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ADD FURNACE CO.,LTD.

44 ซอยบรมราชชนนี 70 ถนนบรมราชชนนี แขวงศาลาธรรมสพน์ เขตทวีวัฒนา กรุงเทพฯ 10170

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**azbil**

No. CP-SP-1308E

# Network Instrumentation Module NX-D15/25 Controller Module User's Manual of Functions



Thank you for purchasing the  
NX-D15/25.

This manual contains information  
for ensuring the correct use of  
the NX-D15/25. It also provides  
necessary information for installation,  
maintenance, and troubleshooting.

This manual should be read by those  
who design and maintain equipment  
that uses the NX-D15/25. Be sure to  
keep this manual nearby for handy  
reference.

Yamatake Corporation



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#### NOTICE

Be sure that the user receives this manual before the product is used.

Copying or duplicating this user's manual in part or in whole is forbidden. The information and specifications in this manual are subject to change without notice.

Considerable effort has been made to ensure that this manual is free from inaccuracies and omissions. If you should find an error or omission, please contact Yamatake Corporation.

In no event is Yamatake Corporation liable to anyone for any indirect, special or consequential damages as a result of using this product.

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## Conventions Used in This Manual

- To prevent injury to the operator and others, and to prevent property damage, the following types of safety precautions are indicated:



### **WARNING**

Warnings are indicated when mishandling this product might result in death or serious injury.



### **CAUTION**

Cautions are indicated when mishandling this product might result in minor injury to the user, or only physical damage to the product.

- In describing the product, this manual uses the icons and conventions listed below.



Use caution when handling the product.



The indicated action is prohibited.



Be sure to follow the indicated instructions.



### **Handling Precautions:**

Handling Precautions indicate items that the user should pay attention to when handling the NX-D15/25.



### **Note:**

Notes indicate information that might benefit the user.



This indicates the item or page that the user is requested to refer to.

[1], [2], [3]:

Numbers within parentheses indicate steps in a sequence or parts of an explanation.



## Safety Precautions

### WARNING

-  Before removing, mounting, or wiring the NX-D15/25, be sure to turn off the power to the module and all connected devices. Failure to do so might cause electric shock.
-  Be sure to check that the NX-D15/25 has been correctly wired before turning on the power. Incorrect wiring of the module can damage it or lead to hazardous conditions.

### CAUTION

-  To lock or unlock the DIN rail locking tab, use a tool such as a screwdriver.
-  Do not disassemble the NX-D15/25. Doing so might cause electric shock or device failure.
-  Do not block the ventilation holes. Doing so might cause fire or device failure.
-  Do not allow wire clippings, metal shavings, water, etc. to enter the case of this device. They can cause fire or device failure.
-  Do not touch electrically charged parts such as the power supply terminals. Doing so may result in an electric shock.
-  Before wiring the NX-D15/25, be sure to disconnect the power. Failure to do so might cause device failure.
-  Wire the NX-D15/25 in compliance with established standards, using the specified power source and recognized installation methods. Failure to do so could result in fire, electric shock, or malfunction.
-  Ensure that the total power consumption of all linked modules does not exceed 100 W. Otherwise fire or faulty operation could occur.
-  Do not supply power to the linked modules from multiple power sources. Doing so could result in fire or malfunction.
-  Do not use unused terminals on the NX-D15/25 as relay terminals. Doing so might cause electric shock, fire or device failure.
-  Do not short the output section. Doing so might cause device failure.
-  Firmly tighten the terminal screws to the torque listed in the specifications. Insufficient tightening might cause fire.
-  If there is a risk of a power surge caused by lightning, use a surge protector to prevent possible fire or failure of the device.
-  Use this device within the operating ranges given in the specifications (for temperature, humidity, voltage, vibration, shock, mounting direction, atmosphere, etc.). Otherwise, fire or device failure could result.
-  The NX-D15/25 does not operate for about 10 seconds after the power has been turned ON, depending on the settings. Be careful if the output from the module is used as an interlock signal.
-  When discarding the NX-D15/25, dispose of it as industrial waste, following local regulations.



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## The Role of This Manual

A total of 6 different manuals are available for the Network Instrumentation Module. Read them as necessary for your specific requirements. If a manual you require is not available, contact Yamatake Corporation or its dealer. Alternatively, you can download the necessary manuals from <http://www.yamatake.com>.

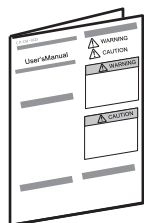


### Network Instrumentation Module User's Manual

#### Network Design Version

**Manual No. CP-SP-1313E**

Personnel who are in charge of design of a network using the Network Instrumentation Module should read this manual thoroughly. It describes how to design a network and gives examples.



### Network Instrumentation Module

#### NX-D15/25/35 Controller Module User's Manual for Installation

**Manual No. CP-UM-5561JE**

This manual is supplied with the NX-D15/25/35. Personnel in charge of design and/or manufacture of a system using the NX-D15/25/35 should thoroughly read this manual. It describes safety precautions, installation, wiring, and primary specifications.

For further information about operation, refer to the user's manual, Abridged Version.



### Network Instrumentation Module

#### NX-D15/25 Controller Module User's Manual Abridged Version

**Manual No. CP-UM-1308E**

This manual.

Personnel who are using the NX-D15/25 for the first time or who are in charge of hardware design and/or maintenance of a control panel containing the NX-D15/25 should read this manual thoroughly. This manual describes the hardware, surveys the NX-D15/25 and other products used with it, explains installation, wiring, and troubleshooting, and gives hardware specifications.



### Network Instrumentation Module

#### NX-CB1 Communication Box User's Manual for Installation

**Manual No. CP-UM-5558JE**

This manual is supplied with the NX-CB1. Personnel in charge of design and/or manufacture of a system using the NX-CB1 should read this manual thoroughly. It describes safety precautions, installation, wiring, and primary specifications.



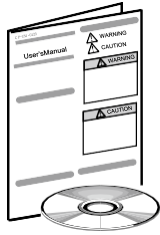
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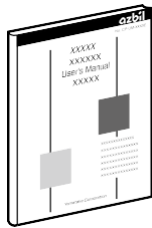


### Network Instrumentation Module

#### Smart Loader Package SLP-NX Installation Guide

Manual No. CP-UM-5559JE

This manual is supplied with the SLP-NX Smart Loader Package and describes installation of the software on a personal computer.



### Network Instrumentation Module

#### Smart Loader Package SLP-NX

#### User's Manual

Manual No. CP-UM-5653E

This manual is included in the SLP-NX Smart Loader Package as a PDF file.

Personnel in charge of design or configuration of a system using the Network Instrumentation Module should read this manual thoroughly. The manual describes the software used to configure the Network Instrumentation Module using a personal computer. It also describes installation of the software on a personal computer, operation of the personal computer, various functions, and setup procedures.



# Organization of This User's Manual

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This manual is organized as follows:

## Chapter 1. OVERVIEW

Overview, features, model selection guide, and part names and functions.

## Chapter 2. INSTALLATION

Operating environment and installation procedures.

## Chapter 3. WIRING

Wiring procedures and precautions, and connection examples.

## Chapter 4. FUNCTIONS NECESSARY FOR CONTROL

Functions necessary for use of the NX-D15/25 for control.

## Chapter 5. OPERATION AND GENERAL FUNCTIONS

Setup of the most commonly used functions.

## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

Setup of functions not related to control.

## Chapter 7. FUNCTIONS USED AS REQUIRED

Setup of convenient functions.

## Chapter 8. CPL COMMUNICATIONS FUNCTION

Communication with a host unit, such as a personal computer or PLC, using Yamatake's standard CPL communication and RS-485.

## Chapter 9. MODBUS COMMUNICATIONS FUNCTION

Communication with a host unit, such as a personal computer or PLC, using MODBUS and RS-485.

## Chapter 10. MODBUS/TCP COMMUNICATIONS FUNCTION

Communication with a host unit, such as a personal computer or PLC, using MODBUS/TCP and Ethernet.

## Chapter 11. LIST OF COMMUNICATION DATA

A list of communication data in the memory of the NX-D15/25.

## Chapter 12. LIST OF PARAMETER SETTINGS

A list of parameter settings.

## Chapter 13. TROUBLESHOOTING

What to do in case of a problem.

## Chapter 14. MAINTENANCE, INSPECTION, AND DISPOSAL

Maintenance, inspection, and disposal.

## Chapter 15. SPECIFICATIONS

General specifications, performance specifications, external dimensions, and optional parts.

## Appendix

Function block diagrams, standard bit codes, standard numerical bit codes, and explanations of characters and terms used in the manual.



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# Chapter 1. OVERVIEW

## 1 - 1 Overview and Features

### ■ Overview

The Instrumentation Network Module uses Ethernet as standard to achieve distributed instrumentation and high-speed communication, and reduce the required wiring and engineering. This gives customers the value of improved environments, quality and productivity.

The NX-D15/25 Controller Module is a module type of controller. One unit can perform up to four loops of PID control.

### ■ Features

#### ● Higher communication speed

- Ethernet equipped as standard

Each module is equipped with an Ethernet communication function.

When modules are connected or distributed, the use of a daisy chain connection method greatly reduces the required wiring.

Each module is also equipped with an RS-485 communication function. High-speed communication is possible to devices such as host systems, programmable logic controllers (PLCs) and display devices.

The system can be upgraded to the Yamatake Monitor and Control System.

- Delivers a true distributed layout

When connected by Ethernet, the system can be used with a distributed layout that has no functional differences from a connected layout.

- Communication redundancy

Two communication configurations are available for the Ethernet network: non- ring and ring.

#### ● Hardware

- Compact and highly functional

The body is an ultra-compact 30×100×104 mm.

- Simple assembly

The three-part structure consists of a base, main body and terminal block. For ease of operation, installation and removal can be performed without using any tools.

Connected operation and distributed layout

- The input and output signals between modules can be linked. Also, modules used in a distributed layout can be linked in the same way as during connected use.

Stand-alone operation is possible

Power, control and communication are integrated into a single unit. This enables efficient use even for applications with low number of channels, and it also saves space.

One unit can perform up to four loops of PID control.

The input is a full multi-range input that allows settings to be freely set for the thermocouple, resistance temperature detector (RTD), DC current and DC voltage.

The control mode supports 2-loop (with RSP) and heat/cool control.

- The control output can be branched to control multiple final control elements. As an option, up to four inputs or outputs can be mounted for one of the following: current transformer, digital input or digital output.

Logical operation processes such as digital input, digital output and internal events can be performed.

- Linking modules enables operations that use inputs and outputs from other modules.

•

•

#### ● Engineering tools

The SLP-NX Smart Loader Package (sold separately) is available.

The Ethernet connection enables simultaneous connection to multiple modules. This provides centralized management, setting and monitoring, which contributes to reduced engineering requirements.



## Chapter 1. OVERVIEW

# 1 - 2 Model Selection Table

### ■ Controller module

| Basic model No. | Type | Ring connection | Wiring method | Channels | Output type | Option | Addition | Description                                                                    |
|-----------------|------|-----------------|---------------|----------|-------------|--------|----------|--------------------------------------------------------------------------------|
| NX—             |      |                 |               |          |             |        |          | Instrumentation Network Module                                                 |
|                 | D15  |                 |               |          |             |        |          | Controller module $\pm 0.3\%$ FS, 500 ms sampling (SV connection not possible) |
|                 | D25  |                 |               |          |             |        |          | Controller module $\pm 0.3\%$ FS, 200 ms sampling                              |
|                 |      | N               |               |          |             |        |          | Non-ring connection                                                            |
|                 |      | R               |               |          |             |        |          | Ring connection                                                                |
|                 |      |                 | T             |          |             |        |          | Screw terminal block                                                           |
|                 |      |                 |               | 4        |             |        |          | 4 channels                                                                     |
|                 |      |                 |               |          | T           |        |          | Transistor output                                                              |
|                 |      |                 |               |          | C           |        |          | Analog current output                                                          |
|                 |      |                 |               |          | D           |        |          | Analog voltage output                                                          |
|                 |      |                 |               |          |             | 0      |          | None                                                                           |
|                 |      |                 |               |          |             | 1      |          | Current transformer input (with 4 ch.)                                         |
|                 |      |                 |               |          |             | 2      |          | Digital output (with 4 ch.)                                                    |
|                 |      |                 |               |          |             | 3      |          | Digital input (with 4 ch.)                                                     |
|                 |      |                 |               |          |             |        | 0        | None                                                                           |
|                 |      |                 |               |          |             |        | D        | Inspection certificate                                                         |
|                 |      |                 |               |          |             |        | Y        | Supports traceability certification                                            |

### ■ Communication box

| Basic model No. | Type | Ring connection 1 | Ring connection 2 | Ports | Option | Addition | Description                                                 |
|-----------------|------|-------------------|-------------------|-------|--------|----------|-------------------------------------------------------------|
| NX—             |      |                   |                   |       |        |          | Instrumentation Network Module                              |
|                 | CB1  |                   |                   |       |        |          | 4-port switching hub                                        |
|                 |      | N                 |                   |       |        |          | Chain (side connector) non-ring connection communications   |
|                 |      | R                 |                   |       |        |          | Chain (side connector) ring connection communications       |
|                 |      |                   | N                 |       |        |          | Inter-chain (front port) non-ring connection communications |
|                 |      |                   | R                 |       |        |          | Inter-chain (front port) connection communications          |
|                 |      |                   |                   | 04    |        |          | 4 ports                                                     |
|                 |      |                   |                   |       | 0      |          | RJ-45                                                       |
|                 |      |                   |                   |       |        | 0        | None                                                        |
|                 |      |                   |                   |       |        | D        | Inspection certificate                                      |

### ■ Communication adapter, terminal adapter

| Basic model No. | Type | Option 1 | Option 2 | Option 3 | Option 4 | Addition | Description                                                          |
|-----------------|------|----------|----------|----------|----------|----------|----------------------------------------------------------------------|
| NX—             |      |          |          |          |          |          | Instrumentation Network Module                                       |
| *1              | CL1  |          |          |          |          |          | Communications adaptor for left side                                 |
| *1              | CR1  |          |          |          |          |          | Communications adaptor for right side                                |
| *1              | TL1  |          |          |          |          |          | Terminal adaptor for left side (for ring connection between chains)  |
| *1              | TR1  |          |          |          |          |          | Terminal adaptor for right side (for ring connection between chains) |
|                 |      | 0        |          |          |          |          | None                                                                 |
|                 |      |          | 0        |          |          |          | None                                                                 |
|                 |      |          |          | 00       |          |          | None                                                                 |
|                 |      |          |          |          | 00       |          | None                                                                 |
|                 |      |          |          |          |          | 0        | None                                                                 |
|                 |      |          |          |          |          | D        | Inspection certificate                                               |

\*1. Left and right as seen from the front.



# 1 - 3 Names and Functions of Parts

## ■ Controller module

### ● Main body

LED operation lamp (shared area):

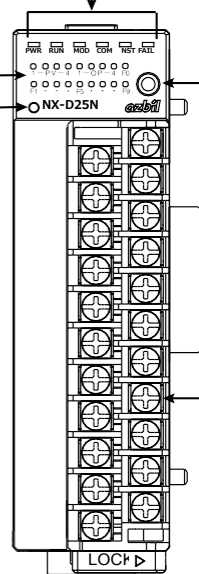
|       |            |                                                                      |
|-------|------------|----------------------------------------------------------------------|
| PWR : | Lit        | Power ON(energized)                                                  |
|       | Off        | Power OFF (not energized)                                            |
| RUN : | Lit        | RUN mode (standard operation mode)                                   |
|       | Fast blink | In module RUN mode, and when PID control is READY for 1 loop or more |
|       | Off        | Operation status other than the above                                |
| MOD   | Fast blink | Configuration data downloading in progress                           |
|       | Off        | F/W downloading in progress                                          |
|       | Off        | Normal action mode                                                   |
| COM   | Lit        | Local Ethernet packet sending or receiving in progress               |
|       | Off        | Local Ethernet packet not sent or not received                       |
| NST   | Lit        | Ring diagnostics function OFF                                        |
|       | Fast blink | Ring cut status (ring is cut somewhere)                              |
|       | Slow blink | Own ring or ring with adjacent node is cut                           |
| FAIL  | Off        | Ring normal                                                          |
|       | Lit        | Hard Failure                                                         |
|       | Slow blink | Soft Failure or another alarm is operating                           |
|       | Off        | No error                                                             |

LED operation lamp (individual area):

|         |            |                                 |
|---------|------------|---------------------------------|
| PV1 - 4 | Fast blink | PV input error                  |
|         | Off        | PV input normal, or not used    |
| OP1 - 4 | Lit        | Control output ON               |
|         | Off        | Control output OFF              |
| F0 - 9  | Lit        | User-defined 0 to 9, ON status  |
|         | Off        | User-defined 0 to 9, OFF status |

The lighting type and lighting status can be freely set (lit, fast blink, slow blink, off, inversion).

Push button:



Loader jack:

Connect the special cable of the SLP-NX Smart Loader Package (sold separately) and perform the settings and monitoring with the loader.

Connection terminal:

A terminal for connecting the signal line.

### ● Base

RS-485 cutoff switch:

Used to disconnect the connection with the right side module of RS-485 communication.

Side connector:

Used to connect modules.

Power terminal:

| No. | Signal    |
|-----|-----------|
| 1   | DC24V (+) |
| 2   | DC24V (-) |

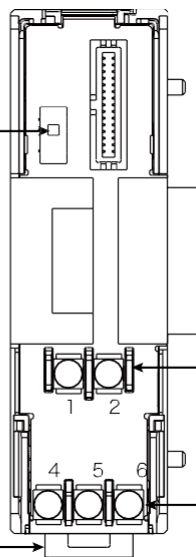
RS-485 communication terminal:

A 3-wire system RS-485 communication terminal.

| No. | Signal |
|-----|--------|
| 4   | DA     |
| 5   | DB     |
| 6   | SG     |

DIN rail stopper:

Used for fixing to the DIN rail.





## Chapter 1. OVERVIEW

### ■ Communication box

#### ● Main body

LED operation lamp (shared area):

|       |            |                                                    |
|-------|------------|----------------------------------------------------|
| PWR : | Lit        | Power ON(energized)                                |
|       | Off        | Power OFF(not energized)                           |
| RUN : | Lit        | Normal operation in progress                       |
|       | Flashing   | Hardware Failure                                   |
|       | Off        | Hardware Failure                                   |
| MOD   | Off        | Normal                                             |
| COM   | Lit        | Sending Ethernet packet to side connector network  |
|       | Off        | Ethernet packet not sent to side connector network |
| NST   | Lit        | Non-ring communication                             |
|       | Fast blink | Ring cut status (ring is cut somewhere)            |
|       | Slow blink | Own ring or ring with adjacent node is cut         |
|       | Off        | Ring communication normal                          |
| FAIL  | Lit        | Hard Failure                                       |
|       | Flashing   | Soft Failure                                       |
|       | Off        | No error                                           |

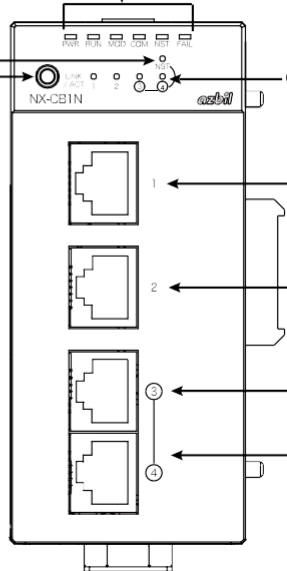
Front panel NST operation lamp:

Maintenance jack:

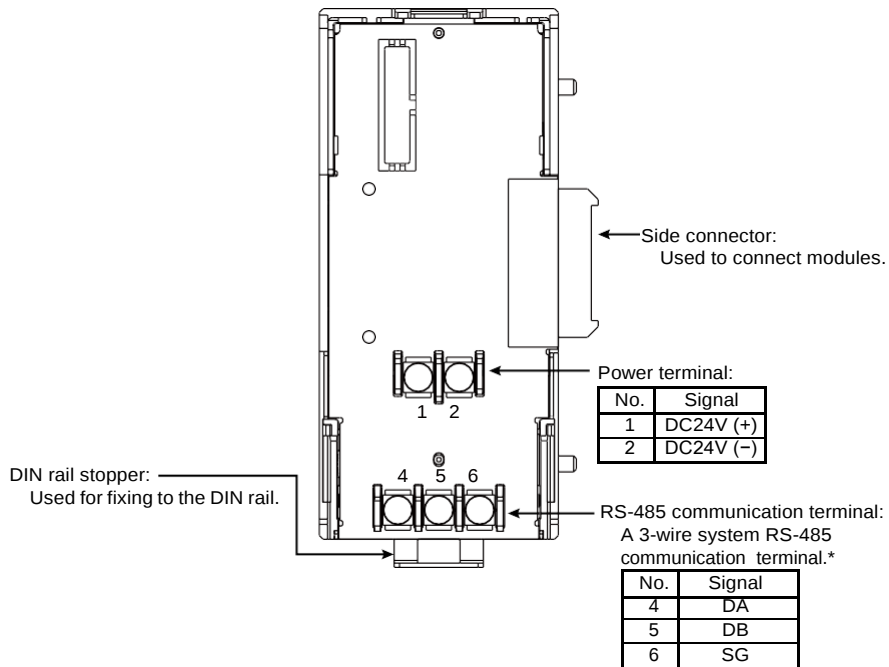
(For manufacturer maintenance)

For internal use at Yamatake.

Cannot connect to the SLP-NX Smart Loader Package.



#### ● Base

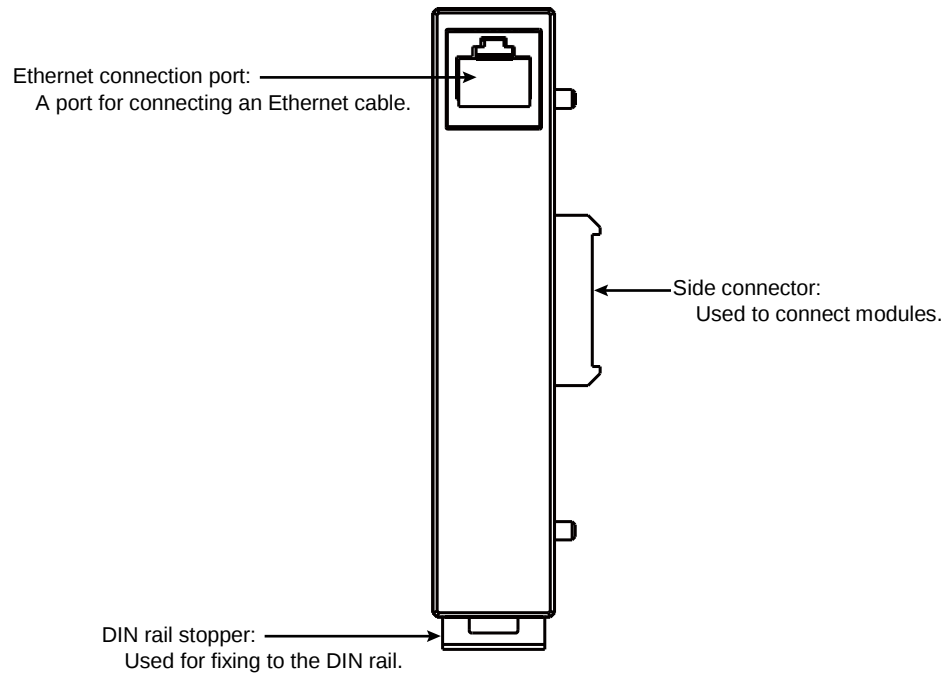


\* Connect to the module that is connected on the right side.

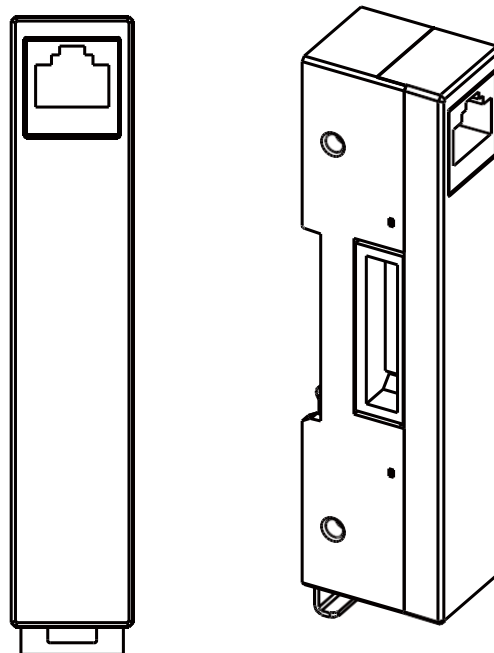


## ■ Communication adapter

- For left connection



- For right connection

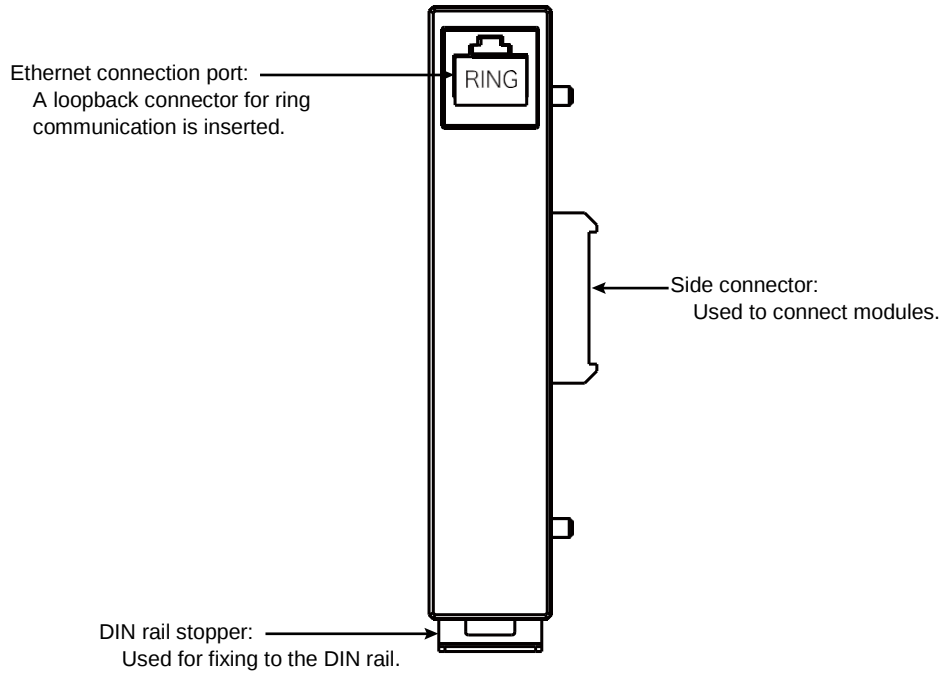




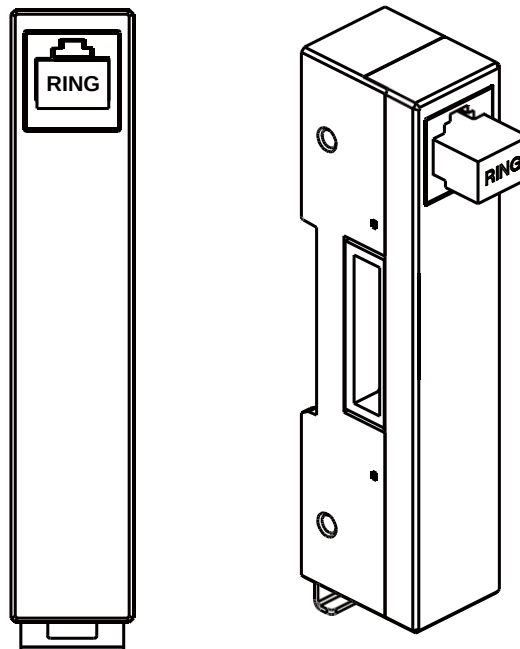
## Chapter 1. OVERVIEW

### ■ Terminal adapter

- For left connection



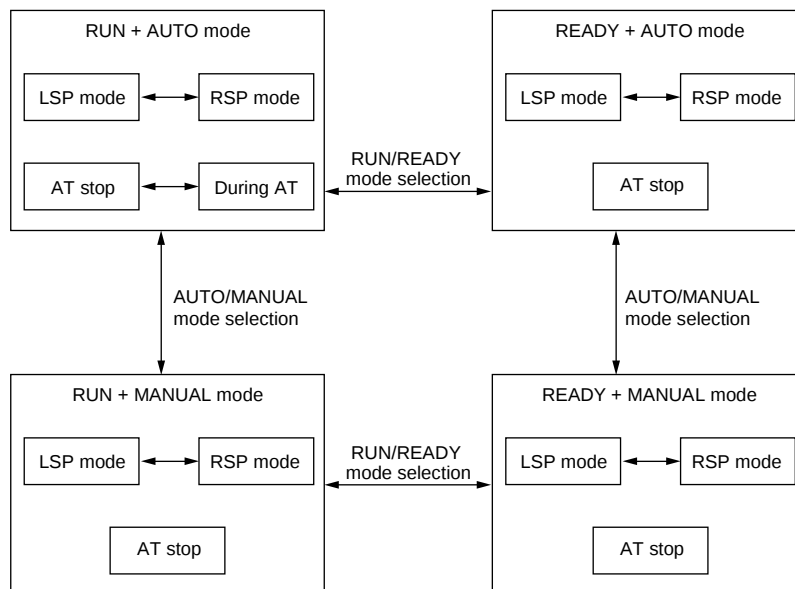
- For right connection





## 1 - 4 Operation Modes

The following shows the transition of operation modes:



RUN: Control status

READY: Control stop status

AUTO: Automatic operation (The unit automatically determines the MV values.)

MANUAL: Manual operation (The MV values are operated manually.)

LSP: Local SP (The control is performed using the SP stored in the unit.)

RSP: Remote SP (The analog input from the external device is used as SP.)

AT: Auto tuning (The PID constants are set automatically using the limit cycle.)





## Chapter 2. INSTALLATION

### ⚠ WARNING



Before removing, mounting, or wiring the NX-D15/25, be sure to turn off the power to the module and all connected devices. Failure to do so might cause electric shock.

### ⚠ CAUTION



Use this device within the operating ranges given in the specifications (for temperature, humidity, voltage, vibration, shock, mounting direction, atmosphere, etc.). Otherwise, fire or device failure could result.



Do not block the ventilation holes. Doing so might cause fire or device failure.



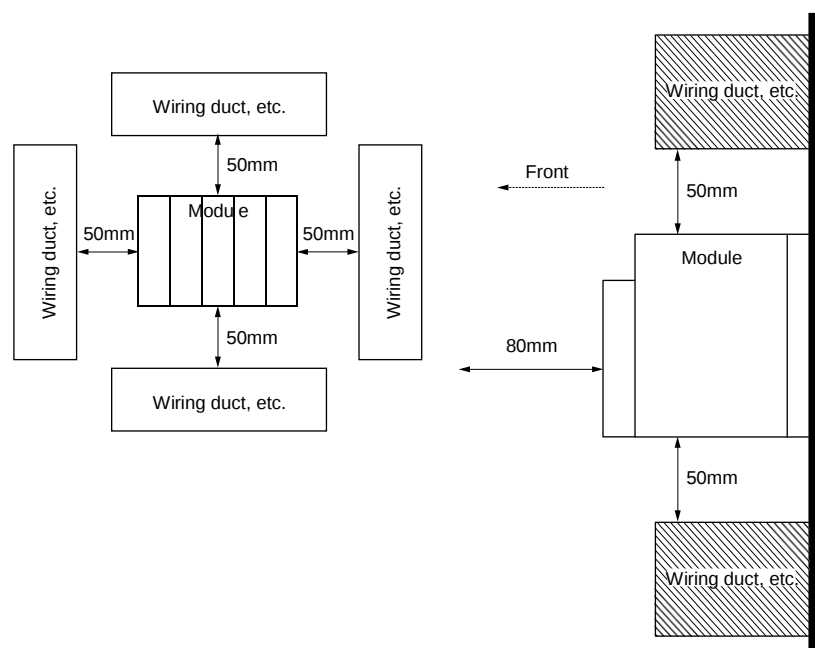
Do not allow wire clippings, metal shavings, water, etc. to enter the case of this device. They can cause fire or device failure.

### ■ Installation location

During installation, leave clearance of at least 50 mm above and below, 50 mm on the right and left, and 80 mm from the front for air intake, removal, wiring, and maintenance.

When mounted, the module should be at least 100 mm away from another module or other device.

Do not mount the module above heat-generating equipment like a power generator.



Do not install in the following locations:

- Places with a high or low temperature or high or low humidity outside the specification range
- Places with sulfide gas or other corrosive gases
- Places exposed to dust or oily smoke
- Places exposed to direct sunlight, wind or rain
- Places exposed to mechanical vibration or shocks outside the specification range
- Near high voltage lines, welding machines or other sources of electrical noise
- Within 15 meters of a high voltage ignition device, such as a boiler
- Places with strong magnetic fields
- Places with flammable liquid or gas



## Chapter 2. INSTALLATION

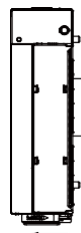
### ■ Terminal block installation and removal

#### • Removal method

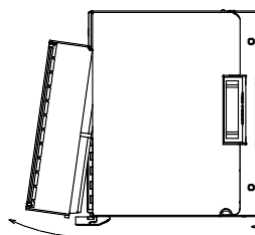
#### ❗ Handling Precautions

- Do not remove the terminal block other than for work, such as:
  - When wiring before installing the unit
  - During maintenance

[1] Slide the lock lever of the terminal block to the left to unlock the terminal block.

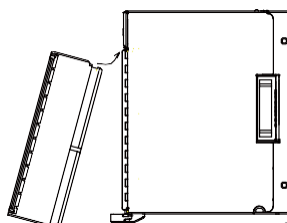


[2] Remove the terminal block by pulling it out towards you from the lower side.

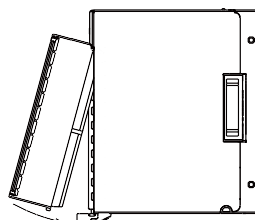


#### • Installation method

[1] Tilt the terminal block and insert the upper side of the terminal block into the groove in the case.



[2] Install so that the lower side of the terminal block is pushed in.



[3] Slide the lock lever of the terminal block to the right to lock the terminal block.





## Chapter 2. INSTALLATION

### ■ Module connection

This module can be connected to other modules with the left and right connectors on the base.

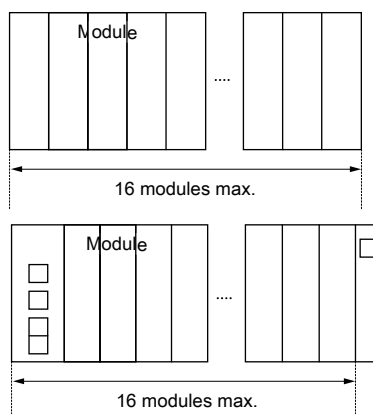
Connect the modules before installing them on the DIN rail. Connecting the modules connects the power and communication of each module, reducing the amount of wiring that is required. With RS-485 communication, the connection with the right side module can be disconnected with the RS-485 cutoff switch on the base.

Up to 16 modules can be linked.

In a distributed layout, if the horizontal length is too long, or if more than 16 modules are connected, divide the modules into two or more groups.

### ❗ Handling Precautions

- The following are not included in the number of linked modules.
  - Communication adapter
  - Terminal adapter



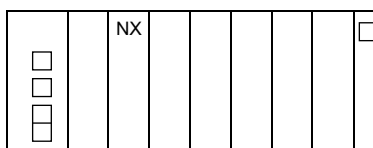
### ■ Installation method

Use the unit while it is installed on a DIN rail.

After fixing the DIN rail, pull out an ample amount of the DIN rail stopper and then attach the base to the rail. Next, push in the DIN rail stopper in the upper direction until it clicks.

### ❗ Handling Precautions

- Install the unit with the DIN rail stopper under the vertical surface.



Connect the modules before mounting them on the DIN rail.



## Chapter 2. INSTALLATION

### ■ Installing the main body to the base

#### ❗ Handling Precautions

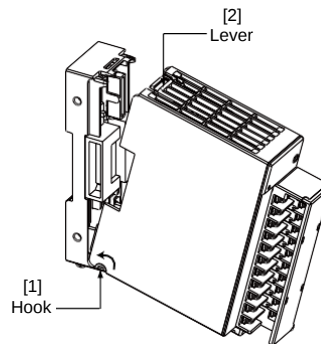
- Use the base and main body from the same package together as a pair.

[1] Attach the hook on the lower side of the main body to the base.

#### ❗ Handling Precautions

- First attach the hook on the lower side of the main body to the base.  
Failure to do so might cause damage.

[2] Insert the upper side of the main body until the lever clicks.



To remove, pull the upper side lever towards yourself while pressing it.



## Chapter 3. WIRING

### 3 - 1 Wiring Precautions

| ⚠ WARNING |                                                                                                                                                                         |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ❗         | Before removing, mounting, or wiring the NX-D15/25, be sure to turn off the power to the module and all connected devices. Failure to do so might cause electric shock. |
| ❗         | Be sure to check that the NX-D15/25 has been correctly wired before turning on the power. Incorrect wiring of the module can damage it or lead to hazardous conditions. |

| ⚠ CAUTION |                                                                                                                                                                                                           |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 🚫         | Do not disassemble the NX-D15/25. Doing so might cause electric shock or device failure.                                                                                                                  |
| ❗         | Do not allow wire clippings, metal shavings, water, etc. to enter the case of this device. They can cause fire or device failure.                                                                         |
| ❗         | Before wiring the NX-D15/25, be sure to disconnect the power. Failure to do so might cause device failure.                                                                                                |
| ❗         | Wire the NX-D15/25 in compliance with established standards, using the specified power source and recognized installation methods. Failure to do so could result in fire, electric shock, or malfunction. |
| ❗         | Firmly tighten the terminal screws to the torque listed in the specifications. Insufficient tightening might cause fire.                                                                                  |
| ❗         | If there is a risk of a power surge caused by lightning, use a surge protector to prevent possible fire or failure of the device.                                                                         |
| ❗         | The NX-D15/25 does not operate for about 10 seconds after the power has been turned ON, depending on the settings. Be careful if the output from the module is used as an interlock signal.               |



## Chapter 3. WIRING

### ■ Wiring precautions

- Make sure that the wiring follows regulations for indoor wiring and technical standards for electrical equipment.
- When connecting wires to the power terminals, use crimp terminals with insulating sleeves.
- Before wiring the unit, verify the device's model No. and terminal Nos. written on the label on the side of the main body.
- Use M3 crimp-type terminal lugs for wiring to a screw-type terminal block.
- Pay special attention so that no crimp type terminal lugs make contact with adjacent terminals.
- Leave a distance of at least 60 cm between I/O lead wires and communications lead wires or power lead wires. Also, do not pass these lead wires through the same conduit or wiring duct.
- When connecting in parallel to another device, check the requirements of the other device carefully before performing instrumentation.
- Position the lead wire that carries heater current so that it penetrates the current transformer. Ensure that the heater current does not exceed the allowable current described in the specifications. Failure to do so might damage the unit.
- To ensure stability, the unit is designed so that after the power is turned ON, there is no output for about 10 seconds (default). A warm-up of at least 30 minutes is recommended to allow the controller to attain the specified accuracy.
- When the wiring is completed, check that there are no wiring mistakes before turning the power ON.



## 3 - 2 Recommended Cables

- When there is a thermocouple input, connect the thermocouple wires to the terminals.

When a thermocouple is connected to terminals, or the wiring distance is long, connect the wire via a shielded compensating lead wire.

Be sure to use a shielded type of compensating lead wire.

- For inputs and outputs other than thermocouples, use a JCS 4364 instrument cable or equivalent. (Generally called twisted shielded cable for instrumentation use.)

Recommended twisted shielded cables are:

|                     |              |                                 |
|---------------------|--------------|---------------------------------|
| Fujikura Ltd.       | 2 conductors | IPEV-S-0.9 mm <sup>2</sup> × 1P |
|                     | 3 conductors | ITEV-S-0.9 mm <sup>2</sup> × 1T |
| Hitachi Cable, Ltd. | 2 conductors | KPEV-S-0.9 mm <sup>2</sup> × 1P |
|                     | 3 conductors | KTEV-S-0.9 mm <sup>2</sup> × 1T |

- A shielded multiconductor microphone cord (MVVS) may be used, if electromagnetic induction noise is comparatively low.





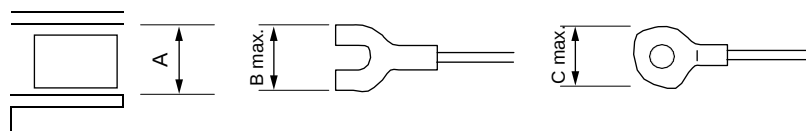
## Chapter 3. WIRING

**3 - 3 Terminal Connections**

| <b>⚠ CAUTION</b> |                                                                                                                               |
|------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>!</b>         | Firmly tighten the terminal screws to the torque listed in the specifications. Insufficient tightening might cause fire.      |
| <b>⊘</b>         | Do not use unused terminals on the NX-D15/25 as relay terminals. Doing so might cause electric shock, fire or device failure. |
| <b>⊘</b>         | Do not short the output section. Doing so might cause device failure.                                                         |

The following describes the connections of the unit terminals.

For wiring of the unit, use a crimp type terminal lug that is suitable for the M3 screw.



| Applicable screw size | Terminal dimensions (mm) |     |     | Recommended crimp-type terminal lugs<br>JST Mfg. Co., Ltd. | Applicable electrical wire size           | JIS indication<br>Model No.<br>(Reference) |
|-----------------------|--------------------------|-----|-----|------------------------------------------------------------|-------------------------------------------|--------------------------------------------|
|                       | A                        | B   | C   |                                                            |                                           |                                            |
| M3                    | 6.1                      | 5.8 | 5.8 | RAV1.25-3                                                  | 0.3 to 1.3 mm <sup>2</sup><br>AWG22 to 16 | V1.25-3<br>V1.25 B3A                       |

**! Handling Precautions**

- When installing this unit in a place where the vibration or shock is large, always use an appropriate round crimp type terminal lug to avoid loose terminal connections.
- Pay special attention so that no crimp type terminal lugs make contact with adjacent terminals.
- The tightening torque of the terminal screw must be 0.5 to 0.7 N•m or less.

**📖 Note**

- Crimp-type terminal lugs

If you want to add a symbol or other label to the cables, in general use a crimp-type terminal lug sleeve. The crimp-type terminal lugs that are suitable for this connector are shown below as a reference.

Manufacturer name : JST Mfg. Co., Ltd.

Model No. : VTUB-1.25

(With insulating coating, 1000 included, wire size: 0.25 to 1.65 mm<sup>2</sup>)

VTUB-2

(With insulating coating, 1000 included, wire size: 1.04 to 2.63mm<sup>2</sup>)

TUB-1.25

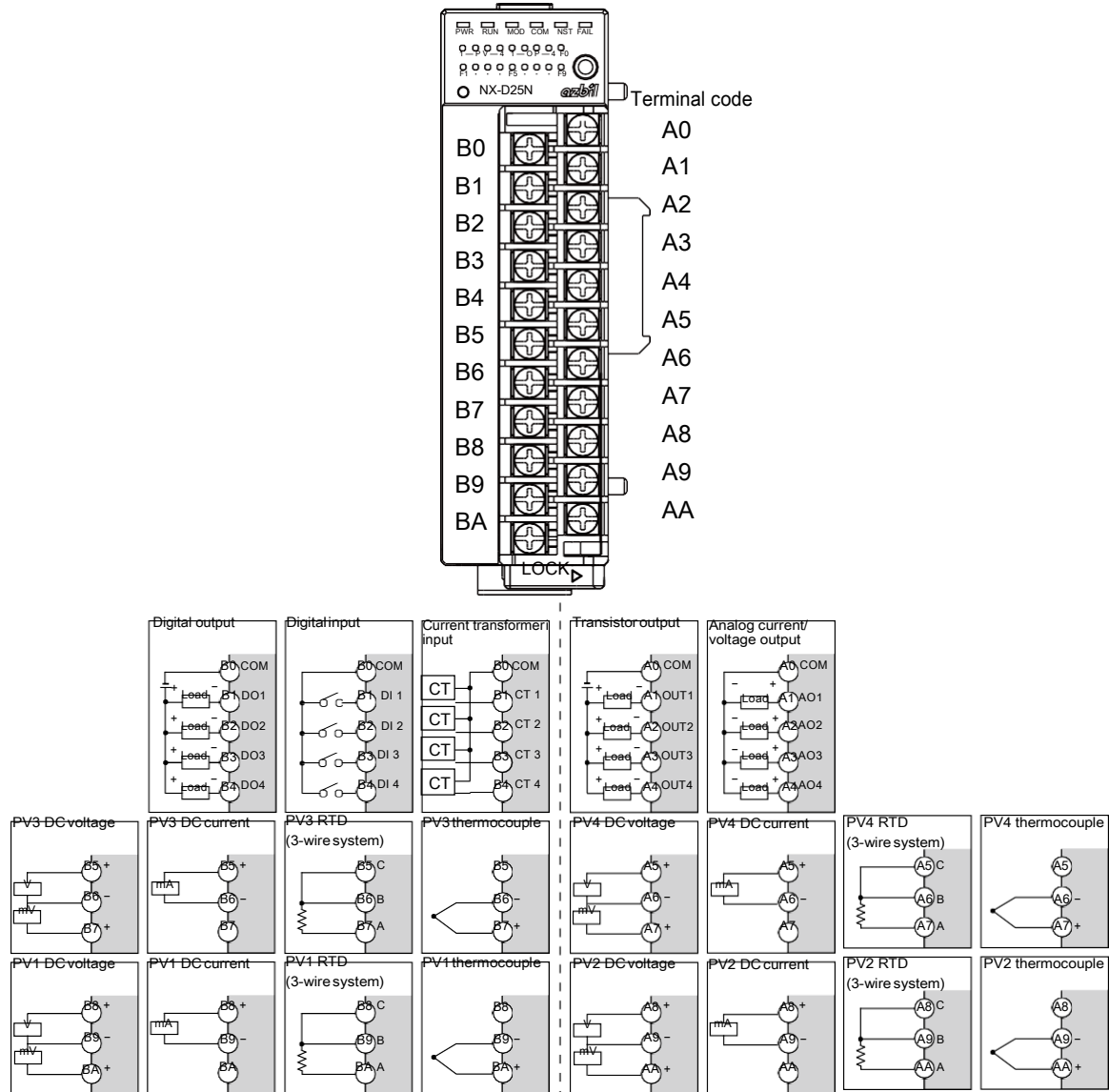
(No insulating coating, 1000 included, wire size: 0.25 to 1.65 mm<sup>2</sup>)

TUB-2

(No insulating coating, 1000 included, wire size: 1.04 to 2.63 mm<sup>2</sup>)



## 3 - 4 Terminal Wiring Diagram





## 3 - 5 Terminal Connections

### ■ Power supply connections

#### ! WARNING



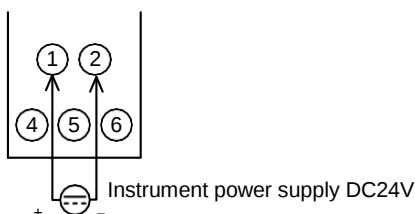
Before removing, mounting, or wiring the NX-D15/25, be sure to turn off the power to the module and all connected devices. Failure to do so might cause electric shock.

#### ! CAUTION



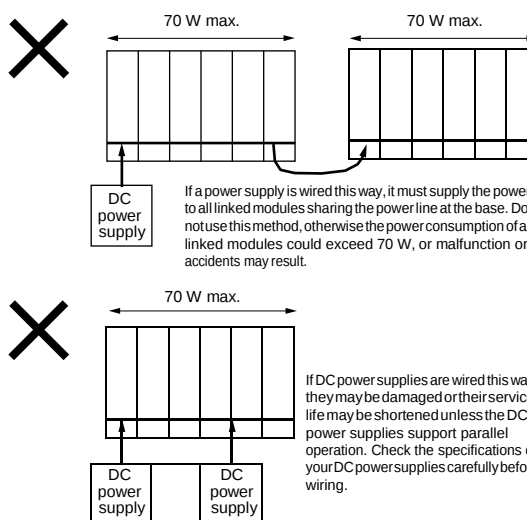
Do not allow the total power consumption of all linked modules to exceed 70 W. Excessive wattage can result in fire or malfunction.

Connect the power terminal as shown below.



### ! Handling Precautions

- The power supply is connected reciprocally between the connected modules.
- Supply power to one of the connected modules.
- Select a power supply that satisfies in full the total power consumption of the connected modules.





## Chapter 3. WIRING

### ■ Noise countermeasures

Provide a power supply from a single-phase instrument power supply to minimize the effects of noise.

If the power supply generates noise, add an insulation transformer, and use a line filter.

(Yamatake Corporation Line Filter Model No.: 81446364-001)

Use a CR filter for quick-rising noises such as impulse noise.

(Yamatake Corporation CR Filter Model No.: 81446365-001)

### ❗ Handling Precautions

- After introducing noise-reduction measures, do not bundle the primary and secondary coils of the insulation transformer together, or put them into the same conduit or duct.

### ■ Power supply design

The required power supply capacity for a module varies depending on the module configuration.

For this reason, the required power supply capacity must be calculated and verified.

The procedures for power supply design are described below.

(1) Calculate the consumption current of the modules to be used

(2) Determine the power supply capacity required

The design of power supply is described below.

#### • How to calculate the power consumption

Modules are connected to the instrument power supply (24 Vdc) via side connector.

The power consumption of each module is shown in the table below.

Calculate the total power consumption from the number of modules to be used.

| Module                | Power consumption (W) | Inrush current                            | Remarks                  |
|-----------------------|-----------------------|-------------------------------------------|--------------------------|
| Controller module     | 4W                    | 20 A max.<br>(under operating conditions) |                          |
| Communication box     | 5W                    | 10 A max.<br>(under operating conditions) |                          |
| Communication adapter | —                     | —                                         | No power supply required |
| Terminal adapter      | —                     | —                                         | No power supply required |

#### • How to select the required power supply capacity

Calculate the required power from the table above, perform derating according to the ambient temperature or the load factor, and then select the power supply.

\* Select a power supply that has a capacity to accommodate the power ON inrush current (under operating conditions).

If derating according to the load reduction factor or ambient temperature is not performed, the service life of the power supply may be shortened.

For details, contact the manufacturer of your power supply.



บริษัท เอดีดี เฟอร์เนส จำกัด

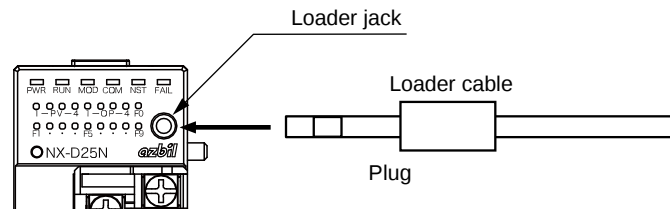
ADD FURNACE CO.,LTD.

44 ซอยบรมราชชนนี 70 ถนนบรมราชชนนี แขวงศาลาธรรมสพน์ เขตทวีวัฒนา กรุงเทพฯ 10170

โทร: 02-888-3472 โทร: ออกแบบ:08-08-170-170 แฟกซ์: 02-888-3258

<https://www.add-furnace.com> E-mail: [sales@add-furnace.com](mailto:sales@add-furnace.com)

## 3 - 6 Loader Cable Connections



### ! Handling Precautions

- Firmly insert the plug into the loader jack.
- When removing or inserting the loader cable, hold the plug. Do not pull the cable.
- Do not apply force to the loader cable or plug in any direction while the cable is connected.  
Doing so might damage the loader cable or loader jack, or affect the functionality or performance.



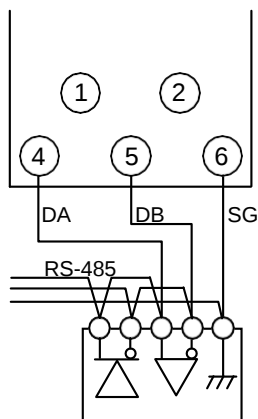
## 3 - 7

## RS-485 Communication Connections

The communication (RS-485) is a 3-wire system connection.

Connect the communication wires to one of the connected modules.

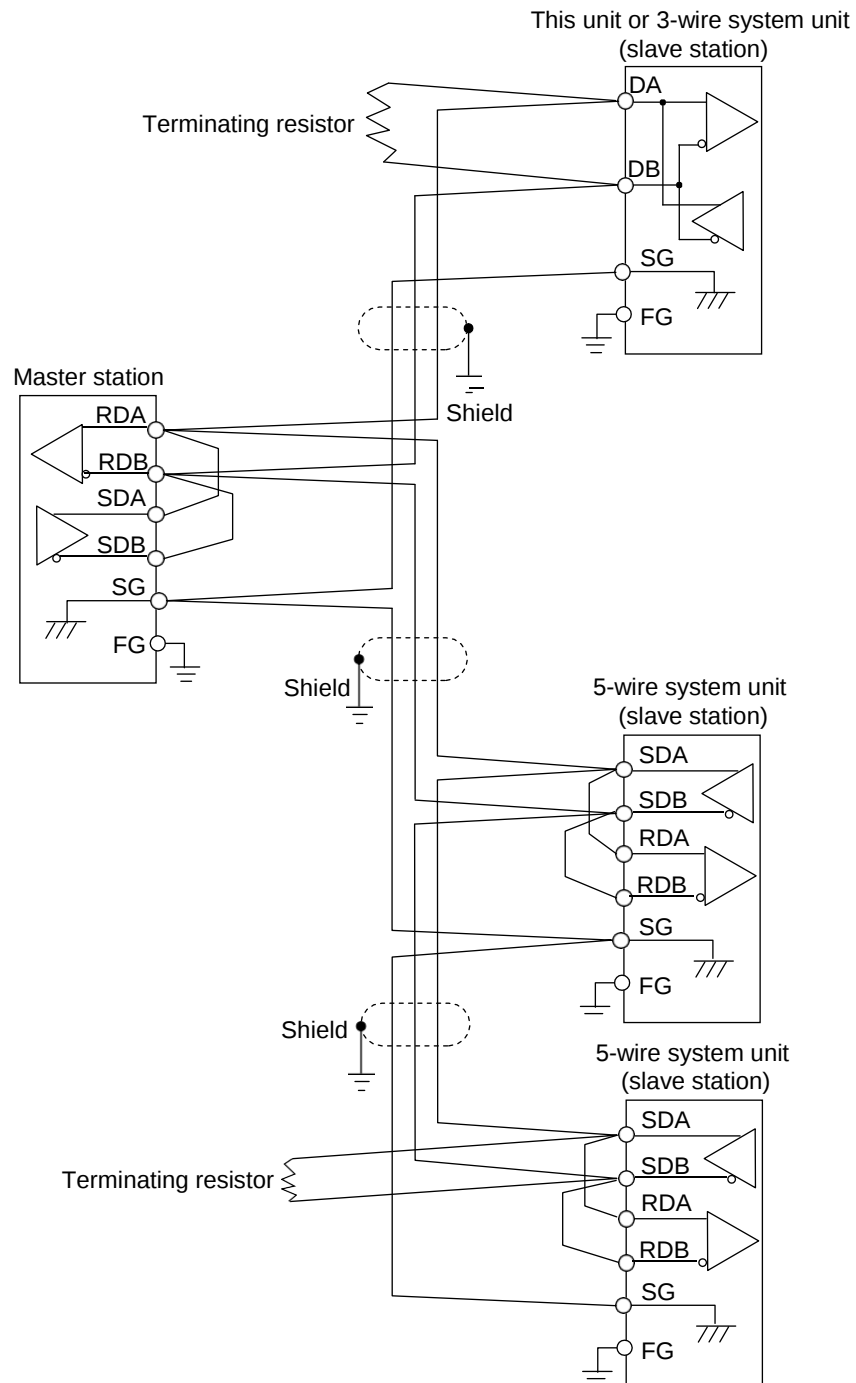
This unit



### ! Handling Precautions

- Attach a 0.5 W or greater terminating resistor of  $150\Omega \pm 5\%$  at each end of the communications lines.
- Be sure to connect the SG terminals to each other. Failure to do so might cause unstable communications.
- Use a twisted pair cable as the communication wires.

• Combining with 5-wire system units

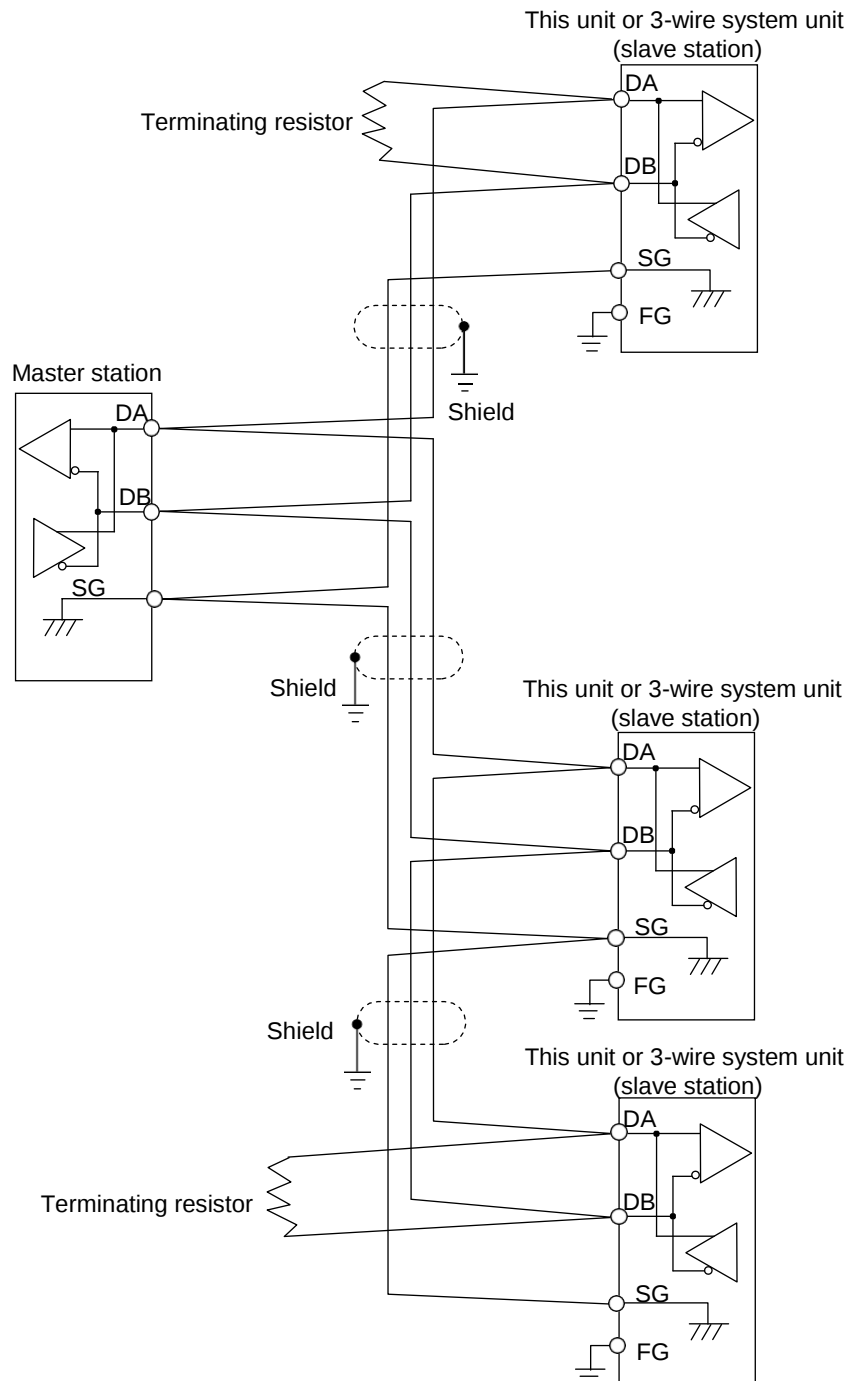


**! Handling Precautions**

- If units for which the connection of a terminating resistor is prohibited (Yamatake SDC15/25/26/35/36 or DMC10) are on the same transmission line, do not connect a terminating resistor to the external or communication line of the NX-D15/25.



• 3-wire system



❗ **Handling Precautions**

- If units for which the connection of a terminating resistor is prohibited (Yamatake SDC15/25/26/35/36 or DMC10) are on the same transmission line, do not connect a terminating resistor to the external or communication line of the NX-D15/25.



## 3 - 8 Noise Generation Sources and Noise Suppression

The following are typical noise generation sources:

1. Relays and contacts
2. Solenoid coils and solenoid valves
3. Power lines (especially those AC 90 V or higher)
4. Inductive loads
5. Motor commutators
6. Phase angle control SCR
7. Radio communication equipment
8. Welding machinery
9. High-voltage ignition devices

Effective measures for noise suppression are described below.

1. A CR filter is effective for quick-rising noises such as impulse noise.  
Recommended CR filter:  
Yamatake Corporation Model No.: 81446365-001
2. A varistor is effective for noises with high crest values.  
Recommended varistor:  
Yamatake Corporation Model No.: 81446366-001(for 100 V)  
81446367-001(for 200 V)

### Handling Precautions

- Take great care when using a varistor because the varistor short-circuits when faulty.



## 3 - 9 I/O Isolation

The solid line indicates isolation from the rest of the circuit.

| Power supply                         |                                  |
|--------------------------------------|----------------------------------|
| Logic circuit                        | Transistor output (ch1 to 4)     |
| Loader jack                          | Analog current output (ch1 to 4) |
| RS-485, Ethernet communication       | Analog voltage output (ch1 to 4) |
| Display (LEDs, switches, etc.)       | Digital output (ch1 to 4)        |
| Current transformer input (ch1 to 4) | Digital input (ch1 to 4)         |
| PV input (ch1)                       |                                  |
| PV input (ch2)                       |                                  |
| PV input (ch3)                       |                                  |
| PV input (ch4)                       |                                  |





# Chapter 4. FUNCTIONS NECESSARY FOR CONTROL

## 4 - 1 How to Set the Loop Configuration

### ■ Bank and settings

| Bank                                   | Item name | Contents of setup                     |
|----------------------------------------|-----------|---------------------------------------|
| Setup                                  | Loop type | See table below                       |
| Loop type                              |           | Loop type                             |
| 0: 1 loop                              |           | 21: 3 loops<br>                       |
| 1: 2 loops                             |           | 22: 4 loops<br>                       |
| 2: 1 loop (RSP)                        |           | 23: 3 loops + MV branching output<br> |
| 5: 2 loops (1 loop with RSP)           |           | 24: 4 loops + MV branching output<br> |
| 8: 2 loops (RSP) + MV branching output |           |                                       |
| 9: 2 loops (RSP)                       |           |                                       |



## Chapter 4. FUNCTIONS NECESSARY FOR CONTROL

## 4 - 2 How to Set the Input Type (PV Input)

### ■ Bank and settings

| Bank     | Item name  | Contents of setup |
|----------|------------|-------------------|
| PV input | Range type | See table below   |

### ■ Input types

#### • Thermocouple

| Range type | Sensor type       | Range              |                 | Resolution |
|------------|-------------------|--------------------|-----------------|------------|
| 1          | K                 | -200 to +1200°C    | -300 to +2200°F | 1°C        |
| 2          | K                 | 0 to 1200°C        | 0 to 2200°F     | 1°C        |
| 3          | K                 | 0.0 to 800.0°C     | 0 to 1500°F     | 0.1°C      |
| 4          | K                 | 0.0 to 600.0°C     | 0 to 1100°F     | 0.1°C      |
| 5          | K                 | 0.0 to 400.0°C     | 0 to 700°F      | 0.1°C      |
| 6          | K                 | -200.0 to +400.0°C | -300 to +700°F  | 0.1°C      |
| 7          | K                 | -200.0 to +200.0°C | -300 to +400°F  | 0.1°C      |
| 8          | J                 | 0 to 1200°C        | 0 to 2200°F     | 1°C        |
| 9          | J                 | 0.0 to 800.0°C     | 0 to 1500°F     | 0.1°C      |
| 10         | J                 | 0.0 to 600.0°C     | 0 to 1100°F     | 0.1°C      |
| 11         | J                 | -200.0 to +400.0°C | -300 to +700°F  | 0.1°C      |
| 12         | E                 | 0.0 to 800.0°C     | 0 to 1500°F     | 0.1°C      |
| 13         | E                 | 0.0 to 600.0°C     | 0 to 1100°F     | 0.1°C      |
| 14         | T                 | -200.0 to +400.0°C | -300 to +700°F  | 0.1°C      |
| 15         | R                 | 0 to 1600°C        | 0 to 3000°F     | 1°C        |
| 16         | S                 | 0 to 1600°C        | 0 to 3000°F     | 1°C        |
| 17         | B                 | 0 to 1800°C        | 0 to 3300°F     | 1°C        |
| 18         | N                 | 0 to 1300°C        | 0 to 2300°F     | 1°C        |
| 19         | PL II             | 0 to 1300°C        | 0 to 2200°F     | 1°C        |
| 20         | WRe5-26           | 0 to 1400°C        | 0 to 2400°F     | 1°C        |
| 21         | WRe5-26           | 0 to 2300°C        | 0 to 4200°F     | 1°C        |
| 22         | Ni-Ni•Mo          | 0 to 1300°C        | 0 to 2300°F     | 1°C        |
| 23         | PR40-20           | 0 to 1900°C        | 0 to 3400°F     | 1°C        |
| 24         | DIN U             | -200.0 to +400.0°C | -300 to +700°F  | 0.1°C      |
| 25         | DIN L             | -100.0 to +800.0°C | -150 to +1500°F | 0.1°C      |
| 26         | Gold-iron/Chromel | 0.1 to 360.1 K     | -450 to +180°F  | 0.1 K      |

• The indicated value low limit for the B thermocouple is 20°C.

#### • Resistance temperature detector (RTD)

| Range type | Sensor type | Range              |                 | Resolution |
|------------|-------------|--------------------|-----------------|------------|
| 41         | Pt100       | -200.0 to +500.0°C | -328 to +932°F  | 0.1°C      |
| 42         | JPt100      | -200.0 to +500.0°C | -328 to +932°F  | 0.1°C      |
| 43         | Pt100       | -200.0 to +850.0°C | -328 to +1562°F | 0.1°C      |
| 44         | JPt100      | -200.0 to +640.0°C | -328 to +1184°F | 0.1°C      |
| 45         | Pt100       | -100.0 to +300.0°C | -148 to +572°F  | 0.1°C      |
| 46         | JPt100      | -100.0 to +300.0°C | -148 to +572°F  | 0.1°C      |
| 47         | Pt100       | -100.0 to +200.0°C | -148 to +392°F  | 0.1°C      |
| 48         | JPt100      | -100.0 to +200.0°C | -148 to +392°F  | 0.1°C      |
| 49         | Pt100       | -50.0 to +100.0°C  | -58 to +212°F   | 0.1°C      |
| 50         | JPt100      | -50.0 to +100.0°C  | -58 to +212°F   | 0.1°C      |
| 51         | Pt100       | -20.00 to +60.00°C | -4 to +140°F    | 0.01°C     |
| 52         | JPt100      | -20.00 to +60.00°C | -4 to +140°F    | 0.01°C     |

#### • Linear

| Range type | Sensor type | Range         |
|------------|-------------|---------------|
| 81         | DC voltage  | 0 to 10 mV    |
| 82         |             | -10 to +10 mV |
| 83         |             | 0 to 100 mV   |
| 84         |             | 0 to 1 V      |
| 85         |             | -1 to +1 V    |
| 86         |             | 1 to 5 V      |
| 87         |             | 0 to 5 V      |
| 88         |             | 0 to 10 V     |
| 89         |             | 2 to 10 V     |
| 90         |             | 0 to 20 mA    |
| 91         | DC current  | 4 to 20 mA    |

### ■ Setting procedures

- [1] Set the range type.
- [2] Set the temperature unit (Celsius/Fahrenheit/Kelvin).
- [3] Set the decimal point position as required.
- [4] Set the alarm setting as required.



#### Note

- The input indication accuracy may vary depending on the type of sensor. For details, refer to:

Chapter 15. SPECIFICATIONS ■ PV input (page 15-1)



#### Handling Precautions

- When a range not in the table is set, the input indicated value is fixed to 0.0.



## 4 - 3 How to Set Range-Related Items

Range-related items are set corresponding to the input type set in section 4-2, How to Set the Input Type (previous page).

### ■ Bank and settings

| Bank         | Item name                              | Contents of setup                                                                                                          |
|--------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Loop (basic) | Range low limit for proportional band  | Low limit of range used for PID control                                                                                    |
|              | Range high limit for proportional band | High limit of range used for PID control                                                                                   |
| PV input     | Alarm setting low limit                | Under-range is detected with a PV below this value                                                                         |
|              | Alarm setting high limit               | Over-range is detected with a PV exceeding this value                                                                      |
|              | Linear scaling low limit               | Value when the low limit of the linear signal is input<br>* This item must be set only when the linear input is selected.  |
|              | Linear scaling high limit              | Value when the high limit of the linear signal is input<br>* This item must be set only when the linear input is selected. |

### ■ How to set the range width for the proportional band

The range low limit and high limit for the proportional band are settings for PID control.

Set the range low limit and high limit for the proportional band as required to suit the range of the PV input used in operations.

Perform PID adjustment after setting the proportional band range width. When the proportional band range width is changed, readjust the PID.

#### ● Configuration method

Example: Loop 1 PV used in a K thermocouple range of 0.0 to 800.0 °C

Configure the settings as shown below in the loop (basic) bank setup.

| Item name                                       | Setting |
|-------------------------------------------------|---------|
| (Loop 1) Range low limit for proportional band  | 0.0     |
| (Loop 1) Range high limit for proportional band | 800.0   |



## Chapter 4. FUNCTIONS NECESSARY FOR CONTROL



## Note

- Set other range-related items as required in addition to the input type set in section 4-2, How to Set the Input Type (page 4-2).

Because initialization is performed automatically as described below, setting is not normally required.

The initializations below only occur when either the range type, temperature unit or decimal point position is set to a value that is different from its previous value. Initialization is not performed if the value is the same.

- When the range type setting is changed to thermocouple/resistance temperature detector (RTD)

Normally, settings other than the range type do not require any change.

However, if required, set the decimal point position, temperature unit, alarm setting high limit/low limit or range high limit/low limit for proportional band.

- When the range type setting is changed to linear range

Normally, settings other than the linear scaling high limit/low limit do not require any change.

The alarm setting low limit is initialized to -2000 and the alarm setting high limit is initialized to 32000. The alarm operates when there is an input below the minimum input or above the maximum input of the set range.

- Initialization of parameters when the range type is set

| Input type                                          | Alarm setting high limit/low limit | Range high limit/low limit for proportional band | Decimal point position |
|-----------------------------------------------------|------------------------------------|--------------------------------------------------|------------------------|
| Thermocouple, resistance temperature detector (RTD) | Yes *1                             | Yes *1                                           | Yes *2                 |
| Linear range                                        | Yes *3                             | Yes *4                                           | Yes *5                 |

\*1. The initialization value varies depending on the set temperature unit.

\*2. The maximum decimal point position for the set range type and the set temperature unit is set.

\*3. The alarm setting low limit and alarm setting high limit are set to -2000 and 32000 respectively.

\*4. The current linear scaling high and low limits are set.

\*5. 0 is set.

- Initialization of parameters when the temperature unit is set

| Input type        | Alarm setting high and low limits | Range high and low limits for proportional band | Decimal point position |
|-------------------|-----------------------------------|-------------------------------------------------|------------------------|
| Thermocouple, RTD | Yes *1                            | Yes *1                                          | Yes *2                 |
| Linear range      | Yes *3                            | Yes *4                                          | Yes *5                 |

\*1. The initialization value varies depending on the set temperature unit.

\*2. The maximum decimal point position for the set range type is set.

\*3. The alarm setting low limit and alarm setting high limit are set to -2000 and 32000 respectively.

\*4. The current linear scaling high and low limits are set.

\*5. 0 is set.



## Chapter 4. FUNCTIONS NECESSARY FOR CONTROL

- Initialization of parameters when the decimal point position is set

| Input type        | Alarm setting high and low limits | Range high and low limits for proportional band |
|-------------------|-----------------------------------|-------------------------------------------------|
| Thermocouple, RTD | Yes *1                            | Yes *1                                          |
| Linear range      | Yes *2                            | Yes *3                                          |

\*1. The initialization value varies depending on the set temperature unit.

\*2. Alarm setting low limit = -2000 and alarm setting high limit = 32000 are set.

\*3. The current linear scaling high and low limits are set.

- Initialization of parameters when the linear scaling is set

| Input type   | Alarm setting high and low limits |
|--------------|-----------------------------------|
| Linear range | Yes *1                            |

\*1. The linear range high limit/low limit values are set as the range width for the proportional band.

## ■ How to set the linear scaling

The linear scaling low limit and high limit are set when the input type is DC voltage or DC current. Set the linear scaling low limit and high limit to suit the output range (engineering range) of the connected unit.

### • Configuration method

Example: PV1 used with a pressure transmitter connected

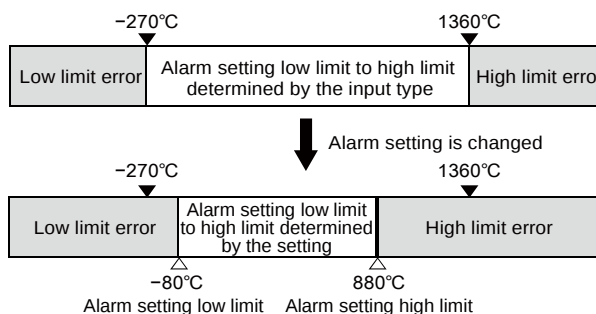
| Specifications of transmitter |              | Setting of this unit |                           |         |
|-------------------------------|--------------|----------------------|---------------------------|---------|
| Output signal                 | Output range | Bank                 | Item name                 | Setting |
| DC 4 mA                       | 0.0 kPa      | PV input             | Linear scaling low limit  | 0.0     |
| DC 20 mA                      | 10.0 kPa     | PV input             | Linear scaling high limit | 10.0    |

## ■ How to change the alarm setting

The alarm setting is determined by each input type.

In this unit, the alarm setting can be changed by setting a narrower range for the PV input.

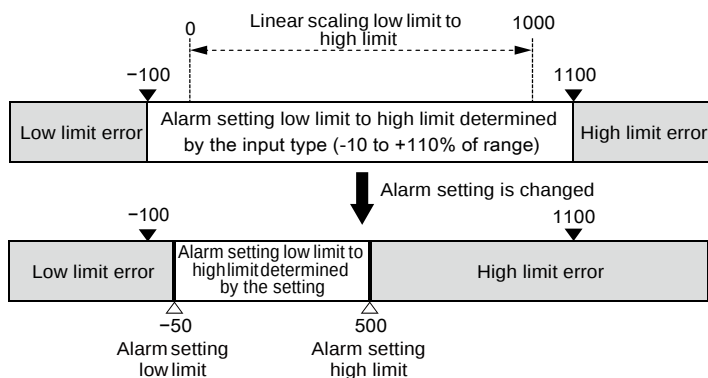
- Example: Changing the alarm setting of PV1 (K thermocouple -200 to +1200°C)





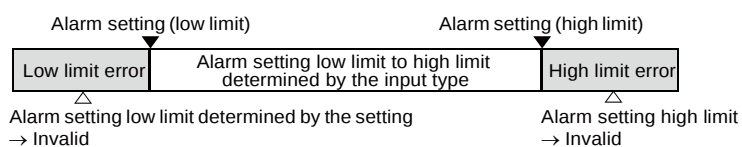
## Chapter 4. FUNCTIONS NECESSARY FOR CONTROL

- Example: Changing the alarm setting of PV1 (DC voltage, scaling 0 to 1000)



### ! Handling Precautions

- If the alarm setting high limit or low limit is set to outside the range of the alarm settings that is determined by the input type, then the alarm setting is not changed.





## Chapter 4. FUNCTIONS NECESSARY FOR CONTROL

## 4 - 4 LSP Function

Up to four SP groups can be selected for each loop.

Additionally, the number of SP groups to use can be restricted with the “SP system group” item in the setup bank.

### ■ SP system group

Select the number of LSP groups for each loop.

For details on using the multi-SP, refer to:

👉 6-3 How to Use the Multi-SP (page 6-11).

| Bank  | Item name       | Contents of setup |
|-------|-----------------|-------------------|
| Setup | SP system group | 1 to 4            |

### ■ LSP

Up to four groups of LSP values can be set for each loop.

| Bank | Item name | Contents of setup             |
|------|-----------|-------------------------------|
| LSP  | LSP1      | SP low limit to SP high limit |
|      | LSP2      |                               |
|      | LSP3      |                               |
|      | LSP4      |                               |

### ■ PID group definition

The PID group number to use in LSP/RSP can be set.

| Bank | Item name                        | Contents of setup |
|------|----------------------------------|-------------------|
| LSP  | PID group definition 1 (for LSP) | 1 to 4            |
|      | PID group definition 2 (for LSP) |                   |
|      | PID group definition 3 (for LSP) |                   |
|      | PID group definition 4 (for LSP) |                   |
| RSP  | PID group definition (for RSP)   |                   |

### ■ SP group number

An LSP group number can be set for each loop.

The SP group selection can be changed for loops with an SP system group of 2 groups or more.

| Bank               | Item name          | Contents of setup |
|--------------------|--------------------|-------------------|
| SP group selection | SP group selection | 1 to 4            |

### ■ SP high and low limits

SP high and low limits can be set for each loop to restrict the SP range.

| Bank             | Item name     | Contents of setup                                                   |
|------------------|---------------|---------------------------------------------------------------------|
| SP configuration | SP low limit  | -19999 to +32000U<br>(Depends on loop PV/SP decimal point position) |
|                  | SP high limit |                                                                     |



## Chapter 4. FUNCTIONS NECESSARY FOR CONTROL

### ■ LSP ramp

The SP can be changed with a constant ramp.

For details, refer to:

 6-4 How to Change the LSP with Constant Ramp (page6-13).

### ■ RSP ramp

When the RSP is changed, the SP can be changed with a constant ramp.

For details, refer to:

 6-5 How to Change the RSP with Constant Ramp (page6-14).



### Note

- “LSP” means a local SP, where data is held internally within the device.  
In contrast, an SP that is input externally via an analog input is an “RSP”, or remote SP.



## 4 - 5 How to Set the Decimal Point Position

The decimal point positions of items related to the loop PV/SP can be set.

### ■ Bank and settings

| Bank         | Item name                         | Contents of setup                                                                                                                                                              |
|--------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Loop control | Loop PV/SP decimal point position | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point |

The decimal point position of this setting is applied to the following displays and setup items:

| Bank                     | Item name                                       | Remarks                                                                                                                                                                                                      |
|--------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comm. (device )<br>Basic | PV (loop), SP                                   | Even when the decimal point position is changed, the set value does not change (Within the settable range)<br>Example:<br>From no decimal point, changed to one digit after the decimal point<br>100 ⇒ 100.0 |
| Loop (basic)             | Range low and high limits for proportional band |                                                                                                                                                                                                              |
| SP configuration         | SP low and high limits                          |                                                                                                                                                                                                              |
| PID                      | Differential 1 to 4                             |                                                                                                                                                                                                              |
| LSP                      | LSP1 to LSP4                                    |                                                                                                                                                                                                              |
| RSP                      | RSP                                             |                                                                                                                                                                                                              |
| Comm. (operation)        | LSP                                             |                                                                                                                                                                                                              |

### ❗ Handling Precautions

- For the thermocouple and resistance temperature detector (RTD), the number of settable digits for the decimal point position is determined by range type.
- ☞ ■ Refer to the range column of the table in “Input types” (page 4-2). Use a decimal point position that is within the range determined by the range type.



## Chapter 4. FUNCTIONS NECESSARY FOR CONTROL

# 4 - 6 How to Set the Loop Control Action

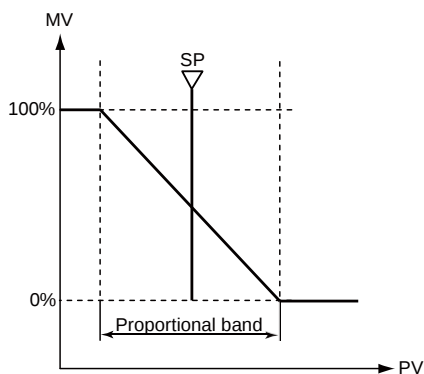
### ■ Bank and settings

| Bank         | Item name      | Contents of setup                                                                                                                    |
|--------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Loop (basic) | Control action | 0: Reverse action (heating)<br>1: Direct action (cooling)<br>2: Heat/Cool<br>4: Reverse action (ON/OFF)<br>5: Direct action (ON/OFF) |

The basic operation of the PID control is set.

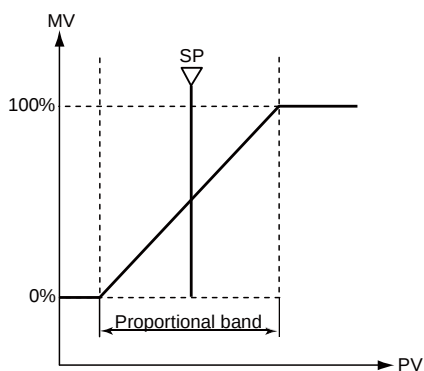
- Heating action: Reverse action

(MV decreases as the PV increases. Generally, this action is used for heating control.)

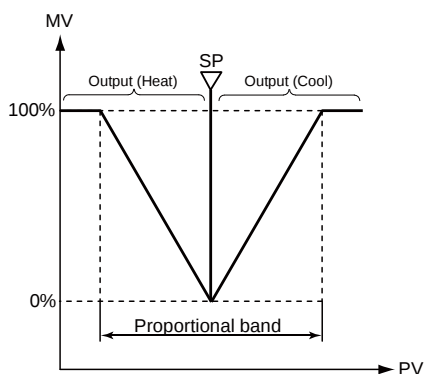


- Cooling action: Direct action

(MV increases as the PV increases. Generally, this action is used for cooling control.)



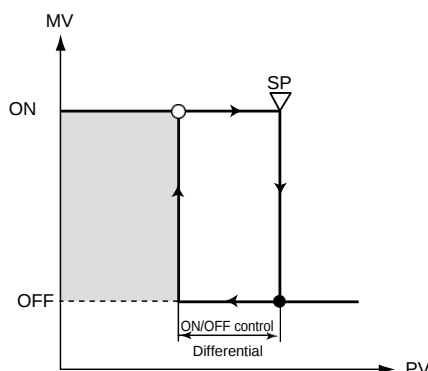
- Heating and cooling action



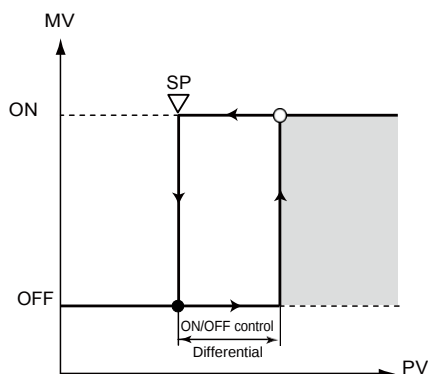


## Chapter 4. FUNCTIONS NECESSARY FOR CONTROL

- ON/OFF action: Reverse action



- ON/OFF action: Direct action



- Example: Heating and cooling MV assigned to output

In this example, heating MV is assigned to analog current output 1 and cooling MV is assigned to analog current output 2 in loop 1 of an analog current output model.

- [1] Configure the settings as shown below in the loop (basic) bank setup.

| Item name                    | Setting      |
|------------------------------|--------------|
| (Loop 1) Control action      | 2: Heat/Cool |
| (Loop 1) Heat/cool dead zone | 0.0          |

- [2] Configure the settings as shown below in the continuous output bank setup.

| Item name                                               | Setting                            |
|---------------------------------------------------------|------------------------------------|
| (Analog current output 1) Output range                  | 0: 4 to 20 mA                      |
| (Analog current output 1) Output type                   | 2: Heat MV                         |
| (Analog current output 1) Loop/channel definition       | 1: Loop 1                          |
| (Analog current output 1) Output decimal point position | 1: 1 digit after the decimal point |
| (Analog current output 1) Output scaling low limit      | 0.0                                |
| (Analog current output 1) Output scaling high limit     | 100.0                              |
| (Analog current output 2) Output range                  | 0: 4 to 20 mA                      |
| (Analog current output 2) Output type                   | 3: Cool MV                         |
| (Analog current output 2) Loop/channel definition       | 1: Loop 1                          |
| (Analog current output 2) Output decimal point position | 1: 1 digit after the decimal point |
| (Analog current output 2) Output scaling low limit      | 0.0                                |
| (Analog current output 2) Output scaling high limit     | 100.0                              |



## Chapter 4. FUNCTIONS NECESSARY FOR CONTROL

## 4 - 7 How to Set Outputs (continuous output and time proportional output)

Setup items vary depending on the type of output and operation method.

### ■ Output types and applications

| Output type                      | Application                                                  |
|----------------------------------|--------------------------------------------------------------|
| Transistor                       | Time proportional output (MV)<br>Alarm output (EV)           |
| Analog current<br>Analog voltage | Continuous output (MV)<br>Transmission output (PV, SP, etc.) |

### ■ Continuous output setup

| Bank              | Item name                     | Contents of setup                                                                                                                                                                                                                                        |
|-------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Continuous output | Output range                  | Analog current output 0: 4 to 20 mA, 1: 0 to 20 mA<br>Analog voltage output 0: 1 to 5 V, 1: 0 to 5 V<br>2: 0 to 10 V<br>3: 2 to 10 V                                                                                                                     |
|                   | Output type                   | 0: Fixed at 0%<br>1: MV<br>2: Heat MV (for heat/cool control)<br>3: Cool MV (for heat/cool control)<br>4: PV (loop)<br>5: SP<br>6: Deviation (PV - SP)<br>7: PV (input channel)<br>For others, see the list of standard numeric values (on page App.-12) |
|                   | Loop/channel definition       | 0: Invalid 1 to 4: Loop /channel 1 to 4                                                                                                                                                                                                                  |
|                   | Output decimal point position | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point                                                                           |
|                   | Output scaling low limit      | -19999 to +32000 U<br>(Value assigned to the low limit of the output)                                                                                                                                                                                    |
|                   | Output scaling high limit     | -19999 to +32000 U<br>(Value assigned to the high limit of the output)                                                                                                                                                                                   |

Use the output range to select the analog current and analog voltage range.

The data to output can be assigned with the output type and loop/channel definition.

In the output decimal point position, the decimal point position is set for the output scaling low limit and the output scaling high limit.

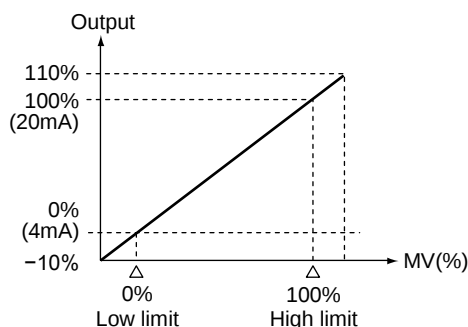
The output scaling low limit and high limit can be used to perform scaling output for the data assigned with the output type.

Reverse scaling can be performed by setting a high limit that is lower than the low limit.

The figure below shows an example where MV scaling output is performed for an analog current output (4 to 20 mA).



## Chapter 4. FUNCTIONS NECESSARY FOR CONTROL



However, when the output range is 0 to 20 mA, 0 to 1 V, 0 to 5 V, or 0 to 10 V, the output is 0 to 110%.

### ■ Time proportional output setup

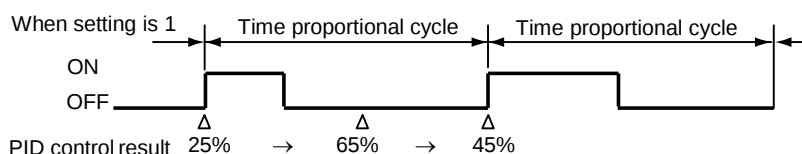
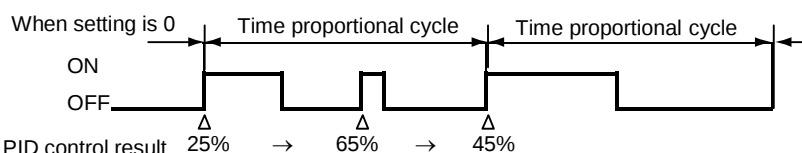
| Bank          | Item name                        | Contents of setup                                                                                                                                                                                                                                 |
|---------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OUT/DO output | Output type                      | 1: Loop 1 MV<br>2: Loop 1 heat MV (for heat/cool control)<br>3: Loop 1 cool MV (for heat/cool control)<br>4: Loop 2 MV<br>5: Loop 2 heat MV (for heat/cool control)<br>6: Loop 2 cool MV (for heat/cool control)<br>7: Loop 3 MV<br>10: Loop 4 MV |
|               | Latch                            | (Setting is invalid)                                                                                                                                                                                                                              |
|               | Time proportional operation type | 0: Control oriented 1: Actuator-life oriented                                                                                                                                                                                                     |
|               | Min. ON/OFF time                 | 0 to 300 ms                                                                                                                                                                                                                                       |
|               | Time proportional cycle          | 0.1 to 120.0 s                                                                                                                                                                                                                                    |
|               | Phase shift                      | 0 to 32000 ms                                                                                                                                                                                                                                     |

When the output type is set to 1 to 7, or 10, the time proportional value is output according to the settings of the time proportional cycle.

Depending on the time proportional operation type, the time proportional output is as follows.

When “0: Control oriented” is set, the output may be turned ON twice or more within the time proportional cycle.

When “1: Actuator-life oriented” is set, the output is turned ON zero times or only once within the time proportional cycle.



The minimum ON/OFF time is valid. Note that even when the setting is 0, the value is 1 ms.

The latch is invalid.



## Chapter 4. FUNCTIONS NECESSARY FOR CONTROL

### ■ ON/OFF control setup

When outputting the MV of ON/OFF control, set as shown below.

| Bank          | Item name                        | Contents of setup                                             |
|---------------|----------------------------------|---------------------------------------------------------------|
| OUT/DO output | Output type                      | 1: Loop 1 MV<br>4: Loop 2 MV<br>7: Loop 3 MV<br>10: Loop 4 MV |
|               | Latch                            | (Setting is invalid)                                          |
|               | Time proportional operation type | 0: Control oriented                                           |
|               | Min. ON/OFF time                 | 10 ms (User sets any value)                                   |
|               | Time proportional cycle          | 2.0 s                                                         |
|               | Phase shift                      | 0 ms                                                          |

### ■ ON/OFF output setup

| Bank          | Item name                        | Contents of setup                                                                           |
|---------------|----------------------------------|---------------------------------------------------------------------------------------------|
| OUT/DO output | Output type                      | 0: OFF<br>1024 to 2047: Standard bit<br>See the list of standard bit Nos. (on page App.-11) |
|               | Latch                            | 0: No latch<br>1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)           |
|               | Time proportional operation type | (Setting is invalid)                                                                        |
|               | Min. ON/OFF time                 | 0 to 300 ms                                                                                 |
|               | Time proportional cycle          | (Setting is invalid)                                                                        |
|               | Phase shift                      | 0 ms                                                                                        |

When any of the standard bit Nos. 1024 to 2047 is set in the output type, the ON/OFF status of this standard bit is output.



## Chapter 5. OPERATION AND GENERAL FUNCTIONS

### 5 - 1 Operation Displays

The front panel of the main body has LED displays and push buttons.

There are two types of LED flashing, fast blink (0.2 s cycles) and slow blink (1.4 s cycles).

#### ■ PWR, RUN, MOD, COM, NST, FAIL

The lighting patterns and descriptions of the top LEDs are shown in the following table.

| LED name | Color  | Lighting pattern | Description                                                               |
|----------|--------|------------------|---------------------------------------------------------------------------|
| PWR      | Green  | Lit              | Power ON (energized)                                                      |
|          |        | Off              | Power OFF (not energized)                                                 |
| RUN      | Green  | Lit              | RUN mode (standard operation mode)                                        |
|          |        | Fast blink       | In module RUN mode, and when PID control is READY for 1 loop or more      |
|          |        | Off              | Operation status other than the above                                     |
| MOD      | Orange | Fast blink       | Configuration data downloading in progress<br>F/W downloading in progress |
|          |        | Off              | Normal action mode                                                        |
| COM      | Green  | Lit              | Local Ethernet packet sending or receiving in progress                    |
|          |        | Off              | Local Ethernet packet not sent or not received                            |
| NST      | Orange | Lit              | Ring diagnostics function OFF                                             |
|          |        | Fast blink       | Ring cut status (ring is cut somewhere)                                   |
|          |        | Slow blink       | Own ring or ring with adjacent node is cut                                |
|          |        | Off              | Ring normal                                                               |
| FAIL     | Red    | Lit              | Hard Failure                                                              |
|          |        | Slow blink       | Soft Failure                                                              |
|          |        | Off              | No error                                                                  |

#### ■ PV1 to 4

The lighting patterns and descriptions of the middle PV1 to 4 LEDs are shown in the following table.

| LED name | Color | Lighting pattern | Description                                                   |
|----------|-------|------------------|---------------------------------------------------------------|
| PV1      | Green | Fast blink       | PV input ch1 range high limit error, or range low limit error |
|          |       | Off              | PV input ch1 normal, or not used                              |
| PV2      | Green | Fast blink       | PV input ch2 range high limit error, or range low limit error |
|          |       | Off              | PV input ch2 normal, or not used                              |
| PV3      | Green | Fast blink       | PV input ch3 range high limit error, or range low limit error |
|          |       | Off              | PV input ch3 normal, or not used                              |
| PV4      | Green | Fast blink       | PV input ch4 range high limit error, or range low limit error |
|          |       | Off              | PV input ch4 normal, or not used                              |



## Chapter 5. OPERATION AND GENERAL FUNCTIONS

## ■ OP1 to 4

The lighting patterns and descriptions of the middle OP1 to 4 LEDs under normal conditions are shown in the following table.

| LED name | Color | Lighting pattern | Description                                                                          |
|----------|-------|------------------|--------------------------------------------------------------------------------------|
| OP1      | Green | Lit              | Transistor output ch1 ON                                                             |
|          |       | Off              | Transistor output ch1 OFF<br>Analog current output ch1, or analog voltage output ch1 |
| OP2      | Green | Lit              | Transistor output ch2 ON                                                             |
|          |       | Off              | Transistor output ch2 OFF<br>Analog current output ch2, or analog voltage output ch2 |
| OP3      | Green | Lit              | Transistor output ch3 ON                                                             |
|          |       | Off              | Transistor output ch3 OFF<br>Analog current output ch3, or analog voltage output ch3 |
| OP4      | Green | Lit              | Transistor output ch4 ON                                                             |
|          |       | Off              | Transistor output ch4 OFF<br>Analog current output ch4, or analog voltage output ch4 |

## ■ F0 to 9

The lighting conditions and lighting patterns can be set for the lighting of the middle right end and bottom F0 to 9 LEDs under normal conditions.

The initial setting is to display the alarm and event statuses.

| LED name | Color | Bank name | Item name               | Setting                                                                                                                                                                               | Initial value                       |
|----------|-------|-----------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| F0       | Red   | UFLED     | Conditions for lighting | 1024 to 2047: Standard bit code                                                                                                                                                       | 1792 (Representative of all alarms) |
|          |       | UFLED     | Lighting status         | 0: Off 3 (Fast blink)<br>1: Lit<br>2: Lit (reverse video)<br>3: Fast blink<br>4: Fast blink (conditional reverse video)<br>5: Slow blink<br>6: Slow blink (conditional reverse video) |                                     |
| F1       | Green | UFLED     | Conditions for lighting | 1024 to 2047 (Same as F0)                                                                                                                                                             | 1088 (Event 1)                      |
|          |       | UFLED     | Lighting status         | 0 to 6 (Same as F0)                                                                                                                                                                   | 1 (Lit)                             |
| F2       | Green | UFLED     | Conditions for lighting | 1024 to 2047 (Same as F0)                                                                                                                                                             | 1089 (Event 2)                      |
|          |       | UFLED     | Lighting status         | 0 to 6 (Same as F0)                                                                                                                                                                   | 1 (Lit)                             |
| F3       | Green | UFLED     | Conditions for lighting | 1024 to 2047 (Same as F0)                                                                                                                                                             | 1090 (Event 3)                      |
|          |       | UFLED     | Lighting status         | 0 to 6 (Same as F0)                                                                                                                                                                   | 1 (Lit)                             |
| F4       | Green | UFLED     | Conditions for lighting | 1024 to 2047 (Same as F0)                                                                                                                                                             | 1091 (Event 4)                      |
|          |       | UFLED     | Lighting status         | 0 to 6 (Same as F0)                                                                                                                                                                   | 1 (Lit)                             |
| F5       | Green | UFLED     | Conditions for lighting | 1024 to 2047 (Same as F0)                                                                                                                                                             | 1092 (Event 5)                      |
|          |       | UFLED     | Lighting status         | 0 to 6 (Same as F0)                                                                                                                                                                   | 1 (Lit)                             |
| F6       | Green | UFLED     | Conditions for lighting | 1024 to 2047 (Same as F0)                                                                                                                                                             | 1093 (Event 6)                      |
|          |       | UFLED     | Lighting status         | 0 to 6 (Same as F0)                                                                                                                                                                   | 1 (Lit)                             |
| F7       | Green | UFLED     | Conditions for lighting | 1024 to 2047 (Same as F0)                                                                                                                                                             | 1094 (Event 7)                      |
|          |       | UFLED     | Lighting status         | 0 to 6 (Same as F0)                                                                                                                                                                   | 1 (Lit)                             |
| F8       | Green | UFLED     | Conditions for lighting | 1024 to 2047 (Same as F0)                                                                                                                                                             | 1545 (RS-485 communications status) |
|          |       | UFLED     | Lighting status         | 0 to 6 (Same as F0)                                                                                                                                                                   | 1 (Lit)                             |
| F9       | Green | UFLED     | Conditions for lighting | 1024 to 2047 (Same as F0)                                                                                                                                                             | 1968 (Parameter error)              |
|          |       | UFLED     | Lighting status         | 0 to 6 (Same as F0)                                                                                                                                                                   | 3 (Fast blink)                      |



## Chapter 5. OPERATION AND GENERAL FUNCTIONS

## ■ Display when power turned ON

When the power is turned ON, the LEDs light as shown in the following table. This is different from the operation displays.

The LEDs then transition to the operation displays.

| Order | LED lighting status<br>(○: Lit, —: Off, ◇: Flashing, ✱: Depends on the status) |     |     |     |     |      |                      |             | Status or process                 |
|-------|--------------------------------------------------------------------------------|-----|-----|-----|-----|------|----------------------|-------------|-----------------------------------|
|       | Top LEDs                                                                       |     |     |     |     |      | Middle LEDs          | Bottom LEDs |                                   |
|       | PWR                                                                            | RUN | MOD | COM | NST | FAIL | PV1-4<br>OP1-4<br>F0 | F1-9        |                                   |
| 1     | —                                                                              | —   | —   | —   | —   | —    | —                    | —           | Power OFF                         |
| 2     | ○                                                                              | ○   | ○   | ○   | ○   | ○    | —                    | —           | Immediately after power ON        |
| 3     | ○                                                                              | —   | —   | —   | —   | —    | ○                    | —           | LED lighting test (0.5 s)         |
| 4     | ○                                                                              | —   | —   | —   | —   | —    | —                    | ○           | LED lighting test (0.5 s)         |
| 5     | ○                                                                              | —   | —   | —   | —   | —    | —                    | —           | Waiting for EEPROM read stability |
| 6     | ○                                                                              | ✱   | ✱   | ✱   | ✱   | ✱    | ◇                    | ◇           | Operation start                   |
| 7     | ○                                                                              | ✱   | ✱   | ✱   | ✱   | ✱    | ✱                    | ✱           | Operation display                 |

## ■ LED lighting pattern under special conditions

| Priority | LED lighting status<br>(○: Lit, —: Off, ◇: Slow blink, ◆: Fast blink, ✱: Depends on the status) |     |     |     |     |      |                      |             | Status or process                                                                                                                                                                                                                                                       |
|----------|-------------------------------------------------------------------------------------------------|-----|-----|-----|-----|------|----------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | Top LEDs                                                                                        |     |     |     |     |      | Middle LEDs          | Bottom LEDs |                                                                                                                                                                                                                                                                         |
|          | PWR                                                                                             | RUN | MOD | COM | NST | FAIL | PV1-4<br>OP1-4<br>F0 | F1-9        |                                                                                                                                                                                                                                                                         |
|          | ◇                                                                                               | ◇   | ◇   | ◇   | ◇   | ◇    | ✱                    | ✱           | Wink function<br>If specified with the SLP-NX.                                                                                                                                                                                                                          |
|          | ○                                                                                               | ◇   | ◇   | ✱   | ✱   | ○    | ✱                    | ✱           | Base EEPROM read write error (AL87)<br>Communications failed between the main body and base, or the base has fatal damage.<br>Turn the power OFF and ON. If the error recurs, replace the module.                                                                       |
|          | ○                                                                                               | ◇   | ◇   | ✱   | ✱   | ◇    | ✱                    | ✱           | Base EEPROM incompatibility<br>The connected base is not supported.<br>Turn the power OFF and ON. If the error recurs, recover the base EEPROM using the push button. If it is still not recovered, replace the module.                                                 |
|          | ◆                                                                                               | ◆   | ◆   | ◆   | ◆   | ◆    | ✱                    | ✱           | Wrong module insertion<br>The model No. of the main body and that of the base do not match.<br>Make sure that the inserted module has the correct model No., and then turn the power OFF and ON.<br>If the error recurs, recover the base EEPROM using the push button. |
|          |                                                                                                 |     |     |     |     |      |                      |             | Ethernet congestion<br>Ethernet congestion occurs in the network.<br>If congestion continues, check for wrong connections in the network.                                                                                                                               |
|          | ○                                                                                               | ◇   | ◇   | ✱   | ✱   | —    | ✱                    | ✱           | Base EEPROM error (AL88)<br>The main body parameters and base parameters do not match.<br>Turn the power OFF and ON. If the error recurs, recover the base EEPROM using the push button.                                                                                |



## Chapter 5. OPERATION AND GENERAL FUNCTIONS

## ■ Push button functions

The base EEPROM can be recovered using the push button.

| Order | LED lighting status<br>(○: Lit, —: Off, ◇: Slow blink, ◆: Fast blink,<br>*: Depends on the status) |     |     |     |     |      |                      |             | Status or process            |
|-------|----------------------------------------------------------------------------------------------------|-----|-----|-----|-----|------|----------------------|-------------|------------------------------|
|       | Top LEDs                                                                                           |     |     |     |     |      | Middle LEDs          | Bottom LEDs |                              |
|       | PWR                                                                                                | RUN | MOD | COM | NST | FAIL | PV1-4<br>OP1-4<br>F0 | F1-9        |                              |
| 1     | *                                                                                                  | *   | *   | *   | *   | *    | *                    | *           | Normal operation in progress |
|       |                                                                                                    |     |     |     |     |      |                      |             | ↓ (Press the push button)    |
| 2     | —                                                                                                  | —   | —   | —   | —   | —    | *                    | *           | All top LEDs are off.        |
|       |                                                                                                    |     |     |     |     |      |                      |             | ↓ (2 seconds elapsed)        |
| 3     | ○                                                                                                  | ○   | ○   | ○   | ○   | ○    | *                    | *           | All top LEDs are lit.        |
|       |                                                                                                    |     |     |     |     |      |                      |             | ↓ (Release the push button)  |
| 4     | *                                                                                                  | *   | *   | *   | *   | *    | *                    | *           | Normal operation in progress |

Base EEPROM recovery is used to eliminate a mismatch between the main body and the base when there is a wrong module insertion, a base EEPROM error or base EEPROM incompatibility.



## 5 - 2 Operation Modes

The data settings related to the operation modes are shown in the table.

For an overview of the operation modes, refer to  1-4 Operation Modes (page 1-7).

### ■ Settings (operation mode selection)

| Bank name | Item name     | Contents of setup         |
|-----------|---------------|---------------------------|
| Loop mode | RUN/READY     | 0: RUN<br>1: READY        |
|           | AUTO/MANUAL   | 0: AUTO<br>1: MANUAL      |
|           | AT stop/start | 0: AT stop<br>1: AT start |
|           | LSP/RSP       | 0: LSP<br>1: RSP          |

### ■ Settings (MANUAL settings)

| Bank name       | Item name                                | Contents of setup        |
|-----------------|------------------------------------------|--------------------------|
| Loop (extended) | Output operation at changing Auto/Manual | 0: Bumpless<br>1: Preset |
|                 | Preset MANUAL value                      | -10.0 to 110.0 (%)       |

### ■ Settings (READY settings)

| Bank name        | Item name              | Contents of setup  |
|------------------|------------------------|--------------------|
| Loop output (MV) | Output at READY        | -10.0 to 110.0 (%) |
|                  | Output at READY (Heat) | -10.0 to 110.0 (%) |
|                  | Output at READY (Cool) | -10.0 to 110.0 (%) |

### ■ Settings (RSP settings)

| Bank name | Item name                      | Contents of setup |
|-----------|--------------------------------|-------------------|
| RSP       | RSP                            | —                 |
|           | PID group definition (for RSP) | 1 to 4 (group)    |



## Chapter 5. OPERATION AND GENERAL FUNCTIONS

### 5 - 3 How to Change the Control Mode and Parameters

To change the control mode or setting parameters, use SLP-NX (sold separately) or use the host computer. This section describes an overview of changing the control mode and setting parameters using SLP-NX.

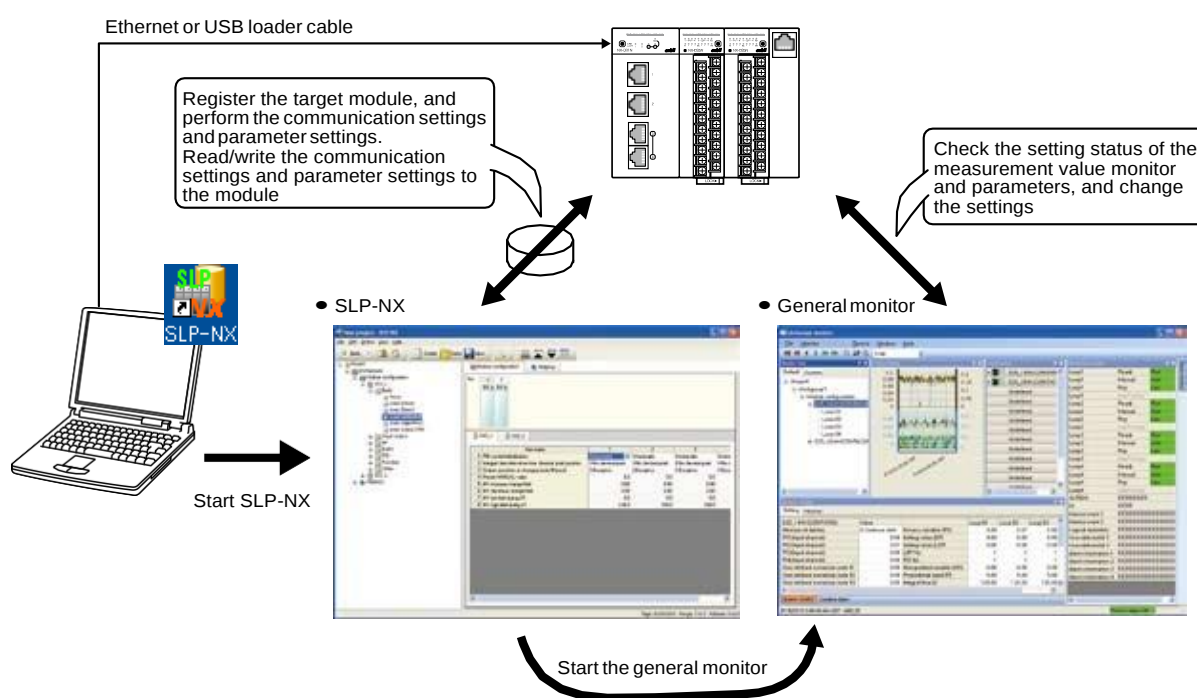
#### ■ SLP-NX function system

SLP-NX has the following function system.

| Function name     | Application                                                                                                                                                                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SLP-NX            | Functions are available for performing module registration, communication settings for each module, and parameter settings. Also, functions are available for reading and writing the module information from each module, communication settings, and parameter settings. |
| Universal monitor | Communication connection can be performed for each module, and status monitoring for the various measurement values and setting status checking and changing for each parameter can be performed individually.                                                             |

#### ■ How to change the setting parameters

The following describes how to change the settings for the setting parameters using the universal monitor.





## Chapter 5. OPERATION AND GENERAL FUNCTIONS

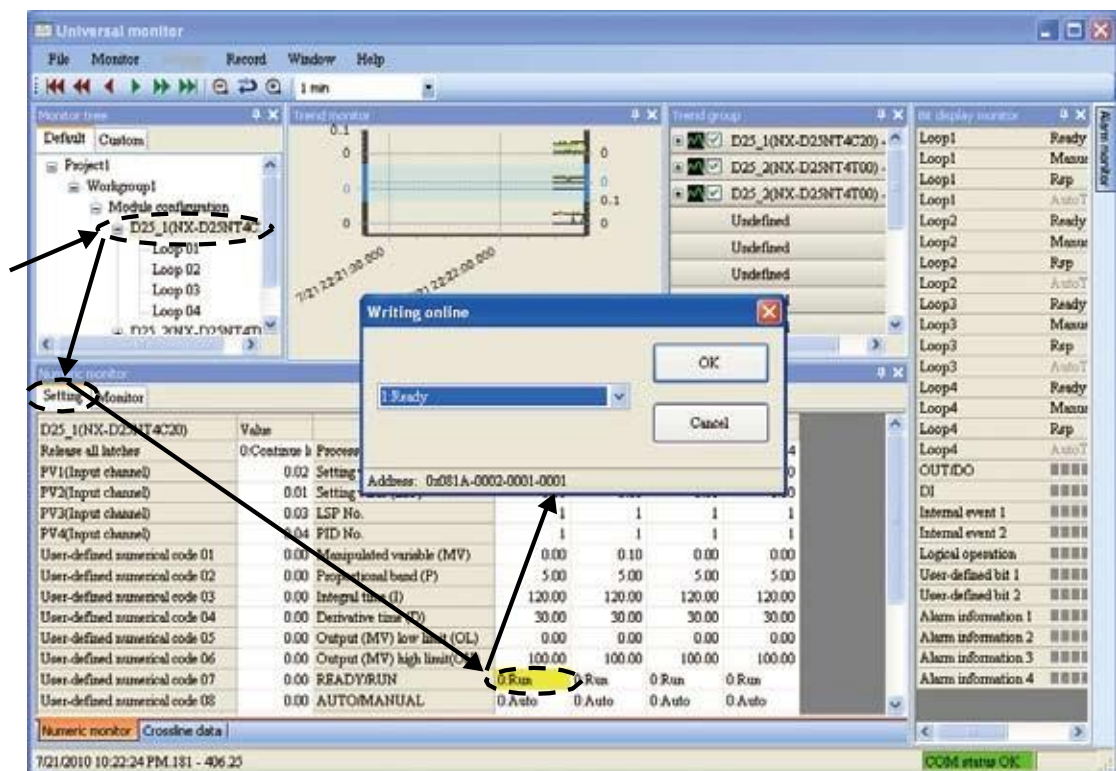
## • Setting change procedures

The following describes as an example how to change the PID control status from RUN to READY.

**Note**

- The following method is an example. The same change can be performed with other operation methods.

- [1] Start SLP-NX.
- [2] Open a project that is backed up on the computer.
- [3] Connect the computer and Instrumentation Network Module. (Ethernet)
- [4] Start the universal monitor with the following operation: [Online] → [Monitor].
- [5] Click the target module for the change in “Monitor tree” on the universal monitor.
- [6] Set the communications status to communication in progress with the following operation: [Monitor] → [Start].
- [7] Double-click the [READY/RUN] area for the loops that is prepared in the “Numeric value monitor [Settings] tab” on the universal monitor to display the change dialog box.
- [8] Change from [0:RUN] → [1:READY] with the pull down key, and then click the [OK].





## Chapter 5. OPERATION AND GENERAL FUNCTIONS

### 5 - 4      How to Manually Output the MV (AUTO/MANUAL)

---

For each loop, the universal monitor can be used to manually output the MV.

Operate by following the procedure below.

- [1]    Display the loop that you want to operate on the universal monitor.
- [2]    Change the “Numeric value monitor [Settings] tab” from AUTO to MANUAL.
- [3]    Change the MV in the “Numeric value monitor [Settings] tab”.



## 5 - 5 How to Change to the Remote SP (RSP/LSP)

For loops with RSP, the universal monitor can be used to change from local SP (LSP) to remote SP (RSP), or the reverse.

Operate by following the procedure below.

- [1] Display the loop that you want to operate on the universal monitor.
- [2] Change the “Numeric value monitor [Settings] tab” from LSP to RSP.  
Alternatively, change from RSP to LSP.



## 5 - 6 How to Change to READY to Stop the Control

The universal monitor can be used to change from operation (RUN) to stop (READY), or the reverse.

Operate by following the procedure below.

- [1] Display the loop that you want to operate on the universal monitor.
- [2] Change the “Numeric value monitor [Settings] tab” from RUN to READY.  
Alternatively, change from READY to RUN.



## 5 - 7 How to Start the Auto Tuning

---

The universal monitor can be used to start or stop auto tuning (AT).

Operate by following the procedure below.

- [1] Display the loop that you want to operate on the universal monitor.
- [2] Check that the PV is normal.  
Check that the status is ready for control in the RUN mode and AUTO mode.
- [3] Set the AT to start in the “Numeric value monitor [Settings] tab”.
- [4] Normally, the AT completes automatically.  
To stop the AT while it is running, change the AT mode to cancel.



## Chapter 5. OPERATION AND GENERAL FUNCTIONS

### 5 - 8 How to Change the SP

---

There are several methods for changing the SP of each loop.

#### ■ How to rewrite SPs that are being used

For each loop, the universal monitor can be used to rewrite SP values.

Operate by following the procedure below.

- [1] Display the loop that you want to operate on the universal monitor.
- [2] Change the setting (LSP) value in “Numeric value monitor [Settings] tab”.

Note that the SP cannot be rewritten when the mode is remote SP (RSP).

#### ■ How to change the SP group selection

The SP group selection can be changed using the universal monitor for loops with an SP system group setting of 2 groups or more.

Note that the SP group selection cannot be changed when the SP group selection is being performed with an internal contact input.

Operate by following the procedure below.

- [1] Display the loop that you want to operate on the universal monitor.
- [2] Change the LSP number in the “Numeric value monitor [Settings] tab”.



## 5 - 9 How to Change the PID

The PID can be changed with two methods; by changing the PID setting or by performing the auto tuning.

### ■ How to change the PID setting

The universal monitor can be used to change the PID value.

Operate by following the procedure below.

- [1] Display the loop that you want to operate on the universal monitor.
- [2] Change the PID value in the “Numeric value monitor [Settings] tab”.

### ■ How to perform the auto tuning

 5-7 How to Start the Auto Tuning (page 5-11).



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## Chapter 5. OPERATION AND GENERAL FUNCTIONS

# 5 - 10 How to Change the Event Action Point

Use SLP-NX to change the operating point.

Depending on the event type, some settings only have an event main setting, while others have both an event main setting and an event sub-setting.

For details on the event types, refer to  6-1 How to Use Events (page 6-1).

Operate by following the procedure below.

- [1] Display the operating point bank using SLP-NX.
- [2] Change the event main settings or the event sub-settings.



## 5 - 11 PID Control

When the control action setting is set to “0: Reverse action” or “1: Direct action”, the following control is performed.

PID control is performed when integral time  $\neq 0$  and derivative time  $\neq 0$ .

PI control is performed when integral time  $\neq 0$  and derivative time = 0.

PD control is performed when integral time = 0 and derivative time  $\neq 0$ .

P control is performed when integral time = 0 and derivative time = 0.

### ■ Settings

| Bank name       | Item name                                                   | Contents of setup                                                                                                                    |
|-----------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Loop (basic)    | Control action                                              | 0: Reverse action (heating)<br>1: Direct action (cooling)<br>2: Heat/Cool<br>4: Reverse action (ON/OFF)<br>5: Direct action (ON/OFF) |
| Loop (extended) | Integral time/<br>derivative time decimal<br>point position | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point                                     |
| PID             | Proportional band 1<br>(PID group 1)                        | 0.1 to 3200.0 (%)                                                                                                                    |
|                 | Integral time 1<br>(PID group 1)                            | 0 to 32000 (s)<br>0.0 to 3200.0 (s)<br>0.00 to 320.00 (s)<br>Depends on the integral time/derivative time decimal<br>point position  |
|                 | Derivative time 1<br>(PID group 1)                          | 0 to 32000 (s)<br>0.0 to 3200.0 (s)<br>0.00 to 320.00 (s)<br>Depends on the integral time/derivative time decimal<br>point position  |
|                 | Output (MV) low limit 1<br>(PID group 1)                    | -10.0 to +110.0 (%)                                                                                                                  |
|                 | Output (MV) high limit 1<br>(PID group 1)                   | -10.0 to +110.0 (%)                                                                                                                  |
|                 | Manual reset 1<br>(PID group 1)                             | -10.0 to +110.0 (%)                                                                                                                  |
|                 | PID group 2 settings                                        | Same as PID group 1 above                                                                                                            |
|                 | PID group 3 settings                                        |                                                                                                                                      |
|                 | PID group 4 settings                                        |                                                                                                                                      |



## Chapter 5. OPERATION AND GENERAL FUNCTIONS

## 5 - 12 Heat/Cool Control

When the control action setting is set to “2: Heat/Cool”, heat/cool control is performed.

### ■ Settings

| Bank name       | Item name                                                   | Contents of setup                                                                                                                    |
|-----------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Loop (basic)    | Control action                                              | 0: Reverse action (heating)<br>1: Direct action (cooling)<br>2: Heat/Cool<br>4: Reverse action (ON/OFF)<br>5: Direct action (ON/OFF) |
|                 | Heat/cool dead zone                                         | -100.0 to +100.0 (%)                                                                                                                 |
| Loop (extended) | Integral time/<br>derivative time decimal<br>point position | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point                                     |
| PID             | Proportional band 1<br>(PID group 1)                        | 0.1 to 3200.0 (%)                                                                                                                    |
|                 | Integral time 1<br>(PID group 1)                            | 0 to 32000 (s)<br>0.0 to 3200.0 (s)<br>0.00 to 320.00 (s)<br>Depends on the integral time/derivative time decimal<br>point position  |
|                 | Derivative time 1<br>(PID group 1)                          | 0 to 32000 (s)<br>0.0 to 3200.0 (s)<br>0.00 to 320.00 (s)<br>Depends on the integral time/derivative time decimal<br>point position  |
|                 | Output (MV) low limit 1<br>(PID group 1)                    | -10.0 to +110.0 (%)                                                                                                                  |
|                 | Output (MV) high limit 1<br>(PID group 1)                   | -10.0 to +110.0 (%)                                                                                                                  |
|                 | Manual reset 1<br>(PID group 1)                             | -10.0 to +110.0 (%)                                                                                                                  |
|                 | Proportional band for cool<br>side 1 (PID group 1)          | 0.1 to 3200.0 (%)                                                                                                                    |
|                 | Integral time for cool side 1<br>(PID group 1)              | 0 to 32000 (s)<br>0.0 to 3200.0 (s)<br>0.00 to 320.00 (s)<br>Depends on the integral time/derivative time decimal<br>point position  |
|                 | Derivative time for cool<br>side 1 (PID group 1)            | 0 to 32000 (s)<br>0.0 to 3200.0 (s)<br>0.00 to 320.00 (s)<br>Depends on the integral time/derivative time decimal<br>point position  |
|                 | Output low limit for cool<br>side 1 (PID group 1)           | -10.0 to +110.0 (%)                                                                                                                  |
|                 | Output high limit for cool<br>side 1 (PID group 1)          | -10.0 to +110.0 (%)                                                                                                                  |
|                 | PID group 2 settings                                        | Same as PID group 1 above                                                                                                            |
|                 | PID group 3 settings                                        |                                                                                                                                      |
|                 | PID group 4 settings                                        |                                                                                                                                      |



## 5 - 13 ON/OFF Control

When the control action setting is set to “3: Reverse action (ON/OFF)” or “4: Direct action (ON/OFF)”, on/off control is performed.

In the PID group selection, the differential can be changed.

### ■ Settings

| Bank name    | Item name                    | Contents of setup           |
|--------------|------------------------------|-----------------------------|
| Loop (basic) | Control action               | 0: Reverse action (heating) |
|              |                              | 1: Direct action (cooling)  |
|              |                              | 2: Heat/Cool                |
|              |                              | 4: Reverse action (ON/OFF)  |
|              |                              | 5: Direct action (ON/OFF)   |
| PID          | Differential 1 (PID group 1) | 0.0 to 3200.0               |
|              | Differential 2 (PID group 2) | 0.0 to 3200.0               |
|              | Differential 3 (PID group 3) | 0.0 to 3200.0               |
|              | Differential 4 (PID group 4) | 0.0 to 3200.0               |







## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

- [3] Assign the ON/OFF status of event 1 to output 1.  
Configure the settings as shown below in the OUT/DO output bank setup.

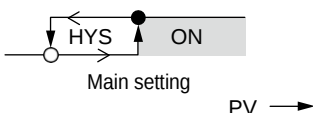
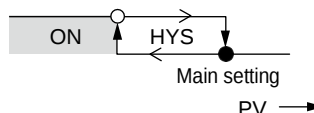
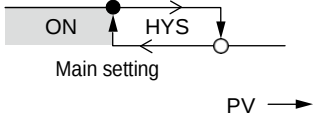
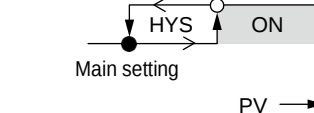
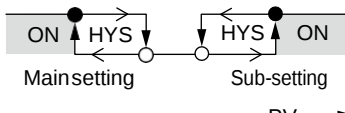
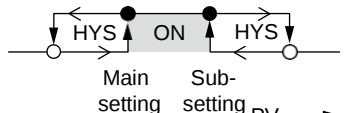
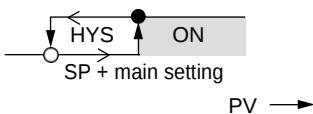
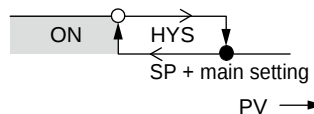
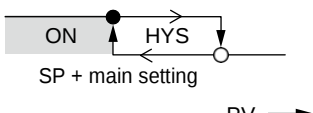
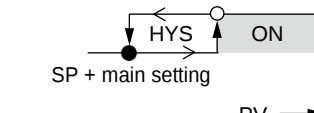
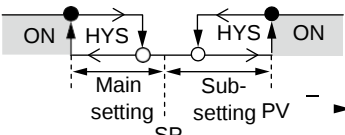
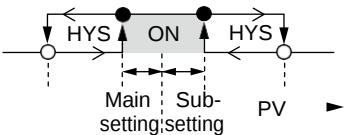
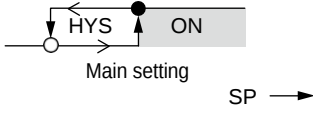
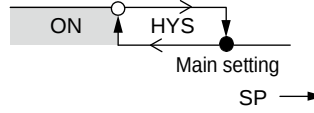
| Item name                        | Setting                     |
|----------------------------------|-----------------------------|
| Output type                      | 1088: Event 1               |
| Latch                            | 0: No latch                 |
| Time proportional operation type | (Setting cannot be changed) |
| Min. ON/OFF time                 | 10 (ms)                     |
| Time proportional cycle          | (Setting cannot be changed) |
| Phase shift                      | 0 (ms)                      |



## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

### ■ Event operation type, direct/reverse, hysteresis, main setting, and sub-setting

According to the operation type, direct/reverse, main setting, sub-setting, hysteresis, and other settings, the operation of the event is as follows:

| Operation type                                     | Operation type setting | Direct action<br>● shows that the ON/OFF is changed at this value.<br>○ shows that the ON/OFF is changed at a point where "1U" is added to this value.                                 | Reverse action<br>● shows that the ON/OFF is changed at this value.<br>○ shows that the ON/OFF is changed at a point where "1U" is added to this value.                                 |
|----------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No event                                           | 0                      | Always OFF                                                                                                                                                                             | Always OFF                                                                                                                                                                              |
| PV high limit                                      | 1                      |                                                                                                       |                                                                                                      |
| PV low limit                                       | 2                      |                                                                                                       |                                                                                                      |
| PV high and low limits                             | 3                      |                                                                                                      |                                                                                                     |
| Deviation high limit                               | 4                      |                                                                                                     |                                                                                                    |
| Deviation low limit                                | 5                      |                                                                                                     |                                                                                                    |
| Deviation high and low limits                      | 6                      |                                                                                                     |                                                                                                    |
| Deviation high limit (Final SP reference)          | 7                      | Same as the direct action of the deviation high limit when the SP ramp is not used. The difference is that the SP ramp does not use the current SP, but it uses the final SP.          | Same as the reverse action of the deviation high limit when the SP ramp is not used. The difference is that the SP ramp does not use the current SP, but it uses the final SP.          |
| Deviation low limit (Final SP reference)           | 8                      | Same as the direct action of the deviation low limit when the SP ramp is not used. The difference is that the SP ramp does not use the current SP, but it uses the final SP.           | Same as the reverse action of the deviation low limit when the SP ramp is not used. The difference is that the SP ramp does not use the current SP, but it uses the final SP.           |
| Deviation high and low limits (Final SP reference) | 9                      | Same as the direct action of the deviation high and low limits when the SP ramp is not used. The difference is that the SP ramp does not use the current SP, but it uses the final SP. | Same as the reverse action of the deviation high and low limits when the SP ramp is not used. The difference is that the SP ramp does not use the current SP, but it uses the final SP. |
| SP high limit                                      | 10                     |                                                                                                     |                                                                                                    |



## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

| Operation type                              | Operation type setting | Direct action<br>● shows that the ON/OFF is changed at this value.<br>○ shows that the ON/OFF is changed at a point where "1U" is added to this value. | Reverse action<br>● shows that the ON/OFF is changed at this value.<br>○ shows that the ON/OFF is changed at a point where "1U" is added to this value. |
|---------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| SP low limit                                | 11                     |                                                                                                                                                        |                                                                                                                                                         |
| SP high and low limits                      | 12                     |                                                                                                                                                        |                                                                                                                                                         |
| MV high limit                               | 13                     |                                                                                                                                                        |                                                                                                                                                         |
| MV low limit                                | 14                     |                                                                                                                                                        |                                                                                                                                                         |
| MV high and low limits                      | 15                     |                                                                                                                                                        |                                                                                                                                                         |
| AI high limit                               | 18                     |                                                                                                                                                        |                                                                                                                                                         |
| AI low limit                                | 19                     |                                                                                                                                                        |                                                                                                                                                         |
| AI high and low limits                      | 20                     |                                                                                                                                                        |                                                                                                                                                         |
| Standard numerical code high limit          | 26                     |                                                                                                                                                        |                                                                                                                                                         |
| Standard numerical code low limit           | 27                     |                                                                                                                                                        |                                                                                                                                                         |
| Standard numerical code high and low limits | 28                     |                                                                                                                                                        |                                                                                                                                                         |
| PV change rate                              | 29                     |                                                                                                                                                        |                                                                                                                                                         |

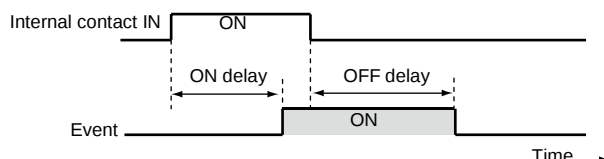


## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

| Operation type                                                           | Operation type setting | Direct action<br>● shows that the ON/OFF is changed at this value.<br>○ shows that the ON/OFF is changed at a point where "1U" is added to this value. | Reverse action<br>● shows that the ON/OFF is changed at this value.<br>○ shows that the ON/OFF is changed at a point where "1U" is added to this value. |
|--------------------------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Deviation high limit between channels (PV1 - specified channel)          | 31                     |                                                                                                                                                        |                                                                                                                                                         |
| Deviation high limit between channels (PV2 - specified channel)          | 32                     |                                                                                                                                                        |                                                                                                                                                         |
| Deviation high limit between channels (PV3 - specified channel)          | 33                     |                                                                                                                                                        |                                                                                                                                                         |
| Deviation high limit between channels (PV4 - specified channel)          | 34                     |                                                                                                                                                        |                                                                                                                                                         |
| Deviation low limit between channels (PV1 - specified channel)           | 35                     |                                                                                                                                                        |                                                                                                                                                         |
| Deviation low limit between channels (PV2 - specified channel)           | 36                     |                                                                                                                                                        |                                                                                                                                                         |
| Deviation low limit between channels (PV3 - specified channel)           | 37                     |                                                                                                                                                        |                                                                                                                                                         |
| Deviation low limit between channels (PV4 - specified channel)           | 38                     |                                                                                                                                                        |                                                                                                                                                         |
| Deviation high and low limits between channels (PV1 - specified channel) | 39                     |                                                                                                                                                        |                                                                                                                                                         |
| Deviation high and low limits between channels (PV2 - specified channel) | 40                     |                                                                                                                                                        |                                                                                                                                                         |
| Deviation high and low limits between channels (PV3 - specified channel) | 41                     |                                                                                                                                                        |                                                                                                                                                         |
| Deviation high and low limits between channels (PV4 - specified channel) | 42                     |                                                                                                                                                        |                                                                                                                                                         |



## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

| Operation type          | Operation type setting | Direct action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Reverse action                                                                                                                                                                            |
|-------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alarm (status)          | 61                     | <ul style="list-style-type: none"> <li>shows that the ON/OFF is changed at this value.</li> <li>shows that the ON/OFF is changed at a point where "1U" is added to this value.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>shows that the ON/OFF is changed at this value.</li> <li>shows that the ON/OFF is changed at a point where "1U" is added to this value.</li> </ul> |
| READY (status)          | 62                     | ON in the READY mode<br>OFF in the RUN mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Alarm (alarm code AL01 to 99)<br>OFF when activated, ON at other times                                                                                                                    |
| MANUAL (status)         | 63                     | ON in the MANUAL mode<br>OFF in the AUTO mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | OFF in the READY mode<br>ON in the RUN mode                                                                                                                                               |
| RSP (status)            | 64                     | ON in the RSP mode<br>OFF in the LSP mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | OFF in the MANUAL mode<br>ON in the AUTO mode                                                                                                                                             |
| During AT (status)      | 65                     | ON when AT is executed<br>OFF when AT is stopped                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | OFF in the RSP mode<br>ON in the LSP mode                                                                                                                                                 |
| During SP ramp          | 66                     | ON during SP ramp<br>OFF when SP ramp is not performed or is completed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | OFF when AT is executed<br>ON when AT is stopped                                                                                                                                          |
| Control action (status) | 67                     | ON during direct action (cooling)<br>OFF during reverse action (heating)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF during SP ramp<br>ON when SP ramp is not performed or is completed                                                                                                                    |
| Timer (status)          | 70                     | <p>The direct and reverse action settings are disabled for the timer event.<br/>To use the timer event, it is necessary to set the operation type of the internal contact input to "Timer stop/start selection".<br/>Additionally, multiple timer events can be controlled from an individual internal contact input by setting an event No. in the loop/channel definition of the internal contact input.</p> <ul style="list-style-type: none"> <li>Setting items <ul style="list-style-type: none"> <li>ON delay time:<br/>A period of time necessary for the event change from OFF to ON after the internal contact input has been changed from OFF to ON.</li> <li>OFF delay time:<br/>A period of time necessary for the event change from ON to OFF after the internal contact input has been changed from ON to OFF.</li> </ul> </li> <li>Operation specifications <ul style="list-style-type: none"> <li>The event is turned ON when the internal contact input ON continues for the ON delay time or longer.</li> <li>The event is turned OFF when the internal contact input OFF continues for the OFF delay time or longer.</li> <li>In other cases, the current status is continued.</li> </ul> </li> </ul>  <ul style="list-style-type: none"> <li>Caution<br/>The default settings of the ON delay and OFF delay before shipment are 0.0s.<br/>The default setting of the loop/channel definition of the internal contact input is "0".<br/>In this case, all timer events can be stopped or started through one internal contact input.<br/>Additionally, when a value exceeding "1" is set for the loop/channel definition, one specified timer event can be stopped or started through one internal contact input.</li> </ul> |                                                                                                                                                                                           |



## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

## ■ Loop/channel definition setup

The content is as follows, depending on the operation type.

| Loop/channel definition                                                   | Operation type target number          | EVENT state at READY *1 | Standby *2 |
|---------------------------------------------------------------------------|---------------------------------------|-------------------------|------------|
| Define the loop number (1 to 4) of the operation type                     | 1 to 15, 18 to 20, 26 to 28, 31 to 42 | ○                       | ○          |
|                                                                           | 62 to 67                              | ○                       | ×          |
| Specify loop number (1 to 4) when standby or EVENT state at READY is used | 61, 70                                | ○                       | ×          |
| Specify the number (2048 to 3071) of the standard numerical codes         | 26 to 28                              | ×                       | ×          |

\*1. ○: Continuation/Forced OFF can be selected, ×: Always Continuation

\*2. ○: Standby/No standby can be selected, ×: Always No standby

## ■ Event standby and EVENT state at READY

“Standby” is a function that does not turn ON the event even though the event satisfies the ON conditions when this unit is turned ON or when the READY mode is changed to the RUN mode.

The event is turned ON when the ON conditions are satisfied again once the OFF conditions have been satisfied.

“Standby + Standby at SP change” means that the standby is set again when the SP is changed (LSP and SP group) in addition to the standby functions.

However, when the same LSP value is written or when the SP value is not changed even though the SP group is changed, the unit does not enter the standby mode.

| Event status at READY              | READY            |               | READY → RUN      |                  |
|------------------------------------|------------------|---------------|------------------|------------------|
|                                    | 0: Continuation  | 1: Forced OFF | 0: Continuation  | 1: Forced OFF    |
| Standby settings                   |                  |               |                  |                  |
| 0: None                            | Normal operation | OFF           | Normal operation | Normal operation |
| 1: Standby                         | OFF              | OFF           | OFF (Standby)    | OFF (Standby)    |
| 2: Standby when the SP is modified | OFF              | OFF           | OFF (Standby)    | OFF (Standby)    |

## ■ Event decimal point

The decimal point position of the main setting and sub-setting of the event setup bank (operating point) and the hysteresis setting of the event configuration bank can be changed.

## ■ ON delay and OFF delay

ON delay is a function that delays the timing at which the event status is changed from OFF to ON. OFF delay is a function that delays the timing at which the event status is changed from ON to OFF. However, note that the operation when the operation type is set to timer event is described on the previous page.



## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

### 6 - 2 How to Use Internal Contact Input

The internal contact input can take in ON/OFF data, such as the digital input (DI) that is specified in the input type, as internal contact input inside the instrument.

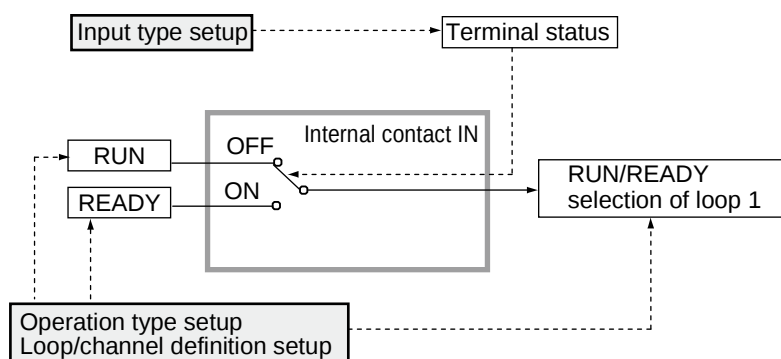
The mode selection operation specified in the operation type can be performed with the ON/OFF data in the specified input type.

#### ■ Setting banks

Internal contact input

#### ■ Example 1: RUN/READY mode selection from the digital input

The following is an example where the RUN/READY of loop 1 is changed to READY when the DI 1 terminal status is ON and changed to RUN when the DI 1 terminal status is OFF.



Set the RUN/READY mode selection to internal contact group 1.

Configure the settings as shown below in the internal contact input bank setup.

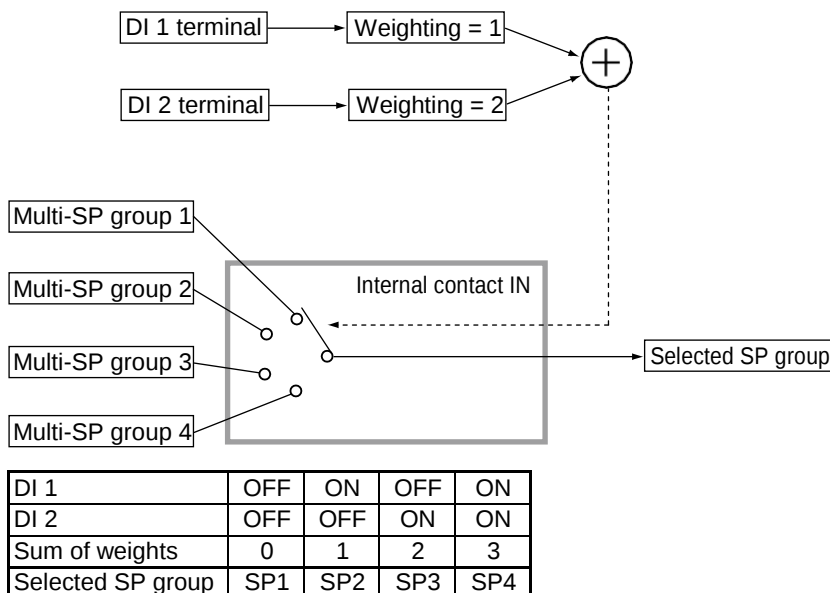
| Item name                                          | Setting                      |
|----------------------------------------------------|------------------------------|
| (Internal contact group 1) Operation type          | 21: RUN/READY mode selection |
| (Internal contact group 1) Input type              | 1152: DI 1 terminal status   |
| (Internal contact group 1) Loop/channel definition | 1: Loop 1                    |
| (Internal contact group 1) Weighting               | (Setting cannot be changed)  |



## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

## ■ Example 2: SP group selection from the digital input

The following is an example where the multi-SP group (1 to 4) of loop 1 is selected using the DI-1 to DI-2 terminals.



[1] Set the SP system group.

Configure the settings as shown below in the setup (basic) bank setup.

| Item name       | Setting |
|-----------------|---------|
| SP system group | 4       |

[2] Set the SP group selection to internal contact input 1 or 2.

In the internal contact input bank, set two groups of internal contact inputs as described below.

| Item name                                             | Setting                    |
|-------------------------------------------------------|----------------------------|
| (Internal contact IN group 1) Operation type          | 1: SP group selection      |
| (Internal contact IN group 1) Input type              | 1152: DI 1 terminal status |
| (Internal contact IN group 1) Loop/channel definition | 1                          |
| (Internal contact IN group 1) Weighting               | 1                          |
| (Internal contact IN group 2) Operation type          | 1: SP group selection      |
| (Internal contact IN group 2) Input type              | 1153: DI 2 terminal status |
| (Internal contact IN group 2) Loop/channel definition | 1                          |
| (Internal contact IN group 2) Weighting               | 2                          |

**Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL****■ Operation types**

Select the operations that are selected with the internal contact input from “Operation type set values” in the following table.

| Operation type set values and meanings         | Loop/channel definition set values and meanings                              |
|------------------------------------------------|------------------------------------------------------------------------------|
| 0: No function                                 | 0 to 127: Invalid                                                            |
| 1: SP group selection                          | 0: All loops 1: Loop 1 2: Loop 2 3: Loop 3 4: Loop 4 5 to 127: Invalid       |
| 2: PID group selection                         | 0: All loops 1: Loop 1 2: Loop 2 3: Loop 3 4: Loop 4 5 to 127: Invalid       |
| 9: AI group definition                         | 0: All loops 1: Loop 1 2: Loop 2 3: Loop 3 4: Loop 4 5 to 127: Invalid       |
| 21: RUN/READY mode selection                   | 0: All loops 1: Loop 1 2: Loop 2 3: Loop 3 4: Loop 4 5 to 127: Invalid       |
| 22: AUTO/MANUAL mode selection                 | 0: All loops 1: Loop 1 2: Loop 2 3: Loop 3 4: Loop 4 5 to 127: Invalid       |
| 23: LSP/RSP mode selection                     | 0: All loops 1: Loop 1 2: Loop 2 3: Loop 3 4: Loop 4 5 to 127: Invalid       |
| 24: AT start/stop selection                    | 0: All loops 1: Loop 1 2: Loop 2 3: Loop 3 4: Loop 4 5 to 127: Invalid       |
| 41: Control operation direct/reverse selection | 0: All loops 1: Loop 1 2: Loop 2 3: Loop 3 4: Loop 4 5 to 127: Invalid       |
| 42: SP RAMP permit/prohibit selection          | 0: All loops 1: Loop 1 2: Loop 2 3: Loop 3 4: Loop 4 5 to 127: Invalid       |
| 46: Timer stop/start selection                 | 0: All timer events 1 to 24: Event number for timer event 25 to 127: Invalid |
| 47: Release all latches                        | 0 to 127: Invalid                                                            |

**■ Input types**

Use to specify the ON/OFF data that the data internal contact input uses as input. This ON/OFF data shows various kinds of instrument statuses and is called “standard bit”. For details about standard bit numeric values, refer to:

☞ ■ Standard bit codes (page App.-12)

**■ Loop/channel definition**

Use to specify the target loop or channel for the internal contact input operation. The meaning of the loop/channel definition varies depending on the operation type.

☞ Refer to the Operation types table above.

**■ Weighting**

Use to select a group or number in a specific operation type, such as SP group selection or PID group selection.

When the input is OFF, the value is “0”. When the input is ON, the value is the set value.

When the operation type and loop/channel definition use the same internal contact input, the selection is determined by the sum of weighting values as shown in the table below.

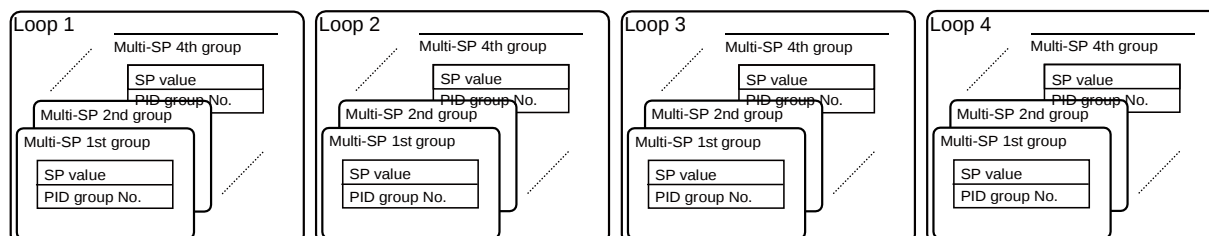
| Sum of weights      | 0       | 1 or higher                                                      |
|---------------------|---------|------------------------------------------------------------------|
| Operation type      |         |                                                                  |
| SP group selection  | Group 1 | Group with “1” added to the sum of weighting values is selected. |
| PID group selection | Group 1 | Group with “1” added to the sum of weighting values is selected. |



## 6 - 3 How to Use the Multi-SP

The multi-SP can be set by combining LSP value and PID group definition on an SP group basis.

Up to 4 SP groups per loop are provided. You can select one group from these groups and use it for control.



### ■ Setting banks

Setup bank

Loop 1 LSP bank

Loop 2 LSP bank

Loop 3 LSP bank

Loop 4 LSP bank

Loop 1 PID bank

Loop 2 PID bank

Loop 3 PID bank

Loop 4 PID bank

SP group selection bank

### ■ Features

A PID constant group can be specified for each SP group. When selecting an SP group, the PID constants corresponding to the PID group definition set in the SP group are used for the control. When using PID constants common to multiple SP groups, specify the same PID group.

### ■ Example: Multi-SP is used with two LSP groups

The following describes an example where two LSP groups and PID constants of two groups are used with two SP groups in loop 1.

- [1] Set the SP to two groups using the multi-SP.

Configure the settings as shown below in the setup (basic) bank setup.

| Item name       | Setting |
|-----------------|---------|
| SP system group | 2       |

- [2] Set data for the SP group.

Configure the settings as shown below in the loop 1 LSP bank.

| Item name                                          | Setting |
|----------------------------------------------------|---------|
| (Loop 1 SP group 1) LSP                            | 100.0   |
| (Loop 1 SP group 1) PID group definition (for LSP) | 1       |
| (Loop 1 SP group 2) LSP                            | 200.0   |
| (Loop 1 SP group 2) PID group definition (for LSP) | 2       |



## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

- [3] Set data for the PID group.

Configure the settings as shown below in the loop 1 PID bank.

| Item name                                   | Setting |
|---------------------------------------------|---------|
| (Loop 1 PID group 1) Proportional band      | 5.0     |
| (Loop 1 PID group 1) Integral time          | 120     |
| (Loop 1 PID group 1) Derivative time        | 30      |
| (Loop 1 PID group 1) Output (MV) low limit  | 0.0     |
| (Loop 1 PID group 1) Output (MV) high limit | 100.0   |
| (Omitted)                                   |         |
| (Loop 1 PID group 2) Proportional band      | 5.0     |
| (Loop 1 PID group 2) Integral time          | 100     |
| (Loop 1 PID group 2) Derivative time        | 25      |
| (Loop 1 PID group 2) Output (MV) low limit  | 0.0     |
| (Loop 1 PID group 2) Output (MV) high limit | 100.0   |
| (Others omitted)                            |         |

- [4] Select an SP group.

Select an SP group in the SP group selection bank.

To select the SP 2 group, configure the setting as described in the table below.

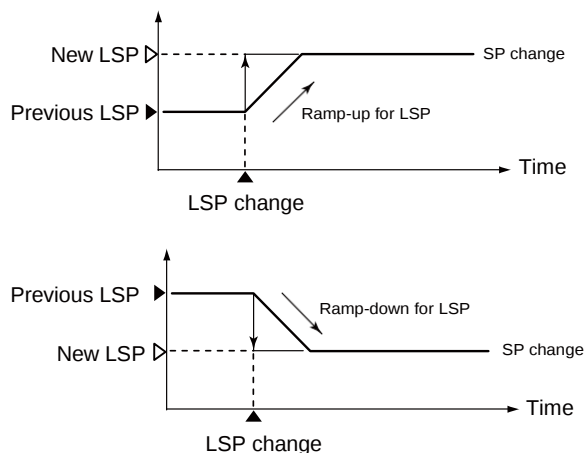
| Item name                   | Setting              |
|-----------------------------|----------------------|
| (Loop 1) SP group selection | 2: Select SP group 2 |



## 6 - 4

Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL  
How to Change the LSP with Constant Ramp

When changing the set value of the LSP or the SP group selection, it is possible to change the SP with a constant SP ramp.



### ■ Bank and settings

| Bank             | Item name            | Contents of setup                                                                                                                                                              |
|------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SP configuration | SP ramp unit         | 0: No decimal point/s 1: No decimal point/min<br>2: No decimal point/h 3: 0.1/s 4: 0.1/min 5: 0.1/h<br>6: 0.01/s 7: 0.01/min 8: 0.01/h 9: 0.001/s<br>10: 0.001/min 11: 0.001/h |
|                  | SP ramp-up for LSP   | 0U: No ramp<br>1 to 32000 U (Decimal point position varies depending on the SP ramp unit)                                                                                      |
|                  | SP ramp-down for LSP | 0U: No ramp<br>1 to 32000 U (Decimal point position varies depending on the SP ramp unit)                                                                                      |
|                  | PV start for LSP     | 0: Allow PV start 1: Prevent PV start                                                                                                                                          |

### ■ Conditions for ramp start

- LSP value is changed.
- SP group is changed.
- Mode is changed from RSP to LSP.

### ■ Conditions for ramp start with PV used as start point

If any of the following arises, the ramp is started with PV used as the start point instead of the previous SP:

- The power is turned ON.
- The MANUAL mode is changed to the AUTO mode.
- The READY mode is changed to the RUN mode.
- The “Loop type” item of the setup bank is changed.

### ❗ Handling Precautions

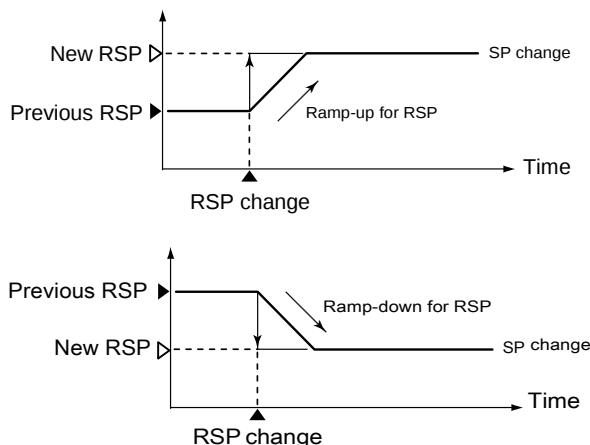
- When the unit is in the following statuses, ramp actions do not start. Additionally, if the unit enters one of the following statuses during ramp operation, the ramp operation is cancelled.
  - MANUAL mode
  - READY mode
  - Ramp operation is prohibited from the internal contact input
- When the unit is in the following statuses, ramp actions with PV used as the start point do not start.
  - When a PV input error occurs
  - When PV start for LSP is 1 (Prevent PV start)



## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

## 6 - 5 How to Change the RSP with Constant Ramp

When the RSP is changed, the SP can be changed with a constant ramp.



### ■ Bank and settings

| Bank             | Item name            | Contents of setup                                                                                                                                                              |
|------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SP configuration | SP ramp unit         | 0: No decimal point/s 1: No decimal point/min<br>2: No decimal point/h 3: 0.1/s 4: 0.1/min 5: 0.1/h<br>6: 0.01/s 7: 0.01/min 8: 0.01/h 9: 0.001/s<br>10: 0.001/min 11: 0.001/h |
|                  | SP ramp-up for RSP   | 0U: No ramp<br>1 to 32000 U (Decimal point position varies depending on the SP ramp unit)                                                                                      |
|                  | SP ramp-down for RSP | 0U: No ramp<br>1 to 32000 U (Decimal point position varies depending on the SP ramp unit)                                                                                      |
|                  | PV start for RSP     | 0: Allow PV start 1: Prevent PV start                                                                                                                                          |

### ■ Conditions for ramp start

- RSP value is changed.
- Mode is changed from LSP to RSP.

### ■ Conditions for ramp start with PV used as start point

If any of the following arises, the ramp is started with PV used as the start point instead of the previous SP:

- The power is turned ON.
- The MANUAL mode is changed to the AUTO mode.
- The READY mode is changed to the RUN mode.
- The “Loop type” item of the setup bank is changed.

### ❗ Handling Precautions

- When the unit is in the following statuses, ramp actions do not start. Additionally, if the unit enters one of the following statuses during ramp operation, the ramp operation is cancelled.
  - MANUAL mode
  - READY mode
  - Ramp operation is prohibited from the internal contact input
- When the unit is in the following statuses, ramp actions with PV used as the start point do not start.
  - When an input error occurs
  - When PV start for RSP is 1 (Prevent PV start)



## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

## 6 - 6 CT (Current Transformer) Input

Current measurement using the current transformer input (CT input) can be performed on models that have a CT input.

There are four CT inputs, CH1 to CH4.

The following three types of currents are measured. Select the detection mode in the settings.

1. Current not related to the ON/OFF status of the unit output
2. Current when output ON is synchronized with the ON/OFF status of the unit output
3. Current when output OFF is synchronized with the ON/OFF status of the unit output

Use 2. to detect a heater burnout or overcurrent. Use 3. to detect a heater short-circuit (final control element short-circuit).

Use 1. to measure the continuous current. For the sake of convenience, the measured value is used as the output ON current value.

- When the “CT operation” setting is set to “1” to “4”, currents (2) and (3) can be detected.
- When the “CT operation” setting is set to “0”, current (1) can be detected.

### ■ Bank and settings

| Bank     | Item name                                         | Contents of setup                                                                                                                                                                                                |
|----------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CT input | CT operation                                      | 0: Continuous current measurement<br>1: Detection of heater line break for OUT1 2: Detection of heater line break for OUT2 3: Detection of heater line break for OUT3 4: Detection of heater line break for OUT4 |
|          | Waiting time for CT measurement                   | 30 to 300 ms                                                                                                                                                                                                     |
|          | Number of CT turns                                | 100 to 4000 turns                                                                                                                                                                                                |
|          | Number of CT power line passes                    | 1 to 6 times                                                                                                                                                                                                     |
|          | Heater burnout detection current value            | 0.0 to 350.0 A                                                                                                                                                                                                   |
|          | Minimum current defined as overcurrent            | 0.0 to 350.0 A                                                                                                                                                                                                   |
|          | Minimum current defined as short-circuit          | 0.0 to 350.0 A                                                                                                                                                                                                   |
|          | Hysteresis                                        | 0.0 to 350.0 A                                                                                                                                                                                                   |
|          | Delay time                                        | 0.0 to 3200.0 s                                                                                                                                                                                                  |
|          | Condition for restoring status before measurement | 1024 to 2047 (Standard bit code)                                                                                                                                                                                 |

### ■ Measurable current

The measurable current varies depending on the number of CT turns and the number of CT power line passes.

| Number of turns<br>Number of passes | Number of turns |             |             |              |              |
|-------------------------------------|-----------------|-------------|-------------|--------------|--------------|
|                                     | 100 turns       | 400 turns   | 800 turns   | 1600 turns   | 4000 turns   |
| 1                                   | 0.1 – 6.9A      | 0.2 – 27.5A | 0.4 – 55.0A | 0.8 – 110.0A | 2.0 – 275.0A |
| 2                                   | 0.1 – 3.4A      | 0.1 – 13.8A | 0.2 – 27.5A | 0.4 – 55.0A  | 1.0 – 137.5A |
| 6                                   | 0.1 – 1.1A      | 0.1 – 4.6A  | 0.1 – 9.2A  | 0.2 – 18.3A  | 0.4 – 45.8A  |

### ■ CT operations

Different operations can be set for CT input 1, CT input 2, CT input 3 and CT input 4.

- When measuring the continuous current, regardless of the ON/OFF status of the output, the current when the output is ON is updated and the current when the output is OFF is fixed at 0.0 A.

### ■ Waiting time for CT measurement

When the CT operation is heater burnout detection, the time from the change in the output ON/OFF status to the start of the current measurement can be set.

- After the change in the ON/OFF status of the monitored output, the current measurement starts when the measurement waiting time elapses. The current measurement finishes after 100 ms elapses.

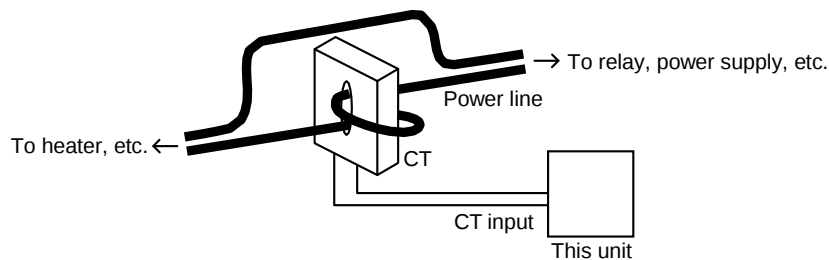
## Chapter 6. FUNCTIONS OFTEN USED FOR OPERATIONS OTHER THAN CONTROL

### ■ Number of CT turns/Number of CT power line passes

Different CT settings can be set for CT input 1, CT input 2, CT input 3 and CT input 4.

- In the number of CT turns item, set the number of CT turns that are connected to the unit.
- In the number of CT power line passes item, set the number of times that the power lines pass through the CT holes.

For example, if power lines pass through a CT hole twice as shown in the figure below, set “2”.



### ■ Heater burnout detection current value

When the output ON current value is at the set value or lower, heater burnout is detected.

When the setting is 0.0, the detection function is stopped.

### ■ Minimum current defined as overcurrent

When the output ON current value is at the set value or higher, overcurrent is detected.

When the setting is 0.0, the detection function is stopped.

### ■ Minimum current defined as short-circuit

When the output OFF current value is at the set value or higher, a short-circuit is detected.

When the setting is 0.0, the detection function is stopped.

### ■ Hysteresis

Set the hysteresis common to heater burnout detection, overcurrent detection and final control element short-circuit detection.

### ■ Delay time

Set the detection delay time common to heater burnout detection, overcurrent detection and final control element short-circuit detection.

### ■ Condition for restoring status before measurement

Set a standard bit code as a condition for restoring the status before current measurement.

Use when the control output is OFF after burnout detection and you want to cancel the status where burnout detection is being performed continuously.

## ! Handling Precautions

- The ON/OFF statuses of heater burnout detection, overcurrent detection and short-circuit detection are updated in the standard bits.  
 Refer to ■ Standard bit codes (page App.-12).
- To output ON/OFF signals such as those from burnout or overcurrent detection from DO, set the CT operation that you want to output in the output type assignment.



## Chapter 7. FUNCTIONS USED AS REQUIRED

### 7 - 1 MV at PV Error

When a PV input error occurs in the RUN mode and AUTO mode, the MV of PID control can be set to any fixed value.

#### ■ Setting banks

Loop output (MV) bank

#### ■ Example

The following is an example where the MV of PID control is set to 10% if there is a PV input error in loop 1.

[1] Set the selection of MV if PV is abnormal.

Configure the settings as shown below in the loop output (MV) bank setup.

| Item name                                  | Setting                        |
|--------------------------------------------|--------------------------------|
| (Loop 1) Selection of MV if PV is abnormal | 1: Output MV if PV is abnormal |

[2] Set the output at PV error.

Configure the settings as shown below in the loop output (MV) bank setup.

| Item name                   | Setting |
|-----------------------------|---------|
| (Loop 1) Output at PV error | 10.0    |



## Chapter 7. FUNCTIONS USED AS REQUIRED

### 7 - 2 MV Change Limit

#### Handling Precautions

- This function is not supported by the NX-D15.

The MV change can be restricted by setting the value (%) of the MV change per second.

#### ■ Setting banks

Loop (extended) bank

#### ■ Example

This example describes how to set a change ratio limit of 10% during an MV increase change.

- [1] Set the MV increase change limit.

Configure the settings as shown below in the loop (extended) bank setup.

| Item name                         | Setting |
|-----------------------------------|---------|
| (Loop 1) MV increase change limit | 10.00   |

- [2] Set the MV decrease change limit.

Configure the settings as shown below in the loop (extended) bank setup.

| Item name                         | Setting |
|-----------------------------------|---------|
| (Loop 1) MV decrease change limit | 0.00    |



## 7 - 3 MV Branching Output

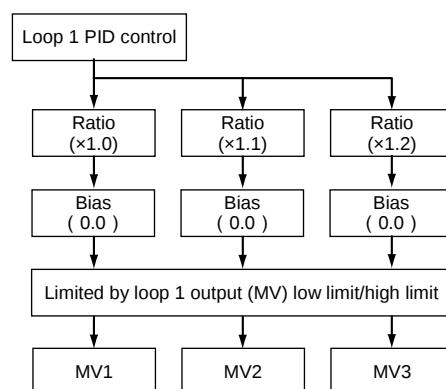
The PID MV of any group can be used for the branching output of MV (up to four) to which a ratio or bias has been applied.

### ■ Setting banks

MV branching output bank

### ■ Example

The following is an example where ratios of 1.0, 1.1 and 1.2 have been applied to the MV of loop 1, and output as MV1 to MV3.



[1] Set the MV1 setting.

Configure the settings as shown below in the MV branching output bank setup.

| Item name             | Setting |
|-----------------------|---------|
| (MV1) Loop assignment | 1       |
| (MV1) Ratio           | 1.00    |
| (MV1) Bias            | 0.00    |

[2] Set the MV2 setting.

Configure the settings as shown below in the MV branching output bank setup.

| Item name             | Setting |
|-----------------------|---------|
| (MV2) Loop assignment | 1       |
| (MV2) Ratio           | 1.10    |
| (MV2) Bias            | 0.00    |

[3] Set the MV3 setting.

Configure the settings as shown below in the MV branching output bank setup.

| Item name             | Setting |
|-----------------------|---------|
| (MV3) Loop assignment | 1       |
| (MV3) Ratio           | 1.20    |
| (MV3) Bias            | 0.00    |

### ! Handling Precautions

- Ratio/bias function is not available when the loop that was set in Loop No./Standard numerical code assignment is Output at PV error, Manual MV, Output at READY, or AT output.

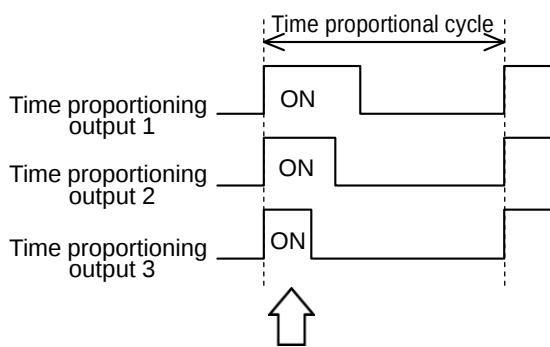


## Chapter 7. FUNCTIONS USED AS REQUIRED

### 7 - 4 Energy Conservation

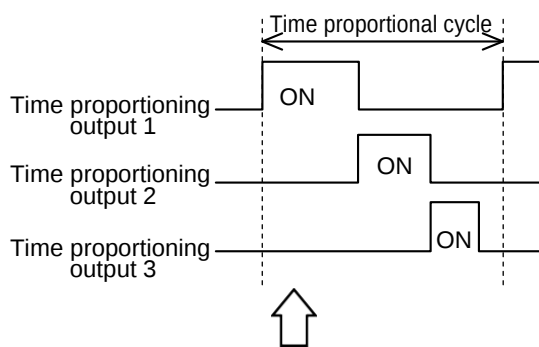
The energy conservation function can be used to ensure that all the time proportioning outputs do not turn ON at the same time.

Example of operation when energy conservation is not used



Each time proportioning output turns ON at the same time.

Example of operation when energy conservation is used



Each time proportioning output does not turn ON at the same time.

Up to 8 time proportioning outputs can be used to create an energy conservation group. An energy conservation group comprises one master output and at least one slave output. In the figures shown here of example operations using energy conservation, the master output is time proportioning output 1.

- The master output turns on from the start of the time proportional cycle.
- The first slave output turns on after the master output turns off.
- The second slave output turns on after the first slave output turns off.
- The subsequent slave outputs operate in the same way. The slave output turns on when the previous slave output turns off.

#### ! Handling Precautions

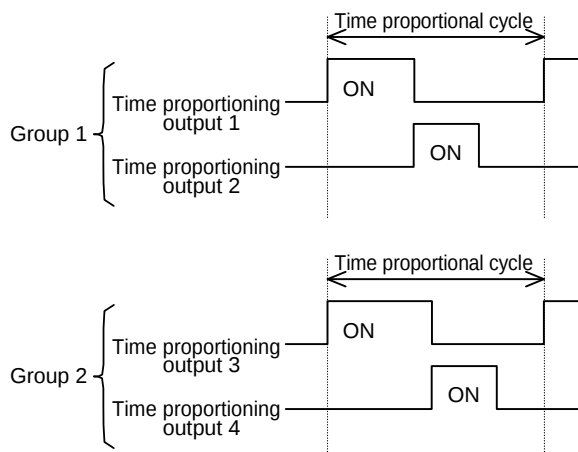
- Set the time proportional cycle of each output within a group to the same value.
- Set the time proportional operation type of each output within a group to 1 (actuator-life oriented).

#### ■ Setting banks

#### ■ Example

Energy conservation bank

The following example is when two energy conservation groups are created, with output 1 and output 2 used in group 1, and output 3 and output 4 used in group 2.





## Chapter 7. FUNCTIONS USED AS REQUIRED

### [1] Set the output 1 setting.

Configure the settings as shown below in the energy conservation bank setup.

| Item name                                                                        | Setting                 |
|----------------------------------------------------------------------------------|-------------------------|
| (Time proportioning output 1)<br>Energy conservation time proportional operation | 1: Used                 |
| (Time proportioning output 1)<br>Energy conservation delay time                  | (Setting is invalid)    |
| (Time proportioning output 1)<br>Master/slave selection                          | 0: Master               |
| (Time proportioning output 1)<br>Time proportional slave channel                 | 2: Time proportioning 2 |

### [2] Set the output 2 setting.

Configure the settings as shown below in the energy conservation bank setup.

| Item name                                                                        | Setting                                                                       |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| (Time proportioning output 2)<br>Energy conservation time proportional operation | 1: Used                                                                       |
| (Time proportioning output 2)<br>Energy conservation delay time                  | Set the time (ms) required for absorbing the operation delay of the actuator. |
| (Time proportioning output 2)<br>Master/slave selection                          | 1: Other than master                                                          |
| (Time proportioning output 2)<br>Time proportional slave channel                 | 2: Time proportioning 2                                                       |

### [3] Set the output 3 setting.

Configure the settings as shown below in the energy conservation bank setup.

| Item name                                                                        | Setting                 |
|----------------------------------------------------------------------------------|-------------------------|
| (Time proportioning output 3)<br>Energy conservation time proportional operation | 1: Used                 |
| (Time proportioning output 3)<br>Energy conservation delay time                  | (Setting is invalid)    |
| (Time proportioning output 3)<br>Master/slave selection                          | 0: Master               |
| (Time proportioning output 3)<br>Time proportional slave channel                 | 4: Time proportioning 4 |

### [4] Set the output 4 setting.

Configure the settings as shown below in the energy conservation bank setup.

| Item name                                                                        | Setting                                                                       |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| (Time proportioning output 4)<br>Energy conservation time proportional operation | 1: Used                                                                       |
| (Time proportioning output 4)<br>Energy conservation delay time                  | Set the time (ms) required for absorbing the operation delay of the actuator. |
| (Time proportioning output 4)<br>Master/slave selection                          | 1: Other than master                                                          |
| (Time proportioning output 4)<br>Time proportional slave channel                 | 4: Time proportioning 4                                                       |



## Note

- In the setting for the final slave output in the group, set the time proportional slave channel to the output's own number. (In the example above, output 2 and output 4 are the final slave outputs.)



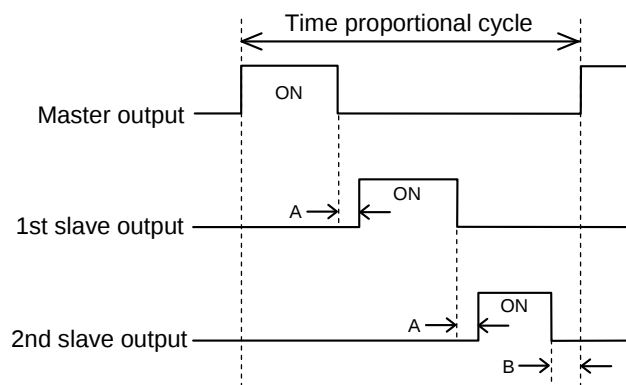
## Chapter 7. FUNCTIONS USED AS REQUIRED

### ■ Energy conservation delay time

Set on the output side of the slave.

To prevent overlapping with the ON status of other outputs or actuators, the output starts after the previous output turns OFF and after the energy conservation delay time has elapsed. This is to prevent the ON status of the time proportioning output from overlapping due to the delay in the actuator operation. (Indicated by A in the figure below.)

Additionally, at the end of the time proportional cycle, an energy conservation delay time OFF is added. This is to prevent overlapping when the master output turns ON. (Indicated by B in the figure below.)



### ❗ Handling Precautions

- ❁ Be sure to check the following settings before use.
  - Set the time proportional cycle of each output within a group to the same value.
  - Be sure to set “Actuator-life oriented”.
  - Be sure to set the slave channels with an energy conservation delay time for the actuator delay.
- ❁ The following usage restrictions apply.
  - When the master channel output is large and the slave channel output times do not fit within the time proportional cycle, the output is turned OFF at the end of the time proportional cycle of the slave time proportioning output. This means that the control calculation results might not be fully output.
  - The energy conservation time proportioning output results are prioritized even in MANUAL mode, READY mode, and when the PV alarm operates. This means that depending on the MV of the master channel, the set MV might not be output.
  - During stable times when PV = SP, the total of the control output of each channel and the energy conservation delay time must be 100% or less. When the value exceeds 100%, the slave channels cannot be controlled with the settings.
  - The controllability varies greatly depending on whether energy conservation is used or not used.



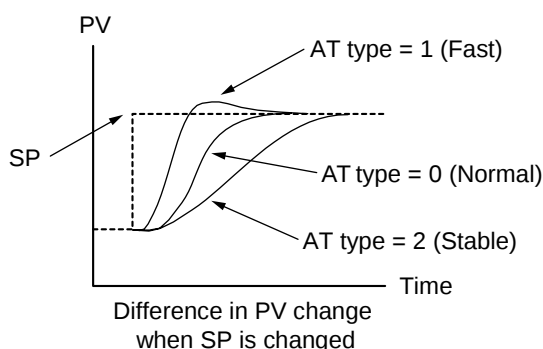
## 7 - 5 AT (Auto Tuning)

When the AT is executed, the AT type can be selected to obtain AT results appropriate for the target control characteristics.

One of the following three types can be selected for the AT type.

- 0: Normal (regular control characteristics)
- 1: Fast (response to disturbance)
- 2: Stable (minimal up/down PV fluctuation)

The following graph shows the pattern of differences in the control results that use PID constants calculated with each AT type.



### ■ Setting banks

| Bank             | Item name                               | Contents of setup                                                                                                              |
|------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Loop (basic)     | AT type                                 | 0: Normal (regular control characteristics)<br>1: Fast (response to disturbance)<br>2: Stable (minimal up/down PV fluctuation) |
| Loop (extended)  | MV low limit during AT                  | -10.0 to +110.0                                                                                                                |
|                  | MV high limit during AT                 | -10.0 to +110.0                                                                                                                |
| Loop (algorithm) | AT adjustment factor, proportional band | 0.00 to 320.00                                                                                                                 |
|                  | AT adjustment factor, integral time     | 0.00 to 320.00                                                                                                                 |
|                  | AT adjustment factor, derivative time   | 0.00 to 320.00                                                                                                                 |

### ■ Example 1

This example describes how to set the AT type of loop 1 to “Fast”.

Set the AT type.

Configure the settings as shown below in the loop (basic) bank setup.

| Item name        | Setting                           |
|------------------|-----------------------------------|
| (Loop 1) AT type | 1: Fast (response to disturbance) |



## Chapter 7. FUNCTIONS USED AS REQUIRED

### ■ Example 2

This example describes the setting where the AT result of derivative time is always 0.0 when the AT (auto tuning) of loop 1 is executed.

Set the AT adjustment factor.

Configure the settings as shown below in the loop (algorithm) bank setup.

| Item name                                        | Setting |
|--------------------------------------------------|---------|
| (Loop 1) AT adjustment factor, proportional band | 1.00    |
| (Loop 1) AT adjustment factor, integral time     | 1.00    |
| (Loop 1) AT adjustment factor, derivative time   | 0.00    |



### Note

- With the AT adjustment factor, the PID constant calculated with the AT is multiplied by the factor before being written to the PID constant setting. When using the PID constant calculated with the AT unchanged, the AT adjustment factor does not need to be set. Use the default setting (1.00) unchanged.

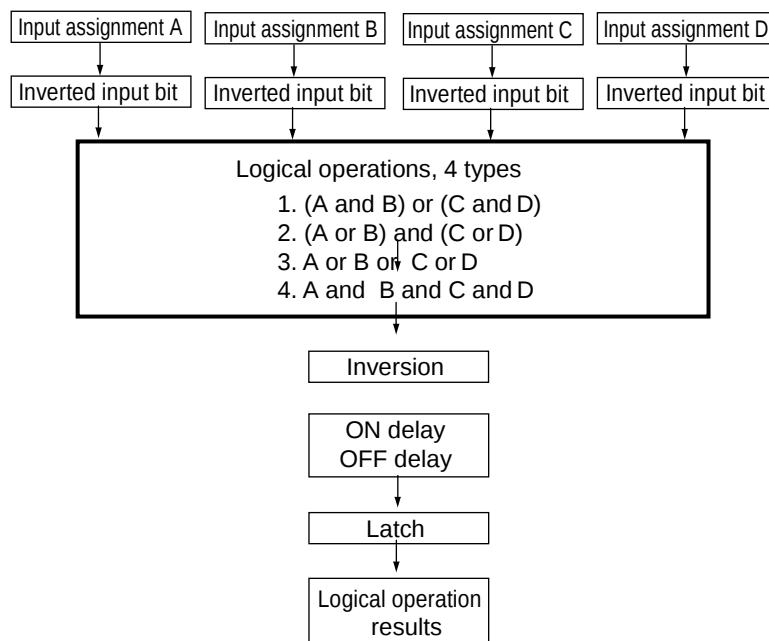


## 7 - 6 Logical Operations

This unit can perform logical operations (Boolean operation consisting of “0” and “1”) corresponding to various statuses and can use the logical operation results as ON/OFF outputs or internal contact inputs.

16 groups of logical operations are provided. One operation group consists of four inputs and one output.

Four kinds of logical operations are provided. Furthermore, the input or output logic can be inverted.



### ■ Processing sequence for logical operations

Certain logical operation results can be used as inputs of the logical operation in the same group or a different group. The operating process of the logical operation is performed at intervals of sampling cycles in the group No. order.

Therefore, the logical operation results of a smaller group No. can be used in the same sampling cycle. The logical operation results of the same group No. or a larger group No. are used in the next sampling cycle.



### Note

- In logical operation groups 1 to 4, logical operations are performed before PID control, while in logical operation groups 5 to 16, logical operations are performed after PID control.



## Chapter 7. FUNCTIONS USED AS REQUIRED

### ■ Example

The following is an example where digital output 1 is turned ON when any of the event 1, event 2, or representative of all alarms is turned ON using the logical operation group 1:

[1] Set the logical operation.

Configure the settings as shown below in the logical operation bank setup.

| Item name                                        | Setting                                |
|--------------------------------------------------|----------------------------------------|
| (Logical operation group 1) Calculation type     | 3: Calculation 3<br>(A or B or C or D) |
| (Logical operation group 1) Input assignment A   | 1088: Event 1                          |
| (Logical operation group 1) Input assignment B   | 1089: Event 2                          |
| (Logical operation group 1) Input assignment C   | 1792: Representative of all<br>alarms  |
| (Logical operation group 1) Input assignment D   | 1024: OFF                              |
| (Logical operation group 1) Inverted input bit A | 0: Direct                              |
| (Logical operation group 1) Inverted input bit B | 0: Direct                              |
| (Logical operation group 1) Inverted input bit C | 0: Direct                              |
| (Logical operation group 1) Inverted input bit D | 0: Direct                              |
| (Logical operation group 1) ON delay time        | 0.0 (unit: s)                          |
| (Logical operation group 1) OFF delay time       | 0.0 (unit: s)                          |
| (Logical operation group 1) Inversion            | 0: Direct                              |
| (Logical operation group 1) Latch                | 0: No latch                            |

[2] Set the results of logical operation 1 for digital output 1.

Configure the settings as shown below in the OUT/DO output bank setup.

| Item name                                          | Setting              |
|----------------------------------------------------|----------------------|
| (OUT/DO output 1) Output type                      | 1088: Event 1        |
| (OUT/DO output 1) Latch                            | 0: No latch          |
| (OUT/DO output 1) Time proportional operation type | (Setting is invalid) |
| (OUT/DO output 1) Min. ON/OFF time                 | 10 (ms)              |
| (OUT/DO output 1) Time proportional cycle          | (Setting is invalid) |
| (OUT/DO output 1) Phase shift                      | (Setting is invalid) |



## 7 - 7 User-defined Bits

User-defined bits can be used instead of the digital input. User-defined bits are ON/OFF data that can be read and written from the communication. 32 bits are available.

### ■ Example

The following is an example where the RUN/READY mode selection of loop 1 is changed to READY when user-defined bit 1 is ON and changed to RUN when user-defined bit 1 is OFF.

- [1] Set the RUN/READY mode selection for internal contact 1.  
Configure the settings as shown below in the internal contact input bank setup.

| Item name                                          | Setting                      |
|----------------------------------------------------|------------------------------|
| (Internal contact group 1) Operation type          | 21: RUN/READY mode selection |
| (Internal contact group 1) Input type              | 1408: User defined bit 1     |
| (Internal contact group 1) Loop/channel definition | 1: Loop 1                    |
| (Internal contact group 1) Weighting               | (Setting is invalid)         |

- [2] Change the value of user-defined bit 1 from the communication.  
Write 0 (RUN) or 1 (READY) in the data address of user-defined bit 1 in the user-defined bit bank.



## Chapter 7. FUNCTIONS USED AS REQUIRED

# 7 - 8 User-defined Numbers

User-defined bits are numerical value data that can be read and written from the communication. 16 bits are available.

### ■ Example

The following is an example where the MV of a host device is received via communication, and is then output. User-defined number 1 is used to output the MV of a host device from analog current output 1.

- [1] Assign user-defined number 1 to analog current output 1.

Configure the settings as shown below in the continuous output bank.

| Item name                                               | Setting                     |
|---------------------------------------------------------|-----------------------------|
| (Analog current output 1) Output range                  | 0: 4 to 20 mA               |
| (Analog current output 1) Output type                   | 2111: User defined number 1 |
| (Analog current output 1) Loop/channel definition       | (Setting is invalid)        |
| (Analog current output 1) Output decimal point position | 0: No decimal point         |
| (Analog current output 1) Output scaling low limit      | 0                           |
| (Analog current output 1) Output scaling high limit     | 1000                        |

- [2] Change the value of user-defined number 1 from the communication.

Write the value that is 10 times the host device MV in the data address of user-defined number 1 in the user-defined number bank. (When the MV of the host device is 50.0%, write 500 in user-defined number 1.



# Chapter 8. CPL COMMUNICATIONS FUNCTION

## 8 - 1 Outline of Communication

Communication with a PC, PLC or other host devices is available using a user-configured program that uses RS-485 communication.

CPL communication (Controller Peripheral Link: Yamatake Corporation's host communication protocol) or MODBUS communication can be selected as the communication protocol.

This chapter describes the CPL communications.

### ■ Features

The features of the unit's communication function are as follows:

- Up to 31 units can be connected to a single master station that functions as a host device.
- When the communication specifications of the host device conform to the RS-232C interface, the communication converter CMC10L (sold separately) is required.

The CMC10L allows conversion between RS-232C and RS-485.

- Almost all of the unit parameters can be communicated.

For details on the communication data, refer to:

Chapter 11. LIST OF COMMUNICATION DATA

- Random access commands are available.

Two or more parameters at separated addresses can be read or written by a single command.

### ■ Setup

The following setup is required for performing the CPL communications.

| Item name                 | Contents of setup                                                                           | Initial value |
|---------------------------|---------------------------------------------------------------------------------------------|---------------|
| Communications type       | 0: CPL<br>1: MODBUS ACSII<br>2: MODBUS RTU                                                  | 0             |
| Station address           | 0: Does not communicate<br>1 to 127                                                         | 127           |
| Transmission speed        | 0: 4800 bps<br>1: 9600 bps<br>2: 19200 bps<br>3: 38400 bps<br>4: 57600 bps<br>5: 115200 bps | 2             |
| Data format (Data length) | 0: 7 bits<br>1: 8 bits                                                                      | 1             |
| Data format (Parity)      | 0: Even parity<br>1: Odd parity<br>2: No parity                                             | 0             |
| Data format (Stop bit)    | 0: 1 bit<br>1: 2 bits                                                                       | 0             |
| Minimum response time     | 1 to 250 ms                                                                                 | 3             |

### Handling Precautions

- The setup cannot be performed via RS-485 communications.
- If you use the Yamatake CMC10L as an RS-485 converter, set the minimum response time to 3 ms or longer.

The maximum transmission speed supported by the CMC10L is 38400 bps.



## Chapter 8. CPL COMMUNICATIONS FUNCTION

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### ■ Communication procedure

The communication procedure is as follows:

- [1] The instruction message is sent from the host device (master station) to one unit (slave station).
- [2] The slave station receives the instruction message, and performs read or write processing according to the content of the message.
- [3] The slave station sends a message corresponding to the processing content as a response message.
- [4] The master station receives the response message.

### ❗ Handling Precautions

- Two or more protocols cannot be used together on a single RS-485 transmission line (such as CPL, MODBUS ASCII, and MODBUS RTU).



## 8 - 2 Message Structure

### ■ Message structure

The following shows the message structure.

Messages are broadly classified into two layers: the data link layer and the application layer.

- Data link layer

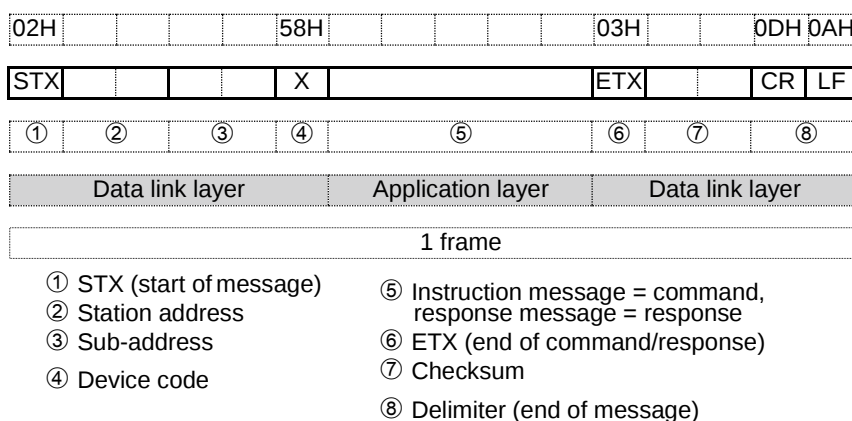
This layer contains the basic information required for communication. For example, the destination of the communication message and the check information of the message.

- Application layer

Data is read and written in this layer. The content of the layer varies according to the purpose of the message.

Messages comprise parts (1) to (9) as shown in the figure below.

The command (details sent from the master station) and the response (details returned from the slave station) are stored in the application layer.



### ■ Data link layer

- Outline of the data link layer

The data link layer is of a fixed length. The position of each data item and the number of its characters are already decided. Note, however, that the data positions of the data link layer from ETX onwards shift according to the number of characters in the application layer.

- Response start conditions

- The device sends the response message only when all the message components in the data link layer of the instruction message are correct. If even one of these is incorrect, no response messages are sent, and the device waits for a new message.

- List of data link layer data definitions

The following list shows the definitions for data in the data link layer:

| Data name       | Character code                                                    | Number of characters | Meaning of data                                          |
|-----------------|-------------------------------------------------------------------|----------------------|----------------------------------------------------------|
| STX             | 02H                                                               | 1                    | Start of message                                         |
| Station address | 0 to 7FH are expressed as hexadecimal character codes             | 2                    | Identification of device to communicate with sub-address |
| Sub-address     | "00" (30H, 30H)                                                   | 2                    | No function                                              |
| Device code     | "X" (58H) or "x" (78H)                                            | 1                    | Device type                                              |
| ETX             | 03H                                                               | 1                    | Application layer end position                           |
| Checksum        | 00H to FFH are expressed as two-digit hexadecimal character codes | 2                    | Checksum of message                                      |
| Delimiter       | CR (0DH), LF (0AH)                                                | 2                    | End of message                                           |



## Chapter 8. CPL COMMUNICATIONS FUNCTION

### • Description of data items

#### •STX (02H)

When STX is received, the unit judges this to be the start of the send message. It follows that if a delimiter has not been received previously, the unit judges that a message start STX has been received. The purpose of this is to enable recovery of the unit's response at the next message from the master station in the event that noise, for example, causes a message error.

#### •Station address

Of the messages received, the unit creates response messages only when station addresses are the same. Station addresses in the messages are expressed as two hexadecimal characters.

The unit returns the same station address as that of the received message.

However, when the station address is set to "00" (30H 30H), the unit does not respond even if the station addresses match.

#### •Sub-address

Two hexadecimal characters can be used, from "00" (30H 30H) to "FF" (46H 46H). The unit returns the same sub-address as that of the received message.

#### •Device code

"X" (58H) or "x" (78H) can be used. This code is determined for each device series, and other codes cannot be selected. The unit returns the same device code as that of the received message. These can be used to identify the messages, for example by using "X" (58H) as the initial value and "x" (78H) in resend messages.

#### •ETX

ETX indicates the end of the application layer.

#### •Checksum

This value is for checking whether or not some abnormality (e.g. noise) causes the message content to change during communications.

#### •The checksum is expressed as two hexadecimal characters.

##### • How to calculate a checksum

[1] Add the character codes in the message from STX through ETX in single byte units.

[2] Take two's complement of the low-order one byte of the addition result.

[3] Convert the obtained two's complement to a two-byte ASCII code.

The following is a sample checksum calculation for a sample message:

[Message example]

STX : 02H

"0" : 30H (first byte of the station address)

"1" : 31H (second byte of the station address)

"0" : 30H (first byte of the sub-address)

"0" : 30H (second byte of the sub-address)

"X" : 58H (device code)

"R" : 52H (first byte of the command)

"D" : 44H (second byte of the command)

(omitted)

ETX : 03H



## Chapter 8. CPL COMMUNICATIONS FUNCTION

- [1] Add the character codes in the message from STX through ETX in single byte units. The adding calculation in single byte units is as follows:  
 $02H + 30H + 31H + 30H + 30H + 58H + 52H + 44H + \dots + 03H$   
 The result of this calculation is 376H.
- [2] The low-order one byte of the addition result 376H is 76H. The two's complement of 76H is 8AH.
- [3] Convert the obtained 8AH to a two-byte ASCII code. The result is:  
 "8": 38H  
 "A": 41H  
 The two bytes "8" (38H) and "A" (41H) are the checksum.

•Delimiter (CR/LF)

This indicates the end of the message. Immediately after LF is received, the unit enters a state allowed to process the received message.

## ■ Application layer

The table below shows the configuration of the application layer.

| Item                          | Description                                                                                                                                          |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Command                       | "RS" (decimal format continuous address data read)                                                                                                   |
|                               | "WS" (decimal format continuous address data write)                                                                                                  |
|                               | "RD" (hexadecimal format continuous address data read)                                                                                               |
|                               | "WD" (hexadecimal format continuous address data write)                                                                                              |
|                               | "RU" (hexadecimal format random address data read)                                                                                                   |
|                               | "WU" (hexadecimal format random address data write)                                                                                                  |
| Data delimiter                | RS, WS command: "," (comma)<br>Other commands: None                                                                                                  |
| Word address                  | RS, WS command: Numeric value in decimal notation and "W", such as "501W".<br>Other commands: Numeric value in hexadecimal notation, such as "01F5". |
| Read count                    | RS, WS command: Numeric value in decimal notation, such as "1".<br>Other commands: Numeric value in hexadecimal notation, such as "0001".            |
| Numerical value to be written | RS, WS command: Numeric value in decimal notation, such as "100".<br>Other commands: Numeric value in hexadecimal notation, such as "0064".          |

The number of data records accessible by a single instruction message and response message cycle is as follows:

| Command | RAM | EEPROM |
|---------|-----|--------|
| RD      | 28  | 28     |
| WD      | 28  | 28     |
| RU      | 28  | 28     |
| WU      | 16  | 16     |
| RS      | 16  | 16     |
| WS      | 16  | 16     |





## ■ Fixed length continuous data write command (WD command)

Writing is performed in a hexadecimal format to data in continuous data addresses.

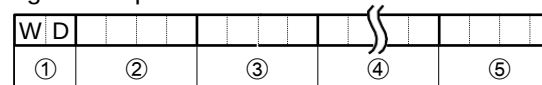
### • Instruction message

Specifies the start data address and at least one data record. The structure of the application layer in the instruction message is as follows:

#### • Writing of single data item



#### • Writing of multiple data items



- ① Command
- ② Start data address
- ③ Data (1st item)
- ④ Data (2nd and following items)
- ⑤ Data (final item)

### • Response message

The structure of the application layer in the response message is as follows:

#### • Normal end



#### • Abnormal end



The abnormal end code is entered at XX.  
For details of the codes, refer to:  
 8-6 List of End Codes (page 8-15).

- ① End code

### Note

- For details on hexadecimal number notation, refer to:  
 ■ Hexadecimals (page 8-13) in 8-5 Numeric Representation in the Application Layer.



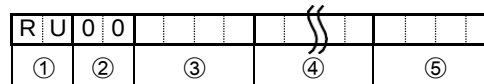
## Chapter 8. CPL COMMUNICATIONS FUNCTION

## ■ Fixed length random data read command (RU command)

Data in random (non-continuous) data addresses is read in a hexadecimal format.

## • Instruction message

Specifies at least one data record. The structure of the application layer in the instruction message is as follows:

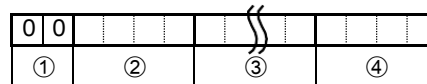


- ① Command
- ② Sub-command, fixed to "00"
- ③ Data address (1st item)
- ④ Data address (2nd and following items)
- ⑤ Data address (final item)

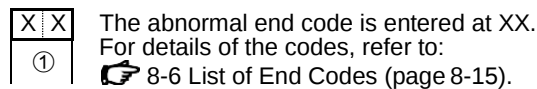
## • Response message

The structure of the application layer in the response message is as follows:

## • Normal end



## • Abnormal end



The abnormal end code is entered at XX.  
For details of the codes, refer to:  
☞ 8-6 List of End Codes (page 8-15).

- ① End code
- ② Data (1st item)
- ③ Data (2nd and following items)
- ④ Data (final item)



## Note

- For details on hexadecimal number notation, refer to:  
☞ ■ Hexadecimals (page 8-13) in 8-5 Numeric Representation in the Application Layer.





## Chapter 8. CPL COMMUNICATIONS FUNCTION

## ■ Continuous data read command (RS command)

Data in continuous data addresses is read in a decimal format.

## • Instruction message

Specifies the start data address and the number of data records. The structure of the application layer in the instruction message is as follows:

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| R | S | , | 4 | 0 | 9 | 6 | W | , | 1 |
| ① | ② |   | ③ |   |   |   |   | ② | ④ |

- ① Command
- ② Data delimiter
- ③ Start data address ("W" is required)
- ④ Number of data records

## • Response message

The structure of the application layer in the response message is as follows:

## • Normal end (reading of single data item)

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | , |   |
| ① | ② |   | ③ |

## • Normal end (reading of multiple data items)

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | , |   | , |   | ⋮ | , |   |
| ① | ② |   | ③ | ② | ④ |   | ② | ⑤ |

## • Abnormal end

|   |   |
|---|---|
| X | X |
| ① |   |

The abnormal end code is entered at XX.  
For details of the codes, refer to:  
👉 8-6 List of End Codes (page 8-15).

- ① End code
- ② Data delimiter
- ③ Data (1st item)
- ④ Data (2nd and following items)
- ⑤ Data (final item)

## 📖 Note

- For details on decimal number notation, refer to:  
👉 ■ Decimals (page 8-14) in 8-5 Numeric Representation in the Application Layer.



## ■ Continuous data write command (WS command)

Writing is performed in a decimal format to data in continuous data addresses.

### • Instruction message

Specifies the start address and at least one data record. The structure of the application layer in the instruction message is as follows:

|   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W | S | , | 4 | 0 | 9 | 6 | W | , | 1 | , | 6 | 5 |
| ① | ② |   | ③ |   |   |   |   | ② | ④ | ② | ⑤ |   |

① Command

② Data delimiter

③ Start data address ("W" is required)

④ Data (1st item)

⑤ Data (2nd item)

### • Response message

The structure of the application layer in the response message is as follows:

#### • Normal end

|   |   |
|---|---|
| 0 | 0 |
| ① |   |

#### • Abnormal end

|   |   |
|---|---|
| X | X |
| ① |   |

The abnormal end code is entered at XX.

For details of the codes, refer to:

👉 8-6 List of End Codes (page 8-15).

① End code

### Note

- For details on decimal number notation, refer to:

👉 ■ Decimals (page 8-14) in 8-5 Numeric Representation in the Application Layer.



## Chapter 8. CPL COMMUNICATIONS FUNCTION

### 8 - 4 Definition of Data Addresses

- **RAM and EEPROM areas of data addresses**

Data addresses are categorized as follows:

| Data address hexadecimal | Data address decimal | Name                       | Remarks                                                                                                                                                                                                                             |
|--------------------------|----------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 100 to FFF               | 256 to 4095          | EEPROM access data address | The write command accesses both the RAM area and EEPROM area, but the read command accesses the RAM area only . Since data is written to the EEPROM, the data does not change even after the power is turned off and back on again. |
| 1000 to 4FFF             | 4096 to 20479        | RAM access data address    | The write and read commands access both the RAM area and EEPROM area. Since data is not written to the EEPROM, the data returns to the previous one stored in the EEPROM after the power is turned off and back on again.           |
| 5000 to 8FFF             | 20480 to 36863       | EEPROM access data address | The write command accesses both the RAM area and EEPROM area, but the read command accesses the RAM area only . Since data is written to the EEPROM, the data does not change even after the power is turned off and back on again. |

#### Handling Precautions

- The number of EEPROM erase/write cycles is limited.  
Accordingly, it is recommended that very frequently written parameters be written to RAM, which does not have a limitation on cycles.  
However, note that the data written to the RAM area is overwritten with the EEPROM area data when the power is turned ON.

- **Write data range**

If the write value exceeds the range determined by parameters, writing is not performed and an abnormal termination code is returned.

- **Write conditions**

An abnormal termination code is also returned when the writing is not possible due to the conditions.

- **Undefined address read**

When an undefined address is read, the end code does not result in an abnormality or warning when the data is 0.



## 8 - 5 Numeric Representation in the Application Layer

The numeric values in the application layer include the data address, number of data records and data values, and use hexadecimal or decimal notation depending on the command. This notation method is shared by both the instruction message and the response message.

### ■ Hexadecimals

The hexadecimal specifications are shown in the table below.

If the message does not match the specifications, the unit does not process the instruction message and instead returns an error response.

| Item                                 | Specification                                                                | Example of specification mismatch                                                      |
|--------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Supported commands                   | RD WD RU WU                                                                  | RS command (hexadecimal is not allowed)<br>WS command (hexadecimal is not allowed)     |
| Available characters                 | 0 (30H) to 9 (39H)<br>A (41H) to F (46H)                                     | 1 2 3 a (a is not allowed)<br>1 2 3 (- is not allowed)<br>1 2 3 (Space is not allowed) |
| Number of characters                 | 4                                                                            | 1 2 3 (3 characters)<br>0 1 2 3 4 (5 characters)                                       |
| Expressible numeric values           | 8000H to 7FFFFH (data with symbols)<br>0000H to FFFFH (data without symbols) |                                                                                        |
| Examples of normal character strings | 0 0 0 0<br>1 2 A B<br>0 1 2 3<br>F F F F                                     |                                                                                        |



## Chapter 8. CPL COMMUNICATIONS FUNCTION

## ■ Decimals

The decimal specifications are shown in the table below.

In the data address, a capital letter “W” (57H) is added immediately after the decimal.

If the message does not match the specifications, the unit does not process the instruction message and instead returns an error response.

| Item                                 | Specification                                                                 | Example of specification mismatch                                                                |
|--------------------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Supported commands                   | RS Ws                                                                         | RD command (decimal is not allowed)<br>WD command (decimal is not allowed)                       |
| Available characters                 | 0 (30H) to 9 (39H)<br>-(2DH)                                                  | 1 2 3 4 (A is not allowed)<br>+ 1 2 3 (+ is not allowed)<br>1 2 3 (Space is not allowed)         |
| Delimiter characters                 | ,(2CH)<br>Delimiter characters are used between two numeric values            |                                                                                                  |
| Number of characters                 | 1 to 5 (positive numbers)<br>2 to 6 (negative numbers)<br>1 (Numeric value 0) | 0 characters (Nothing between delimiter characters)<br>1 2 3 4 5 6 (6-character positive number) |
| Expressible numeric values           | -32768 to +32767 (data with symbols)<br>0 to 65535 (data without symbols)     |                                                                                                  |
| Positive number notation             | Starts with 1 (31H) to 9 (39H)                                                | 0 1 (Not allowed to start with 0)                                                                |
| Negative number notation             | Starts with -(2DH), the second character is 1 (31H) to 9 (39H)                | - 0 1 (0 is not allowed for the second character)                                                |
| Numeric value 0 notation             | 0                                                                             | - 0 (- is not allowed)<br>0 0 (Anything other than 1 character is not allowed)                   |
| Examples of normal character strings | 1<br>3 2 7 6 7<br>- 1 2<br>- 3 2 7 6 8                                        |                                                                                                  |



## 8 - 6 List of End Codes

The result of the application layer process for the instruction message can be understood from the end code of the response message.

Results other than “normal” are in two levels. An “error” occurs when nothing is processed, and a “warning” occurs when there is a possibility that some kind of processing will be performed.

### ■ End code of the read command

| End code     | Meaning                                            | Unit processing                                                                                                                        |
|--------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 00 (Normal)  | Normal termination                                 | Returns a read value                                                                                                                   |
| 99 (Error)   | Undefined command                                  | Returns only the end code (does not add data)                                                                                          |
| 10 (Error)   | Parameter error *                                  | Returns only the end code (does not add data)                                                                                          |
| 40 (Error)   | No. of data records error                          | Returns only the end code (does not add data)                                                                                          |
| 21 (Warning) | Data address error                                 | Returns the data of the corresponding data address as a 0 value                                                                        |
| 22 (Warning) | Data range error                                   | Returns the read value of the corresponding data address as 8000 or 7FFF in hexadecimal format, or -32768 or +32767 in decimal format. |
| 23 (Warning) | Not allowed depending on the instrument conditions | Returns the data of the corresponding data address as a 0 value                                                                        |

\*. The parameter errors are the following errors.

- Violation of the numeric representation
- Violation of the instruction message format

### ■ End code of the write command

| End code     | Meaning                                            | Unit processing                               |
|--------------|----------------------------------------------------|-----------------------------------------------|
| 00 (Normal)  | Normal termination                                 | Writes all data                               |
| 99 (Error)   | Undefined command                                  | Does not write any data                       |
| 10 (Error)   | Parameter error *                                  | Does not write any data                       |
| 40 (Error)   | No. of data records error                          | Does not write any data                       |
| 21 (Warning) | Data address error                                 | Does not write the corresponding data address |
| 22 (Warning) | Data range error                                   | Does not write the corresponding data address |
| 23 (Warning) | Not allowed depending on the instrument conditions | Does not write the corresponding data address |

\*. The parameter errors are the following errors.

- Violation of the numeric representation
- Violation of the instruction message format
- Addition of excess data to the end of the frame

## Chapter 8. CPL COMMUNICATIONS FUNCTION

# 8 - 7 Reception and Transmission Timing

### ■ Timing specifications for instruction and response messages

The cautions below are required with regard to the timing to transmit an instruction message from the master station and a response message from the slave station.

#### • Response monitor time

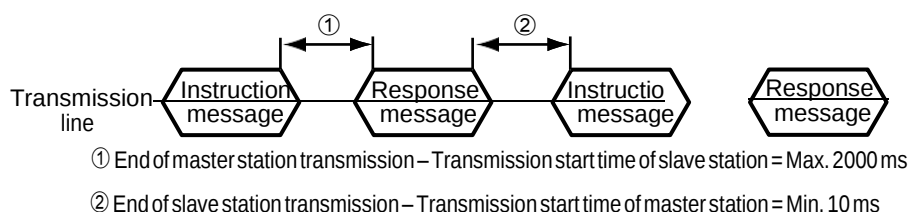
The maximum response time from the end of the instruction message transmission by the master station until when the master station receives a response message from the slave station is two seconds ((1) in the figure below).

So, the response monitor time should be set to two seconds.

Generally, when a response time-out occurs, the instruction message is resent.

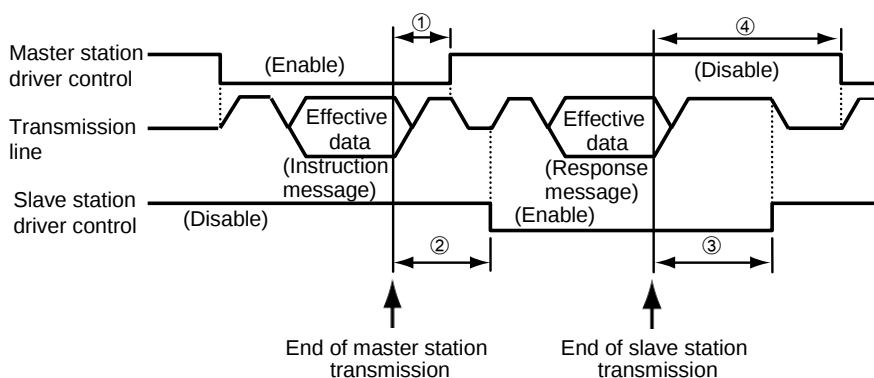
#### • Transmission start time

A wait time of 10 ms is required before the master station starts to transmit the next instruction message (to the same slave station or a different slave station) after the end of receiving response message ((2) in the figure below).



### ■ RS-485 driver control timing specifications

When the transmission/reception on the RS-485 3-wire system is directly controlled by the master station, care should be paid to the following timing:



- ① End of master station transmission - Driver disable time = Max. 500  $\mu$ s
- ② End of slave station reception – Driver enable time = Minimum response time
- ③ End of slave station transmission - Driver disable time = Max. 10 ms
- ④ End of master station reception - Driver enable time = Min. 10 ms



## Chapter 9. MODBUS COMMUNICATIONS FUNCTION

### 9 - 1 Outline of Communication

Communication with a PC, PLC or other host devices is available using a user-configured program that uses RS-485 communication.

CPL communication (Controller Peripheral Link: Yamatake Corporation's host communication protocol) or MODBUS communication can be selected as the communication protocol. This chapter describes the MODBUS communications.

#### ■ Features

The features of the unit's communication function are as follows:

- Up to 31 units can be connected to a single master station as a host device.
- When the communication specifications of the host device conform to the RS-232C interface, the communication converter CMC10L (sold separately) is required.

The CMC10L allows conversion between RS-232C and RS-485.

- Almost all of the unit parameters can be communicated.

For details on the communication parameters, refer to:

👉 Chapter 11. LIST OF COMMUNICATION DATA.

#### ❗ Handling Precautions

- In MODBUS communications, the communication address (parameter) for the module that is set in the host device may be reduced by 1 in a communication message during transmission.

Example: If the communication address (parameter) is set to 1001 in the host device, it will be 1000 in a communication message during transmission.

The module sends/receives a message to/from the communication address (parameter) that is specified in the communication message.

Be sure to understand the specifications of the host device before using the module.



## Chapter 9. MODBUS COMMUNICATIONS FUNCTION

### ■ Setup

The following setup is required for performing the MODBUS communications.

| Item name                 | Contents of setup                                                                           | Initial value |
|---------------------------|---------------------------------------------------------------------------------------------|---------------|
| Communications type       | 0: CPL<br>1: MODBUS ACSII<br>2: MODBUS RTU                                                  | 0             |
| Station address           | 0: Does not communicate<br>1 to 127                                                         | 127           |
| Transmission speed        | 0: 4800 bps<br>1: 9600 bps<br>2: 19200 bps<br>3: 38400 bps<br>4: 57600 bps<br>5: 115200 bps | 2             |
| Data format (Data length) | 0: 7 bits<br>1: 8 bits                                                                      | 1             |
| Data format (Parity)      | 0: Even parity<br>1: Odd parity<br>2: No parity                                             | 0             |
| Data format (Stop bit)    | 0: 1 bit<br>1: 2 bits                                                                       | 0             |
| Minimum response time     | 1 to 250 ms                                                                                 | 3             |

- When the communications type is set to MODBUS RTU, the operation is fixed to 8-bit data regardless of the data format (data length) setting.

#### **[!]** Handling Precautions

- The setup cannot be performed via RS-485 communications.
- If you use the Yamatake CMC10L as an RS-232C/RS-485 converter, set the minimum response time to 3 ms or longer.  
The maximum transmission speed supported by the CMC10L is 38400 bps.

### ■ Communication procedure

The communication procedure is as follows:

- [1] The instruction message is sent from the host device (master station) to one unit (slave station).
- [2] The slave station receives the instruction message, and performs read or write processing according to the content of the message.
- [3] The slave station sends a message corresponding to the processing content as a response message.
- [4] The master station receives the response message.

#### **[!]** Handling Precautions

- Two or more protocols cannot be used together on a single RS-485 transmission line (such as CPL, MODBUS ASCII, and MODBUS RTU).





## Chapter 9. MODBUS COMMUNICATIONS FUNCTION

[2] Take the two's complement of the addition result.

[3] Convert the low-order one byte of the addition result to the two characters that express the hexadecimal.

- End code (CR/LF)

This indicates the end of the message. Immediately after LF is received, the unit enters a state allowed to process the received message.



### Note

- The following is an example of the check code (LRC) calculation.

[Message example]

: : 3AH (start of message)  
'0' : 30H (first byte of the station address)  
'A' : 41H (second byte of the station address)  
'0' : 30H (first byte of the read command)  
'3' : 33H (second byte of the read command)  
'0' : 30H (first byte of the start data address)  
'3' : 33H (second byte of the start data address)  
'E' : 45H (third byte of the start data address)  
'9' : 39H (fourth byte of the start data address)  
'0' : 30H (first byte of the read count)  
'0' : 30H (second byte of the read count)  
'0' : 30H (third byte of the read count)  
'2' : 32H (fourth byte of the read count)

[1] Add from the first byte of the station address to immediately before the check code. The adding calculation is as follows:

$0AH + 03H + 03H + E9H + 00H + 02H$

The result of this calculation is FBH.

[2] The low-order one byte of the addition result FBH is unchanged at FBH. The two's complement of FBH is 05H.

[3] Convert the obtained 05H to a two-byte ASCII code. The result is:

'0' : 30H

'5' : 35H

The two bytes '0' (30H) and '5' (35H) are the two-byte check code.



## Chapter 9. MODBUS COMMUNICATIONS FUNCTION

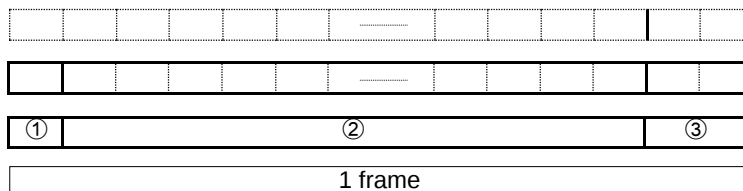
## • MODBUS RTU

All messages use binary data.

MODBUS RTU messages comprise parts (1) to (3) as shown below.

The command (details sent from the master station) and the response (details returned from the slave station) are stored in part (2).

All messages use binary data. (One box below represents one byte.)



① Station address (1 byte)

② Send message, response message

③ Check code (2 bytes)

- Station address

Of the messages received, the unit creates response messages only when station addresses are the same. Station addresses in the messages are one byte. However, when the station address is set to “0”, the unit does not respond even if the station addresses match. The unit returns the same station address as that of the received message.

- Check code (CRC)

This value is for checking whether or not some abnormality (e.g. noise) causes the message content to change during communications. The check code is two bytes.

The procedure for calculating the check code (CRC) is as follows.

The part from the start of the station address in the message to immediately before the check code is the subject of the calculation. The binary data of the message is used unchanged in the calculation. The check code is 16-bit data, and can be calculated with the C language function `get_crc16()` as shown below. In the message, the low-order one byte is first, and the high-order one byte is last. This order is the reverse of the other 16-bit data.

|                  |                                           |
|------------------|-------------------------------------------|
| [Explanation]    | Calculate the CRC 16 bits                 |
| [Argument 1]     | Character string length (number of bytes) |
| [Argument 2]     | Pointer for start of character string     |
| [Function value] | Calculation result                        |

```

unsigned short get_crc16(signed int len, const unsigned char
*p)
{
    unsigned short crc16;
    unsigned short next;
    unsigned short carry;
    signed int i;
    crc16 = 0xffff;

    while (len > 0)
    {
        next = (unsigned short)*p;
        crc16 ^= next;
        for (i = 0; i < 8; i++)
        {
            carry = crc16 & 0x0001;
            crc16 >>= 1;
            if (carry != 0)
            {
                crc16 ^= 0xa001;
            }
        }
        p++;
        len--;
    }

    return crc16;
}

```



## Chapter 9. MODBUS COMMUNICATIONS FUNCTION

- One frame end judgment

The message end (one frame end) is judged when the time in which a character has not been received exceeds the time specified for the transmission speed. One frame end is judged when the next character is not received before the time-outs shown below.

However, note that there is a variation of  $\pm 1$  ms in the time-outs shown in the table below.

| Set transmission speed (bps) | Time-out transmission speed (bps) |
|------------------------------|-----------------------------------|
| 4800                         | 9 ms or longer                    |
| 9600                         | 5 ms or longer                    |
| 19200                        | 3 ms or longer                    |
| 38400                        | 2 ms or longer                    |
| 57600                        | 2 ms or longer                    |
| 115200                       | 2 ms or longer                    |

### ■ Command types

The command (send message) types supported by this unit are as follows:

| Command type             | Description    |              | Conformance class |
|--------------------------|----------------|--------------|-------------------|
|                          | ASCII          | RTU          |                   |
| Multiple data item read  | "03" (2 bytes) | 03H (1 byte) | class 0           |
| Multiple data item write | "10" (2 bytes) | 10H (1 byte) | class 0           |
| One data item write      | "06" (2 bytes) | 06H (1 byte) | class 1 Note:     |

Note: This unit does not support class 1 commands other than one data item write.

### ■ Exception codes

When a response message error occurs, the following exception codes are added after the function code.

| Error type           | Exception code |              | Description                                             |
|----------------------|----------------|--------------|---------------------------------------------------------|
|                      | ASCII          | RTU          |                                                         |
| Invalid function     | "01" (2 bytes) | 01H (1 byte) | Function code not supported code by the unit            |
| Invalid data address | "02" (2 bytes) | 02H (1 byte) | Including data addresses that cannot be read or written |
| Invalid data         | "03" (2 bytes) | 03H (1 byte) | Errors other than the above                             |

### ■ No. of data records

The number of data records that can be read or written in a one frame message is as follows:

| Command type (Function code)  | No. of data records |               |               |               |
|-------------------------------|---------------------|---------------|---------------|---------------|
|                               | ASCII               |               | RTU           |               |
|                               | RAM                 | EEPROM        | RAM           | EEPROM        |
| Multiple data item read (03)  | 1 to 16 items       | 1 to 16 items | 1 to 32 items | 1 to 32 items |
| Multiple data item write (10) | 1 to 16 items       | 1 to 16 items | 1 to 32 items | 1 to 32 items |
| One data item write (06)      | 1 item              | 1 item        | 1 item        | 1 item        |



### Note

- For details on the MODBUS communication specifications, refer to:
  - ☞ "Modicon Modbus Protocol Reference Guide (PI-MBUS-300 Rev.J)" MODICON, Inc.
  - ☞ "OPEN MODBUS/TCP SPECIFICATION (Release 1.0)" Schneider Electric.



## Chapter 9. MODBUS COMMUNICATIONS FUNCTION

## 9 - 3 Description of Commands

## ■ Multiple data item read command (03H)

Data in continuous data addresses is read in a hexadecimal format.

## ● Instruction message

Specifies the start data address and the number of data records. The structure of the instruction message is as follows:

## MODBUS ASCII

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 3AH | 30H | 41H | 30H | 33H | 30H | 33H | 45H | 39H | 30H | 30H | 30H | 32H | 30H | 35H | 0DH | 0AH |
| :   | 0   | A   | 0   | 3   | 0   | 3   | E   | 9   | 0   | 0   | 0   | 2   | 0   | 5   | CR  | LF  |
| ①   | ②   | ③   | ④   |     | ⑤   |     |     | ⑥   | ⑦   |     |     |     |     |     |     |     |

- ① Start code
- ② Station address
- ③ Function code
- ④ Start data address
- ⑤ No. of data records
- ⑥ Check code (LRC)
- ⑦ End code

## MODBUS RTU

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 0AH | 03H | 03H | E9H | 00H | 02H | 14H | C0H |
| ①   | ②   | ③   | ④   | ⑤   |     |     |     |

- ① Start code
- ② Function code
- ③ Start data address
- ④ No. of data records
- ⑤ Check code (CRC)

## ● Response message

The structure of the response message is as follows:

## MODBUS ASCII

## • Normal example

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 3AH | 30H | 41H | 30H | 33H | 30H | 34H | 30H | 33H | 30H | 31H | 30H | 30H | 30H | 33H | 45H | 38H | 0DH | 0AH |
| :   | 0   | A   | 0   | 3   | 0   | 4   | 0   | 3   | 0   | 1   | 0   | 0   | 0   | 3   | E   | 8   | CR  | LF  |
| ①   | ②   | ③   | ④   | ⑤   |     | ⑥   |     |     | ⑦   |     | ⑧   |     |     |     |     |     |     |     |

- ① Start code
- ② Station address
- ③ Function code
- ④ No. of data records ×2
- ⑤ Read data 1
- ⑥ Read data 2
- ⑦ Check code (LRC)
- ⑧ End code



## Chapter 9. MODBUS COMMUNICATIONS FUNCTION

## • Error example

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 3AH | 30H | 41H | 38H | 34H | 30H | 31H | 37H | 31H | 0DH | 0AH |
| :   | 0   | A   | 8   | 4   | 0   | 1   | 7   | 1   | CR  | LF  |
| ①   | ②   | ③   | ④   | ⑤   | ⑥   |     |     |     |     |     |

① Start code

② Station address

③ Function code (When an error occurs, 1 is set for the MSB of the send message's function code. In this example, a response of 84 is given for the undefined 04.)

④ Exception code  page 9-6)

⑤ Check code (LRC)

⑥ End code

## MODBUS RTU

## • Normal example

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0AH | 03H | 04H | 03H | 01H | 00H | 03H | 51H | 76H |
| ①   | ②   | ③   | ④   | ⑤   | ⑥   |     |     |     |

① Station address

② Function code

③ Read count ×2 (number of bytes)

④ Read data 1

⑤ Read data 2

⑥ Check code (CRC)

## • Error example

|     |     |     |     |     |
|-----|-----|-----|-----|-----|
| 0AH | 84H | 01H | F3H | 02H |
| ①   | ②   | ③   | ④   |     |

① Station address

② Function code (When an error occurs, 1 is set for the MSB of the send message's function code. In this example, a response of 84 is given for the undefined 04.)

③ Exception code  page 9-6)

④ Check code (CRC)



## Chapter 9. MODBUS COMMUNICATIONS FUNCTION

## ■ Multiple data item write command (10H)

Writing is performed in a hexadecimal format to data in continuous data addresses.

## ● Instruction message

Specifies the start address, number of data records, and at least one data record.

The structure of the instruction message is as follows:

Example: The 01A0H and 0E53H values are written in two continuous data addresses from 05DDH.

## MODBUS ASCII

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 3AH | 30H | 31H | 31H | 30H | 30H | 35H | 44H | 44H | 30H | 30H | 30H | 32H | 30H | 34H |
| :   | 0   | 1   | 1   | 0   | 0   | 5   | D   | D   | 0   | 0   | 0   | 2   | 0   | 4   |
| ①   | ②   | ③   | ④   | ⑤   | ⑥   | ⑦   | ⑧   | ⑨   | ⑩   | ⑪   | ⑫   | ⑬   | ⑭   | ⑮   |

|     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 30H | 31H | 41H | 30H | 30H | 45H | 35H | 33H | 30H | 35H | 0DH | 0AH |
| 0   | 1   | A   | 0   | 0   | E   | 5   | 3   | 0   | 5   | CR  | LF  |
| ⑦   | ⑧   | ⑨   | ⑩   | ⑪   | ⑫   | ⑬   | ⑭   | ⑮   | ⑯   | ⑰   | ⑱   |

- ① Start code
- ② Station address
- ③ Function code
- ④ Write start data address 1
- ⑤ No. of write data records
- ⑥ No. of write data records ×2
- ⑦ Write data 1
- ⑧ Write data 2
- ⑨ Check code (LRC)
- ⑩ End code

## MODBUS RTU

|     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 01H | 10H | 05H | DDH | 00H | 02H | 04H | 01H | A0H | 0EH | 53H | 45H | B9H |
| ①   | ②   | ③   | ④   | ⑤   | ⑥   | ⑦   | ⑧   | ⑨   | ⑩   | ⑪   | ⑫   | ⑬   |

- ① Station address
- ② Function code
- ③ Write start data address
- ④ No. of write data records
- ⑤ No. of write data records ×2
- ⑥ Write data 1
- ⑦ Write data 2
- ⑧ Check code (CRC)



## Chapter 9. MODBUS COMMUNICATIONS FUNCTION

- Response message

The structure of the response message is as follows:

## MODBUS ASCII

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 3AH | 30H | 31H | 31H | 30H | 30H | 35H | 44H | 44H | 30H | 30H | 30H | 32H | 30H | 42H | 0DH | 0AH |
| :   | 0   | 1   | 1   | 0   | 0   | 5   | D   | D   | 0   | 0   | 0   | 2   | 0   | B   | CR  | LF  |
| ①   | ②   | ③   |     |     |     | ④   |     |     |     | ⑤   |     |     | ⑥   |     | ⑦   |     |

- ① Start code
- ② Station address
- ③ Function code
- ④ Write start data address 1
- ⑤ No. of write data records
- ⑥ Check code
- ⑦ End code

## MODBUS RTU

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 01H | 10H | 05H | DDH | 00H | 02H | D1H | 3EH |
| ①   | ②   | ③   |     | ④   |     | ⑤   |     |

- ① Station address
- ② Function code
- ③ Write start data address
- ④ No. of write data records
- ⑤ Check code (CRC)



## Note

- The response message when an error occurs is the same as when an error occurs for the multiple data item read command.



## Chapter 9. MODBUS COMMUNICATIONS FUNCTION

## ■ One data item write command (06H)

Writing is performed in a hexadecimal format to data for which there is only one data address.

## • Send message

Specifies the data address and the data. The structure of the instruction message is as follows:

Example: The 01A0H value is written in the 05DDH data address.

## MODBUS ASCII

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 3AH | 30H | 31H | 30H | 36H | 30H | 35H | 44H | 44H | 30H | 31H | 41H | 30H | 37H | 36H | 0DH | 0AH |
| :   | 0   | 1   | 0   | 6   | 0   | 5   | D   | D   | 0   | 1   | A   | 0   | 7   | 6   | CR  | LF  |
| ①   | ②   | ③   |     |     | ④   |     |     |     | ⑤   |     |     |     | ⑥   |     | ⑦   |     |

- ① Start code
- ② Station address
- ③ Function code
- ④ Data address
- ⑤ Write data
- ⑥ Check code (LRC)
- ⑦ End code

## MODBUS RTU

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 01H | 06H | 05H | DDH | 01H | A0H | 18H | D4H |
| ①   | ②   | ③   |     | ④   |     | ⑤   |     |

- ① Station address
- ② Function code
- ③ Data address
- ④ Write data
- ⑤ Check code (CRC)

## • Response message

The normal response message is the same as the send message.



## Note

- The response message when an error occurs is the same as when an error occurs for the multiple data item read command.



## Chapter 9. MODBUS COMMUNICATIONS FUNCTION

## 9 - 4 Numeric Representation

The numeric values include the data address, number of data records and data values, and all use the hexadecimal notation. The numeric representation varies depending on whether the communications type is MODBUS ASCII or MODBUS RTU. This notation method is shared by both the instruction message and the response message.

## ■ ASCII hexadecimals

The ASCII hexadecimal specifications are shown in the table below.

If the message does not match the specifications, the unit does not process the instruction message and instead returns an error response.

| Item                                      | Specification                                                                | Example of specification mismatch                                                        |
|-------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Available characters                      | 0 (30H) to 9 (39H)<br>A (41H) to F (46H)                                     | 1 2 3 a (a is not allowed)<br>- 1 2 3 (- is not allowed)<br>1 2 3 (Space is not allowed) |
| Number of characters                      | 4 or 2                                                                       | 1 2 3 (3 characters)<br>0 1 2 3 4 (5 characters)                                         |
| Expressible numeric values (4 characters) | 8000H to 7FFFFH (data with symbols)<br>0000H to FFFFH (data without symbols) |                                                                                          |
| Expressible numeric values (2 characters) | 00H to FFH (data without symbols)                                            |                                                                                          |
| Examples of normal character strings      | 0 0 0 0<br>1 2 A B<br>0 1 2 3<br>F F F F<br>0 1<br>1 0                       |                                                                                          |

## ■ RTU hexadecimals

The RTU hexadecimal specifications are shown in the table below.

If the message does not match the specifications, the unit does not process the instruction message and instead returns an error response.

| Item                                      | Specification                                                                | Example of specification mismatch |
|-------------------------------------------|------------------------------------------------------------------------------|-----------------------------------|
| Available characters                      | 00H to FFH (all)                                                             |                                   |
| Number of characters                      | 2 or 1                                                                       | 00H 01H 02H (3 characters)        |
| Expressible numeric values (2 characters) | 8000H to 7FFFFH (data with symbols)<br>0000H to FFFFH (data without symbols) |                                   |
| Expressible numeric values (1 characters) | 00H to FFH (data without symbols)                                            |                                   |
| Examples of normal character strings      | 00H 01H<br>12H ABH<br>01H 23H<br>FFH FFH<br>10H<br>04H                       |                                   |



## 9 - 5 Specifications Shared with CPL Communications Function

---

### ■ Definition of data addresses

☞ Refer to 8-4 Definition of Data Addresses (page 8-12).

### ■ RS-485 driver control timing specifications

☞ Refer to 8-7 Reception and Transmission Timing (page 8-16).





## Chapter 10. MODBUS TCP COMMUNICATIONS FUNCTION

### 10 - 1 Outline of Communication

This unit can communicate with host devices in MODBUS TCP protocol that conforms to Ethernet TCP/IP.

#### ■ Features

The features of the unit's communication function are as follows:

- When an Ethernet interface communication adapter (1 port) or communication box (4 ports) is mounted on the right or left (communication box is left only) of a connected unit and an Ethernet cable is connected, all modules in the connected block can be accessed.
- The host device can perform communication via Ethernet when the unit's IP address is specified.
- Almost all of the unit parameters can be communicated.

For details on the communication parameters, refer to:

☞ Chapter 11. LIST OF COMMUNICATION DATA.

#### ❗ Handling Precautions

- In MODBUS communications, the communication address (parameter) for the module that is set in the host device may be reduced by 1 in a communication message during transmission.

Example: If the communication address (parameter) is set to 1001 in the host device, it will be 1000 in a communication message during transmission.

The module sends/receives a message to/from the communication address (parameter) that is specified in the communication message.

Be sure to understand the specifications of the host device before using the module.

#### ■ Setup

The following setup is required for performing the MODBUS TCP communications with the unit.

| Item            | Initial value   |
|-----------------|-----------------|
| IP address      | 192.168.255.254 |
| Net mask        | 255.255.255.0   |
| Default gateway | None            |

- The net mask and default gateway can be set for each chain by selecting "All" in the actual module configuration screen of the SLP-NX (sold separately).
- The port number used by MODBUS TCP is 502, but this can be changed as required.

#### ■ Communication procedure

The communication procedure is as follows:

- [1] The instruction message is sent from the host device (master station) to one unit (slave station).
- [2] The slave station receives the instruction message, and performs read or write processing according to the content of the message.
- [3] The slave station sends a message corresponding to the processing content as a response message.
- [4] The master station receives the response message.

#### ❗ Handling Precautions

- Up to two TCP connections can be supported for MODBUS TCP. However, you should also check for restrictions resulting from other communications or communication functions.



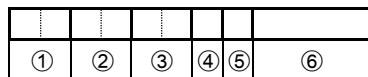
## Chapter 10. MODBUS TCP COMMUNICATIONS FUNCTION

# 10 - 2 Message Structure

### ■ Message structure

A TCP/IP frame is used. The MODBUS TCP message is expressed in the TCP data section.

#### ● MODBUS TCP



- |                                    |                                                  |
|------------------------------------|--------------------------------------------------|
| ① Transaction Identifier (2 bytes) | No particular definition.                        |
| ② Protocol Identifier (2 bytes)    | 0x0000 when the protocol is MODBUS.              |
| ③ Length (2 bytes)                 | Expresses the number of bytes in (4) to (6).     |
| ④ Unit Identifier (1 byte)         | Specify 0xFF or 0x00.                            |
| ⑤ Function (1 byte)                | Specify a function code.                         |
| ⑥ Data (n bytes)                   | A data string that depends on the function code. |

#### ● Data details

- Transaction Identifier  
Contains the same value in a request - response pair.  
The communication master station can use the Transaction Identifier to recognize that a response is the pair of a request.
- Protocol Identifier  
Specify with 0x0000 when the protocol is MODBUS.
- Length  
Expresses the data length from Unit Identifier to Data as the number of bytes.
- Unit Identifier  
Specify 0xFF or 0x00.
- Function  
Specify a function code.
- Data  
The communication data.

#### ● Frame detection method

A TCP frame is detected as one MODBUS TCP frame.

#### ● Used port

The TCP port number used by MODBUS TCP is No. 502. (Can be changed.)

#### ● Function code

Supports Function Codes 3(0x03), 16(0x10) and (0x06).



## Chapter 10. MODBUS TCP COMMUNICATIONS FUNCTION

## ■ Exception codes

When a response message error occurs, the following exception codes are added after the function code.

| Error type           | Exception code | Description                                             |
|----------------------|----------------|---------------------------------------------------------|
| Invalid function     | "01" (2 bytes) | Function code not supported code by the unit            |
| Invalid data address | "02" (2 bytes) | Including data addresses that cannot be read or written |
| Invalid data         | "03" (2 bytes) | Errors other than the above                             |
| Busy                 | "06" (2 bytes) | Status where the unit cannot process. Resend.           |

## ■ No. of data records

The number of data records that can be read or written in a one frame message is as follows:

| Command type<br>(Function code) | No. of data records |               |
|---------------------------------|---------------------|---------------|
|                                 | RAM                 | EEPROM        |
| Multiple data item read (03)    | 1 to 64 items       | 1 to 64 items |
| Multiple data item write (10)   | 1 to 32 items       | 1 to 32 items |
| One data item write (06)        | 1 item              | 1 item        |



## Note

- For details on the MODBUS communication specifications, refer to:  
 "Modicon Modbus Protocol Reference Guide (PI-MBUS-300 Rev.J)"  
 MODICON, Inc.
- OPEN MODBUS/TCP SPECIFICATION (Release 1.0)" Schneider Electric.



## Chapter 10. MODBUS TCP COMMUNICATIONS FUNCTION

# 10 - 3 Description of Commands

### ■ Application section

The following data descriptions

|   |   |
|---|---|
| X | X |
| ① |   |

are single byte hex descriptions (left side is the upper nibble).

### ■ Read holding registers (FC=0x03)

#### • One data item

##### • Request

|   |   |   |  |   |  |  |  |
|---|---|---|--|---|--|--|--|
| 0 | 3 |   |  |   |  |  |  |
| ① |   | ② |  | ③ |  |  |  |

① Function code (Read Holding Registers)

② Start data address

③ Number of data records (= 1)

##### • Normal response

|   |   |   |  |   |  |  |  |
|---|---|---|--|---|--|--|--|
| 0 | 3 |   |  |   |  |  |  |
| ① |   | ② |  | ③ |  |  |  |

① Function code (Read Holding Registers)

② Number of bytes (= 2)

③ Read data

##### • Abnormal response

|   |   |   |  |
|---|---|---|--|
| 8 | 3 |   |  |
| ① |   | ② |  |

① Error code (Read Holding Registers)

② Exception code (= 01/02/03/06)

#### • Multiple data items

##### • Request

|   |   |   |  |   |  |  |  |
|---|---|---|--|---|--|--|--|
| 0 | 3 |   |  |   |  |  |  |
| ① |   | ② |  | ③ |  |  |  |

① Function code (Read Holding Registers)

② Start data address

③ Number of data records

##### • Normal response

|   |   |   |  |   |  |  |  |  |  |  |  |  |   |  |
|---|---|---|--|---|--|--|--|--|--|--|--|--|---|--|
| 0 | 3 |   |  |   |  |  |  |  |  |  |  |  |   |  |
| ① |   | ② |  | ③ |  |  |  |  |  |  |  |  | ③ |  |

① Function code (Read Holding Registers)

② Number of bytes

③ Read data (data items continue for the number of read data items)

##### • Abnormal response

|   |   |   |  |
|---|---|---|--|
| 8 | 3 |   |  |
| ① |   | ② |  |

① Error code (Read Holding Registers)

② Exception code (= 01/02/03/06)





## Chapter 10. MODBUS TCP COMMUNICATIONS FUNCTION

### ■ Write single register (FC=0x06)

#### • Request

|   |   |   |  |  |   |  |  |
|---|---|---|--|--|---|--|--|
| 0 | 6 |   |  |  |   |  |  |
| ① |   | ② |  |  | ③ |  |  |

① Function code (Write Single Register)

② Write address

③ Write data

#### • Normal response

|   |   |   |  |  |   |  |  |
|---|---|---|--|--|---|--|--|
| 0 | 6 |   |  |  |   |  |  |
| ① |   | ② |  |  | ③ |  |  |

① Function code (Write Single Register)

② Write address

③ Write data (echo back)

#### • Abnormal response

|   |   |   |  |
|---|---|---|--|
| 8 | 6 |   |  |
| ① |   | ② |  |

① Error code (Write Single Register)

② Exception code (= 01/02/03/06)



## Chapter 11. LIST OF COMMUNICATION DATA

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## Chapter 11. LIST OF COMMUNICATION DATA

The following shows the meanings of the symbols stated in the "RAM/EEPROM Read/Write" columns:

No symbol : Possible

× : Impossible

### Handling Precautions

- When reading the EEPROM address, data in the RAM is read in the same manner as the reading of the RAM address.
- Even there is no symbol, reading or writing might not be possible depending on the conditions.

### Decimal point information

|        |                                                                                                                                   |
|--------|-----------------------------------------------------------------------------------------------------------------------------------|
| —      | : No decimal point                                                                                                                |
| 1 to 3 | : Decimal point position (original value of data is multiplied by 10, 100, or 1000)                                               |
| PID_PV | : Determined by the settings for loops 1 to 4 in the loop (basic) bank (loop PV/SV decimal point position).                       |
| PV     | : Determined by the settings for PV1 to 4 in the PV input bank (decimal point position).                                          |
| RAMP   | : Determined by the settings for loops 1 to 4 in the SP configuration bank (SP ramp unit).                                        |
| OUT    | : Determined by the settings for outputs 1 to 4 in the continuous output bank (output decimal point position).                    |
| EV     | : Determined by the settings for event Nos. 1 to 24 in the event configuration bank (decimal point position).                     |
| PID    | : Determined by the settings for loops 1 to 4 in the loop (extended) bank (integral time/derivative time decimal point position). |

### Handling Precautions

- In MODBUS communications, the communication address (parameter) for the module that is set in the host device may be reduced by 1 in a communication message during transmission.

Example: If the communication address (parameter) is set to 1001 in the host device, it will be 1000 in a communication message during transmission.

The module sends/receives a message to/from the communication address (parameter) that is specified in the communication message. Be sure to understand the specifications of the host device before using the module.



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## Chapter 11. LIST OF COMMUNICATION DATA

### Monitor/Communications Profile

| Folder name | Bank name           | No. | Item name                 | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|---------------------|-----|---------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                     |     |                           | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Monitor     | Comm. (device)      | 1   | READY/RUN                 | 14352       | 3810         | 30736          | 7810         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 1   | Auto/Manual               | 14353       | 3811         | 30737          | 7811         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 1   | AT cancel/execute         | 14354       | 3812         | 30738          | 7812         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 1   | LSP/RSP                   | 14355       | 3813         | 30739          | 7813         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 1   | PV (loop)                 | 14356       | 3814         | 30740          | 7814         |      | x     |        | x     | PID_PV                    |         |
| Monitor     | Comm. (device)      | 1   | SP                        | 14357       | 3815         | 30741          | 7815         |      | x     |        | x     | PID_PV                    |         |
| Monitor     | Comm. (device)      | 1   | MV                        | 14358       | 3816         | 30742          | 7816         |      | x     |        | x     | 1                         |         |
| Monitor     | Comm. (device)      | 2   | READY/RUN                 | 14360       | 3818         | 30744          | 7818         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 2   | Auto/Manual               | 14361       | 3819         | 30745          | 7819         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 2   | AT cancel/execute         | 14362       | 381A         | 30746          | 781A         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 2   | LSP/RSP                   | 14363       | 381B         | 30747          | 781B         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 2   | PV (loop)                 | 14364       | 381C         | 30748          | 781C         |      | x     |        | x     | PID_PV                    |         |
| Monitor     | Comm. (device)      | 2   | SP                        | 14365       | 381D         | 30749          | 781D         |      | x     |        | x     | PID_PV                    |         |
| Monitor     | Comm. (device)      | 2   | MV                        | 14366       | 381E         | 30750          | 781E         |      | x     |        | x     | 1                         |         |
| Monitor     | Comm. (device)      | 3   | READY/RUN                 | 14368       | 3820         | 30752          | 7820         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 3   | Auto/Manual               | 14369       | 3821         | 30753          | 7821         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 3   | AT cancel/execute         | 14370       | 3822         | 30754          | 7822         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 3   | PV (loop)                 | 14372       | 3824         | 30756          | 7824         |      | x     |        | x     | PID_PV                    |         |
| Monitor     | Comm. (device)      | 3   | SP                        | 14373       | 3825         | 30757          | 7825         |      | x     |        | x     | PID_PV                    |         |
| Monitor     | Comm. (device)      | 3   | MV                        | 14374       | 3826         | 30758          | 7826         |      | x     |        | x     | 1                         |         |
| Monitor     | Comm. (device)      | 4   | READY/RUN                 | 14376       | 3828         | 30760          | 7828         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 4   | Auto/Manual               | 14377       | 3829         | 30761          | 7829         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 4   | AT cancel/execute         | 14378       | 382A         | 30762          | 782A         |      | x     |        | x     | -                         |         |
| Monitor     | Comm. (device)      | 4   | PV (loop)                 | 14380       | 382C         | 30764          | 782C         |      | x     |        | x     | PID_PV                    |         |
| Monitor     | Comm. (device)      | 4   | SP                        | 14381       | 382D         | 30765          | 782D         |      | x     |        | x     | PID_PV                    |         |
| Monitor     | Comm. (device)      | 4   | MV                        | 14382       | 382E         | 30766          | 782E         |      | x     |        | x     | 1                         |         |
| Monitor     | Comm. (operation)   | 1   | SP group selection        | 14592       | 3900         | 30976          | 7900         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 1   | LSP                       | 14593       | 3901         | 30977          | 7901         |      |       |        |       | PID_PV                    |         |
| Monitor     | Comm. (operation)   | 1   | Manual MV                 | 14594       | 3902         | 30978          | 7902         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (operation)   | 1   | READY/RUN                 | 14595       | 3903         | 30979          | 7903         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 1   | Auto/Manual               | 14596       | 3904         | 30980          | 7904         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 1   | AT cancel/execute         | 14597       | 3905         | 30981          | 7905         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 1   | LSP/RSP                   | 14598       | 3906         | 30982          | 7906         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 2   | SP group selection        | 14600       | 3908         | 30984          | 7908         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 2   | LSP                       | 14601       | 3909         | 30985          | 7909         |      |       |        |       | PID_PV                    |         |
| Monitor     | Comm. (operation)   | 2   | Manual MV                 | 14602       | 390A         | 30986          | 790A         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (operation)   | 2   | READY/RUN                 | 14603       | 390B         | 30987          | 790B         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 2   | Auto/Manual               | 14604       | 390C         | 30988          | 790C         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 2   | AT cancel/execute         | 14605       | 390D         | 30989          | 790D         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 2   | LSP/RSP                   | 14606       | 390E         | 30990          | 790E         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 3   | SP group selection        | 14608       | 3910         | 30992          | 7910         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 3   | LSP                       | 14609       | 3911         | 30993          | 7911         |      |       |        |       | PID_PV                    |         |
| Monitor     | Comm. (operation)   | 3   | Manual MV                 | 14610       | 3912         | 30994          | 7912         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (operation)   | 3   | READY/RUN                 | 14611       | 3913         | 30995          | 7913         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 3   | Auto/Manual               | 14612       | 3914         | 30996          | 7914         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 3   | AT cancel/execute         | 14613       | 3915         | 30997          | 7915         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 4   | SP group selection        | 14616       | 3918         | 31000          | 7918         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 4   | LSP                       | 14617       | 3919         | 31001          | 7919         |      |       |        |       | PID_PV                    |         |
| Monitor     | Comm. (operation)   | 4   | Manual MV                 | 14618       | 391A         | 31002          | 791A         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (operation)   | 4   | READY/RUN                 | 14619       | 391B         | 31003          | 791B         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 4   | Auto/Manual               | 14620       | 391C         | 31004          | 791C         |      |       |        |       | -                         |         |
| Monitor     | Comm. (operation)   | 4   | AT cancel/execute         | 14621       | 391D         | 31005          | 791D         |      |       |        |       | -                         |         |
| Monitor     | Comm. (current PID) | 1   | Current proportional band | 14848       | 3A00         | 31232          | 7A00         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 1   | Current integral time     | 14849       | 3A01         | 31233          | 7A01         |      |       |        |       | PID                       |         |
| Monitor     | Comm. (current PID) | 1   | Current derivative time   | 14850       | 3A02         | 31234          | 7A02         |      |       |        |       | PID                       |         |
| Monitor     | Comm. (current PID) | 1   | Current manual reset      | 14851       | 3A03         | 31235          | 7A03         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 1   | Current output low limit  | 14852       | 3A04         | 31236          | 7A04         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 1   | Current output high limit | 14853       | 3A05         | 31237          | 7A05         |      |       |        |       | 1                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Monitor/Communications Profile

| Folder name | Bank name           | No. | Item name                             | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|---------------------|-----|---------------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                     |     |                                       | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Monitor     | Comm. (current PID) | 1   | Current proportional band for cooling | 14854       | 3A06         | 31238          | 7A06         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 1   | Current integral time for cooling     | 14855       | 3A07         | 31239          | 7A07         |      |       |        |       | PID                       |         |
| Monitor     | Comm. (current PID) | 1   | Current derivative time for cooling   | 14856       | 3A08         | 31240          | 7A08         |      |       |        |       | PID                       |         |
| Monitor     | Comm. (current PID) | 1   | Current MV low limit for cooling      | 14858       | 3A0A         | 31242          | 7A0A         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 1   | Current MV high limit for cooling     | 14859       | 3A0B         | 31243          | 7A0B         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 2   | Current proportional band             | 14860       | 3A0C         | 31244          | 7A0C         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 2   | Current integral time                 | 14861       | 3A0D         | 31245          | 7A0D         |      |       |        |       | PID                       |         |
| Monitor     | Comm. (current PID) | 2   | Current derivative time               | 14862       | 3A0E         | 31246          | 7A0E         |      |       |        |       | PID                       |         |
| Monitor     | Comm. (current PID) | 2   | Current manual reset                  | 14863       | 3A0F         | 31247          | 7A0F         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 2   | Current output low limit              | 14864       | 3A10         | 31248          | 7A10         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 2   | Current output high limit             | 14865       | 3A11         | 31249          | 7A11         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 2   | Current proportional band for cooling | 14866       | 3A12         | 31250          | 7A12         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 2   | Current integral time for cooling     | 14867       | 3A13         | 31251          | 7A13         |      |       |        |       | PID                       |         |
| Monitor     | Comm. (current PID) | 2   | Current derivative time for cooling   | 14868       | 3A14         | 31252          | 7A14         |      |       |        |       | PID                       |         |
| Monitor     | Comm. (current PID) | 2   | Current MV low limit for cooling      | 14870       | 3A16         | 31254          | 7A16         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 2   | Current MV high limit for cooling     | 14871       | 3A17         | 31255          | 7A17         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 3   | Current proportional band             | 14872       | 3A18         | 31256          | 7A18         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 3   | Current integral time                 | 14873       | 3A19         | 31257          | 7A19         |      |       |        |       | PID                       |         |
| Monitor     | Comm. (current PID) | 3   | Current derivative time               | 14874       | 3A1A         | 31258          | 7A1A         |      |       |        |       | PID                       |         |
| Monitor     | Comm. (current PID) | 3   | Current manual reset                  | 14875       | 3A1B         | 31259          | 7A1B         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 3   | Current output low limit              | 14876       | 3A1C         | 31260          | 7A1C         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 3   | Current output high limit             | 14877       | 3A1D         | 31261          | 7A1D         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 4   | Current proportional band             | 14884       | 3A24         | 31268          | 7A24         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 4   | Current integral time                 | 14885       | 3A25         | 31269          | 7A25         |      |       |        |       | PID                       |         |
| Monitor     | Comm. (current PID) | 4   | Current derivative time               | 14886       | 3A26         | 31270          | 7A26         |      |       |        |       | PID                       |         |
| Monitor     | Comm. (current PID) | 4   | Current manual reset                  | 14887       | 3A27         | 31271          | 7A27         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 4   | Current output low limit              | 14888       | 3A28         | 31272          | 7A28         |      |       |        |       | 1                         |         |
| Monitor     | Comm. (current PID) | 4   | Current output high limit             | 14889       | 3A29         | 31273          | 7A29         |      |       |        |       | 1                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Monitor/Loop Mode

| Folder name | Bank name | No. | Item name     | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------|-----|---------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |           |     |               | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Monitor     | Loop mode | 1   | RUN/READY     | 6960        | 1B30         | 23344          | 5B30         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 1   | Auto/Manual   | 6961        | 1B31         | 23345          | 5B31         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 1   | AT stop/start | 6962        | 1B32         | 23346          | 5B32         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 1   | LSP/RSP       | 6963        | 1B33         | 23347          | 5B33         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 2   | RUN/READY     | 6976        | 1B40         | 23360          | 5B40         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 2   | Auto/Manual   | 6977        | 1B41         | 23361          | 5B41         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 2   | AT stop/start | 6978        | 1B42         | 23362          | 5B42         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 2   | LSP/RSP       | 6979        | 1B43         | 23363          | 5B43         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 3   | RUN/READY     | 6992        | 1B50         | 23376          | 5B50         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 3   | Auto/Manual   | 6993        | 1B51         | 23377          | 5B51         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 3   | AT stop/start | 6994        | 1B52         | 23378          | 5B52         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 4   | RUN/READY     | 7008        | 1B60         | 23392          | 5B60         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 4   | Auto/Manual   | 7009        | 1B61         | 23393          | 5B61         |      |       |        |       | -                         |         |
| Monitor     | Loop mode | 4   | AT stop/start | 7010        | 1B62         | 23394          | 5B62         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Monitor/Monitor

| Folder name | Bank name              | No. | Item name                    | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks                 |
|-------------|------------------------|-----|------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|-------------------------|
|             |                        |     |                              | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |                         |
| Monitor     | Alarm                  | 1   | Alarm information 1          | 10288       | 2830         | 26672          | 6830         |      | x     |        | x     | -                         | See Alarm information 1 |
| Monitor     | Alarm                  | 1   | Alarm information 2          | 10289       | 2831         | 26673          | 6831         |      | x     |        | x     | -                         | See Alarm information 2 |
| Monitor     | Alarm                  | 1   | Alarm information 3          | 10290       | 2832         | 26674          | 6832         |      | x     |        | x     | -                         | See Alarm information 3 |
| Monitor     | Alarm                  | 1   | Alarm information 4          | 10291       | 2833         | 26675          | 6833         |      | x     |        | x     | -                         | See Alarm information 4 |
| Monitor     | Basic                  | 1   | PV (loop)                    | 10304       | 2840         | 26688          | 6840         |      | x     |        | x     | PID_PV                    |                         |
| Monitor     | Basic                  | 1   | SP                           | 10305       | 2841         | 26689          | 6841         |      | x     |        | x     | PID_PV                    |                         |
| Monitor     | Basic                  | 1   | MV                           | 10306       | 2842         | 26690          | 6842         |      | x     |        | x     | 1                         |                         |
| Monitor     | Basic                  | 1   | Heat MV                      | 10307       | 2843         | 26691          | 6843         |      | x     |        | x     | 1                         |                         |
| Monitor     | Basic                  | 1   | Cool MV                      | 10308       | 2844         | 26692          | 6844         |      | x     |        | x     | 1                         |                         |
| Monitor     | Basic                  | 1   | AT progress                  | 10309       | 2845         | 26693          | 6845         |      | x     |        | x     | -                         |                         |
| Monitor     | Basic                  | 1   | SP group selection           | 10310       | 2846         | 26694          | 6846         |      | x     |        | x     | -                         |                         |
| Monitor     | Basic                  | 1   | PID group selection          | 10311       | 2847         | 26695          | 6847         |      | x     |        | x     | -                         |                         |
| Monitor     | Basic                  | 1   | PV (input channel)           | 10312       | 2848         | 26696          | 6848         |      | x     |        | x     | PV                        |                         |
| Monitor     | Basic                  | 2   | PV (loop)                    | 10320       | 2850         | 26704          | 6850         |      | x     |        | x     | PID_PV                    |                         |
| Monitor     | Basic                  | 2   | SP                           | 10321       | 2851         | 26705          | 6851         |      | x     |        | x     | PID_PV                    |                         |
| Monitor     | Basic                  | 2   | MV                           | 10322       | 2852         | 26706          | 6852         |      | x     |        | x     | 1                         |                         |
| Monitor     | Basic                  | 2   | Heat MV                      | 10323       | 2853         | 26707          | 6853         |      | x     |        | x     | 1                         |                         |
| Monitor     | Basic                  | 2   | Cool MV                      | 10324       | 2854         | 26708          | 6854         |      | x     |        | x     | 1                         |                         |
| Monitor     | Basic                  | 2   | AT progress                  | 10325       | 2855         | 26709          | 6855         |      | x     |        | x     | -                         |                         |
| Monitor     | Basic                  | 2   | SP group selection           | 10326       | 2856         | 26710          | 6856         |      | x     |        | x     | -                         |                         |
| Monitor     | Basic                  | 2   | PID group selection          | 10327       | 2857         | 26711          | 6857         |      | x     |        | x     | -                         |                         |
| Monitor     | Basic                  | 2   | PV (input channel)           | 10328       | 2858         | 26712          | 6858         |      | x     |        | x     | PV                        |                         |
| Monitor     | Basic                  | 3   | PV (loop)                    | 10336       | 2860         | 26720          | 6860         |      | x     |        | x     | PID_PV                    |                         |
| Monitor     | Basic                  | 3   | SP                           | 10337       | 2861         | 26721          | 6861         |      | x     |        | x     | PID_PV                    |                         |
| Monitor     | Basic                  | 3   | MV                           | 10338       | 2862         | 26722          | 6862         |      | x     |        | x     | 1                         |                         |
| Monitor     | Basic                  | 3   | AT progress                  | 10341       | 2865         | 26725          | 6865         |      | x     |        | x     | -                         |                         |
| Monitor     | Basic                  | 3   | SP group selection           | 10342       | 2866         | 26726          | 6866         |      | x     |        | x     | -                         |                         |
| Monitor     | Basic                  | 3   | PID group selection          | 10343       | 2867         | 26727          | 6867         |      | x     |        | x     | -                         |                         |
| Monitor     | Basic                  | 3   | PV (input channel)           | 10344       | 2868         | 26728          | 6868         |      | x     |        | x     | PV                        |                         |
| Monitor     | Basic                  | 4   | PV (loop)                    | 10352       | 2870         | 26736          | 6870         |      | x     |        | x     | PID_PV                    |                         |
| Monitor     | Basic                  | 4   | SP                           | 10353       | 2871         | 26737          | 6871         |      | x     |        | x     | PID_PV                    |                         |
| Monitor     | Basic                  | 4   | MV                           | 10354       | 2872         | 26738          | 6872         |      | x     |        | x     | 1                         |                         |
| Monitor     | Basic                  | 4   | AT progress                  | 10357       | 2875         | 26741          | 6875         |      | x     |        | x     | -                         |                         |
| Monitor     | Basic                  | 4   | SP group selection           | 10358       | 2876         | 26742          | 6876         |      | x     |        | x     | -                         |                         |
| Monitor     | Basic                  | 4   | PID group selection          | 10359       | 2877         | 26743          | 6877         |      | x     |        | x     | -                         |                         |
| Monitor     | Basic                  | 4   | PV (input channel)           | 10360       | 2878         | 26744          | 6878         |      | x     |        | x     | PV                        |                         |
| Monitor     | AO percent             | 1   | AO percent data              | 10448       | 28D0         | 26832          | 68D0         |      | x     |        | x     | 1                         |                         |
| Monitor     | AO percent             | 2   | AO percent data              | 10449       | 28D1         | 26833          | 68D1         |      | x     |        | x     | 1                         |                         |
| Monitor     | AO percent             | 3   | AO percent data              | 10450       | 28D2         | 26834          | 68D2         |      | x     |        | x     | 1                         |                         |
| Monitor     | AO percent             | 4   | AO percent data              | 10451       | 28D3         | 26835          | 68D3         |      | x     |        | x     | 1                         |                         |
| Monitor     | OUT/DO terminal ON/OFF | 1   | OUT/DO terminal, ON/OFF data | 10464       | 28E0         | 26848          | 68E0         |      | x     |        | x     | -                         |                         |
| Monitor     | OUT/DO terminal ON/OFF | 2   | OUT/DO terminal, ON/OFF data | 10465       | 28E1         | 26849          | 68E1         |      | x     |        | x     | -                         |                         |
| Monitor     | OUT/DO terminal ON/OFF | 3   | OUT/DO terminal, ON/OFF data | 10466       | 28E2         | 26850          | 68E2         |      | x     |        | x     | -                         |                         |
| Monitor     | OUT/DO terminal ON/OFF | 4   | OUT/DO terminal, ON/OFF data | 10467       | 28E3         | 26851          | 68E3         |      | x     |        | x     | -                         |                         |
| Monitor     | OUT/DO terminal ON/OFF | 5   | OUT/DO terminal, ON/OFF data | 10468       | 28E4         | 26852          | 68E4         |      | x     |        | x     | -                         |                         |
| Monitor     | OUT/DO terminal ON/OFF | 6   | OUT/DO terminal, ON/OFF data | 10469       | 28E5         | 26853          | 68E5         |      | x     |        | x     | -                         |                         |
| Monitor     | OUT/DO terminal ON/OFF | 7   | OUT/DO terminal, ON/OFF data | 10470       | 28E6         | 26854          | 68E6         |      | x     |        | x     | -                         |                         |
| Monitor     | OUT/DO terminal ON/OFF | 8   | OUT/DO terminal, ON/OFF data | 10471       | 28E7         | 26855          | 68E7         |      | x     |        | x     | -                         |                         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Monitor/Remaining Delay Time

| Folder name | Bank name            | No. | Item name            | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|----------------------|-----|----------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                      |     |                      | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Monitor     | Remaining delay time | 1   | Remaining delay time | 10512       | 2910         | 26896          | 6910         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 2   | Remaining delay time | 10513       | 2911         | 26897          | 6911         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 3   | Remaining delay time | 10514       | 2912         | 26898          | 6912         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 4   | Remaining delay time | 10515       | 2913         | 26899          | 6913         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 5   | Remaining delay time | 10516       | 2914         | 26900          | 6914         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 6   | Remaining delay time | 10517       | 2915         | 26901          | 6915         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 7   | Remaining delay time | 10518       | 2916         | 26902          | 6916         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 8   | Remaining delay time | 10519       | 2917         | 26903          | 6917         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 9   | Remaining delay time | 10520       | 2918         | 26904          | 6918         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 10  | Remaining delay time | 10521       | 2919         | 26905          | 6919         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 11  | Remaining delay time | 10522       | 291A         | 26906          | 691A         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 12  | Remaining delay time | 10523       | 291B         | 26907          | 691B         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 13  | Remaining delay time | 10524       | 291C         | 26908          | 691C         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 14  | Remaining delay time | 10525       | 291D         | 26909          | 691D         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 15  | Remaining delay time | 10526       | 291E         | 26910          | 691E         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 16  | Remaining delay time | 10527       | 291F         | 26911          | 691F         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 17  | Remaining delay time | 10528       | 2920         | 26912          | 6920         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 18  | Remaining delay time | 10529       | 2921         | 26913          | 6921         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 19  | Remaining delay time | 10530       | 2922         | 26914          | 6922         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 20  | Remaining delay time | 10531       | 2923         | 26915          | 6923         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 21  | Remaining delay time | 10532       | 2924         | 26916          | 6924         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 22  | Remaining delay time | 10533       | 2925         | 26917          | 6925         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 23  | Remaining delay time | 10534       | 2926         | 26918          | 6926         |      | x     |        | x     | 1                         |         |
| Monitor     | Remaining delay time | 24  | Remaining delay time | 10535       | 2927         | 26919          | 6927         |      | x     |        | x     | 1                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Monitor/Computation Result

| Folder name | Bank name          | No. | Item name                                 | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks                                                |
|-------------|--------------------|-----|-------------------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|--------------------------------------------------------|
|             |                    |     |                                           | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |                                                        |
| Monitor     | Computation result | 1   | Instrument internal computation result 1  | 10608       | 2970         | 26992          | 6970         |      | x     |        | x     | -                         | See Instrument internal computation result 1 (bitmap)  |
| Monitor     | Computation result | 1   | Instrument internal computation result 2  | 10609       | 2971         | 26993          | 6971         |      | x     |        | x     | -                         | See Instrument internal computation result 2 (bitmap)  |
| Monitor     | Computation result | 1   | Instrument internal computation result 3  | 10610       | 2972         | 26994          | 6972         |      | x     |        | x     | -                         | See Instrument internal computation result 3 (bitmap)  |
| Monitor     | Computation result | 1   | Instrument internal computation result 5  | 10612       | 2974         | 26996          | 6974         |      | x     |        | x     | -                         | See Instrument internal computation result 5 (bitmap)  |
| Monitor     | Computation result | 1   | Instrument internal computation result 13 | 10620       | 297C         | 27004          | 697C         |      | x     |        | x     | -                         | See Instrument internal computation result 13 (bitmap) |
| Monitor     | Computation result | 1   | Instrument internal computation result 21 | 10628       | 2984         | 27012          | 6984         |      | x     |        | x     | -                         | See Instrument internal computation result 21 (bitmap) |



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## Chapter 11. LIST OF COMMUNICATION DATA Monitor/Standard Bit

| Folder name | Bank name       | No. | Item name                       | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------------|-----|---------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                 |     |                                 | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Monitor     | Bits: 1024-1151 | 1   | Always 0 (Off)                  | 17664       | 4500         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Always 1 (On)                   | 17665       | 4501         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 1                         | 17728       | 4540         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 2                         | 17729       | 4541         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 3                         | 17730       | 4542         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 4                         | 17731       | 4543         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 5                         | 17732       | 4544         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 6                         | 17733       | 4545         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 7                         | 17734       | 4546         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 8                         | 17735       | 4547         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 9                         | 17736       | 4548         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 10                        | 17737       | 4549         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 11                        | 17738       | 454A         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 12                        | 17739       | 454B         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 13                        | 17740       | 454C         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 14                        | 17741       | 454D         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 15                        | 17742       | 454E         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 16                        | 17743       | 454F         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 17                        | 17744       | 4550         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 18                        | 17745       | 4551         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 19                        | 17746       | 4552         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 20                        | 17747       | 4553         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 21                        | 17748       | 4554         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 22                        | 17749       | 4555         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 23                        | 17750       | 4556         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | Event 24                        | 17751       | 4557         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | CT1 heater line break detection | 17760       | 4560         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | CT2 heater line break detection | 17761       | 4561         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | CT3 heater line break detection | 17762       | 4562         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | CT4 heater line break detection | 17763       | 4563         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | CT1 overcurrent detection       | 17764       | 4564         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | CT2 overcurrent detection       | 17765       | 4565         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | CT3 overcurrent detection       | 17766       | 4566         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | CT4 overcurrent detection       | 17767       | 4567         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | CT1 short-circuit detection     | 17768       | 4568         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | CT2 short-circuit detection     | 17769       | 4569         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | CT3 short-circuit detection     | 17770       | 456A         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1024-1151 | 1   | CT4 short-circuit detection     | 17771       | 456B         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1152-1279 | 1   | DI1 terminal status             | 17792       | 4580         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1152-1279 | 1   | DI2 terminal status             | 17793       | 4581         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1152-1279 | 1   | DI3 terminal status             | 17794       | 4582         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1152-1279 | 1   | DI4 terminal status             | 17795       | 4583         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1280-1407 | 1   | OUT1 terminal status            | 17920       | 4600         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1280-1407 | 1   | OUT2 terminal status            | 17921       | 4601         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1280-1407 | 1   | OUT3 terminal status            | 17922       | 4602         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1280-1407 | 1   | OUT4 terminal status            | 17923       | 4603         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1280-1407 | 1   | DO1 terminal status             | 17924       | 4604         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1280-1407 | 1   | DO2 terminal status             | 17925       | 4605         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1280-1407 | 1   | DO3 terminal status             | 17926       | 4606         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1280-1407 | 1   | DO4 terminal status             | 17927       | 4607         | -              | -            |      | x     | x      | x     | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Monitor/Standard Bit

| Folder name | Bank name       | No. | Item name                       | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------------|-----|---------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                 |     |                                 | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 1              | 18048       | 4680         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 2              | 18049       | 4681         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 3              | 18050       | 4682         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 4              | 18051       | 4683         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 5              | 18052       | 4684         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 6              | 18053       | 4685         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 7              | 18054       | 4686         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 8              | 18055       | 4687         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 9              | 18056       | 4688         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 10             | 18057       | 4689         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 11             | 18058       | 468A         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 12             | 18059       | 468B         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 13             | 18060       | 468C         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 14             | 18061       | 468D         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 15             | 18062       | 468E         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 16             | 18063       | 468F         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 17             | 18064       | 4690         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 18             | 18065       | 4691         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 19             | 18066       | 4692         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 20             | 18067       | 4693         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 21             | 18068       | 4694         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 22             | 18069       | 4695         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 23             | 18070       | 4696         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 24             | 18071       | 4697         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 25             | 18072       | 4698         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 26             | 18073       | 4699         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 27             | 18074       | 469A         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 28             | 18075       | 469B         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 29             | 18076       | 469C         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 30             | 18077       | 469D         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 31             | 18078       | 469E         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 32             | 18079       | 469F         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 1  | 18080       | 46A0         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 2  | 18081       | 46A1         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 3  | 18082       | 46A2         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 4  | 18083       | 46A3         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 5  | 18084       | 46A4         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 6  | 18085       | 46A5         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 7  | 18086       | 46A6         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 8  | 18087       | 46A7         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 9  | 18088       | 46A8         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 10 | 18089       | 46A9         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 11 | 18090       | 46AA         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 12 | 18091       | 46AB         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 13 | 18092       | 46AC         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 14 | 18093       | 46AD         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 15 | 18094       | 46AE         | -              | -            |      | x     | x      | x     | -                         |         |

Chapter 11. LIST OF COMMUNICATION DATA  
Monitor/Standard Bit

| Folder name | Bank name       | No. | Item name                                      | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------------|-----|------------------------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                 |     |                                                | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 16                | 18095       | 46AF         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | RS-485 status (normal transmission of 1 frame) | 18185       | 4709         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 1 RUN/READY status                        | 18208       | 4720         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 2 RUN/READY status                        | 18209       | 4721         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 3 RUN/READY status                        | 18210       | 4722         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 4 RUN/READY status                        | 18211       | 4723         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 1 Auto/Manual status                      | 18224       | 4730         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 2 Auto/Manual status                      | 18225       | 4731         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 3 Auto/Manual status                      | 18226       | 4732         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 4 Auto/Manual status                      | 18227       | 4733         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 1 AT pause/AT status                      | 18240       | 4740         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 2 AT pause/AT status                      | 18241       | 4741         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 3 AT pause/AT status                      | 18242       | 4742         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 4 AT pause/AT status                      | 18243       | 4743         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 1 LSP/RSP status                          | 18256       | 4750         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 2 LSP/RSP status                          | 18257       | 4751         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 1 SP ramp-up in progress                  | 18288       | 4770         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 2 SP ramp-up in progress                  | 18289       | 4771         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 3 SP ramp-up in progress                  | 18290       | 4772         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1536-1663 | 1   | Loop 4 SP ramp-up in progress                  | 18291       | 4773         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1664-1791 | 1   | Loop 1 SP ramp-down in progress                | 18304       | 4780         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1664-1791 | 1   | Loop 2 SP ramp-down in progress                | 18305       | 4781         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1664-1791 | 1   | Loop 3 SP ramp-down in progress                | 18306       | 4782         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1664-1791 | 1   | Loop 4 SP ramp-down in progress                | 18307       | 4783         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | Representative of all alarms                   | 18432       | 4800         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | AD1 fault (AL11)                               | 18448       | 4810         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | AD2 fault (AL12)                               | 18449       | 4811         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | AD3 fault (AL13)                               | 18450       | 4812         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | AD4 fault (AL14)                               | 18451       | 4813         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | PV1 high limit error (AL01)                    | 18464       | 4820         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | PV2 high limit error (AL03)                    | 18465       | 4821         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | PV3 high limit error (AL05)                    | 18466       | 4822         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | PV4 high limit error (AL07)                    | 18467       | 4823         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | PV1 low limit error (AL02)                     | 18480       | 4830         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | PV2 low limit error (AL04)                     | 18481       | 4831         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | PV3 low limit error (AL06)                     | 18482       | 4832         | -              | -            |      | x     | x      | x     | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Monitor/Standard Bit

| Folder name | Bank name       | No. | Item name                                    | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------------|-----|----------------------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                 |     |                                              | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Monitor     | Bits: 1792-1919 | 1   | PV4 low limit error (AL08)                   | 18483       | 4833         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | CJ1 error (AL71)                             | 18496       | 4840         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | CJ2 error (AL72)                             | 18497       | 4841         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | CJ3 error (AL73)                             | 18498       | 4842         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1792-1919 | 1   | CJ4 error (AL74)                             | 18499       | 4843         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 1                       | 18560       | 4880         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 2                       | 18561       | 4881         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 3                       | 18562       | 4882         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 4                       | 18563       | 4883         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 5                       | 18564       | 4884         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 6                       | 18565       | 4885         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 7                       | 18566       | 4886         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 8                       | 18567       | 4887         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 9                       | 18568       | 4888         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 10                      | 18569       | 4889         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 11                      | 18570       | 488A         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 12                      | 18571       | 488B         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 13                      | 18572       | 488C         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 14                      | 18573       | 488D         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 15                      | 18574       | 488E         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 16                      | 18575       | 488F         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | CT1 input error (AL25)                       | 18592       | 48A0         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | CT2 input error (AL26)                       | 18593       | 48A1         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | CT3 input error (AL27)                       | 18594       | 48A2         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | CT4 input error (AL28)                       | 18595       | 48A3         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Parameter error (AL94/AL97)                  | 18608       | 48B0         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Adjustment data error (AL95/AL98)            | 18609       | 48B1         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | EEPROM not initialized (AL83)                | 18610       | 48B2         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | ROM error (AL99)                             | 18612       | 48B4         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | EEPROM RW error (AL86)                       | 18614       | 48B6         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitors 1-16 (AL31)               | 18619       | 48BB         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Transmission time-out between modules (AL32) | 18620       | 48BC         | -              | -            |      | x     | x      | x     | -                         |         |
| Monitor     | Bits: 1920-2047 | 1   | Writing to EEPROM                            | 18621       | 48BD         | -              | -            |      | x     | x      | x     | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Standard Numerical Code/Standard Numerical Code

| Folder name             | Bank name          | No. | Item name               | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------------------|--------------------|-----|-------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|                         |                    |     |                         | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 1   | 18751       | 493F         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 2   | 18752       | 4940         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 3   | 18753       | 4941         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 4   | 18754       | 4942         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 5   | 18755       | 4943         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 6   | 18756       | 4944         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 7   | 18757       | 4945         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 8   | 18758       | 4946         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 9   | 18759       | 4947         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 10  | 18760       | 4948         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 11  | 18761       | 4949         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 12  | 18762       | 494A         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 13  | 18763       | 494B         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 14  | 18764       | 494C         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 15  | 18765       | 494D         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2048-2175 | 1   | User-defined number 16  | 18766       | 494E         | -              | -            |      | x     | x      | x     | -                         |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | PV1                     | 18944       | 4A00         | -              | -            |      | x     | x      | x     | PV1                       |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | PV2                     | 18945       | 4A01         | -              | -            |      | x     | x      | x     | PV2                       |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | PV3                     | 18946       | 4A02         | -              | -            |      | x     | x      | x     | PV3                       |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | PV4                     | 18947       | 4A03         | -              | -            |      | x     | x      | x     | PV4                       |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | AI1                     | 18952       | 4A08         | -              | -            |      | x     | x      | x     | PV1                       |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | AI2                     | 18953       | 4A09         | -              | -            |      | x     | x      | x     | PV1                       |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | AI3                     | 18954       | 4A0A         | -              | -            |      | x     | x      | x     | PV1                       |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | AI4                     | 18955       | 4A0B         | -              | -            |      | x     | x      | x     | PV1                       |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 1 PV               | 18960       | 4A10         | -              | -            |      | x     | x      | x     | PID1_PV                   |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 2 PV               | 18961       | 4A11         | -              | -            |      | x     | x      | x     | PID2_PV                   |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 3 PV               | 18962       | 4A12         | -              | -            |      | x     | x      | x     | PID3_PV                   |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 4 PV               | 18963       | 4A13         | -              | -            |      | x     | x      | x     | PID4_PV                   |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 1 SP (in use)      | 18976       | 4A20         | -              | -            |      | x     | x      | x     | PID1_PV                   |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 2 SP (in use)      | 18977       | 4A21         | -              | -            |      | x     | x      | x     | PID2_PV                   |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 3 SP (in use)      | 18978       | 4A22         | -              | -            |      | x     | x      | x     | PID3_PV                   |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 4 SP (in use)      | 18979       | 4A23         | -              | -            |      | x     | x      | x     | PID4_PV                   |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 1 SP (final value) | 18992       | 4A30         | -              | -            |      | x     | x      | x     | PID1_PV                   |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 2 SP (final value) | 18993       | 4A31         | -              | -            |      | x     | x      | x     | PID2_PV                   |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Standard Numerical Code/Standard Numerical Code

| Folder name             | Bank name          | No. | Item name                            | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------------------|--------------------|-----|--------------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|                         |                    |     |                                      | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 3 SP (final value)              | 18994       | 4A32         | -              | -            |      | x     | x      | x     | PID3_PV                   |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 4 SP (final value)              | 18995       | 4A33         | -              | -            |      | x     | x      | x     | PID4_PV                   |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 1 MV                            | 19056       | 4A70         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 2 MV                            | 19057       | 4A71         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 3 MV                            | 19058       | 4A72         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2304-2431 | 1   | Loop 4 MV                            | 19059       | 4A73         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | Loop 1 MV for heating                | 19072       | 4A80         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | Loop 2 MV for heating                | 19073       | 4A81         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | Loop 1 MV for cooling                | 19088       | 4A90         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | Loop 2 MV for cooling                | 19089       | 4A91         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | CT1 measured current when output ON  | 19136       | 4AC0         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | CT2 measured current when output ON  | 19137       | 4AC1         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | CT3 measured current when output ON  | 19138       | 4AC2         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | CT4 measured current when output ON  | 19139       | 4AC3         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | CT1 measured current when output OFF | 19152       | 4AD0         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | CT2 measured current when output OFF | 19153       | 4AD1         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | CT3 measured current when output OFF | 19154       | 4AD2         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | CT4 measured current when output OFF | 19155       | 4AD3         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | Loop 1 deviation (PV - SP)           | 19168       | 4AE0         | -              | -            |      | x     | x      | x     | PID1_PV                   |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | Loop 2 deviation (PV - SP)           | 19169       | 4AE1         | -              | -            |      | x     | x      | x     | PID2_PV                   |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | Loop 3 deviation (PV - SP)           | 19170       | 4AE2         | -              | -            |      | x     | x      | x     | PID3_PV                   |         |
| Standard numerical code | Numbers: 2432-2559 | 1   | Loop 4 deviation (PV - SP)           | 19171       | 4AE3         | -              | -            |      | x     | x      | x     | PID4_PV                   |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Monitor/Standard Numerical Code

| Folder name             | Bank name          | No. | Item name                     | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------------------|--------------------|-----|-------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|                         |                    |     |                               | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 1 timer remaining time  | 19296       | 4B60         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 2 timer remaining time  | 19297       | 4B61         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 3 timer remaining time  | 19298       | 4B62         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 4 timer remaining time  | 19299       | 4B63         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 5 timer remaining time  | 19300       | 4B64         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 6 timer remaining time  | 19301       | 4B65         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 7 timer remaining time  | 19302       | 4B66         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 8 timer remaining time  | 19303       | 4B67         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 9 timer remaining time  | 19304       | 4B68         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 10 timer remaining time | 19305       | 4B69         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 11 timer remaining time | 19306       | 4B6A         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 12 timer remaining time | 19307       | 4B6B         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 13 timer remaining time | 19308       | 4B6C         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 14 timer remaining time | 19309       | 4B6D         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 15 timer remaining time | 19310       | 4B6E         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 16 timer remaining time | 19311       | 4B6F         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 17 timer remaining time | 19312       | 4B70         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 18 timer remaining time | 19313       | 4B71         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 19 timer remaining time | 19314       | 4B72         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 20 timer remaining time | 19315       | 4B73         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 21 timer remaining time | 19316       | 4B74         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 22 timer remaining time | 19317       | 4B75         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 23 timer remaining time | 19318       | 4B76         | -              | -            |      | x     | x      | x     | 1                         |         |
| Standard numerical code | Numbers: 2560-2687 | 1   | Event 24 timer remaining time | 19319       | 4B77         | -              | -            |      | x     | x      | x     | 1                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Monitor/User-defined Bit

| Folder name | Bank name        | No. | Item name               | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks                     |
|-------------|------------------|-----|-------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|-----------------------------|
|             |                  |     |                         | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |                             |
| Monitor     | User-defined bit | 1   | User-defined bits 1-16  | 10080       | 2760         | 26464          | 6760         |      |       |        |       | -                         | See User-defined bits 1-16  |
| Monitor     | User-defined bit | 1   | User-defined bit 1      | 10081       | 2761         | 26465          | 6761         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 2      | 10082       | 2762         | 26466          | 6762         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 3      | 10083       | 2763         | 26467          | 6763         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 4      | 10084       | 2764         | 26468          | 6764         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 5      | 10085       | 2765         | 26469          | 6765         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 6      | 10086       | 2766         | 26470          | 6766         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 7      | 10087       | 2767         | 26471          | 6767         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 8      | 10088       | 2768         | 26472          | 6768         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 9      | 10089       | 2769         | 26473          | 6769         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 10     | 10090       | 276A         | 26474          | 676A         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 11     | 10091       | 276B         | 26475          | 676B         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 12     | 10092       | 276C         | 26476          | 676C         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 13     | 10093       | 276D         | 26477          | 676D         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 14     | 10094       | 276E         | 26478          | 676E         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 15     | 10095       | 276F         | 26479          | 676F         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 16     | 10096       | 2770         | 26480          | 6770         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bits 17-32 | 10097       | 2771         | 26481          | 6771         |      |       |        |       | -                         | See User-defined bits 17-32 |
| Monitor     | User-defined bit | 1   | User-defined bit 17     | 10098       | 2772         | 26482          | 6772         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 18     | 10099       | 2773         | 26483          | 6773         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 19     | 10100       | 2774         | 26484          | 6774         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 20     | 10101       | 2775         | 26485          | 6775         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 21     | 10102       | 2776         | 26486          | 6776         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 22     | 10103       | 2777         | 26487          | 6777         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 23     | 10104       | 2778         | 26488          | 6778         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 24     | 10105       | 2779         | 26489          | 6779         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 25     | 10106       | 277A         | 26490          | 677A         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 26     | 10107       | 277B         | 26491          | 677B         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 27     | 10108       | 277C         | 26492          | 677C         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 28     | 10109       | 277D         | 26493          | 677D         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 29     | 10110       | 277E         | 26494          | 677E         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 30     | 10111       | 277F         | 26495          | 677F         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 31     | 10112       | 2780         | 26496          | 6780         |      |       |        |       | -                         |                             |
| Monitor     | User-defined bit | 1   | User-defined bit 32     | 10113       | 2781         | 26497          | 6781         |      |       |        |       | -                         |                             |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Monitor/User-defined Number

| Folder name | Bank name           | No. | Item name              | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|---------------------|-----|------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                     |     |                        | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Monitor     | User-defined number | 1   | User-defined number 1  | 12224       | 2FC0         | 28608          | 6FC0         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 2  | 12225       | 2FC1         | 28609          | 6FC1         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 3  | 12226       | 2FC2         | 28610          | 6FC2         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 4  | 12227       | 2FC3         | 28611          | 6FC3         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 5  | 12228       | 2FC4         | 28612          | 6FC4         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 6  | 12229       | 2FC5         | 28613          | 6FC5         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 7  | 12230       | 2FC6         | 28614          | 6FC6         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 8  | 12231       | 2FC7         | 28615          | 6FC7         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 9  | 12232       | 2FC8         | 28616          | 6FC8         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 10 | 12233       | 2FC9         | 28617          | 6FC9         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 11 | 12234       | 2FCA         | 28618          | 6FCA         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 12 | 12235       | 2FCB         | 28619          | 6FCB         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 13 | 12236       | 2FCC         | 28620          | 6FCC         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 14 | 12237       | 2FCD         | 28621          | 6FCD         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 15 | 12238       | 2FCE         | 28622          | 6FCE         |      |       |        |       | -                         |         |
| Monitor     | User-defined number | 1   | User-defined number 16 | 12239       | 2FCF         | 28623          | 6FCF         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Communications/Ethernet Communications

| Folder name    | Bank name               | No. | Item name               | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks                                                   |
|----------------|-------------------------|-----|-------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|-----------------------------------------------------------|
|                |                         |     |                         | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |                                                           |
| Communications | Ethernet communications | 1   | MAC address 1           | -           | -            | 800            | 0320         | x    | x     |        | x     | -                         |                                                           |
| Communications | Ethernet communications | 1   | MAC address 2           | -           | -            | 801            | 0321         | x    | x     |        | x     | -                         |                                                           |
| Communications | Ethernet communications | 1   | MAC address 3           | -           | -            | 802            | 0322         | x    | x     |        | x     | -                         |                                                           |
| Communications | Ethernet communications | 1   | MAC address 4           | -           | -            | 803            | 0323         | x    | x     |        | x     | -                         |                                                           |
| Communications | Ethernet communications | 1   | MAC address 5           | -           | -            | 804            | 0324         | x    | x     |        | x     | -                         |                                                           |
| Communications | Ethernet communications | 1   | MAC address 6           | -           | -            | 805            | 0325         | x    | x     |        | x     | -                         |                                                           |
| Communications | Ethernet communications | 1   | IPv4 address 1          | -           | -            | 817            | 0331         | x    | x     |        |       | -                         | Changed settings are enabled after the power is restarted |
| Communications | Ethernet communications | 1   | IPv4 address 2          | -           | -            | 818            | 0332         | x    | x     |        |       | -                         | Changed settings are enabled after the power is restarted |
| Communications | Ethernet communications | 1   | IPv4 address 3          | -           | -            | 819            | 0333         | x    | x     |        |       | -                         | Changed settings are enabled after the power is restarted |
| Communications | Ethernet communications | 1   | IPv4 address 4          | -           | -            | 820            | 0334         | x    | x     |        |       | -                         | Changed settings are enabled after the power is restarted |
| Communications | Ethernet communications | 1   | IPv4 address net mask 1 | -           | -            | 821            | 0335         | x    | x     |        |       |                           | Changed settings are enabled after the power is restarted |
| Communications | Ethernet communications | 1   | IPv4 address net mask 2 | -           | -            | 822            | 0336         | x    | x     |        |       |                           | Changed settings are enabled after the power is restarted |
| Communications | Ethernet communications | 1   | IPv4 address net mask 3 | -           | -            | 823            | 0337         | x    | x     |        |       | -                         | Changed settings are enabled after the power is restarted |
| Communications | Ethernet communications | 1   | IPv4 address net mask 4 | -           | -            | 824            | 0338         | x    | x     |        |       |                           | Changed settings are enabled after the power is restarted |
| Communications | Ethernet communications | 1   | IPv4 default gateway 1  | -           | -            | 825            | 0339         | x    | x     |        |       |                           | Changed settings are enabled after the power is restarted |
| Communications | Ethernet communications | 1   | IPv4 default gateway 2  | -           | -            | 826            | 033A         | x    | x     |        |       |                           | Changed settings are enabled after the power is restarted |
| Communications | Ethernet communications | 1   | IPv4 default gateway 3  | -           | -            | 827            | 033B         | x    | x     |        |       |                           | Changed settings are enabled after the power is restarted |
| Communications | Ethernet communications | 1   | IPv4 default gateway 4  | -           | -            | 828            | 033C         | x    | x     |        |       |                           | Changed settings are enabled after the power is restarted |
| Communications | Ethernet communications | 1   | MODBUS TCP port number  | -           | -            | 830            | 033E         | x    | x     |        |       |                           | Changed settings are enabled after the power is restarted |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Communications/RS-485 Communications

| Folder name    | Bank name            | No. | Item name                 | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|----------------|----------------------|-----|---------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|                |                      |     |                           | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Communications | RS-485 communication | 1   | Communications type       | 10240       | 2800         | 26624          | 6800         |      |       |        |       | -                         |         |
| Communications | RS-485 communication | 1   | Station address           | 10241       | 2801         | 26625          | 6801         |      |       |        |       | -                         |         |
| Communications | RS-485 communication | 1   | Transmission speed        | 10242       | 2802         | 26626          | 6802         |      |       |        |       | -                         |         |
| Communications | RS-485 communication | 1   | Data format (data length) | 10243       | 2803         | 26627          | 6803         |      |       |        |       | -                         |         |
| Communications | RS-485 communication | 1   | Data format (parity)      | 10244       | 2804         | 26628          | 6804         |      |       |        |       | -                         |         |
| Communications | RS-485 communication | 1   | Data format (stop bit)    | 10245       | 2805         | 26629          | 6805         |      |       |        |       | -                         |         |
| Communications | RS-485 communication | 1   | Minimum response time     | 10246       | 2806         | 26630          | 6806         |      |       |        |       | -                         |         |



## Chapter 11. LIST OF COMMUNICATION DATA

### Basic/Setup

| Folder name | Bank name | No. | Item name                     | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks                                                   |
|-------------|-----------|-----|-------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|-----------------------------------------------------------|
|             |           |     |                               | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |                                                           |
| Basic       | Setup     | 1   | SP system group               | 8818        | 2272         | 25202          | 6272         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Start delay at power ON       | 8820        | 2274         | 25204          | 6274         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 1  | 8828        | 227C         | 25212          | 627C         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 2  | 8829        | 227D         | 25213          | 627D         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 3  | 8830        | 227E         | 25214          | 627E         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 4  | 8831        | 227F         | 25215          | 627F         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 5  | 8832        | 2280         | 25216          | 6280         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 6  | 8833        | 2281         | 25217          | 6281         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 7  | 8834        | 2282         | 25218          | 6282         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 8  | 8835        | 2283         | 25219          | 6283         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 9  | 8836        | 2284         | 25220          | 6284         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 10 | 8837        | 2285         | 25221          | 6285         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 11 | 8838        | 2286         | 25222          | 6286         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 12 | 8839        | 2287         | 25223          | 6287         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 13 | 8840        | 2288         | 25224          | 6288         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 14 | 8841        | 2289         | 25225          | 6289         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 15 | 8842        | 228A         | 25226          | 628A         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Advanced function password 16 | 8843        | 228B         | 25227          | 628B         |      |       |        |       | -                         |                                                           |
| Basic       | Setup     | 1   | Loop type                     | 8880        | 22B0         | 25264          | 62B0         |      |       |        |       | -                         | Changed settings are enabled after the power is restarted |
| Basic       | Setup     | 1   | Release all latches           | 8882        | 22B2         | 25266          | 62B2         |      |       |        |       | -                         |                                                           |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Basic/Loop (Input)

| Folder name | Bank name    | No. | Item name    | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|--------------|-----|--------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |              |     |              | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Basic       | Loop (input) | 1   | Assigned PV  | 10704       | 29D0         | 27088          | 69D0         |      |       |        |       | -                         |         |
| Basic       | Loop (input) | 1   | Assigned RSP | 10705       | 29D1         | 27089          | 69D1         |      |       |        |       | -                         |         |
| Basic       | Loop (input) | 1   | Assigned AI  | 10707       | 29D3         | 27091          | 69D3         |      |       |        |       | -                         |         |
| Basic       | Loop (input) | 2   | Assigned PV  | 10720       | 29E0         | 27104          | 69E0         |      |       |        |       | -                         |         |
| Basic       | Loop (input) | 2   | Assigned RSP | 10721       | 29E1         | 27105          | 69E1         |      |       |        |       | -                         |         |
| Basic       | Loop (input) | 2   | Assigned AI  | 10723       | 29E3         | 27107          | 69E3         |      |       |        |       | -                         |         |
| Basic       | Loop (input) | 3   | Assigned PV  | 10736       | 29F0         | 27120          | 69F0         |      |       |        |       | -                         |         |
| Basic       | Loop (input) | 3   | Assigned AI  | 10739       | 29F3         | 27123          | 69F3         |      |       |        |       | -                         |         |
| Basic       | Loop (input) | 4   | Assigned PV  | 10752       | 2A00         | 27136          | 6A00         |      |       |        |       | -                         |         |
| Basic       | Loop (input) | 4   | Assigned AI  | 10755       | 2A03         | 27139          | 6A03         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Basic/Loop

| Folder name | Bank name    | No. | Item name                              | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|--------------|-----|----------------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |              |     |                                        | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Basic       | Loop (basic) | 1   | Loop PV/SP decimal point position      | 8048        | 1F70         | 24432          | 5F70         |      |       |        |       | -                         |         |
| Basic       | Loop (basic) | 1   | Control action                         | 8050        | 1F72         | 24434          | 5F72         |      |       |        |       | -                         |         |
| Basic       | Loop (basic) | 1   | Range low limit for proportional band  | 8052        | 1F74         | 24436          | 5F74         |      |       |        |       | PID_PV                    |         |
| Basic       | Loop (basic) | 1   | Range high limit for proportional band | 8053        | 1F75         | 24437          | 5F75         |      |       |        |       | PID_PV                    |         |
| Basic       | Loop (basic) | 1   | AT type                                | 8054        | 1F76         | 24438          | 5F76         |      |       |        |       | -                         |         |
| Basic       | Loop (basic) | 1   | Heat/cool dead zone                    | 8055        | 1F77         | 24439          | 5F77         |      |       |        |       | 1                         |         |
| Basic       | Loop (basic) | 1   | Initial output of PID control          | 8056        | 1F78         | 24440          | 5F78         |      |       |        |       | 1                         |         |
| Basic       | Loop (basic) | 2   | Loop PV/SP decimal point position      | 8064        | 1F80         | 24448          | 5F80         |      |       |        |       | -                         |         |
| Basic       | Loop (basic) | 2   | Control action                         | 8066        | 1F82         | 24450          | 5F82         |      |       |        |       | -                         |         |
| Basic       | Loop (basic) | 2   | Range low limit for proportional band  | 8068        | 1F84         | 24452          | 5F84         |      |       |        |       | PID_PV                    |         |
| Basic       | Loop (basic) | 2   | Range high limit for proportional band | 8069        | 1F85         | 24453          | 5F85         |      |       |        |       | PID_PV                    |         |
| Basic       | Loop (basic) | 2   | AT type                                | 8070        | 1F86         | 24454          | 5F86         |      |       |        |       | -                         |         |
| Basic       | Loop (basic) | 2   | Heat/cool dead zone                    | 8071        | 1F87         | 24455          | 5F87         |      |       |        |       | 1                         |         |
| Basic       | Loop (basic) | 2   | Initial output of PID control          | 8072        | 1F88         | 24456          | 5F88         |      |       |        |       | 1                         |         |
| Basic       | Loop (basic) | 3   | Loop PV/SP decimal point position      | 8080        | 1F90         | 24464          | 5F90         |      |       |        |       | -                         |         |
| Basic       | Loop (basic) | 3   | Control action                         | 8082        | 1F92         | 24466          | 5F92         |      |       |        |       | -                         |         |
| Basic       | Loop (basic) | 3   | Range low limit for proportional band  | 8084        | 1F94         | 24468          | 5F94         |      |       |        |       | PID_PV                    |         |
| Basic       | Loop (basic) | 3   | Range high limit for proportional band | 8085        | 1F95         | 24469          | 5F95         |      |       |        |       | PID_PV                    |         |
| Basic       | Loop (basic) | 3   | AT type                                | 8086        | 1F96         | 24470          | 5F96         |      |       |        |       | -                         |         |
| Basic       | Loop (basic) | 3   | Initial output of PID control          | 8088        | 1F98         | 24472          | 5F98         |      |       |        |       | 1                         |         |
| Basic       | Loop (basic) | 4   | Loop PV/SP decimal point position      | 8096        | 1FA0         | 24480          | 5FA0         |      |       |        |       | -                         |         |
| Basic       | Loop (basic) | 4   | Control action                         | 8098        | 1FA2         | 24482          | 5FA2         |      |       |        |       | -                         |         |
| Basic       | Loop (basic) | 4   | Range low limit for proportional band  | 8100        | 1FA4         | 24484          | 5FA4         |      |       |        |       | PID_PV                    |         |
| Basic       | Loop (basic) | 4   | Range high limit for proportional band | 8101        | 1FA5         | 24485          | 5FA5         |      |       |        |       | PID_PV                    |         |
| Basic       | Loop (basic) | 4   | AT type                                | 8102        | 1FA6         | 24486          | 5FA6         |      |       |        |       | -                         |         |
| Basic       | Loop (basic) | 4   | Initial output of PID control          | 8104        | 1FA8         | 24488          | 5FA8         |      |       |        |       | 1                         |         |



## Chapter 11. LIST OF COMMUNICATION DATA

## Basic/Loop

| Folder name | Bank name       | No. | Item name                                            | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks              |
|-------------|-----------------|-----|------------------------------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|----------------------|
|             |                 |     |                                                      | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |                      |
| Basic       | Loop (extended) | 1   | PID control initialization                           | 8112        | 1FB0         | 24496          | 5FB0         |      |       |        |       | -                         |                      |
| Basic       | Loop (extended) | 1   | Integral time/derivative time decimal point position | 8113        | 1FB1         | 24497          | 5FB1         |      |       |        |       | -                         |                      |
| Basic       | Loop (extended) | 1   | Output operation at changing Auto/Manual             | 8114        | 1FB2         | 24498          | 5FB2         |      |       |        |       | -                         |                      |
| Basic       | Loop (extended) | 1   | Preset MANUAL value                                  | 8115        | 1FB3         | 24499          | 5FB3         |      |       |        |       | 1                         |                      |
| Basic       | Loop (extended) | 1   | MV increase change limit                             | 8116        | 1FB4         | 24500          | 5FB4         |      |       |        |       | 2                         | NX-D15 not supported |
| Basic       | Loop (extended) | 1   | MV decrease change limit                             | 8117        | 1FB5         | 24501          | 5FB5         |      |       |        |       | 2                         | NX-D15 not supported |
| Basic       | Loop (extended) | 1   | MV low limit during AT                               | 8119        | 1FB7         | 24503          | 5FB7         |      |       |        |       | 1                         |                      |
| Basic       | Loop (extended) | 1   | MV high limit during AT                              | 8120        | 1FB8         | 24504          | 5FB8         |      |       |        |       | 1                         |                      |
| Basic       | Loop (extended) | 2   | PID control initialization                           | 8144        | 1FD0         | 24528          | 5FD0         |      |       |        |       | -                         |                      |
| Basic       | Loop (extended) | 2   | Integral time/derivative time decimal point position | 8145        | 1FD1         | 24529          | 5FD1         |      |       |        |       | -                         |                      |
| Basic       | Loop (extended) | 2   | Output operation at changing Auto/Manual             | 8146        | 1FD2         | 24530          | 5FD2         |      |       |        |       | -                         |                      |
| Basic       | Loop (extended) | 2   | Preset MANUAL value                                  | 8147        | 1FD3         | 24531          | 5FD3         |      |       |        |       | 1                         |                      |
| Basic       | Loop (extended) | 2   | MV increase change limit                             | 8148        | 1FD4         | 24532          | 5FD4         |      |       |        |       | 2                         | NX-D15 not supported |
| Basic       | Loop (extended) | 2   | MV decrease change limit                             | 8149        | 1FD5         | 24533          | 5FD5         |      |       |        |       | 2                         | NX-D15 not supported |
| Basic       | Loop (extended) | 2   | MV low limit during AT                               | 8151        | 1FD7         | 24535          | 5FD7         |      |       |        |       | 1                         |                      |
| Basic       | Loop (extended) | 2   | MV high limit during AT                              | 8152        | 1FD8         | 24536          | 5FD8         |      |       |        |       | 1                         |                      |
| Basic       | Loop (extended) | 3   | PID control initialization                           | 8176        | 1FF0         | 24560          | 5FF0         |      |       |        |       | -                         |                      |
| Basic       | Loop (extended) | 3   | Integral time/derivative time decimal point position | 8177        | 1FF1         | 24561          | 5FF1         |      |       |        |       | -                         |                      |
| Basic       | Loop (extended) | 3   | Output operation at changing Auto/Manual             | 8178        | 1FF2         | 24562          | 5FF2         |      |       |        |       | -                         |                      |
| Basic       | Loop (extended) | 3   | Preset MANUAL value                                  | 8179        | 1FF3         | 24563          | 5FF3         |      |       |        |       | 1                         |                      |
| Basic       | Loop (extended) | 3   | MV increase change limit                             | 8180        | 1FF4         | 24564          | 5FF4         |      |       |        |       | 2                         | NX-D15 not supported |
| Basic       | Loop (extended) | 3   | MV decrease change limit                             | 8181        | 1FF5         | 24565          | 5FF5         |      |       |        |       | 2                         | NX-D15 not supported |
| Basic       | Loop (extended) | 3   | MV low limit during AT                               | 8183        | 1FF7         | 24567          | 5FF7         |      |       |        |       | 1                         |                      |
| Basic       | Loop (extended) | 3   | MV high limit during AT                              | 8184        | 1FF8         | 24568          | 5FF8         |      |       |        |       | 1                         |                      |
| Basic       | Loop (extended) | 4   | PID control initialization                           | 8208        | 2010         | 24592          | 6010         |      |       |        |       | -                         |                      |
| Basic       | Loop (extended) | 4   | Integral time/derivative time decimal point position | 8209        | 2011         | 24593          | 6011         |      |       |        |       | -                         |                      |
| Basic       | Loop (extended) | 4   | Output operation at changing Auto/Manual             | 8210        | 2012         | 24594          | 6012         |      |       |        |       | -                         |                      |
| Basic       | Loop (extended) | 4   | Preset MANUAL value                                  | 8211        | 2013         | 24595          | 6013         |      |       |        |       | 1                         |                      |
| Basic       | Loop (extended) | 4   | MV increase change limit                             | 8212        | 2014         | 24596          | 6014         |      |       |        |       | 2                         | NX-D15 not supported |
| Basic       | Loop (extended) | 4   | MV decrease change limit                             | 8213        | 2015         | 24597          | 6015         |      |       |        |       | 2                         | NX-D15 not supported |
| Basic       | Loop (extended) | 4   | MV low limit during AT                               | 8215        | 2017         | 24599          | 6017         |      |       |        |       | 1                         |                      |
| Basic       | Loop (extended) | 4   | MV high limit during AT                              | 8216        | 2018         | 24600          | 6018         |      |       |        |       | 1                         |                      |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Basic/Loop

| Folder name | Bank name        | No. | Item name                                | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|------------------|-----|------------------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                  |     |                                          | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Basic       | Loop (algorithm) | 1   | AT adjustment factor, proportional band  | 8240        | 2030         | 24624          | 6030         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 1   | AT adjustment factor, integral time      | 8241        | 2031         | 24625          | 6031         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 1   | AT adjustment factor, derivative time    | 8242        | 2032         | 24626          | 6032         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 1   | Just-FITTER settling band                | 8246        | 2036         | 24630          | 6036         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 1   | Just-FITTER overshoot suppression factor | 8247        | 2037         | 24631          | 6037         |      |       |        |       | -                         |         |
| Basic       | Loop (algorithm) | 1   | SP lag factor                            | 8250        | 203A         | 24634          | 603A         |      |       |        |       | 1                         |         |
| Basic       | Loop (algorithm) | 2   | AT adjustment factor, proportional band  | 8272        | 2050         | 24656          | 6050         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 2   | AT adjustment factor, integral time      | 8273        | 2051         | 24657          | 6051         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 2   | AT adjustment factor, derivative time    | 8274        | 2052         | 24658          | 6052         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 2   | Just-FITTER settling band                | 8278        | 2056         | 24662          | 6056         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 2   | Just-FITTER overshoot suppression factor | 8279        | 2057         | 24663          | 6057         |      |       |        |       | -                         |         |
| Basic       | Loop (algorithm) | 2   | SP lag factor                            | 8282        | 205A         | 24666          | 605A         |      |       |        |       | 1                         |         |
| Basic       | Loop (algorithm) | 3   | AT adjustment factor, proportional band  | 8304        | 2070         | 24688          | 6070         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 3   | AT adjustment factor, integral time      | 8305        | 2071         | 24689          | 6071         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 3   | AT adjustment factor, derivative time    | 8306        | 2072         | 24690          | 6072         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 3   | Just-FITTER settling band                | 8310        | 2076         | 24694          | 6076         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 3   | Just-FITTER overshoot suppression factor | 8311        | 2077         | 24695          | 6077         |      |       |        |       | -                         |         |
| Basic       | Loop (algorithm) | 3   | SP lag factor                            | 8314        | 207A         | 24698          | 607A         |      |       |        |       | 1                         |         |
| Basic       | Loop (algorithm) | 4   | AT adjustment factor, proportional band  | 8336        | 2090         | 24720          | 6090         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 4   | AT adjustment factor, integral time      | 8337        | 2091         | 24721          | 6091         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 4   | AT adjustment factor, derivative time    | 8338        | 2092         | 24722          | 6092         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 4   | Just-FITTER settling band                | 8342        | 2096         | 24726          | 6096         |      |       |        |       | 2                         |         |
| Basic       | Loop (algorithm) | 4   | Just-FITTER overshoot suppression factor | 8343        | 2097         | 24727          | 6097         |      |       |        |       | -                         |         |
| Basic       | Loop (algorithm) | 4   | SP lag factor                            | 8346        | 209A         | 24730          | 609A         |      |       |        |       | 1                         |         |



## Chapter 11. LIST OF COMMUNICATION DATA

## Basic/Loop Output

| Folder name | Bank name        | No. | Item name                         | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|------------------|-----|-----------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                  |     |                                   | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Basic       | Loop output (MV) | 1   | Output at READY                   | 8368        | 20B0         | 24752          | 60B0         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 1   | Output at READY (Heat)            | 8369        | 20B1         | 24753          | 60B1         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 1   | Output at READY (Cool)            | 8370        | 20B2         | 24754          | 60B2         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 1   | Selection of MV if PV is abnormal | 8371        | 20B3         | 24755          | 60B3         |      |       |        |       | -                         |         |
| Basic       | Loop output (MV) | 1   | Output at PV error                | 8372        | 20B4         | 24756          | 60B4         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 2   | Output at READY                   | 8384        | 20C0         | 24768          | 60C0         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 2   | Output at READY (Heat)            | 8385        | 20C1         | 24769          | 60C1         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 2   | Output at READY (Cool)            | 8386        | 20C2         | 24770          | 60C2         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 2   | Selection of MV if PV is abnormal | 8387        | 20C3         | 24771          | 60C3         |      |       |        |       | -                         |         |
| Basic       | Loop output (MV) | 2   | Output at PV error                | 8388        | 20C4         | 24772          | 60C4         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 3   | Output at READY                   | 8400        | 20D0         | 24784          | 60D0         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 3   | Output at READY (Heat)            | 8401        | 20D1         | 24785          | 60D1         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 3   | Selection of MV if PV is abnormal | 8403        | 20D3         | 24787          | 60D3         |      |       |        |       | -                         |         |
| Basic       | Loop output (MV) | 3   | Output at PV error                | 8404        | 20D4         | 24788          | 60D4         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 4   | Output at READY                   | 8416        | 20E0         | 24800          | 60E0         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 4   | Output at READY (Heat)            | 8417        | 20E1         | 24801          | 60E1         |      |       |        |       | 1                         |         |
| Basic       | Loop output (MV) | 4   | Selection of MV if PV is abnormal | 8419        | 20E3         | 24803          | 60E3         |      |       |        |       | -                         |         |
| Basic       | Loop output (MV) | 4   | Output at PV error                | 8420        | 20E4         | 24804          | 60E4         |      |       |        |       | 1                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Input-output/PV Input

| Folder name  | Bank name | No. | Item name                      | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|--------------|-----------|-----|--------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|              |           |     |                                | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Input-output | PV input  | 1   | Range type                     | 9024        | 2340         | 25408          | 6340         |      |       |        |       | -                         |         |
| Input-output | PV input  | 1   | Decimal point position         | 9025        | 2341         | 25409          | 6341         |      |       |        |       | -                         |         |
| Input-output | PV input  | 1   | Temperature unit               | 9026        | 2342         | 25410          | 6342         |      |       |        |       | -                         |         |
| Input-output | PV input  | 1   | Alarm setting low limit        | 9027        | 2343         | 25411          | 6343         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 1   | Alarm setting high limit       | 9028        | 2344         | 25412          | 6344         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 1   | Cold junction compensation     | 9029        | 2345         | 25413          | 6345         |      |       |        |       | -                         |         |
| Input-output | PV input  | 1   | Linear scaling low limit       | 9032        | 2348         | 25416          | 6348         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 1   | Linear scaling high limit      | 9033        | 2349         | 25417          | 6349         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 1   | Square root extraction dropout | 9034        | 234A         | 25418          | 634A         |      |       |        |       | 1                         |         |
| Input-output | PV input  | 1   | Filter                         | 9035        | 234B         | 25419          | 634B         |      |       |        |       | 2                         |         |
| Input-output | PV input  | 1   | Bias                           | 9036        | 234C         | 25420          | 634C         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 1   | Ratio                          | 9037        | 234D         | 25421          | 634D         |      |       |        |       | 3                         |         |
| Input-output | PV input  | 2   | Range type                     | 9056        | 2360         | 25440          | 6360         |      |       |        |       | -                         |         |
| Input-output | PV input  | 2   | Decimal point position         | 9057        | 2361         | 25441          | 6361         |      |       |        |       | -                         |         |
| Input-output | PV input  | 2   | Temperature unit               | 9058        | 2362         | 25442          | 6362         |      |       |        |       | -                         |         |
| Input-output | PV input  | 2   | Alarm setting low limit        | 9059        | 2363         | 25443          | 6363         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 2   | Alarm setting high limit       | 9060        | 2364         | 25444          | 6364         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 2   | Cold junction compensation     | 9061        | 2365         | 25445          | 6365         |      |       |        |       | -                         |         |
| Input-output | PV input  | 2   | Linear scaling low limit       | 9064        | 2368         | 25448          | 6368         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 2   | Linear scaling high limit      | 9065        | 2369         | 25449          | 6369         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 2   | Square root extraction dropout | 9066        | 236A         | 25450          | 636A         |      |       |        |       | 1                         |         |
| Input-output | PV input  | 2   | Filter                         | 9067        | 236B         | 25451          | 636B         |      |       |        |       | 2                         |         |
| Input-output | PV input  | 2   | Bias                           | 9068        | 236C         | 25452          | 636C         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 2   | Ratio                          | 9069        | 236D         | 25453          | 636D         |      |       |        |       | 3                         |         |
| Input-output | PV input  | 3   | Range type                     | 9088        | 2380         | 25472          | 6380         |      |       |        |       | -                         |         |
| Input-output | PV input  | 3   | Decimal point position         | 9089        | 2381         | 25473          | 6381         |      |       |        |       | -                         |         |
| Input-output | PV input  | 3   | Temperature unit               | 9090        | 2382         | 25474          | 6382         |      |       |        |       | -                         |         |
| Input-output | PV input  | 3   | Alarm setting low limit        | 9091        | 2383         | 25475          | 6383         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 3   | Alarm setting high limit       | 9092        | 2384         | 25476          | 6384         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 3   | Cold junction compensation     | 9093        | 2385         | 25477          | 6385         |      |       |        |       | -                         |         |
| Input-output | PV input  | 3   | Linear scaling low limit       | 9096        | 2388         | 25480          | 6388         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 3   | Linear scaling high limit      | 9097        | 2389         | 25481          | 6389         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 3   | Square root extraction dropout | 9098        | 238A         | 25482          | 638A         |      |       |        |       | 1                         |         |
| Input-output | PV input  | 3   | Filter                         | 9099        | 238B         | 25483          | 638B         |      |       |        |       | 2                         |         |
| Input-output | PV input  | 3   | Bias                           | 9100        | 238C         | 25484          | 638C         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 3   | Ratio                          | 9101        | 238D         | 25485          | 638D         |      |       |        |       | 3                         |         |
| Input-output | PV input  | 4   | Range type                     | 9120        | 23A0         | 25504          | 63A0         |      |       |        |       | -                         |         |
| Input-output | PV input  | 4   | Decimal point position         | 9121        | 23A1         | 25505          | 63A1         |      |       |        |       | -                         |         |
| Input-output | PV input  | 4   | Temperature unit               | 9122        | 23A2         | 25506          | 63A2         |      |       |        |       | -                         |         |
| Input-output | PV input  | 4   | Alarm setting low limit        | 9123        | 23A3         | 25507          | 63A3         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 4   | Alarm setting high limit       | 9124        | 23A4         | 25508          | 63A4         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 4   | Cold junction compensation     | 9125        | 23A5         | 25509          | 63A5         |      |       |        |       | -                         |         |
| Input-output | PV input  | 4   | Linear scaling low limit       | 9128        | 23A8         | 25512          | 63A8         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 4   | Linear scaling high limit      | 9129        | 23A9         | 25513          | 63A9         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 4   | Square root extraction dropout | 9130        | 23AA         | 25514          | 63AA         |      |       |        |       | 1                         |         |
| Input-output | PV input  | 4   | Filter                         | 9131        | 23AB         | 25515          | 63AB         |      |       |        |       | 2                         |         |
| Input-output | PV input  | 4   | Bias                           | 9132        | 23AC         | 25516          | 63AC         |      |       |        |       | PV                        |         |
| Input-output | PV input  | 4   | Ratio                          | 9133        | 23AD         | 25517          | 63AD         |      |       |        |       | 3                         |         |



## Chapter 11. LIST OF COMMUNICATION DATA

## Input-output/Continuous Output

| Folder name  | Bank name         | No. | Item name                     | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|--------------|-------------------|-----|-------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|              |                   |     |                               | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Input-output | Continuous output | 1   | Output range                  | 9216        | 2400         | 25600          | 6400         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 1   | Output type                   | 9217        | 2401         | 25601          | 6401         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 1   | Loop/channel definition       | 9218        | 2402         | 25602          | 6402         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 1   | Output decimal point position | 9219        | 2403         | 25603          | 6403         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 1   | Output scaling low limit      | 9220        | 2404         | 25604          | 6404         |      |       |        |       | OUT                       |         |
| Input-output | Continuous output | 1   | Output scaling high limit     | 9221        | 2405         | 25605          | 6405         |      |       |        |       | OUT                       |         |
| Input-output | Continuous output | 2   | Output range                  | 9232        | 2410         | 25616          | 6410         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 2   | Output type                   | 9233        | 2411         | 25617          | 6411         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 2   | Loop/channel definition       | 9234        | 2412         | 25618          | 6412         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 2   | Output decimal point position | 9235        | 2413         | 25619          | 6413         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 2   | Output scaling low limit      | 9236        | 2414         | 25620          | 6414         |      |       |        |       | OUT                       |         |
| Input-output | Continuous output | 2   | Output scaling high limit     | 9237        | 2415         | 25621          | 6415         |      |       |        |       | OUT                       |         |
| Input-output | Continuous output | 3   | Output range                  | 9248        | 2420         | 25632          | 6420         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 3   | Output type                   | 9249        | 2421         | 25633          | 6421         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 3   | Loop/channel definition       | 9250        | 2422         | 25634          | 6422         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 3   | Output decimal point position | 9251        | 2423         | 25635          | 6423         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 3   | Output scaling low limit      | 9252        | 2424         | 25636          | 6424         |      |       |        |       | OUT                       |         |
| Input-output | Continuous output | 3   | Output scaling high limit     | 9253        | 2425         | 25637          | 6425         |      |       |        |       | OUT                       |         |
| Input-output | Continuous output | 4   | Output range                  | 9264        | 2430         | 25648          | 6430         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 4   | Output type                   | 9265        | 2431         | 25649          | 6431         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 4   | Loop/channel definition       | 9266        | 2432         | 25650          | 6432         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 4   | Output decimal point position | 9267        | 2433         | 25651          | 6433         |      |       |        |       | -                         |         |
| Input-output | Continuous output | 4   | Output scaling low limit      | 9268        | 2434         | 25652          | 6434         |      |       |        |       | OUT                       |         |
| Input-output | Continuous output | 4   | Output scaling high limit     | 9269        | 2435         | 25653          | 6435         |      |       |        |       | OUT                       |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Input-output / OUT/DO Output

| Folder name  | Bank name     | No. | Item name                        | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|--------------|---------------|-----|----------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|              |               |     |                                  | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Input-output | OUT/DO output | 1   | Output type                      | 9328        | 2470         | 25712          | 6470         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 1   | Latch                            | 9329        | 2471         | 25713          | 6471         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 1   | Time proportional operation type | 9330        | 2472         | 25714          | 6472         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 1   | Min. ON/OFF time                 | 9331        | 2473         | 25715          | 6473         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 1   | Time proportional cycle          | 9332        | 2474         | 25716          | 6474         |      |       |        |       | 1                         |         |
| Input-output | OUT/DO output | 1   | Phase shift                      | 9336        | 2478         | 25720          | 6478         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 2   | Output type                      | 9344        | 2480         | 25728          | 6480         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 2   | Latch                            | 9345        | 2481         | 25729          | 6481         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 2   | Time proportional operation type | 9346        | 2482         | 25730          | 6482         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 2   | Min. ON/OFF time                 | 9347        | 2483         | 25731          | 6483         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 2   | Time proportional cycle          | 9348        | 2484         | 25732          | 6484         |      |       |        |       | 1                         |         |
| Input-output | OUT/DO output | 2   | Phase shift                      | 9352        | 2488         | 25736          | 6488         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 3   | Output type                      | 9360        | 2490         | 25744          | 6490         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 3   | Latch                            | 9361        | 2491         | 25745          | 6491         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 3   | Time proportional operation type | 9362        | 2492         | 25746          | 6492         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 3   | Min. ON/OFF time                 | 9363        | 2493         | 25747          | 6493         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 3   | Time proportional cycle          | 9364        | 2494         | 25748          | 6494         |      |       |        |       | 1                         |         |
| Input-output | OUT/DO output | 3   | Phase shift                      | 9368        | 2498         | 25752          | 6498         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 4   | Output type                      | 9376        | 24A0         | 25760          | 64A0         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 4   | Latch                            | 9377        | 24A1         | 25761          | 64A1         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 4   | Time proportional operation type | 9378        | 24A2         | 25762          | 64A2         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 4   | Min. ON/OFF time                 | 9379        | 24A3         | 25763          | 64A3         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 4   | Time proportional cycle          | 9380        | 24A4         | 25764          | 64A4         |      |       |        |       | 1                         |         |
| Input-output | OUT/DO output | 4   | Phase shift                      | 9384        | 24A8         | 25768          | 64A8         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 5   | Output type                      | 9392        | 24B0         | 25776          | 64B0         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 5   | Latch                            | 9393        | 24B1         | 25777          | 64B1         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 5   | Time proportional operation type | 9394        | 24B2         | 25778          | 64B2         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 5   | Min. ON/OFF time                 | 9395        | 24B3         | 25779          | 64B3         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 5   | Time proportional cycle          | 9396        | 24B4         | 25780          | 64B4         |      |       |        |       | 1                         |         |
| Input-output | OUT/DO output | 5   | Phase shift                      | 9400        | 24B8         | 25784          | 64B8         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 6   | Output type                      | 9408        | 24C0         | 25792          | 64C0         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 6   | Latch                            | 9409        | 24C1         | 25793          | 64C1         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 6   | Time proportional operation type | 9410        | 24C2         | 25794          | 64C2         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 6   | Min. ON/OFF time                 | 9411        | 24C3         | 25795          | 64C3         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 6   | Time proportional cycle          | 9412        | 24C4         | 25796          | 64C4         |      |       |        |       | 1                         |         |
| Input-output | OUT/DO output | 6   | Phase shift                      | 9416        | 24C8         | 25800          | 64C8         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 7   | Output type                      | 9424        | 24D0         | 25808          | 64D0         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 7   | Latch                            | 9425        | 24D1         | 25809          | 64D1         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 7   | Time proportional operation type | 9426        | 24D2         | 25810          | 64D2         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 7   | Min. ON/OFF time                 | 9427        | 24D3         | 25811          | 64D3         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 7   | Time proportional cycle          | 9428        | 24D4         | 25812          | 64D4         |      |       |        |       | 1                         |         |
| Input-output | OUT/DO output | 7   | Phase shift                      | 9432        | 24D8         | 25816          | 64D8         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 8   | Output type                      | 9440        | 24E0         | 25824          | 64E0         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 8   | Latch                            | 9441        | 24E1         | 25825          | 64E1         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 8   | Time proportional operation type | 9442        | 24E2         | 25826          | 64E2         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 8   | Min. ON/OFF time                 | 9443        | 24E3         | 25827          | 64E3         |      |       |        |       | -                         |         |
| Input-output | OUT/DO output | 8   | Time proportional cycle          | 9444        | 24E4         | 25828          | 64E4         |      |       |        |       | 1                         |         |
| Input-output | OUT/DO output | 8   | Phase shift                      | 9448        | 24E8         | 25832          | 64E8         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Input-output/CT Input

| Folder name  | Bank name | No. | Item name                                         | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|--------------|-----------|-----|---------------------------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|              |           |     |                                                   | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Input-output | CT input  | 1   | CT operation                                      | 11152       | 2B90         | 27536          | 6B90         |      |       |        |       | -                         |         |
| Input-output | CT input  | 1   | Waiting time for CT measurement                   | 11153       | 2B91         | 27537          | 6B91         |      |       |        |       | -                         |         |
| Input-output | CT input  | 1   | Number of CT turns                                | 11154       | 2B92         | 27538          | 6B92         |      |       |        |       | -                         |         |
| Input-output | CT input  | 1   | Number of CT power line passes                    | 11155       | 2B93         | 27539          | 6B93         |      |       |        |       | -                         |         |
| Input-output | CT input  | 1   | Heater burnout detection current value            | 11156       | 2B94         | 27540          | 6B94         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 1   | Minimum current defined as overcurrent            | 11157       | 2B95         | 27541          | 6B95         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 1   | Minimum current defined as short circuit          | 11158       | 2B96         | 27542          | 6B96         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 1   | Hysteresis                                        | 11159       | 2B97         | 27543          | 6B97         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 1   | Delay time                                        | 11160       | 2B98         | 27544          | 6B98         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 1   | Condition for restoring status before measurement | 11161       | 2B99         | 27545          | 6B99         |      |       |        |       | -                         |         |
| Input-output | CT input  | 2   | CT operation                                      | 11168       | 2BA0         | 27552          | 6BA0         |      |       |        |       | -                         |         |
| Input-output | CT input  | 2   | Waiting time for CT measurement                   | 11169       | 2BA1         | 27553          | 6BA1         |      |       |        |       | -                         |         |
| Input-output | CT input  | 2   | Number of CT turns                                | 11170       | 2BA2         | 27554          | 6BA2         |      |       |        |       | -                         |         |
| Input-output | CT input  | 2   | Number of CT power line passes                    | 11171       | 2BA3         | 27555          | 6BA3         |      |       |        |       | -                         |         |
| Input-output | CT input  | 2   | Heater burnout detection current value            | 11172       | 2BA4         | 27556          | 6BA4         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 2   | Minimum current defined as overcurrent            | 11173       | 2BA5         | 27557          | 6BA5         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 2   | Minimum current defined as short circuit          | 11174       | 2BA6         | 27558          | 6BA6         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 2   | Hysteresis                                        | 11175       | 2BA7         | 27559          | 6BA7         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 2   | Delay time                                        | 11176       | 2BA8         | 27560          | 6BA8         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 2   | Condition for restoring status before measurement | 11177       | 2BA9         | 27561          | 6BA9         |      |       |        |       | -                         |         |
| Input-output | CT input  | 3   | CT operation                                      | 11184       | 2BB0         | 27568          | 6BB0         |      |       |        |       | -                         |         |
| Input-output | CT input  | 3   | Waiting time for CT measurement                   | 11185       | 2BB1         | 27569          | 6BB1         |      |       |        |       | -                         |         |
| Input-output | CT input  | 3   | Number of CT turns                                | 11186       | 2BB2         | 27570          | 6BB2         |      |       |        |       | -                         |         |
| Input-output | CT input  | 3   | Number of CT power line passes                    | 11187       | 2BB3         | 27571          | 6BB3         |      |       |        |       | -                         |         |
| Input-output | CT input  | 3   | Heater burnout detection current value            | 11188       | 2BB4         | 27572          | 6BB4         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 3   | Minimum current defined as overcurrent            | 11189       | 2BB5         | 27573          | 6BB5         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 3   | Minimum current defined as short circuit          | 11190       | 2BB6         | 27574          | 6BB6         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 3   | Hysteresis                                        | 11191       | 2BB7         | 27575          | 6BB7         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 3   | Delay time                                        | 11192       | 2BB8         | 27576          | 6BB8         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 3   | Condition for restoring status before measurement | 11193       | 2BB9         | 27577          | 6BB9         |      |       |        |       | -                         |         |
| Input-output | CT input  | 4   | CT operation                                      | 11200       | 2BC0         | 27584          | 6BC0         |      |       |        |       | -                         |         |
| Input-output | CT input  | 4   | Waiting time for CT measurement                   | 11201       | 2BC1         | 27585          | 6BC1         |      |       |        |       | -                         |         |
| Input-output | CT input  | 4   | Number of CT turns                                | 11202       | 2BC2         | 27586          | 6BC2         |      |       |        |       | -                         |         |
| Input-output | CT input  | 4   | Number of CT power line passes                    | 11203       | 2BC3         | 27587          | 6BC3         |      |       |        |       | -                         |         |
| Input-output | CT input  | 4   | Heater burnout detection current value            | 11204       | 2BC4         | 27588          | 6BC4         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 4   | Minimum current defined as overcurrent            | 11205       | 2BC5         | 27589          | 6BC5         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 4   | Minimum current defined as short circuit          | 11206       | 2BC6         | 27590          | 6BC6         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 4   | Hysteresis                                        | 11207       | 2BC7         | 27591          | 6BC7         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 4   | Delay time                                        | 11208       | 2BC8         | 27592          | 6BC8         |      |       |        |       | 1                         |         |
| Input-output | CT input  | 4   | Condition for restoring status before measurement | 11209       | 2BC9         | 27593          | 6BC9         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### SP/SP Group Selection

| Folder name | Bank name          | No. | Item name          | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|--------------------|-----|--------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                    |     |                    | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| SP          | SP group selection | 1   | SP group selection | 4096        | 1000         | 20480          | 5000         |      |       |        |       | -                         |         |
| SP          | SP group selection | 2   | SP group selection | 4100        | 1004         | 20484          | 5004         |      |       |        |       | -                         |         |
| SP          | SP group selection | 3   | SP group selection | 4104        | 1008         | 20488          | 5008         |      |       |        |       | -                         |         |
| SP          | SP group selection | 4   | SP group selection | 4108        | 100C         | 20492          | 500C         |      |       |        |       | -                         |         |



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### SP/LSP

| Folder name | Bank name | No. | Item name                        | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------|-----|----------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |           |     |                                  | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| SP          | LSP       | 1   | LSP1                             | 4112        | 1010         | 20496          | 5010         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 1   | PID group definition 1 (for LSP) | 4113        | 1011         | 20497          | 5011         |      |       |        |       | -                         |         |
| SP          | LSP       | 1   | LSP2                             | 4114        | 1012         | 20498          | 5012         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 1   | PID group definition 2 (for LSP) | 4115        | 1013         | 20499          | 5013         |      |       |        |       | -                         |         |
| SP          | LSP       | 1   | LSP3                             | 4116        | 1014         | 20500          | 5014         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 1   | PID group definition 3 (for LSP) | 4117        | 1015         | 20501          | 5015         |      |       |        |       | -                         |         |
| SP          | LSP       | 1   | LSP4                             | 4118        | 1016         | 20502          | 5016         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 1   | PID group definition 4 (for LSP) | 4119        | 1017         | 20503          | 5017         |      |       |        |       | -                         |         |
| SP          | LSP       | 2   | LSP1                             | 4144        | 1030         | 20528          | 5030         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 2   | PID group definition 1 (for LSP) | 4145        | 1031         | 20529          | 5031         |      |       |        |       | -                         |         |
| SP          | LSP       | 2   | LSP2                             | 4146        | 1032         | 20530          | 5032         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 2   | PID group definition 2 (for LSP) | 4147        | 1033         | 20531          | 5033         |      |       |        |       | -                         |         |
| SP          | LSP       | 2   | LSP3                             | 4148        | 1034         | 20532          | 5034         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 2   | PID group definition 3 (for LSP) | 4149        | 1035         | 20533          | 5035         |      |       |        |       | -                         |         |
| SP          | LSP       | 2   | LSP4                             | 4150        | 1036         | 20534          | 5036         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 2   | PID group definition 4 (for LSP) | 4151        | 1037         | 20535          | 5037         |      |       |        |       | -                         |         |
| SP          | LSP       | 3   | LSP1                             | 4176        | 1050         | 20560          | 5050         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 3   | PID group definition 1 (for LSP) | 4177        | 1051         | 20561          | 5051         |      |       |        |       | -                         |         |
| SP          | LSP       | 3   | LSP2                             | 4178        | 1052         | 20562          | 5052         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 3   | PID group definition 2 (for LSP) | 4179        | 1053         | 20563          | 5053         |      |       |        |       | -                         |         |
| SP          | LSP       | 3   | LSP3                             | 4180        | 1054         | 20564          | 5054         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 3   | PID group definition 3 (for LSP) | 4181        | 1055         | 20565          | 5055         |      |       |        |       | -                         |         |
| SP          | LSP       | 3   | LSP4                             | 4182        | 1056         | 20566          | 5056         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 3   | PID group definition 4 (for LSP) | 4183        | 1057         | 20567          | 5057         |      |       |        |       | -                         |         |
| SP          | LSP       | 4   | LSP1                             | 4208        | 1070         | 20592          | 5070         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 4   | PID group definition 1 (for LSP) | 4209        | 1071         | 20593          | 5071         |      |       |        |       | -                         |         |
| SP          | LSP       | 4   | LSP2                             | 4210        | 1072         | 20594          | 5072         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 4   | PID group definition 2 (for LSP) | 4211        | 1073         | 20595          | 5073         |      |       |        |       | -                         |         |
| SP          | LSP       | 4   | LSP3                             | 4212        | 1074         | 20596          | 5074         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 4   | PID group definition 3 (for LSP) | 4213        | 1075         | 20597          | 5075         |      |       |        |       | -                         |         |
| SP          | LSP       | 4   | LSP4                             | 4214        | 1076         | 20598          | 5076         |      |       |        |       | PID_PV                    |         |
| SP          | LSP       | 4   | PID group definition 4 (for LSP) | 4215        | 1077         | 20599          | 5077         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### SP/RSP

| Folder name | Bank name | No. | Item name                      | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------|-----|--------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |           |     |                                | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| SP          | RSP       | 1   | RSP                            | 4240        | 1090         | 20624          | 5090         |      | x     |        | x     | PID_PV                    |         |
| SP          | RSP       | 1   | PID group definition (for RSP) | 4241        | 1091         | 20625          | 5091         |      |       |        |       | -                         |         |
| SP          | RSP       | 2   | RSP                            | 4244        | 1094         | 20628          | 5094         |      | x     |        | x     | PID_PV                    |         |
| SP          | RSP       | 2   | PID group definition (for RSP) | 4245        | 1095         | 20629          | 5095         |      |       |        |       | -                         |         |



## Chapter 11. LIST OF COMMUNICATION DATA

### SP/SP Configuration

| Folder name | Bank name        | No. | Item name            | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|------------------|-----|----------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                  |     |                      | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| SP          | SP configuration | 1   | SP low limit         | 4256        | 10A0         | 20640          | 50A0         |      |       |        |       | PID_PV                    |         |
| SP          | SP configuration | 1   | SP high limit        | 4257        | 10A1         | 20641          | 50A1         |      |       |        |       | PID_PV                    |         |
| SP          | SP configuration | 2   | SP low limit         | 4260        | 10A4         | 20644          | 50A4         |      |       |        |       | PID_PV                    |         |
| SP          | SP configuration | 2   | SP high limit        | 4261        | 10A5         | 20645          | 50A5         |      |       |        |       | PID_PV                    |         |
| SP          | SP configuration | 3   | SP low limit         | 4264        | 10A8         | 20648          | 50A8         |      |       |        |       | PID_PV                    |         |
| SP          | SP configuration | 3   | SP high limit        | 4265        | 10A9         | 20649          | 50A9         |      |       |        |       | PID_PV                    |         |
| SP          | SP configuration | 4   | SP low limit         | 4268        | 10AC         | 20652          | 50AC         |      |       |        |       | PID_PV                    |         |
| SP          | SP configuration | 4   | SP high limit        | 4269        | 10AD         | 20653          | 50AD         |      |       |        |       | PID_PV                    |         |
| SP          | SP configuration | 1   | SP ramp unit         | 4272        | 10B0         | 20656          | 50B0         |      |       |        |       | -                         |         |
| SP          | SP configuration | 1   | SP ramp-up for LSP   | 4273        | 10B1         | 20657          | 50B1         |      |       |        |       | RAMP                      |         |
| SP          | SP configuration | 1   | SP ramp-down for LSP | 4274        | 10B2         | 20658          | 50B2         |      |       |        |       | RAMP                      |         |
| SP          | SP configuration | 1   | SP ramp-up for RSP   | 4276        | 10B4         | 20660          | 50B4         |      |       |        |       | RAMP                      |         |
| SP          | SP configuration | 1   | SP ramp-down for RSP | 4277        | 10B5         | 20661          | 50B5         |      |       |        |       | RAMP                      |         |
| SP          | SP configuration | 1   | PV start for LSP     | 4280        | 10B8         | 20664          | 50B8         |      |       |        |       | -                         |         |
| SP          | SP configuration | 1   | PV start for RSP     | 4281        | 10B9         | 20665          | 50B9         |      |       |        |       | -                         |         |
| SP          | SP configuration | 2   | SP ramp unit         | 4288        | 10C0         | 20672          | 50C0         |      |       |        |       | -                         |         |
| SP          | SP configuration | 2   | SP ramp-up for LSP   | 4289        | 10C1         | 20673          | 50C1         |      |       |        |       | RAMP                      |         |
| SP          | SP configuration | 2   | SP ramp-down for LSP | 4290        | 10C2         | 20674          | 50C2         |      |       |        |       | RAMP                      |         |
| SP          | SP configuration | 2   | SP ramp-up for RSP   | 4292        | 10C4         | 20676          | 50C4         |      |       |        |       | RAMP                      |         |
| SP          | SP configuration | 2   | SP ramp-down for RSP | 4293        | 10C5         | 20677          | 50C5         |      |       |        |       | RAMP                      |         |
| SP          | SP configuration | 2   | PV start for LSP     | 4296        | 10C8         | 20680          | 50C8         |      |       |        |       | -                         |         |
| SP          | SP configuration | 2   | PV start for RSP     | 4297        | 10C9         | 20681          | 50C9         |      |       |        |       | -                         |         |
| SP          | SP configuration | 3   | SP ramp unit         | 4304        | 10D0         | 20688          | 50D0         |      |       |        |       | -                         |         |
| SP          | SP configuration | 3   | SP ramp-up for LSP   | 4305        | 10D1         | 20689          | 50D1         |      |       |        |       | RAMP                      |         |
| SP          | SP configuration | 3   | SP ramp-down for LSP | 4306        | 10D2         | 20690          | 50D2         |      |       |        |       | RAMP                      |         |
| SP          | SP configuration | 3   | PV start for LSP     | 4312        | 10D8         | 20696          | 50D8         |      |       |        |       | -                         |         |
| SP          | SP configuration | 4   | SP ramp unit         | 4320        | 10E0         | 20704          | 50E0         |      |       |        |       | -                         |         |
| SP          | SP configuration | 4   | SP ramp-up for LSP   | 4321        | 10E1         | 20705          | 50E1         |      |       |        |       | RAMP                      |         |
| SP          | SP configuration | 4   | SP ramp-down for LSP | 4322        | 10E2         | 20706          | 50E2         |      |       |        |       | RAMP                      |         |
| SP          | SP configuration | 4   | PV start for LSP     | 4328        | 10E8         | 20712          | 50E8         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Event/Event Settings

| Folder name | Bank name       | No. | Item name          | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------------|-----|--------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                 |     |                    | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Event       | Operating point | 1   | Event main setting | 4336        | 10F0         | 20720          | 50F0         |      |       |        |       | EV                        |         |
| Event       | Operating point | 1   | Event sub-setting  | 4337        | 10F1         | 20721          | 50F1         |      |       |        |       | EV                        |         |
| Event       | Operating point | 2   | Event main setting | 4338        | 10F2         | 20722          | 50F2         |      |       |        |       | EV                        |         |
| Event       | Operating point | 2   | Event sub-setting  | 4339        | 10F3         | 20723          | 50F3         |      |       |        |       | EV                        |         |
| Event       | Operating point | 3   | Event main setting | 4340        | 10F4         | 20724          | 50F4         |      |       |        |       | EV                        |         |
| Event       | Operating point | 3   | Event sub-setting  | 4341        | 10F5         | 20725          | 50F5         |      |       |        |       | EV                        |         |
| Event       | Operating point | 4   | Event main setting | 4342        | 10F6         | 20726          | 50F6         |      |       |        |       | EV                        |         |
| Event       | Operating point | 4   | Event sub-setting  | 4343        | 10F7         | 20727          | 50F7         |      |       |        |       | EV                        |         |
| Event       | Operating point | 5   | Event main setting | 4344        | 10F8         | 20728          | 50F8         |      |       |        |       | EV                        |         |
| Event       | Operating point | 5   | Event sub-setting  | 4345        | 10F9         | 20729          | 50F9         |      |       |        |       | EV                        |         |
| Event       | Operating point | 6   | Event main setting | 4346        | 10FA         | 20730          | 50FA         |      |       |        |       | EV                        |         |
| Event       | Operating point | 6   | Event sub-setting  | 4347        | 10FB         | 20731          | 50FB         |      |       |        |       | EV                        |         |
| Event       | Operating point | 7   | Event main setting | 4348        | 10FC         | 20732          | 50FC         |      |       |        |       | EV                        |         |
| Event       | Operating point | 7   | Event sub-setting  | 4349        | 10FD         | 20733          | 50FD         |      |       |        |       | EV                        |         |
| Event       | Operating point | 8   | Event main setting | 4350        | 10FE         | 20734          | 50FE         |      |       |        |       | EV                        |         |
| Event       | Operating point | 8   | Event sub-setting  | 4351        | 10FF         | 20735          | 50FF         |      |       |        |       | EV                        |         |
| Event       | Operating point | 9   | Event main setting | 4352        | 1100         | 20736          | 5100         |      |       |        |       | EV                        |         |
| Event       | Operating point | 9   | Event sub-setting  | 4353        | 1101         | 20737          | 5101         |      |       |        |       | EV                        |         |
| Event       | Operating point | 10  | Event main setting | 4354        | 1102         | 20738          | 5102         |      |       |        |       | EV                        |         |
| Event       | Operating point | 10  | Event sub-setting  | 4355        | 1103         | 20739          | 5103         |      |       |        |       | EV                        |         |
| Event       | Operating point | 11  | Event main setting | 4356        | 1104         | 20740          | 5104         |      |       |        |       | EV                        |         |
| Event       | Operating point | 11  | Event sub-setting  | 4357        | 1105         | 20741          | 5105         |      |       |        |       | EV                        |         |
| Event       | Operating point | 12  | Event main setting | 4358        | 1106         | 20742          | 5106         |      |       |        |       | EV                        |         |
| Event       | Operating point | 12  | Event sub-setting  | 4359        | 1107         | 20743          | 5107         |      |       |        |       | EV                        |         |
| Event       | Operating point | 13  | Event main setting | 4360        | 1108         | 20744          | 5108         |      |       |        |       | EV                        |         |
| Event       | Operating point | 13  | Event sub-setting  | 4361        | 1109         | 20745          | 5109         |      |       |        |       | EV                        |         |
| Event       | Operating point | 14  | Event main setting | 4362        | 110A         | 20746          | 510A         |      |       |        |       | EV                        |         |
| Event       | Operating point | 14  | Event sub-setting  | 4363        | 110B         | 20747          | 510B         |      |       |        |       | EV                        |         |
| Event       | Operating point | 15  | Event main setting | 4364        | 110C         | 20748          | 510C         |      |       |        |       | EV                        |         |
| Event       | Operating point | 15  | Event sub-setting  | 4365        | 110D         | 20749          | 510D         |      |       |        |       | EV                        |         |
| Event       | Operating point | 16  | Event main setting | 4366        | 110E         | 20750          | 510E         |      |       |        |       | EV                        |         |
| Event       | Operating point | 16  | Event sub-setting  | 4367        | 110F         | 20751          | 510F         |      |       |        |       | EV                        |         |
| Event       | Operating point | 17  | Event main setting | 4368        | 1110         | 20752          | 5110         |      |       |        |       | EV                        |         |
| Event       | Operating point | 17  | Event sub-setting  | 4369        | 1111         | 20753          | 5111         |      |       |        |       | EV                        |         |
| Event       | Operating point | 18  | Event main setting | 4370        | 1112         | 20754          | 5112         |      |       |        |       | EV                        |         |
| Event       | Operating point | 18  | Event sub-setting  | 4371        | 1113         | 20755          | 5113         |      |       |        |       | EV                        |         |
| Event       | Operating point | 19  | Event main setting | 4372        | 1114         | 20756          | 5114         |      |       |        |       | EV                        |         |
| Event       | Operating point | 19  | Event sub-setting  | 4373        | 1115         | 20757          | 5115         |      |       |        |       | EV                        |         |
| Event       | Operating point | 20  | Event main setting | 4374        | 1116         | 20758          | 5116         |      |       |        |       | EV                        |         |
| Event       | Operating point | 20  | Event sub-setting  | 4375        | 1117         | 20759          | 5117         |      |       |        |       | EV                        |         |
| Event       | Operating point | 21  | Event main setting | 4376        | 1118         | 20760          | 5118         |      |       |        |       | EV                        |         |
| Event       | Operating point | 21  | Event sub-setting  | 4377        | 1119         | 20761          | 5119         |      |       |        |       | EV                        |         |
| Event       | Operating point | 22  | Event main setting | 4378        | 111A         | 20762          | 511A         |      |       |        |       | EV                        |         |
| Event       | Operating point | 22  | Event sub-setting  | 4379        | 111B         | 20763          | 511B         |      |       |        |       | EV                        |         |
| Event       | Operating point | 23  | Event main setting | 4380        | 111C         | 20764          | 511C         |      |       |        |       | EV                        |         |
| Event       | Operating point | 23  | Event sub-setting  | 4381        | 111D         | 20765          | 511D         |      |       |        |       | EV                        |         |
| Event       | Operating point | 24  | Event main setting | 4382        | 111E         | 20766          | 511E         |      |       |        |       | EV                        |         |
| Event       | Operating point | 24  | Event sub-setting  | 4383        | 111F         | 20767          | 511F         |      |       |        |       | EV                        |         |



## Chapter 11. LIST OF COMMUNICATION DATA

## Event/Event Configuration

| Folder name | Bank name     | No. | Item name               | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|---------------|-----|-------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |               |     |                         | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Event       | Event config. | 1   | Operation type          | 4400        | 1130         | 20784          | 5130         |      |       |        |       | -                         |         |
| Event       | Event config. | 1   | Loop/channel definition | 4401        | 1131         | 20785          | 5131         |      |       |        |       | -                         |         |
| Event       | Event config. | 1   | Direct/Reverse          | 4402        | 1132         | 20786          | 5132         |      |       |        |       | -                         |         |
| Event       | Event config. | 1   | Standby                 | 4403        | 1133         | 20787          | 5133         |      |       |        |       | -                         |         |
| Event       | Event config. | 1   | EVENT state at READY    | 4404        | 1134         | 20788          | 5134         |      |       |        |       | -                         |         |
| Event       | Event config. | 1   | Decimal point position  | 4405        | 1135         | 20789          | 5135         |      |       |        |       | -                         |         |
| Event       | Event config. | 1   | Hysteresis              | 4406        | 1136         | 20790          | 5136         |      |       |        |       | EV                        |         |
| Event       | Event config. | 1   | ON delay                | 4407        | 1137         | 20791          | 5137         |      |       |        |       | 1                         |         |
| Event       | Event config. | 1   | OFF delay               | 4408        | 1138         | 20792          | 5138         |      |       |        |       | 1                         |         |
| Event       | Event config. | 2   | Operation type          | 4416        | 1140         | 20800          | 5140         |      |       |        |       | -                         |         |
| Event       | Event config. | 2   | Loop/channel definition | 4417        | 1141         | 20801          | 5141         |      |       |        |       | -                         |         |
| Event       | Event config. | 2   | Direct/Reverse          | 4418        | 1142         | 20802          | 5142         |      |       |        |       | -                         |         |
| Event       | Event config. | 2   | Standby                 | 4419        | 1143         | 20803          | 5143         |      |       |        |       | -                         |         |
| Event       | Event config. | 2   | EVENT state at READY    | 4420        | 1144         | 20804          | 5144         |      |       |        |       | -                         |         |
| Event       | Event config. | 2   | Decimal point position  | 4421        | 1145         | 20805          | 5145         |      |       |        |       | -                         |         |
| Event       | Event config. | 2   | Hysteresis              | 4422        | 1146         | 20806          | 5146         |      |       |        |       | EV                        |         |
| Event       | Event config. | 2   | ON delay                | 4423        | 1147         | 20807          | 5147         |      |       |        |       | 1                         |         |
| Event       | Event config. | 2   | OFF delay               | 4424        | 1148         | 20808          | 5148         |      |       |        |       | 1                         |         |
| Event       | Event config. | 3   | Operation type          | 4432        | 1150         | 20816          | 5150         |      |       |        |       | -                         |         |
| Event       | Event config. | 3   | Loop/channel definition | 4433        | 1151         | 20817          | 5151         |      |       |        |       | -                         |         |
| Event       | Event config. | 3   | Direct/Reverse          | 4434        | 1152         | 20818          | 5152         |      |       |        |       | -                         |         |
| Event       | Event config. | 3   | Standby                 | 4435        | 1153         | 20819          | 5153         |      |       |        |       | -                         |         |
| Event       | Event config. | 3   | EVENT state at READY    | 4436        | 1154         | 20820          | 5154         |      |       |        |       | -                         |         |
| Event       | Event config. | 3   | Decimal point position  | 4437        | 1155         | 20821          | 5155         |      |       |        |       | -                         |         |
| Event       | Event config. | 3   | Hysteresis              | 4438        | 1156         | 20822          | 5156         |      |       |        |       | EV                        |         |
| Event       | Event config. | 3   | ON delay                | 4439        | 1157         | 20823          | 5157         |      |       |        |       | 1                         |         |
| Event       | Event config. | 3   | OFF delay               | 4440        | 1158         | 20824          | 5158         |      |       |        |       | 1                         |         |
| Event       | Event config. | 4   | Operation type          | 4448        | 1160         | 20832          | 5160         |      |       |        |       | -                         |         |
| Event       | Event config. | 4   | Loop/channel definition | 4449        | 1161         | 20833          | 5161         |      |       |        |       | -                         |         |
| Event       | Event config. | 4   | Direct/Reverse          | 4450        | 1162         | 20834          | 5162         |      |       |        |       | -                         |         |
| Event       | Event config. | 4   | Standby                 | 4451        | 1163         | 20835          | 5163         |      |       |        |       | -                         |         |
| Event       | Event config. | 4   | EVENT state at READY    | 4452        | 1164         | 20836          | 5164         |      |       |        |       | -                         |         |
| Event       | Event config. | 4   | Decimal point position  | 4453        | 1165         | 20837          | 5165         |      |       |        |       | -                         |         |
| Event       | Event config. | 4   | Hysteresis              | 4454        | 1166         | 20838          | 5166         |      |       |        |       | EV                        |         |
| Event       | Event config. | 4   | ON delay                | 4455        | 1167         | 20839          | 5167         |      |       |        |       | 1                         |         |
| Event       | Event config. | 4   | OFF delay               | 4456        | 1168         | 20840          | 5168         |      |       |        |       | 1                         |         |
| Event       | Event config. | 5   | Operation type          | 4464        | 1170         | 20848          | 5170         |      |       |        |       | -                         |         |
| Event       | Event config. | 5   | Loop/channel definition | 4465        | 1171         | 20849          | 5171         |      |       |        |       | -                         |         |
| Event       | Event config. | 5   | Direct/Reverse          | 4466        | 1172         | 20850          | 5172         |      |       |        |       | -                         |         |
| Event       | Event config. | 5   | Standby                 | 4467        | 1173         | 20851          | 5173         |      |       |        |       | -                         |         |
| Event       | Event config. | 5   | EVENT state at READY    | 4468        | 1174         | 20852          | 5174         |      |       |        |       | -                         |         |
| Event       | Event config. | 5   | Decimal point position  | 4469        | 1175         | 20853          | 5175         |      |       |        |       | -                         |         |
| Event       | Event config. | 5   | Hysteresis              | 4470        | 1176         | 20854          | 5176         |      |       |        |       | EV                        |         |
| Event       | Event config. | 5   | ON delay                | 4471        | 1177         | 20855          | 5177         |      |       |        |       | 1                         |         |
| Event       | Event config. | 5   | OFF delay               | 4472        | 1178         | 20856          | 5178         |      |       |        |       | 1                         |         |
| Event       | Event config. | 6   | Operation type          | 4480        | 1180         | 20864          | 5180         |      |       |        |       | -                         |         |
| Event       | Event config. | 6   | Loop/channel definition | 4481        | 1181         | 20865          | 5181         |      |       |        |       | -                         |         |
| Event       | Event config. | 6   | Direct/Reverse          | 4482        | 1182         | 20866          | 5182         |      |       |        |       | -                         |         |
| Event       | Event config. | 6   | Standby                 | 4483        | 1183         | 20867          | 5183         |      |       |        |       | -                         |         |
| Event       | Event config. | 6   | EVENT state at READY    | 4484        | 1184         | 20868          | 5184         |      |       |        |       | -                         |         |
| Event       | Event config. | 6   | Decimal point position  | 4485        | 1185         | 20869          | 5185         |      |       |        |       | -                         |         |
| Event       | Event config. | 6   | Hysteresis              | 4486        | 1186         | 20870          | 5186         |      |       |        |       | EV                        |         |
| Event       | Event config. | 6   | ON delay                | 4487        | 1187         | 20871          | 5187         |      |       |        |       | 1                         |         |
| Event       | Event config. | 6   | OFF delay               | 4488        | 1188         | 20872          | 5188         |      |       |        |       | 1                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Event/Event Configuration

| Folder name | Bank name     | No. | Item name               | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|---------------|-----|-------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |               |     |                         | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Event       | Event config. | 7   | Operation type          | 4496        | 1190         | 20880          | 5190         |      |       |        |       | -                         |         |
| Event       | Event config. | 7   | Loop/channel definition | 4497        | 1191         | 20881          | 5191         |      |       |        |       | -                         |         |
| Event       | Event config. | 7   | Direct/Reverse          | 4498        | 1192         | 20882          | 5192         |      |       |        |       | -                         |         |
| Event       | Event config. | 7   | Standby                 | 4499        | 1193         | 20883          | 5193         |      |       |        |       | -                         |         |
| Event       | Event config. | 7   | EVENT state at READY    | 4500        | 1194         | 20884          | 5194         |      |       |        |       | -                         |         |
| Event       | Event config. | 7   | Decimal point position  | 4501        | 1195         | 20885          | 5195         |      |       |        |       | -                         |         |
| Event       | Event config. | 7   | Hysteresis              | 4502        | 1196         | 20886          | 5196         |      |       |        |       | EV                        |         |
| Event       | Event config. | 7   | ON delay                | 4503        | 1197         | 20887          | 5197         |      |       |        |       | 1                         |         |
| Event       | Event config. | 7   | OFF delay               | 4504        | 1198         | 20888          | 5198         |      |       |        |       | 1                         |         |
| Event       | Event config. | 8   | Operation type          | 4512        | 11A0         | 20896          | 51A0         |      |       |        |       | -                         |         |
| Event       | Event config. | 8   | Loop/channel definition | 4513        | 11A1         | 20897          | 51A1         |      |       |        |       | -                         |         |
| Event       | Event config. | 8   | Direct/Reverse          | 4514        | 11A2         | 20898          | 51A2         |      |       |        |       | -                         |         |
| Event       | Event config. | 8   | Standby                 | 4515        | 11A3         | 20899          | 51A3         |      |       |        |       | -                         |         |
| Event       | Event config. | 8   | EVENT state at READY    | 4516        | 11A4         | 20900          | 51A4         |      |       |        |       | -                         |         |
| Event       | Event config. | 8   | Decimal point position  | 4517        | 11A5         | 20901          | 51A5         |      |       |        |       | -                         |         |
| Event       | Event config. | 8   | Hysteresis              | 4518        | 11A6         | 20902          | 51A6         |      |       |        |       | EV                        |         |
| Event       | Event config. | 8   | ON delay                | 4519        | 11A7         | 20903          | 51A7         |      |       |        |       | 1                         |         |
| Event       | Event config. | 8   | OFF delay               | 4520        | 11A8         | 20904          | 51A8         |      |       |        |       | 1                         |         |
| Event       | Event config. | 9   | Operation type          | 4528        | 11B0         | 20912          | 51B0         |      |       |        |       | -                         |         |
| Event       | Event config. | 9   | Loop/channel definition | 4529        | 11B1         | 20913          | 51B1         |      |       |        |       | -                         |         |
| Event       | Event config. | 9   | Direct/Reverse          | 4530        | 11B2         | 20914          | 51B2         |      |       |        |       | -                         |         |
| Event       | Event config. | 9   | Standby                 | 4531        | 11B3         | 20915          | 51B3         |      |       |        |       | -                         |         |
| Event       | Event config. | 9   | EVENT state at READY    | 4532        | 11B4         | 20916          | 51B4         |      |       |        |       | -                         |         |
| Event       | Event config. | 9   | Decimal point position  | 4533        | 11B5         | 20917          | 51B5         |      |       |        |       | -                         |         |
| Event       | Event config. | 9   | Hysteresis              | 4534        | 11B6         | 20918          | 51B6         |      |       |        |       | EV                        |         |
| Event       | Event config. | 9   | ON delay                | 4535        | 11B7         | 20919          | 51B7         |      |       |        |       | 1                         |         |
| Event       | Event config. | 9   | OFF delay               | 4536        | 11B8         | 20920          | 51B8         |      |       |        |       | 1                         |         |
| Event       | Event config. | 10  | Operation type          | 4544        | 11C0         | 20928          | 51C0         |      |       |        |       | -                         |         |
| Event       | Event config. | 10  | Loop/channel definition | 4545        | 11C1         | 20929          | 51C1         |      |       |        |       | -                         |         |
| Event       | Event config. | 10  | Direct/Reverse          | 4546        | 11C2         | 20930          | 51C2         |      |       |        |       | -                         |         |
| Event       | Event config. | 10  | Standby                 | 4547        | 11C3         | 20931          | 51C3         |      |       |        |       | -                         |         |
| Event       | Event config. | 10  | EVENT state at READY    | 4548        | 11C4         | 20932          | 51C4         |      |       |        |       | -                         |         |
| Event       | Event config. | 10  | Decimal point position  | 4549        | 11C5         | 20933          | 51C5         |      |       |        |       | -                         |         |
| Event       | Event config. | 10  | Hysteresis              | 4550        | 11C6         | 20934          | 51C6         |      |       |        |       | EV                        |         |
| Event       | Event config. | 10  | ON delay                | 4551        | 11C7         | 20935          | 51C7         |      |       |        |       | 1                         |         |
| Event       | Event config. | 10  | OFF delay               | 4552        | 11C8         | 20936          | 51C8         |      |       |        |       | 1                         |         |
| Event       | Event config. | 11  | Operation type          | 4560        | 11D0         | 20944          | 51D0         |      |       |        |       | -                         |         |
| Event       | Event config. | 11  | Loop/channel definition | 4561        | 11D1         | 20945          | 51D1         |      |       |        |       | -                         |         |
| Event       | Event config. | 11  | Direct/Reverse          | 4562        | 11D2         | 20946          | 51D2         |      |       |        |       | -                         |         |
| Event       | Event config. | 11  | Standby                 | 4563        | 11D3         | 20947          | 51D3         |      |       |        |       | -                         |         |
| Event       | Event config. | 11  | EVENT state at READY    | 4564        | 11D4         | 20948          | 51D4         |      |       |        |       | -                         |         |
| Event       | Event config. | 11  | Decimal point position  | 4565        | 11D5         | 20949          | 51D5         |      |       |        |       | -                         |         |
| Event       | Event config. | 11  | Hysteresis              | 4566        | 11D6         | 20950          | 51D6         |      |       |        |       | EV                        |         |
| Event       | Event config. | 11  | ON delay                | 4567        | 11D7         | 20951          | 51D7         |      |       |        |       | 1                         |         |
| Event       | Event config. | 11  | OFF delay               | 4568        | 11D8         | 20952          | 51D8         |      |       |        |       | 1                         |         |
| Event       | Event config. | 12  | Operation type          | 4576        | 11E0         | 20960          | 51E0         |      |       |        |       | -                         |         |
| Event       | Event config. | 12  | Loop/channel definition | 4577        | 11E1         | 20961          | 51E1         |      |       |        |       | -                         |         |
| Event       | Event config. | 12  | Direct/Reverse          | 4578        | 11E2         | 20962          | 51E2         |      |       |        |       | -                         |         |
| Event       | Event config. | 12  | Standby                 | 4579        | 11E3         | 20963          | 51E3         |      |       |        |       | -                         |         |
| Event       | Event config. | 12  | EVENT state at READY    | 4580        | 11E4         | 20964          | 51E4         |      |       |        |       | -                         |         |
| Event       | Event config. | 12  | Decimal point position  | 4581        | 11E5         | 20965          | 51E5         |      |       |        |       | -                         |         |
| Event       | Event config. | 12  | Hysteresis              | 4582        | 11E6         | 20966          | 51E6         |      |       |        |       | EV                        |         |
| Event       | Event config. | 12  | ON delay                | 4583        | 11E7         | 20967          | 51E7         |      |       |        |       | 1                         |         |
| Event       | Event config. | 12  | OFF delay               | 4584        | 11E8         | 20968          | 51E8         |      |       |        |       | 1                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Event/Event Configuration

| Folder name | Bank name     | No. | Item name               | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|---------------|-----|-------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |               |     |                         | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Event       | Event config. | 13  | Operation type          | 4592        | 11F0         | 20976          | 51F0         |      |       |        |       | -                         |         |
| Event       | Event config. | 13  | Loop/channel definition | 4593        | 11F1         | 20977          | 51F1         |      |       |        |       | -                         |         |
| Event       | Event config. | 13  | Direct/Reverse          | 4594        | 11F2         | 20978          | 51F2         |      |       |        |       | -                         |         |
| Event       | Event config. | 13  | Standby                 | 4595        | 11F3         | 20979          | 51F3         |      |       |        |       | -                         |         |
| Event       | Event config. | 13  | EVENT state at READY    | 4596        | 11F4         | 20980          | 51F4         |      |       |        |       | -                         |         |
| Event       | Event config. | 13  | Decimal point position  | 4597        | 11F5         | 20981          | 51F5         |      |       |        |       | -                         |         |
| Event       | Event config. | 13  | Hysteresis              | 4598        | 11F6         | 20982          | 51F6         |      |       |        |       | EV                        |         |
| Event       | Event config. | 13  | ON delay                | 4599        | 11F7         | 20983          | 51F7         |      |       |        |       | 1                         |         |
| Event       | Event config. | 13  | OFF delay               | 4600        | 11F8         | 20984          | 51F8         |      |       |        |       | 1                         |         |
| Event       | Event config. | 14  | Operation type          | 4608        | 1200         | 20992          | 5200         |      |       |        |       | -                         |         |
| Event       | Event config. | 14  | Loop/channel definition | 4609        | 1201         | 20993          | 5201         |      |       |        |       | -                         |         |
| Event       | Event config. | 14  | Direct/Reverse          | 4610        | 1202         | 20994          | 5202         |      |       |        |       | -                         |         |
| Event       | Event config. | 14  | Standby                 | 4611        | 1203         | 20995          | 5203         |      |       |        |       | -                         |         |
| Event       | Event config. | 14  | EVENT state at READY    | 4612        | 1204         | 20996          | 5204         |      |       |        |       | -                         |         |
| Event       | Event config. | 14  | Decimal point position  | 4613        | 1205         | 20997          | 5205         |      |       |        |       | -                         |         |
| Event       | Event config. | 14  | Hysteresis              | 4614        | 1206         | 20998          | 5206         |      |       |        |       | EV                        |         |
| Event       | Event config. | 14  | ON delay                | 4615        | 1207         | 20999          | 5207         |      |       |        |       | 1                         |         |
| Event       | Event config. | 14  | OFF delay               | 4616        | 1208         | 21000          | 5208         |      |       |        |       | 1                         |         |
| Event       | Event config. | 15  | Operation type          | 4624        | 1210         | 21008          | 5210         |      |       |        |       | -                         |         |
| Event       | Event config. | 15  | Loop/channel definition | 4625        | 1211         | 21009          | 5211         |      |       |        |       | -                         |         |
| Event       | Event config. | 15  | Direct/Reverse          | 4626        | 1212         | 21010          | 5212         |      |       |        |       | -                         |         |
| Event       | Event config. | 15  | Standby                 | 4627        | 1213         | 21011          | 5213         |      |       |        |       | -                         |         |
| Event       | Event config. | 15  | EVENT state at READY    | 4628        | 1214         | 21012          | 5214         |      |       |        |       | -                         |         |
| Event       | Event config. | 15  | Decimal point position  | 4629        | 1215         | 21013          | 5215         |      |       |        |       | -                         |         |
| Event       | Event config. | 15  | Hysteresis              | 4630        | 1216         | 21014          | 5216         |      |       |        |       | EV                        |         |
| Event       | Event config. | 15  | ON delay                | 4631        | 1217         | 21015          | 5217         |      |       |        |       | 1                         |         |
| Event       | Event config. | 15  | OFF delay               | 4632        | 1218         | 21016          | 5218         |      |       |        |       | 1                         |         |
| Event       | Event config. | 16  | Operation type          | 4640        | 1220         | 21024          | 5220         |      |       |        |       | -                         |         |
| Event       | Event config. | 16  | Loop/channel definition | 4641        | 1221         | 21025          | 5221         |      |       |        |       | -                         |         |
| Event       | Event config. | 16  | Direct/Reverse          | 4642        | 1222         | 21026          | 5222         |      |       |        |       | -                         |         |
| Event       | Event config. | 16  | Standby                 | 4643        | 1223         | 21027          | 5223         |      |       |        |       | -                         |         |
| Event       | Event config. | 16  | EVENT state at READY    | 4644        | 1224         | 21028          | 5224         |      |       |        |       | -                         |         |
| Event       | Event config. | 16  | Decimal point position  | 4645        | 1225         | 21029          | 5225         |      |       |        |       | -                         |         |
| Event       | Event config. | 16  | Hysteresis              | 4646        | 1226         | 21030          | 5226         |      |       |        |       | EV                        |         |
| Event       | Event config. | 16  | ON delay                | 4647        | 1227         | 21031          | 5227         |      |       |        |       | 1                         |         |
| Event       | Event config. | 16  | OFF delay               | 4648        | 1228         | 21032          | 5228         |      |       |        |       | 1                         |         |
| Event       | Event config. | 17  | Operation type          | 4656        | 1230         | 21040          | 5230         |      |       |        |       | -                         |         |
| Event       | Event config. | 17  | Loop/channel definition | 4657        | 1231         | 21041          | 5231         |      |       |        |       | -                         |         |
| Event       | Event config. | 17  | Direct/Reverse          | 4658        | 1232         | 21042          | 5232         |      |       |        |       | -                         |         |
| Event       | Event config. | 17  | Standby                 | 4659        | 1233         | 21043          | 5233         |      |       |        |       | -                         |         |
| Event       | Event config. | 17  | EVENT state at READY    | 4660        | 1234         | 21044          | 5234         |      |       |        |       | -                         |         |
| Event       | Event config. | 17  | Decimal point position  | 4661        | 1235         | 21045          | 5235         |      |       |        |       | -                         |         |
| Event       | Event config. | 17  | Hysteresis              | 4662        | 1236         | 21046          | 5236         |      |       |        |       | EV                        |         |
| Event       | Event config. | 17  | ON delay                | 4663        | 1237         | 21047          | 5237         |      |       |        |       | 1                         |         |
| Event       | Event config. | 17  | OFF delay               | 4664        | 1238         | 21048          | 5238         |      |       |        |       | 1                         |         |
| Event       | Event config. | 18  | Operation type          | 4672        | 1240         | 21056          | 5240         |      |       |        |       | -                         |         |
| Event       | Event config. | 18  | Loop/channel definition | 4673        | 1241         | 21057          | 5241         |      |       |        |       | -                         |         |
| Event       | Event config. | 18  | Direct/Reverse          | 4674        | 1242         | 21058          | 5242         |      |       |        |       | -                         |         |
| Event       | Event config. | 18  | Standby                 | 4675        | 1243         | 21059          | 5243         |      |       |        |       | -                         |         |
| Event       | Event config. | 18  | EVENT state at READY    | 4676        | 1244         | 21060          | 5244         |      |       |        |       | -                         |         |
| Event       | Event config. | 18  | Decimal point position  | 4677        | 1245         | 21061          | 5245         |      |       |        |       | -                         |         |
| Event       | Event config. | 18  | Hysteresis              | 4678        | 1246         | 21062          | 5246         |      |       |        |       | EV                        |         |
| Event       | Event config. | 18  | ON delay                | 4679        | 1247         | 21063          | 5247         |      |       |        |       | 1                         |         |
| Event       | Event config. | 18  | OFF delay               | 4680        | 1248         | 21064          | 5248         |      |       |        |       | 1                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Event/Event Configuration

| Folder name | Bank name     | No. | Item name               | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|---------------|-----|-------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |               |     |                         | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Event       | Event config. | 19  | Operation type          | 4688        | 1250         | 21072          | 5250         |      |       |        |       | -                         |         |
| Event       | Event config. | 19  | Loop/channel definition | 4689        | 1251         | 21073          | 5251         |      |       |        |       | -                         |         |
| Event       | Event config. | 19  | Direct/Reverse          | 4690        | 1252         | 21074          | 5252         |      |       |        |       | -                         |         |
| Event       | Event config. | 19  | Standby                 | 4691        | 1253         | 21075          | 5253         |      |       |        |       | -                         |         |
| Event       | Event config. | 19  | EVENT state at READY    | 4692        | 1254         | 21076          | 5254         |      |       |        |       | -                         |         |
| Event       | Event config. | 19  | Decimal point position  | 4693        | 1255         | 21077          | 5255         |      |       |        |       | -                         |         |
| Event       | Event config. | 19  | Hysteresis              | 4694        | 1256         | 21078          | 5256         |      |       |        |       | EV                        |         |
| Event       | Event config. | 19  | ON delay                | 4695        | 1257         | 21079          | 5257         |      |       |        |       | 1                         |         |
| Event       | Event config. | 19  | OFF delay               | 4696        | 1258         | 21080          | 5258         |      |       |        |       | 1                         |         |
| Event       | Event config. | 20  | Operation type          | 4704        | 1260         | 21088          | 5260         |      |       |        |       | -                         |         |
| Event       | Event config. | 20  | Loop/channel definition | 4705        | 1261         | 21089          | 5261         |      |       |        |       | -                         |         |
| Event       | Event config. | 20  | Direct/Reverse          | 4706        | 1262         | 21090          | 5262         |      |       |        |       | -                         |         |
| Event       | Event config. | 20  | Standby                 | 4707        | 1263         | 21091          | 5263         |      |       |        |       | -                         |         |
| Event       | Event config. | 20  | EVENT state at READY    | 4708        | 1264         | 21092          | 5264         |      |       |        |       | -                         |         |
| Event       | Event config. | 20  | Decimal point position  | 4709        | 1265         | 21093          | 5265         |      |       |        |       | -                         |         |
| Event       | Event config. | 20  | Hysteresis              | 4710        | 1266         | 21094          | 5266         |      |       |        |       | EV                        |         |
| Event       | Event config. | 20  | ON delay                | 4711        | 1267         | 21095          | 5267         |      |       |        |       | 1                         |         |
| Event       | Event config. | 20  | OFF delay               | 4712        | 1268         | 21096          | 5268         |      |       |        |       | 1                         |         |
| Event       | Event config. | 21  | Operation type          | 4720        | 1270         | 21104          | 5270         |      |       |        |       | -                         |         |
| Event       | Event config. | 21  | Loop/channel definition | 4721        | 1271         | 21105          | 5271         |      |       |        |       | -                         |         |
| Event       | Event config. | 21  | Direct/Reverse          | 4722        | 1272         | 21106          | 5272         |      |       |        |       | -                         |         |
| Event       | Event config. | 21  | Standby                 | 4723        | 1273         | 21107          | 5273         |      |       |        |       | -                         |         |
| Event       | Event config. | 21  | EVENT state at READY    | 4724        | 1274         | 21108          | 5274         |      |       |        |       | -                         |         |
| Event       | Event config. | 21  | Decimal point position  | 4725        | 1275         | 21109          | 5275         |      |       |        |       | -                         |         |
| Event       | Event config. | 21  | Hysteresis              | 4726        | 1276         | 21110          | 5276         |      |       |        |       | EV                        |         |
| Event       | Event config. | 21  | ON delay                | 4727        | 1277         | 21111          | 5277         |      |       |        |       | 1                         |         |
| Event       | Event config. | 21  | OFF delay               | 4728        | 1278         | 21112          | 5278         |      |       |        |       | 1                         |         |
| Event       | Event config. | 22  | Operation type          | 4736        | 1280         | 21120          | 5280         |      |       |        |       | -                         |         |
| Event       | Event config. | 22  | Loop/channel definition | 4737        | 1281         | 21121          | 5281         |      |       |        |       | -                         |         |
| Event       | Event config. | 22  | Direct/Reverse          | 4738        | 1282         | 21122          | 5282         |      |       |        |       | -                         |         |
| Event       | Event config. | 22  | Standby                 | 4739        | 1283         | 21123          | 5283         |      |       |        |       | -                         |         |
| Event       | Event config. | 22  | EVENT state at READY    | 4740        | 1284         | 21124          | 5284         |      |       |        |       | -                         |         |
| Event       | Event config. | 22  | Decimal point position  | 4741        | 1285         | 21125          | 5285         |      |       |        |       | -                         |         |
| Event       | Event config. | 22  | Hysteresis              | 4742        | 1286         | 21126          | 5286         |      |       |        |       | EV                        |         |
| Event       | Event config. | 22  | ON delay                | 4743        | 1287         | 21127          | 5287         |      |       |        |       | 1                         |         |
| Event       | Event config. | 22  | OFF delay               | 4744        | 1288         | 21128          | 5288         |      |       |        |       | 1                         |         |
| Event       | Event config. | 23  | Operation type          | 4752        | 1290         | 21136          | 5290         |      |       |        |       | -                         |         |
| Event       | Event config. | 23  | Loop/channel definition | 4753        | 1291         | 21137          | 5291         |      |       |        |       | -                         |         |
| Event       | Event config. | 23  | Direct/Reverse          | 4754        | 1292         | 21138          | 5292         |      |       |        |       | -                         |         |
| Event       | Event config. | 23  | Standby                 | 4755        | 1293         | 21139          | 5293         |      |       |        |       | -                         |         |
| Event       | Event config. | 23  | EVENT state at READY    | 4756        | 1294         | 21140          | 5294         |      |       |        |       | -                         |         |
| Event       | Event config. | 23  | Decimal point position  | 4757        | 1295         | 21141          | 5295         |      |       |        |       | -                         |         |
| Event       | Event config. | 23  | Hysteresis              | 4758        | 1296         | 21142          | 5296         |      |       |        |       | EV                        |         |
| Event       | Event config. | 23  | ON delay                | 4759        | 1297         | 21143          | 5297         |      |       |        |       | 1                         |         |
| Event       | Event config. | 23  | OFF delay               | 4760        | 1298         | 21144          | 5298         |      |       |        |       | 1                         |         |
| Event       | Event config. | 24  | Operation type          | 4768        | 12A0         | 21152          | 52A0         |      |       |        |       | -                         |         |
| Event       | Event config. | 24  | Loop/channel definition | 4769        | 12A1         | 21153          | 52A1         |      |       |        |       | -                         |         |
| Event       | Event config. | 24  | Direct/Reverse          | 4770        | 12A2         | 21154          | 52A2         |      |       |        |       | -                         |         |
| Event       | Event config. | 24  | Standby                 | 4771        | 12A3         | 21155          | 52A3         |      |       |        |       | -                         |         |
| Event       | Event config. | 24  | EVENT state at READY    | 4772        | 12A4         | 21156          | 52A4         |      |       |        |       | -                         |         |
| Event       | Event config. | 24  | Decimal point position  | 4773        | 12A5         | 21157          | 52A5         |      |       |        |       | -                         |         |
| Event       | Event config. | 24  | Hysteresis              | 4774        | 12A6         | 21158          | 52A6         |      |       |        |       | EV                        |         |
| Event       | Event config. | 24  | ON delay                | 4775        | 12A7         | 21159          | 52A7         |      |       |        |       | 1                         |         |
| Event       | Event config. | 24  | OFF delay               | 4776        | 12A8         | 21160          | 52A8         |      |       |        |       | 1                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### PID/PID

| Folder name | Bank name | No. | Item name                         | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------|-----|-----------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |           |     |                                   | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| PID         | PID       | 1   | Proportional band 1               | 7024        | 1B70         | 23408          | 5B70         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Integral time 1                   | 7025        | 1B71         | 23409          | 5B71         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Derivative time 1                 | 7026        | 1B72         | 23410          | 5B72         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Output (MV) low limit 1           | 7027        | 1B73         | 23411          | 5B73         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Output (MV) high limit 1          | 7028        | 1B74         | 23412          | 5B74         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Manual reset 1                    | 7029        | 1B75         | 23413          | 5B75         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Proportional band for cool side 1 | 7030        | 1B76         | 23414          | 5B76         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Integral time for cool side 1     | 7031        | 1B77         | 23415          | 5B77         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Derivative time for cool side 1   | 7032        | 1B78         | 23416          | 5B78         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Output low limit for cool side 1  | 7033        | 1B79         | 23417          | 5B79         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Output high limit for cool side 1 | 7034        | 1B7A         | 23418          | 5B7A         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Differential 1                    | 7035        | 1B7B         | 23419          | 5B7B         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 1   | Proportional band 2               | 7040        | 1B80         | 23424          | 5B80         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Integral time 2                   | 7041        | 1B81         | 23425          | 5B81         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Derivative time 2                 | 7042        | 1B82         | 23426          | 5B82         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Output (MV) low limit 2           | 7043        | 1B83         | 23427          | 5B83         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Output (MV) high limit 2          | 7044        | 1B84         | 23428          | 5B84         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Manual reset 2                    | 7045        | 1B85         | 23429          | 5B85         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Proportional band for cool side 2 | 7046        | 1B86         | 23430          | 5B86         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Integral time for cool side 2     | 7047        | 1B87         | 23431          | 5B87         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Derivative time for cool side 2   | 7048        | 1B88         | 23432          | 5B88         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Output low limit for cool side 2  | 7049        | 1B89         | 23433          | 5B89         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Output high limit for cool side 2 | 7050        | 1B8A         | 23434          | 5B8A         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Differential 2                    | 7051        | 1B8B         | 23435          | 5B8B         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 1   | Proportional band 3               | 7056        | 1B90         | 23440          | 5B90         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Integral time 3                   | 7057        | 1B91         | 23441          | 5B91         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Derivative time 3                 | 7058        | 1B92         | 23442          | 5B92         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Output (MV) low limit 3           | 7059        | 1B93         | 23443          | 5B93         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Output (MV) high limit 3          | 7060        | 1B94         | 23444          | 5B94         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Manual reset 3                    | 7061        | 1B95         | 23445          | 5B95         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Proportional band for cool side 3 | 7062        | 1B96         | 23446          | 5B96         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Integral time for cool side 3     | 7063        | 1B97         | 23447          | 5B97         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Derivative time for cool side 3   | 7064        | 1B98         | 23448          | 5B98         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Output low limit for cool side 3  | 7065        | 1B99         | 23449          | 5B99         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Output high limit for cool side 3 | 7066        | 1B9A         | 23450          | 5B9A         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Differential 3                    | 7067        | 1B9B         | 23451          | 5B9B         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 1   | Proportional band 4               | 7072        | 1BA0         | 23456          | 5BA0         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Integral time 4                   | 7073        | 1BA1         | 23457          | 5BA1         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Derivative time 4                 | 7074        | 1BA2         | 23458          | 5BA2         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Output (MV) low limit 4           | 7075        | 1BA3         | 23459          | 5BA3         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Output (MV) high limit 4          | 7076        | 1BA4         | 23460          | 5BA4         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Manual reset 4                    | 7077        | 1BA5         | 23461          | 5BA5         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Proportional band for cool side 4 | 7078        | 1BA6         | 23462          | 5BA6         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Integral time for cool side 4     | 7079        | 1BA7         | 23463          | 5BA7         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Derivative time for cool side 4   | 7080        | 1BA8         | 23464          | 5BA8         |      |       |        |       | PID                       |         |
| PID         | PID       | 1   | Output low limit for cool side 4  | 7081        | 1BA9         | 23465          | 5BA9         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Output high limit for cool side 4 | 7082        | 1BAA         | 23466          | 5BAA         |      |       |        |       | 1                         |         |
| PID         | PID       | 1   | Differential 4                    | 7083        | 1BAB         | 23467          | 5BAB         |      |       |        |       | PID_PV                    |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### PID/PID

| Folder name | Bank name | No. | Item name                         | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------|-----|-----------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |           |     |                                   | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| PID         | PID       | 2   | Proportional band 1               | 7280        | 1C70         | 23664          | 5C70         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Integral time 1                   | 7281        | 1C71         | 23665          | 5C71         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Derivative time 1                 | 7282        | 1C72         | 23666          | 5C72         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Output (MV) low limit 1           | 7283        | 1C73         | 23667          | 5C73         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Output (MV) high limit 1          | 7284        | 1C74         | 23668          | 5C74         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Manual reset 1                    | 7285        | 1C75         | 23669          | 5C75         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Proportional band for cool side 1 | 7286        | 1C76         | 23670          | 5C76         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Integral time for cool side 1     | 7287        | 1C77         | 23671          | 5C77         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Derivative time for cool side 1   | 7288        | 1C78         | 23672          | 5C78         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Output low limit for cool side 1  | 7289        | 1C79         | 23673          | 5C79         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Output high limit for cool side 1 | 7290        | 1C7A         | 23674          | 5C7A         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Differential 1                    | 7291        | 1C7B         | 23675          | 5C7B         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 2   | Proportional band 2               | 7296        | 1C80         | 23680          | 5C80         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Integral time 2                   | 7297        | 1C81         | 23681          | 5C81         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Derivative time 2                 | 7298        | 1C82         | 23682          | 5C82         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Output (MV) low limit 2           | 7299        | 1C83         | 23683          | 5C83         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Output (MV) high limit 2          | 7300        | 1C84         | 23684          | 5C84         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Manual reset 2                    | 7301        | 1C85         | 23685          | 5C85         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Proportional band for cool side 2 | 7302        | 1C86         | 23686          | 5C86         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Integral time for cool side 2     | 7303        | 1C87         | 23687          | 5C87         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Derivative time for cool side 2   | 7304        | 1C88         | 23688          | 5C88         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Output low limit for cool side 2  | 7305        | 1C89         | 23689          | 5C89         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Output high limit for cool side 2 | 7306        | 1C8A         | 23690          | 5C8A         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Differential 2                    | 7307        | 1C8B         | 23691          | 5C8B         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 2   | Proportional band 3               | 7312        | 1C90         | 23696          | 5C90         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Integral time 3                   | 7313        | 1C91         | 23697          | 5C91         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Derivative time 3                 | 7314        | 1C92         | 23698          | 5C92         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Output (MV) low limit 3           | 7315        | 1C93         | 23699          | 5C93         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Output (MV) high limit 3          | 7316        | 1C94         | 23700          | 5C94         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Manual reset 3                    | 7317        | 1C95         | 23701          | 5C95         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Proportional band for cool side 3 | 7318        | 1C96         | 23702          | 5C96         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Integral time for cool side 3     | 7319        | 1C97         | 23703          | 5C97         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Derivative time for cool side 3   | 7320        | 1C98         | 23704          | 5C98         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Output low limit for cool side 3  | 7321        | 1C99         | 23705          | 5C99         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Output high limit for cool side 3 | 7322        | 1C9A         | 23706          | 5C9A         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Differential 3                    | 7323        | 1C9B         | 23707          | 5C9B         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 2   | Proportional band 4               | 7328        | 1CA0         | 23712          | 5CA0         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Integral time 4                   | 7329        | 1CA1         | 23713          | 5CA1         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Derivative time 4                 | 7330        | 1CA2         | 23714          | 5CA2         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Output (MV) low limit 4           | 7331        | 1CA3         | 23715          | 5CA3         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Output (MV) high limit 4          | 7332        | 1CA4         | 23716          | 5CA4         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Manual reset 4                    | 7333        | 1CA5         | 23717          | 5CA5         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Proportional band for cool side 4 | 7334        | 1CA6         | 23718          | 5CA6         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Integral time for cool side 4     | 7335        | 1CA7         | 23719          | 5CA7         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Derivative time for cool side 4   | 7336        | 1CA8         | 23720          | 5CA8         |      |       |        |       | PID                       |         |
| PID         | PID       | 2   | Output low limit for cool side 4  | 7337        | 1CA9         | 23721          | 5CA9         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Output high limit for cool side 4 | 7338        | 1CAA         | 23722          | 5CAA         |      |       |        |       | 1                         |         |
| PID         | PID       | 2   | Differential 4                    | 7339        | 1CAB         | 23723          | 5CAB         |      |       |        |       | PID_PV                    |         |



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### PID/PID

| Folder name | Bank name | No. | Item name                | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------|-----|--------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |           |     |                          | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| PID         | PID       | 3   | Proportional band 1      | 7536        | 1D70         | 23920          | 5D70         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Integral time 1          | 7537        | 1D71         | 23921          | 5D71         |      |       |        |       | PID                       |         |
| PID         | PID       | 3   | Derivative time 1        | 7538        | 1D72         | 23922          | 5D72         |      |       |        |       | PID                       |         |
| PID         | PID       | 3   | Output (MV) low limit 1  | 7539        | 1D73         | 23923          | 5D73         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Output (MV) high limit 1 | 7540        | 1D74         | 23924          | 5D74         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Manual reset 1           | 7541        | 1D75         | 23925          | 5D75         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Differential 1           | 7547        | 1D7B         | 23931          | 5D7B         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 3   | Proportional band 2      | 7552        | 1D80         | 23936          | 5D80         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Integral time 2          | 7553        | 1D81         | 23937          | 5D81         |      |       |        |       | PID                       |         |
| PID         | PID       | 3   | Derivative time 2        | 7554        | 1D82         | 23938          | 5D82         |      |       |        |       | PID                       |         |
| PID         | PID       | 3   | Output (MV) low limit 2  | 7555        | 1D83         | 23939          | 5D83         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Output (MV) high limit 2 | 7556        | 1D84         | 23940          | 5D84         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Manual reset 2           | 7557        | 1D85         | 23941          | 5D85         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Differential 2           | 7563        | 1D8B         | 23947          | 5D8B         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 3   | Proportional band 3      | 7568        | 1D90         | 23952          | 5D90         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Integral time 3          | 7569        | 1D91         | 23953          | 5D91         |      |       |        |       | PID                       |         |
| PID         | PID       | 3   | Derivative time 3        | 7570        | 1D92         | 23954          | 5D92         |      |       |        |       | PID                       |         |
| PID         | PID       | 3   | Output (MV) low limit 3  | 7571        | 1D93         | 23955          | 5D93         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Output (MV) high limit 3 | 7572        | 1D94         | 23956          | 5D94         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Manual reset 3           | 7573        | 1D95         | 23957          | 5D95         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Differential 3           | 7579        | 1D9B         | 23963          | 5D9B         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 3   | Proportional band 4      | 7584        | 1DA0         | 23968          | 5DA0         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Integral time 4          | 7585        | 1DA1         | 23969          | 5DA1         |      |       |        |       | PID                       |         |
| PID         | PID       | 3   | Derivative time 4        | 7586        | 1DA2         | 23970          | 5DA2         |      |       |        |       | PID                       |         |
| PID         | PID       | 3   | Output (MV) low limit 4  | 7587        | 1DA3         | 23971          | 5DA3         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Output (MV) high limit 4 | 7588        | 1DA4         | 23972          | 5DA4         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Manual reset 4           | 7589        | 1DA5         | 23973          | 5DA5         |      |       |        |       | 1                         |         |
| PID         | PID       | 3   | Differential 4           | 7595        | 1DAB         | 23979          | 5DAB         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 4   | Proportional band 1      | 7792        | 1E70         | 24176          | 5E70         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Integral time 1          | 7793        | 1E71         | 24177          | 5E71         |      |       |        |       | PID                       |         |
| PID         | PID       | 4   | Derivative time 1        | 7794        | 1E72         | 24178          | 5E72         |      |       |        |       | PID                       |         |
| PID         | PID       | 4   | Output (MV) low limit 1  | 7795        | 1E73         | 24179          | 5E73         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Output (MV) high limit 1 | 7796        | 1E74         | 24180          | 5E74         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Manual reset 1           | 7797        | 1E75         | 24181          | 5E75         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Differential 1           | 7803        | 1E7B         | 24187          | 5E7B         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 4   | Proportional band 2      | 7808        | 1E80         | 24192          | 5E80         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Integral time 2          | 7809        | 1E81         | 24193          | 5E81         |      |       |        |       | PID                       |         |
| PID         | PID       | 4   | Derivative time 2        | 7810        | 1E82         | 24194          | 5E82         |      |       |        |       | PID                       |         |
| PID         | PID       | 4   | Output (MV) low limit 2  | 7811        | 1E83         | 24195          | 5E83         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Output (MV) high limit 2 | 7812        | 1E84         | 24196          | 5E84         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Manual reset 2           | 7813        | 1E85         | 24197          | 5E85         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Differential 2           | 7819        | 1E8B         | 24203          | 5E8B         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 4   | Proportional band 3      | 7824        | 1E90         | 24208          | 5E90         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Integral time 3          | 7825        | 1E91         | 24209          | 5E91         |      |       |        |       | PID                       |         |
| PID         | PID       | 4   | Derivative time 3        | 7826        | 1E92         | 24210          | 5E92         |      |       |        |       | PID                       |         |
| PID         | PID       | 4   | Output (MV) low limit 3  | 7827        | 1E93         | 24211          | 5E93         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Output (MV) high limit 3 | 7828        | 1E94         | 24212          | 5E94         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Manual reset 3           | 7829        | 1E95         | 24213          | 5E95         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Differential 3           | 7835        | 1E9B         | 24219          | 5E9B         |      |       |        |       | PID_PV                    |         |
| PID         | PID       | 4   | Proportional band 4      | 7840        | 1EA0         | 24224          | 5EA0         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Integral time 4          | 7841        | 1EA1         | 24225          | 5EA1         |      |       |        |       | PID                       |         |
| PID         | PID       | 4   | Derivative time 4        | 7842        | 1EA2         | 24226          | 5EA2         |      |       |        |       | PID                       |         |
| PID         | PID       | 4   | Output (MV) low limit 4  | 7843        | 1EA3         | 24227          | 5EA3         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Output (MV) high limit 4 | 7844        | 1EA4         | 24228          | 5EA4         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Manual reset 4           | 7845        | 1EA5         | 24229          | 5EA5         |      |       |        |       | 1                         |         |
| PID         | PID       | 4   | Differential 4           | 7851        | 1EAB         | 24235          | 5EAB         |      |       |        |       | PID_PV                    |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Function/Internal Contact IN

| Folder name | Bank name           | No. | Item name               | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|---------------------|-----|-------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                     |     |                         | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Function    | Internal contact IN | 1   | Operation type          | 9472        | 2500         | 25856          | 6500         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 1   | Input type              | 9473        | 2501         | 25857          | 6501         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 1   | Loop/channel definition | 9474        | 2502         | 25858          | 6502         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 1   | Weighting               | 9475        | 2503         | 25859          | 6503         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 2   | Operation type          | 9480        | 2508         | 25864          | 6508         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 2   | Input type              | 9481        | 2509         | 25865          | 6509         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 2   | Loop/channel definition | 9482        | 250A         | 25866          | 650A         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 2   | Weighting               | 9483        | 250B         | 25867          | 650B         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 3   | Operation type          | 9488        | 2510         | 25872          | 6510         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 3   | Input type              | 9489        | 2511         | 25873          | 6511         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 3   | Loop/channel definition | 9490        | 2512         | 25874          | 6512         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 3   | Weighting               | 9491        | 2513         | 25875          | 6513         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 4   | Operation type          | 9496        | 2518         | 25880          | 6518         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 4   | Input type              | 9497        | 2519         | 25881          | 6519         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 4   | Loop/channel definition | 9498        | 251A         | 25882          | 651A         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 4   | Weighting               | 9499        | 251B         | 25883          | 651B         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 5   | Operation type          | 9504        | 2520         | 25888          | 6520         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 5   | Input type              | 9505        | 2521         | 25889          | 6521         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 5   | Loop/channel definition | 9506        | 2522         | 25890          | 6522         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 5   | Weighting               | 9507        | 2523         | 25891          | 6523         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 6   | Operation type          | 9512        | 2528         | 25896          | 6528         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 6   | Input type              | 9513        | 2529         | 25897          | 6529         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 6   | Loop/channel definition | 9514        | 252A         | 25898          | 652A         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 6   | Weighting               | 9515        | 252B         | 25899          | 652B         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 7   | Operation type          | 9520        | 2530         | 25904          | 6530         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 7   | Input type              | 9521        | 2531         | 25905          | 6531         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 7   | Loop/channel definition | 9522        | 2532         | 25906          | 6532         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 7   | Weighting               | 9523        | 2533         | 25907          | 6533         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 8   | Operation type          | 9528        | 2538         | 25912          | 6538         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 8   | Input type              | 9529        | 2539         | 25913          | 6539         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 8   | Loop/channel definition | 9530        | 253A         | 25914          | 653A         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 8   | Weighting               | 9531        | 253B         | 25915          | 653B         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 9   | Operation type          | 9536        | 2540         | 25920          | 6540         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 9   | Input type              | 9537        | 2541         | 25921          | 6541         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 9   | Loop/channel definition | 9538        | 2542         | 25922          | 6542         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 9   | Weighting               | 9539        | 2543         | 25923          | 6543         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 10  | Operation type          | 9544        | 2548         | 25928          | 6548         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 10  | Input type              | 9545        | 2549         | 25929          | 6549         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 10  | Loop/channel definition | 9546        | 254A         | 25930          | 654A         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 10  | Weighting               | 9547        | 254B         | 25931          | 654B         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 11  | Operation type          | 9552        | 2550         | 25936          | 6550         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 11  | Input type              | 9553        | 2551         | 25937          | 6551         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 11  | Loop/channel definition | 9554        | 2552         | 25938          | 6552         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 11  | Weighting               | 9555        | 2553         | 25939          | 6553         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 12  | Operation type          | 9560        | 2558         | 25944          | 6558         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 12  | Input type              | 9561        | 2559         | 25945          | 6559         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 12  | Loop/channel definition | 9562        | 255A         | 25946          | 655A         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 12  | Weighting               | 9563        | 255B         | 25947          | 655B         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 13  | Operation type          | 9568        | 2560         | 25952          | 6560         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 13  | Input type              | 9569        | 2561         | 25953          | 6561         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 13  | Loop/channel definition | 9570        | 2562         | 25954          | 6562         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 13  | Weighting               | 9571        | 2563         | 25955          | 6563         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 14  | Operation type          | 9576        | 2568         | 25960          | 6568         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 14  | Input type              | 9577        | 2569         | 25961          | 6569         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 14  | Loop/channel definition | 9578        | 256A         | 25962          | 656A         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 14  | Weighting               | 9579        | 256B         | 25963          | 656B         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Function/Internal Contact IN

| Folder name | Bank name           | No. | Item name               | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|---------------------|-----|-------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                     |     |                         | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Function    | Internal contact IN | 15  | Operation type          | 9584        | 2570         | 25968          | 6570         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 15  | Input type              | 9585        | 2571         | 25969          | 6571         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 15  | Loop/channel definition | 9586        | 2572         | 25970          | 6572         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 15  | Weighting               | 9587        | 2573         | 25971          | 6573         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 16  | Operation type          | 9592        | 2578         | 25976          | 6578         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 16  | Input type              | 9593        | 2579         | 25977          | 6579         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 16  | Loop/channel definition | 9594        | 257A         | 25978          | 657A         |      |       |        |       | -                         |         |
| Function    | Internal contact IN | 16  | Weighting               | 9595        | 257B         | 25979          | 657B         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Function/Logical Operation

| Folder name | Bank name         | No. | Item name            | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-------------------|-----|----------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                   |     |                      | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Function    | Logical operation | 1   | Calculation type     | 9824        | 2660         | 26208          | 6660         |      |       |        |       | -                         |         |
| Function    | Logical operation | 1   | Input assignment A   | 9825        | 2661         | 26209          | 6661         |      |       |        |       | -                         |         |
| Function    | Logical operation | 1   | Input assignment B   | 9826        | 2662         | 26210          | 6662         |      |       |        |       | -                         |         |
| Function    | Logical operation | 1   | Input assignment C   | 9827        | 2663         | 26211          | 6663         |      |       |        |       | -                         |         |
| Function    | Logical operation | 1   | Input assignment D   | 9828        | 2664         | 26212          | 6664         |      |       |        |       | -                         |         |
| Function    | Logical operation | 1   | Inverted input bit A | 9829        | 2665         | 26213          | 6665         |      |       |        |       | -                         |         |
| Function    | Logical operation | 1   | Inverted input bit B | 9830        | 2666         | 26214          | 6666         |      |       |        |       | -                         |         |
| Function    | Logical operation | 1   | Inverted input bit C | 9831        | 2667         | 26215          | 6667         |      |       |        |       | -                         |         |
| Function    | Logical operation | 1   | Inverted input bit D | 9832        | 2668         | 26216          | 6668         |      |       |        |       | -                         |         |
| Function    | Logical operation | 1   | ON delay time        | 9833        | 2669         | 26217          | 6669         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 1   | OFF delay time       | 9834        | 266A         | 26218          | 666A         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 1   | Inversion            | 9835        | 266B         | 26219          | 666B         |      |       |        |       | -                         |         |
| Function    | Logical operation | 1   | Latch                | 9836        | 266C         | 26220          | 666C         |      |       |        |       | -                         |         |
| Function    | Logical operation | 2   | Calculation type     | 9840        | 2670         | 26224          | 6670         |      |       |        |       | -                         |         |
| Function    | Logical operation | 2   | Input assignment A   | 9841        | 2671         | 26225          | 6671         |      |       |        |       | -                         |         |
| Function    | Logical operation | 2   | Input assignment B   | 9842        | 2672         | 26226          | 6672         |      |       |        |       | -                         |         |
| Function    | Logical operation | 2   | Input assignment C   | 9843        | 2673         | 26227          | 6673         |      |       |        |       | -                         |         |
| Function    | Logical operation | 2   | Input assignment D   | 9844        | 2674         | 26228          | 6674         |      |       |        |       | -                         |         |
| Function    | Logical operation | 2   | Inverted input bit A | 9845        | 2675         | 26229          | 6675         |      |       |        |       | -                         |         |
| Function    | Logical operation | 2   | Inverted input bit B | 9846        | 2676         | 26230          | 6676         |      |       |        |       | -                         |         |
| Function    | Logical operation | 2   | Inverted input bit C | 9847        | 2677         | 26231          | 6677         |      |       |        |       | -                         |         |
| Function    | Logical operation | 2   | Inverted input bit D | 9848        | 2678         | 26232          | 6678         |      |       |        |       | -                         |         |
| Function    | Logical operation | 2   | ON delay time        | 9849        | 2679         | 26233          | 6679         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 2   | OFF delay time       | 9850        | 267A         | 26234          | 667A         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 2   | Inversion            | 9851        | 267B         | 26235          | 667B         |      |       |        |       | -                         |         |
| Function    | Logical operation | 2   | Latch                | 9852        | 267C         | 26236          | 667C         |      |       |        |       | -                         |         |
| Function    | Logical operation | 3   | Calculation type     | 9856        | 2680         | 26240          | 6680         |      |       |        |       | -                         |         |
| Function    | Logical operation | 3   | Input assignment A   | 9857        | 2681         | 26241          | 6681         |      |       |        |       | -                         |         |
| Function    | Logical operation | 3   | Input assignment B   | 9858        | 2682         | 26242          | 6682         |      |       |        |       | -                         |         |
| Function    | Logical operation | 3   | Input assignment C   | 9859        | 2683         | 26243          | 6683         |      |       |        |       | -                         |         |
| Function    | Logical operation | 3   | Input assignment D   | 9860        | 2684         | 26244          | 6684         |      |       |        |       | -                         |         |
| Function    | Logical operation | 3   | Inverted input bit A | 9861        | 2685         | 26245          | 6685         |      |       |        |       | -                         |         |
| Function    | Logical operation | 3   | Inverted input bit B | 9862        | 2686         | 26246          | 6686         |      |       |        |       | -                         |         |
| Function    | Logical operation | 3   | Inverted input bit C | 9863        | 2687         | 26247          | 6687         |      |       |        |       | -                         |         |
| Function    | Logical operation | 3   | Inverted input bit D | 9864        | 2688         | 26248          | 6688         |      |       |        |       | -                         |         |
| Function    | Logical operation | 3   | ON delay time        | 9865        | 2689         | 26249          | 6689         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 3   | OFF delay time       | 9866        | 268A         | 26250          | 668A         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 3   | Inversion            | 9867        | 268B         | 26251          | 668B         |      |       |        |       | -                         |         |
| Function    | Logical operation | 3   | Latch                | 9868        | 268C         | 26252          | 668C         |      |       |        |       | -                         |         |
| Function    | Logical operation | 4   | Calculation type     | 9872        | 2690         | 26256          | 6690         |      |       |        |       | -                         |         |
| Function    | Logical operation | 4   | Input assignment A   | 9873        | 2691         | 26257          | 6691         |      |       |        |       | -                         |         |
| Function    | Logical operation | 4   | Input assignment B   | 9874        | 2692         | 26258          | 6692         |      |       |        |       | -                         |         |
| Function    | Logical operation | 4   | Input assignment C   | 9875        | 2693         | 26259          | 6693         |      |       |        |       | -                         |         |
| Function    | Logical operation | 4   | Input assignment D   | 9876        | 2694         | 26260          | 6694         |      |       |        |       | -                         |         |
| Function    | Logical operation | 4   | Inverted input bit A | 9877        | 2695         | 26261          | 6695         |      |       |        |       | -                         |         |
| Function    | Logical operation | 4   | Inverted input bit B | 9878        | 2696         | 26262          | 6696         |      |       |        |       | -                         |         |
| Function    | Logical operation | 4   | Inverted input bit C | 9879        | 2697         | 26263          | 6697         |      |       |        |       | -                         |         |
| Function    | Logical operation | 4   | Inverted input bit D | 9880        | 2698         | 26264          | 6698         |      |       |        |       | -                         |         |
| Function    | Logical operation | 4   | ON delay time        | 9881        | 2699         | 26265          | 6699         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 4   | OFF delay time       | 9882        | 269A         | 26266          | 669A         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 4   | Inversion            | 9883        | 269B         | 26267          | 669B         |      |       |        |       | -                         |         |
| Function    | Logical operation | 4   | Latch                | 9884        | 269C         | 26268          | 669C         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA Function/Logical Operation

| Folder name | Bank name         | No. | Item name            | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-------------------|-----|----------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                   |     |                      | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Function    | Logical operation | 5   | Calculation type     | 9888        | 26A0         | 26272          | 66A0         |      |       |        |       | -                         |         |
| Function    | Logical operation | 5   | Input assignment A   | 9889        | 26A1         | 26273          | 66A1         |      |       |        |       | -                         |         |
| Function    | Logical operation | 5   | Input assignment B   | 9890        | 26A2         | 26274          | 66A2         |      |       |        |       | -                         |         |
| Function    | Logical operation | 5   | Input assignment C   | 9891        | 26A3         | 26275          | 66A3         |      |       |        |       | -                         |         |
| Function    | Logical operation | 5   | Input assignment D   | 9892        | 26A4         | 26276          | 66A4         |      |       |        |       | -                         |         |
| Function    | Logical operation | 5   | Inverted input bit A | 9893        | 26A5         | 26277          | 66A5         |      |       |        |       | -                         |         |
| Function    | Logical operation | 5   | Inverted input bit B | 9894        | 26A6         | 26278          | 66A6         |      |       |        |       | -                         |         |
| Function    | Logical operation | 5   | Inverted input bit C | 9895        | 26A7         | 26279          | 66A7         |      |       |        |       | -                         |         |
| Function    | Logical operation | 5   | Inverted input bit D | 9896        | 26A8         | 26280          | 66A8         |      |       |        |       | -                         |         |
| Function    | Logical operation | 5   | ON delay time        | 9897        | 26A9         | 26281          | 66A9         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 5   | OFF delay time       | 9898        | 26AA         | 26282          | 66AA         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 5   | Inversion            | 9899        | 26AB         | 26283          | 66AB         |      |       |        |       | -                         |         |
| Function    | Logical operation | 5   | Latch                | 9900        | 26AC         | 26284          | 66AC         |      |       |        |       | -                         |         |
| Function    | Logical operation | 6   | Calculation type     | 9904        | 26B0         | 26288          | 66B0         |      |       |        |       | -                         |         |
| Function    | Logical operation | 6   | Input assignment A   | 9905        | 26B1         | 26289          | 66B1         |      |       |        |       | -                         |         |
| Function    | Logical operation | 6   | Input assignment B   | 9906        | 26B2         | 26290          | 66B2         |      |       |        |       | -                         |         |
| Function    | Logical operation | 6   | Input assignment C   | 9907        | 26B3         | 26291          | 66B3         |      |       |        |       | -                         |         |
| Function    | Logical operation | 6   | Input assignment D   | 9908        | 26B4         | 26292          | 66B4         |      |       |        |       | -                         |         |
| Function    | Logical operation | 6   | Inverted input bit A | 9909        | 26B5         | 26293          | 66B5         |      |       |        |       | -                         |         |
| Function    | Logical operation | 6   | Inverted input bit B | 9910        | 26B6         | 26294          | 66B6         |      |       |        |       | -                         |         |
| Function    | Logical operation | 6   | Inverted input bit C | 9911        | 26B7         | 26295          | 66B7         |      |       |        |       | -                         |         |
| Function    | Logical operation | 6   | Inverted input bit D | 9912        | 26B8         | 26296          | 66B8         |      |       |        |       | -                         |         |
| Function    | Logical operation | 6   | ON delay time        | 9913        | 26B9         | 26297          | 66B9         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 6   | OFF delay time       | 9914        | 26BA         | 26298          | 66BA         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 6   | Inversion            | 9915        | 26BB         | 26299          | 66BB         |      |       |        |       | -                         |         |
| Function    | Logical operation | 6   | Latch                | 9916        | 26BC         | 26300          | 66BC         |      |       |        |       | -                         |         |
| Function    | Logical operation | 7   | Calculation type     | 9920        | 26C0         | 26304          | 66C0         |      |       |        |       | -                         |         |
| Function    | Logical operation | 7   | Input assignment A   | 9921        | 26C1         | 26305          | 66C1         |      |       |        |       | -                         |         |
| Function    | Logical operation | 7   | Input assignment B   | 9922        | 26C2         | 26306          | 66C2         |      |       |        |       | -                         |         |
| Function    | Logical operation | 7   | Input assignment C   | 9923        | 26C3         | 26307          | 66C3         |      |       |        |       | -                         |         |
| Function    | Logical operation | 7   | Input assignment D   | 9924        | 26C4         | 26308          | 66C4         |      |       |        |       | -                         |         |
| Function    | Logical operation | 7   | Inverted input bit A | 9925        | 26C5         | 26309          | 66C5         |      |       |        |       | -                         |         |
| Function    | Logical operation | 7   | Inverted input bit B | 9926        | 26C6         | 26310          | 66C6         |      |       |        |       | -                         |         |
| Function    | Logical operation | 7   | Inverted input bit C | 9927        | 26C7         | 26311          | 66C7         |      |       |        |       | -                         |         |
| Function    | Logical operation | 7   | Inverted input bit D | 9928        | 26C8         | 26312          | 66C8         |      |       |        |       | -                         |         |
| Function    | Logical operation | 7   | ON delay time        | 9929        | 26C9         | 26313          | 66C9         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 7   | OFF delay time       | 9930        | 26CA         | 26314          | 66CA         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 7   | Inversion            | 9931        | 26CB         | 26315          | 66CB         |      |       |        |       | -                         |         |
| Function    | Logical operation | 7   | Latch                | 9932        | 26CC         | 26316          | 66CC         |      |       |        |       | -                         |         |
| Function    | Logical operation | 8   | Calculation type     | 9936        | 26D0         | 26320          | 66D0         |      |       |        |       | -                         |         |
| Function    | Logical operation | 8   | Input assignment A   | 9937        | 26D1         | 26321          | 66D1         |      |       |        |       | -                         |         |
| Function    | Logical operation | 8   | Input assignment B   | 9938        | 26D2         | 26322          | 66D2         |      |       |        |       | -                         |         |
| Function    | Logical operation | 8   | Input assignment C   | 9939        | 26D3         | 26323          | 66D3         |      |       |        |       | -                         |         |
| Function    | Logical operation | 8   | Input assignment D   | 9940        | 26D4         | 26324          | 66D4         |      |       |        |       | -                         |         |
| Function    | Logical operation | 8   | Inverted input bit A | 9941        | 26D5         | 26325          | 66D5         |      |       |        |       | -                         |         |
| Function    | Logical operation | 8   | Inverted input bit B | 9942        | 26D6         | 26326          | 66D6         |      |       |        |       | -                         |         |
| Function    | Logical operation | 8   | Inverted input bit C | 9943        | 26D7         | 26327          | 66D7         |      |       |        |       | -                         |         |
| Function    | Logical operation | 8   | Inverted input bit D | 9944        | 26D8         | 26328          | 66D8         |      |       |        |       | -                         |         |
| Function    | Logical operation | 8   | ON delay time        | 9945        | 26D9         | 26329          | 66D9         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 8   | OFF delay time       | 9946        | 26DA         | 26330          | 66DA         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 8   | Inversion            | 9947        | 26DB         | 26331          | 66DB         |      |       |        |       | -                         |         |
| Function    | Logical operation | 8   | Latch                | 9948        | 26DC         | 26332          | 66DC         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Function/Logical Operation

| Folder name | Bank name         | No. | Item name            | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-------------------|-----|----------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                   |     |                      | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Function    | Logical operation | 9   | Calculation type     | 9952        | 26E0         | 26336          | 66E0         |      |       |        |       | -                         |         |
| Function    | Logical operation | 9   | Input assignment A   | 9953        | 26E1         | 26337          | 66E1         |      |       |        |       | -                         |         |
| Function    | Logical operation | 9   | Input assignment B   | 9954        | 26E2         | 26338          | 66E2         |      |       |        |       | -                         |         |
| Function    | Logical operation | 9   | Input assignment C   | 9955        | 26E3         | 26339          | 66E3         |      |       |        |       | -                         |         |
| Function    | Logical operation | 9   | Input assignment D   | 9956        | 26E4         | 26340          | 66E4         |      |       |        |       | -                         |         |
| Function    | Logical operation | 9   | Inverted input bit A | 9957        | 26E5         | 26341          | 66E5         |      |       |        |       | -                         |         |
| Function    | Logical operation | 9   | Inverted input bit B | 9958        | 26E6         | 26342          | 66E6         |      |       |        |       | -                         |         |
| Function    | Logical operation | 9   | Inverted input bit C | 9959        | 26E7         | 26343          | 66E7         |      |       |        |       | -                         |         |
| Function    | Logical operation | 9   | Inverted input bit D | 9960        | 26E8         | 26344          | 66E8         |      |       |        |       | -                         |         |
| Function    | Logical operation | 9   | ON delay time        | 9961        | 26E9         | 26345          | 66E9         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 9   | OFF delay time       | 9962        | 26EA         | 26346          | 66EA         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 9   | Inversion            | 9963        | 26EB         | 26347          | 66EB         |      |       |        |       | -                         |         |
| Function    | Logical operation | 9   | Latch                | 9964        | 26EC         | 26348          | 66EC         |      |       |        |       | -                         |         |
| Function    | Logical operation | 10  | Calculation type     | 9968        | 26F0         | 26352          | 66F0         |      |       |        |       | -                         |         |
| Function    | Logical operation | 10  | Input assignment A   | 9969        | 26F1         | 26353          | 66F1         |      |       |        |       | -                         |         |
| Function    | Logical operation | 10  | Input assignment B   | 9970        | 26F2         | 26354          | 66F2         |      |       |        |       | -                         |         |
| Function    | Logical operation | 10  | Input assignment C   | 9971        | 26F3         | 26355          | 66F3         |      |       |        |       | -                         |         |
| Function    | Logical operation | 10  | Input assignment D   | 9972        | 26F4         | 26356          | 66F4         |      |       |        |       | -                         |         |
| Function    | Logical operation | 10  | Inverted input bit A | 9973        | 26F5         | 26357          | 66F5         |      |       |        |       | -                         |         |
| Function    | Logical operation | 10  | Inverted input bit B | 9974        | 26F6         | 26358          | 66F6         |      |       |        |       | -                         |         |
| Function    | Logical operation | 10  | Inverted input bit C | 9975        | 26F7         | 26359          | 66F7         |      |       |        |       | -                         |         |
| Function    | Logical operation | 10  | Inverted input bit D | 9976        | 26F8         | 26360          | 66F8         |      |       |        |       | -                         |         |
| Function    | Logical operation | 10  | ON delay time        | 9977        | 26F9         | 26361          | 66F9         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 10  | OFF delay time       | 9978        | 26FA         | 26362          | 66FA         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 10  | Inversion            | 9979        | 26FB         | 26363          | 66FB         |      |       |        |       | -                         |         |
| Function    | Logical operation | 10  | Latch                | 9980        | 26FC         | 26364          | 66FC         |      |       |        |       | -                         |         |
| Function    | Logical operation | 11  | Calculation type     | 9984        | 2700         | 26368          | 6700         |      |       |        |       | -                         |         |
| Function    | Logical operation | 11  | Input assignment A   | 9985        | 2701         | 26369          | 6701         |      |       |        |       | -                         |         |
| Function    | Logical operation | 11  | Input assignment B   | 9986        | 2702         | 26370          | 6702         |      |       |        |       | -                         |         |
| Function    | Logical operation | 11  | Input assignment C   | 9987        | 2703         | 26371          | 6703         |      |       |        |       | -                         |         |
| Function    | Logical operation | 11  | Input assignment D   | 9988        | 2704         | 26372          | 6704         |      |       |        |       | -                         |         |
| Function    | Logical operation | 11  | Inverted input bit A | 9989        | 2705         | 26373          | 6705         |      |       |        |       | -                         |         |
| Function    | Logical operation | 11  | Inverted input bit B | 9990        | 2706         | 26374          | 6706         |      |       |        |       | -                         |         |
| Function    | Logical operation | 11  | Inverted input bit C | 9991        | 2707         | 26375          | 6707         |      |       |        |       | -                         |         |
| Function    | Logical operation | 11  | Inverted input bit D | 9992        | 2708         | 26376          | 6708         |      |       |        |       | -                         |         |
| Function    | Logical operation | 11  | ON delay time        | 9993        | 2709         | 26377          | 6709         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 11  | OFF delay time       | 9994        | 270A         | 26378          | 670A         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 11  | Inversion            | 9995        | 270B         | 26379          | 670B         |      |       |        |       | -                         |         |
| Function    | Logical operation | 11  | Latch                | 9996        | 270C         | 26380          | 670C         |      |       |        |       | -                         |         |
| Function    | Logical operation | 12  | Calculation type     | 10000       | 2710         | 26384          | 6710         |      |       |        |       | -                         |         |
| Function    | Logical operation | 12  | Input assignment A   | 10001       | 2711         | 26385          | 6711         |      |       |        |       | -                         |         |
| Function    | Logical operation | 12  | Input assignment B   | 10002       | 2712         | 26386          | 6712         |      |       |        |       | -                         |         |
| Function    | Logical operation | 12  | Input assignment C   | 10003       | 2713         | 26387          | 6713         |      |       |        |       | -                         |         |
| Function    | Logical operation | 12  | Input assignment D   | 10004       | 2714         | 26388          | 6714         |      |       |        |       | -                         |         |
| Function    | Logical operation | 12  | Inverted input bit A | 10005       | 2715         | 26389          | 6715         |      |       |        |       | -                         |         |
| Function    | Logical operation | 12  | Inverted input bit B | 10006       | 2716         | 26390          | 6716         |      |       |        |       | -                         |         |
| Function    | Logical operation | 12  | Inverted input bit C | 10007       | 2717         | 26391          | 6717         |      |       |        |       | -                         |         |
| Function    | Logical operation | 12  | Inverted input bit D | 10008       | 2718         | 26392          | 6718         |      |       |        |       | -                         |         |
| Function    | Logical operation | 12  | ON delay time        | 10009       | 2719         | 26393          | 6719         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 12  | OFF delay time       | 10010       | 271A         | 26394          | 671A         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 12  | Inversion            | 10011       | 271B         | 26395          | 671B         |      |       |        |       | -                         |         |
| Function    | Logical operation | 12  | Latch                | 10012       | 271C         | 26396          | 671C         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA Function/Logical Operation

| Folder name | Bank name         | No. | Item name            | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-------------------|-----|----------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                   |     |                      | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Function    | Logical operation | 13  | Calculation type     | 10016       | 2720         | 26400          | 6720         |      |       |        |       | -                         |         |
| Function    | Logical operation | 13  | Input assignment A   | 10017       | 2721         | 26401          | 6721         |      |       |        |       | -                         |         |
| Function    | Logical operation | 13  | Input assignment B   | 10018       | 2722         | 26402          | 6722         |      |       |        |       | -                         |         |
| Function    | Logical operation | 13  | Input assignment C   | 10019       | 2723         | 26403          | 6723         |      |       |        |       | -                         |         |
| Function    | Logical operation | 13  | Input assignment D   | 10020       | 2724         | 26404          | 6724         |      |       |        |       | -                         |         |
| Function    | Logical operation | 13  | Inverted input bit A | 10021       | 2725         | 26405          | 6725         |      |       |        |       | -                         |         |
| Function    | Logical operation | 13  | Inverted input bit B | 10022       | 2726         | 26406          | 6726         |      |       |        |       | -                         |         |
| Function    | Logical operation | 13  | Inverted input bit C | 10023       | 2727         | 26407          | 6727         |      |       |        |       | -                         |         |
| Function    | Logical operation | 13  | Inverted input bit D | 10024       | 2728         | 26408          | 6728         |      |       |        |       | -                         |         |
| Function    | Logical operation | 13  | ON delay time        | 10025       | 2729         | 26409          | 6729         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 13  | OFF delay time       | 10026       | 272A         | 26410          | 672A         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 13  | Inversion            | 10027       | 272B         | 26411          | 672B         |      |       |        |       | -                         |         |
| Function    | Logical operation | 13  | Latch                | 10028       | 272C         | 26412          | 672C         |      |       |        |       | -                         |         |
| Function    | Logical operation | 14  | Calculation type     | 10032       | 2730         | 26416          | 6730         |      |       |        |       | -                         |         |
| Function    | Logical operation | 14  | Input assignment A   | 10033       | 2731         | 26417          | 6731         |      |       |        |       | -                         |         |
| Function    | Logical operation | 14  | Input assignment B   | 10034       | 2732         | 26418          | 6732         |      |       |        |       | -                         |         |
| Function    | Logical operation | 14  | Input assignment C   | 10035       | 2733         | 26419          | 6733         |      |       |        |       | -                         |         |
| Function    | Logical operation | 14  | Input assignment D   | 10036       | 2734         | 26420          | 6734         |      |       |        |       | -                         |         |
| Function    | Logical operation | 14  | Inverted input bit A | 10037       | 2735         | 26421          | 6735         |      |       |        |       | -                         |         |
| Function    | Logical operation | 14  | Inverted input bit B | 10038       | 2736         | 26422          | 6736         |      |       |        |       | -                         |         |
| Function    | Logical operation | 14  | Inverted input bit C | 10039       | 2737         | 26423          | 6737         |      |       |        |       | -                         |         |
| Function    | Logical operation | 14  | Inverted input bit D | 10040       | 2738         | 26424          | 6738         |      |       |        |       | -                         |         |
| Function    | Logical operation | 14  | ON delay time        | 10041       | 2739         | 26425          | 6739         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 14  | OFF delay time       | 10042       | 273A         | 26426          | 673A         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 14  | Inversion            | 10043       | 273B         | 26427          | 673B         |      |       |        |       | -                         |         |
| Function    | Logical operation | 14  | Latch                | 10044       | 273C         | 26428          | 673C         |      |       |        |       | -                         |         |
| Function    | Logical operation | 15  | Calculation type     | 10048       | 2740         | 26432          | 6740         |      |       |        |       | -                         |         |
| Function    | Logical operation | 15  | Input assignment A   | 10049       | 2741         | 26433          | 6741         |      |       |        |       | -                         |         |
| Function    | Logical operation | 15  | Input assignment B   | 10050       | 2742         | 26434          | 6742         |      |       |        |       | -                         |         |
| Function    | Logical operation | 15  | Input assignment C   | 10051       | 2743         | 26435          | 6743         |      |       |        |       | -                         |         |
| Function    | Logical operation | 15  | Input assignment D   | 10052       | 2744         | 26436          | 6744         |      |       |        |       | -                         |         |
| Function    | Logical operation | 15  | Inverted input bit A | 10053       | 2745         | 26437          | 6745         |      |       |        |       | -                         |         |
| Function    | Logical operation | 15  | Inverted input bit B | 10054       | 2746         | 26438          | 6746         |      |       |        |       | -                         |         |
| Function    | Logical operation | 15  | Inverted input bit C | 10055       | 2747         | 26439          | 6747         |      |       |        |       | -                         |         |
| Function    | Logical operation | 15  | Inverted input bit D | 10056       | 2748         | 26440          | 6748         |      |       |        |       | -                         |         |
| Function    | Logical operation | 15  | ON delay time        | 10057       | 2749         | 26441          | 6749         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 15  | OFF delay time       | 10058       | 274A         | 26442          | 674A         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 15  | Inversion            | 10059       | 274B         | 26443          | 674B         |      |       |        |       | -                         |         |
| Function    | Logical operation | 15  | Latch                | 10060       | 274C         | 26444          | 674C         |      |       |        |       | -                         |         |
| Function    | Logical operation | 16  | Calculation type     | 10064       | 2750         | 26448          | 6750         |      |       |        |       | -                         |         |
| Function    | Logical operation | 16  | Input assignment A   | 10065       | 2751         | 26449          | 6751         |      |       |        |       | -                         |         |
| Function    | Logical operation | 16  | Input assignment B   | 10066       | 2752         | 26450          | 6752         |      |       |        |       | -                         |         |
| Function    | Logical operation | 16  | Input assignment C   | 10067       | 2753         | 26451          | 6753         |      |       |        |       | -                         |         |
| Function    | Logical operation | 16  | Input assignment D   | 10068       | 2754         | 26452          | 6754         |      |       |        |       | -                         |         |
| Function    | Logical operation | 16  | Inverted input bit A | 10069       | 2755         | 26453          | 6755         |      |       |        |       | -                         |         |
| Function    | Logical operation | 16  | Inverted input bit B | 10070       | 2756         | 26454          | 6756         |      |       |        |       | -                         |         |
| Function    | Logical operation | 16  | Inverted input bit C | 10071       | 2757         | 26455          | 6757         |      |       |        |       | -                         |         |
| Function    | Logical operation | 16  | Inverted input bit D | 10072       | 2758         | 26456          | 6758         |      |       |        |       | -                         |         |
| Function    | Logical operation | 16  | ON delay time        | 10073       | 2759         | 26457          | 6759         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 16  | OFF delay time       | 10074       | 275A         | 26458          | 675A         |      |       |        |       | 1                         |         |
| Function    | Logical operation | 16  | Inversion            | 10075       | 275B         | 26459          | 675B         |      |       |        |       | -                         |         |
| Function    | Logical operation | 16  | Latch                | 10076       | 275C         | 26460          | 675C         |      |       |        |       | -                         |         |



## Chapter 11. LIST OF COMMUNICATION DATA

## Function/Energy Conservation

| Folder name | Bank name           | No. | Item name                                       | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|---------------------|-----|-------------------------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                     |     |                                                 | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Function    | Energy conservation | 1   | Energy conservation time proportional operation | 11536       | 2D10         | 27920          | 6D10         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 1   | Energy conservation delay time                  | 11537       | 2D11         | 27921          | 6D11         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 1   | Master/slave selection                          | 11538       | 2D12         | 27922          | 6D12         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 1   | Time proportional slave channel                 | 11540       | 2D14         | 27924          | 6D14         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 2   | Energy conservation time proportional operation | 11544       | 2D18         | 27928          | 6D18         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 2   | Energy conservation delay time                  | 11545       | 2D19         | 27929          | 6D19         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 2   | Master/slave selection                          | 11546       | 2D1A         | 27930          | 6D1A         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 2   | Time proportional slave channel                 | 11548       | 2D1C         | 27932          | 6D1C         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 3   | Energy conservation time proportional operation | 11552       | 2D20         | 27936          | 6D20         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 3   | Energy conservation delay time                  | 11553       | 2D21         | 27937          | 6D21         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 3   | Master/slave selection                          | 11554       | 2D22         | 27938          | 6D22         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 3   | Time proportional slave channel                 | 11556       | 2D24         | 27940          | 6D24         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 4   | Energy conservation time proportional operation | 11560       | 2D28         | 27944          | 6D28         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 4   | Energy conservation delay time                  | 11561       | 2D29         | 27945          | 6D29         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 4   | Master/slave selection                          | 11562       | 2D2A         | 27946          | 6D2A         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 4   | Time proportional slave channel                 | 11564       | 2D2C         | 27948          | 6D2C         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 5   | Energy conservation time proportional operation | 11568       | 2D30         | 27952          | 6D30         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 5   | Energy conservation delay time                  | 11569       | 2D31         | 27953          | 6D31         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 5   | Master/slave selection                          | 11570       | 2D32         | 27954          | 6D32         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 5   | Time proportional slave channel                 | 11572       | 2D34         | 27956          | 6D34         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 6   | Energy conservation time proportional operation | 11576       | 2D38         | 27960          | 6D38         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 6   | Energy conservation delay time                  | 11577       | 2D39         | 27961          | 6D39         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 6   | Master/slave selection                          | 11578       | 2D3A         | 27962          | 6D3A         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 6   | Time proportional slave channel                 | 11580       | 2D3C         | 27964          | 6D3C         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 7   | Energy conservation time proportional operation | 11584       | 2D40         | 27968          | 6D40         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 7   | Energy conservation delay time                  | 11585       | 2D41         | 27969          | 6D41         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 7   | Master/slave selection                          | 11586       | 2D42         | 27970          | 6D42         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 7   | Time proportional slave channel                 | 11588       | 2D44         | 27972          | 6D44         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 8   | Energy conservation time proportional operation | 11592       | 2D48         | 27976          | 6D48         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 8   | Energy conservation delay time                  | 11593       | 2D49         | 27977          | 6D49         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 8   | Master/slave selection                          | 11594       | 2D4A         | 27978          | 6D4A         |      |       |        |       | -                         |         |
| Function    | Energy conservation | 8   | Time proportional slave channel                 | 11596       | 2D4C         | 27980          | 6D4C         |      |       |        |       | -                         |         |



## Chapter 11. LIST OF COMMUNICATION DATA

### Function/MV Branching Output

| Folder name | Bank name           | No. | Item name       | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|---------------------|-----|-----------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                     |     |                 | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Function    | MV branching output | 1   | Loop assignment | 11776       | 2E00         | 28160          | 6E00         |      |       |        |       | -                         |         |
| Function    | MV branching output | 1   | Ratio           | 11777       | 2E01         | 28161          | 6E01         |      |       |        |       | 2                         |         |
| Function    | MV branching output | 1   | Bias            | 11778       | 2E02         | 28162          | 6E02         |      |       |        |       | 2                         |         |
| Function    | MV branching output | 2   | Loop assignment | 11780       | 2E04         | 28164          | 6E04         |      |       |        |       | -                         |         |
| Function    | MV branching output | 2   | Ratio           | 11781       | 2E05         | 28165          | 6E05         |      |       |        |       | 2                         |         |
| Function    | MV branching output | 2   | Bias            | 11782       | 2E06         | 28166          | 6E06         |      |       |        |       | 2                         |         |
| Function    | MV branching output | 3   | Loop assignment | 11784       | 2E08         | 28168          | 6E08         |      |       |        |       | -                         |         |
| Function    | MV branching output | 3   | Ratio           | 11785       | 2E09         | 28169          | 6E09         |      |       |        |       | 2                         |         |
| Function    | MV branching output | 3   | Bias            | 11786       | 2E0A         | 28170          | 6E0A         |      |       |        |       | 2                         |         |
| Function    | MV branching output | 4   | Loop assignment | 11788       | 2E0C         | 28172          | 6E0C         |      |       |        |       | -                         |         |
| Function    | MV branching output | 4   | Ratio           | 11789       | 2E0D         | 28173          | 6E0D         |      |       |        |       | 2                         |         |
| Function    | MV branching output | 4   | Bias            | 11790       | 2E0E         | 28174          | 6E0E         |      |       |        |       | 2                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Function/Reception Monitoring

| Folder name | Bank name            | No. | Item name    | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks               |
|-------------|----------------------|-----|--------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|-----------------------|
|             |                      |     |              | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |                       |
| Function    | Reception monitoring | 1   | Address (l)  | -           | -            | 3840           | 0F00         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 1   | Address (h)  | -           | -            | 3841           | 0F01         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 1   | Time-out (l) | -           | -            | 3842           | 0F02         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 1   | Time-out (h) | -           | -            | 3843           | 0F03         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 1   | Mode         | -           | -            | 3844           | 0F04         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 2   | Address (l)  | -           | -            | 3848           | 0F08         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 2   | Address (h)  | -           | -            | 3849           | 0F09         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 2   | Time-out (l) | -           | -            | 3850           | 0F0A         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 2   | Time-out (h) | -           | -            | 3851           | 0F0B         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 2   | Mode         | -           | -            | 3852           | 0F0C         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 3   | Address (l)  | -           | -            | 3856           | 0F10         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 3   | Address (h)  | -           | -            | 3857           | 0F11         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 3   | Time-out (l) | -           | -            | 3858           | 0F12         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 3   | Time-out (h) | -           | -            | 3859           | 0F13         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 3   | Mode         | -           | -            | 3860           | 0F14         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 4   | Address (l)  | -           | -            | 3864           | 0F18         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 4   | Address (h)  | -           | -            | 3865           | 0F19         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 4   | Time-out (l) | -           | -            | 3866           | 0F1A         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 4   | Time-out (h) | -           | -            | 3867           | 0F1B         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 4   | Mode         | -           | -            | 3868           | 0F1C         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 5   | Address (l)  | -           | -            | 3872           | 0F20         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 5   | Address (h)  | -           | -            | 3873           | 0F21         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 5   | Time-out (l) | -           | -            | 3874           | 0F22         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 5   | Time-out (h) | -           | -            | 3875           | 0F23         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 5   | Mode         | -           | -            | 3876           | 0F24         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 6   | Address (l)  | -           | -            | 3880           | 0F28         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 6   | Address (h)  | -           | -            | 3881           | 0F29         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 6   | Time-out (l) | -           | -            | 3882           | 0F2A         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 6   | Time-out (h) | -           | -            | 3883           | 0F2B         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 6   | Mode         | -           | -            | 3884           | 0F2C         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 7   | Address (l)  | -           | -            | 3888           | 0F30         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 7   | Address (h)  | -           | -            | 3889           | 0F31         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 7   | Time-out (l) | -           | -            | 3890           | 0F32         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 7   | Time-out (h) | -           | -            | 3891           | 0F33         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 7   | Mode         | -           | -            | 3892           | 0F34         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 8   | Address (l)  | -           | -            | 3896           | 0F38         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 8   | Address (h)  | -           | -            | 3897           | 0F39         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 8   | Time-out (l) | -           | -            | 3898           | 0F3A         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 8   | Time-out (h) | -           | -            | 3899           | 0F3B         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 8   | Mode         | -           | -            | 3900           | 0F3C         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 9   | Address (l)  | -           | -            | 3904           | 0F40         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 9   | Address (h)  | -           | -            | 3905           | 0F41         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 9   | Time-out (l) | -           | -            | 3906           | 0F42         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 9   | Time-out (h) | -           | -            | 3907           | 0F43         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 9   | Mode         | -           | -            | 3908           | 0F44         | x    | x     |        |       | -                         |                       |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Function/Reception Monitoring

| Folder name | Bank name            | No. | Item name    | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks               |
|-------------|----------------------|-----|--------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|-----------------------|
|             |                      |     |              | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |                       |
| Function    | Reception monitoring | 10  | Address (l)  | -           | -            | 3912           | 0F48         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 10  | Address (h)  | -           | -            | 3913           | 0F49         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 10  | Time-out (l) | -           | -            | 3914           | 0F4A         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 10  | Time-out (h) | -           | -            | 3915           | 0F4B         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 10  | Mode         | -           | -            | 3916           | 0F4C         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 11  | Address (l)  | -           | -            | 3920           | 0F50         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 11  | Address (h)  | -           | -            | 3921           | 0F51         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 11  | Time-out (l) | -           | -            | 3922           | 0F52         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 11  | Time-out (h) | -           | -            | 3923           | 0F53         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 11  | Mode         | -           | -            | 3924           | 0F54         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 12  | Address (l)  | -           | -            | 3928           | 0F58         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 12  | Address (h)  | -           | -            | 3929           | 0F59         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 12  | Time-out (l) | -           | -            | 3930           | 0F5A         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 12  | Time-out (h) | -           | -            | 3931           | 0F5B         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 12  | Mode         | -           | -            | 3932           | 0F5C         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 13  | Address (l)  | -           | -            | 3936           | 0F60         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 13  | Address (h)  | -           | -            | 3937           | 0F61         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 13  | Time-out (l) | -           | -            | 3938           | 0F62         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 13  | Time-out (h) | -           | -            | 3939           | 0F63         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 13  | Mode         | -           | -            | 3940           | 0F64         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 14  | Address (l)  | -           | -            | 3944           | 0F68         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 14  | Address (h)  | -           | -            | 3945           | 0F69         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 14  | Time-out (l) | -           | -            | 3946           | 0F6A         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 14  | Time-out (h) | -           | -            | 3947           | 0F6B         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 14  | Mode         | -           | -            | 3948           | 0F6C         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 15  | Address (l)  | -           | -            | 3952           | 0F70         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 15  | Address (h)  | -           | -            | 3953           | 0F71         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 15  | Time-out (l) | -           | -            | 3954           | 0F72         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 15  | Time-out (h) | -           | -            | 3955           | 0F73         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 15  | Mode         | -           | -            | 3956           | 0F74         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 16  | Address (l)  | -           | -            | 3960           | 0F78         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 16  | Address (h)  | -           | -            | 3961           | 0F79         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 16  | Time-out (l) | -           | -            | 3962           | 0F7A         | x    | x     |        |       | -                         |                       |
| Function    | Reception monitoring | 16  | Time-out (h) | -           | -            | 3963           | 0F7B         | x    | x     |        |       | -                         | When writing, write 0 |
| Function    | Reception monitoring | 16  | Mode         | -           | -            | 3964           | 0F7C         | x    | x     |        |       | -                         |                       |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Other/UF LED Settings

| Folder name | Bank name       | No. | Item name               | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------------|-----|-------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                 |     |                         | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Other       | UF LED settings | 1   | Conditions for lighting | 10160       | 27B0         | 26544          | 67B0         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 1   | Lighting status         | 10161       | 27B1         | 26545          | 67B1         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 2   | Conditions for lighting | 10164       | 27B4         | 26548          | 67B4         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 2   | Lighting status         | 10165       | 27B5         | 26549          | 67B5         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 3   | Conditions for lighting | 10168       | 27B8         | 26552          | 67B8         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 3   | Lighting status         | 10169       | 27B9         | 26553          | 67B9         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 4   | Conditions for lighting | 10172       | 27BC         | 26556          | 67BC         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 4   | Lighting status         | 10173       | 27BD         | 26557          | 67BD         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 5   | Conditions for lighting | 10176       | 27C0         | 26560          | 67C0         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 5   | Lighting status         | 10177       | 27C1         | 26561          | 67C1         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 6   | Conditions for lighting | 10180       | 27C4         | 26564          | 67C4         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 6   | Lighting status         | 10181       | 27C5         | 26565          | 67C5         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 7   | Conditions for lighting | 10184       | 27C8         | 26568          | 67C8         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 7   | Lighting status         | 10185       | 27C9         | 26569          | 67C9         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 8   | Conditions for lighting | 10188       | 27CC         | 26572          | 67CC         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 8   | Lighting status         | 10189       | 27CD         | 26573          | 67CD         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 9   | Conditions for lighting | 10192       | 27D0         | 26576          | 67D0         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 9   | Lighting status         | 10193       | 27D1         | 26577          | 67D1         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 10  | Conditions for lighting | 10196       | 27D4         | 26580          | 67D4         |      |       |        |       | -                         |         |
| Other       | UF LED settings | 10  | Lighting status         | 10197       | 27D5         | 26581          | 67D5         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Other/Instrument Information

| Folder name | Bank name        | No. | Item name                           | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|------------------|-----|-------------------------------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                  |     |                                     | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Other       | Instrument info. | 1   | F/W information 1 (ROM ID)          | 10768       | 2A10         | 27152          | 6A10         |      | x     |        | x     | -                         |         |
| Other       | Instrument info. | 1   | F/W information 2 (ROM version 1)   | 10769       | 2A11         | 27153          | 6A11         |      | x     |        | x     | -                         |         |
| Other       | Instrument info. | 1   | F/W information 3 (ROM version 2)   | 10770       | 2A12         | 27154          | 6A12         |      | x     |        | x     | -                         |         |
| Other       | Instrument info. | 1   | F/W information 4 (Version for SLP) | 10771       | 2A13         | 27155          | 6A13         |      | x     |        | x     | -                         |         |
| Other       | Instrument info. | 1   | Date code (year)                    | 10774       | 2A16         | 27158          | 6A16         |      | x     |        | x     | -                         |         |
| Other       | Instrument info. | 1   | Date code (month/day)               | 10775       | 2A17         | 27159          | 6A17         |      | x     |        | x     | -                         |         |
| Other       | Instrument info. | 1   | Production No.                      | 10776       | 2A18         | 27160          | 6A18         |      | x     |        | x     | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Other/PV Tag Name

| Folder name | Bank name   | No. | Item name  | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-------------|-----|------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |             |     |            | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Other       | PV tag name | 1   | Tag name 1 | 6640        | 19F0         | 23024          | 59F0         |      |       |        |       | -                         |         |
| Other       | PV tag name | 1   | Tag name 2 | 6641        | 19F1         | 23025          | 59F1         |      |       |        |       | -                         |         |
| Other       | PV tag name | 1   | Tag name 3 | 6642        | 19F2         | 23026          | 59F2         |      |       |        |       | -                         |         |
| Other       | PV tag name | 1   | Tag name 4 | 6643        | 19F3         | 23027          | 59F3         |      |       |        |       | -                         |         |
| Other       | PV tag name | 1   | Tag name 5 | 6644        | 19F4         | 23028          | 59F4         |      |       |        |       | -                         |         |
| Other       | PV tag name | 1   | Tag name 6 | 6645        | 19F5         | 23029          | 59F5         |      |       |        |       | -                         |         |
| Other       | PV tag name | 1   | Tag name 7 | 6646        | 19F6         | 23030          | 59F6         |      |       |        |       | -                         |         |
| Other       | PV tag name | 1   | Tag name 8 | 6647        | 19F7         | 23031          | 59F7         |      |       |        |       | -                         |         |
| Other       | PV tag name | 2   | Tag name 1 | 6656        | 1A00         | 23040          | 5A00         |      |       |        |       | -                         |         |
| Other       | PV tag name | 2   | Tag name 2 | 6657        | 1A01         | 23041          | 5A01         |      |       |        |       | -                         |         |
| Other       | PV tag name | 2   | Tag name 3 | 6658        | 1A02         | 23042          | 5A02         |      |       |        |       | -                         |         |
| Other       | PV tag name | 2   | Tag name 4 | 6659        | 1A03         | 23043          | 5A03         |      |       |        |       | -                         |         |
| Other       | PV tag name | 2   | Tag name 5 | 6660        | 1A04         | 23044          | 5A04         |      |       |        |       | -                         |         |
| Other       | PV tag name | 2   | Tag name 6 | 6661        | 1A05         | 23045          | 5A05         |      |       |        |       | -                         |         |
| Other       | PV tag name | 2   | Tag name 7 | 6662        | 1A06         | 23046          | 5A06         |      |       |        |       | -                         |         |
| Other       | PV tag name | 2   | Tag name 8 | 6663        | 1A07         | 23047          | 5A07         |      |       |        |       | -                         |         |
| Other       | PV tag name | 3   | Tag name 1 | 6672        | 1A10         | 23056          | 5A10         |      |       |        |       | -                         |         |
| Other       | PV tag name | 3   | Tag name 2 | 6673        | 1A11         | 23057          | 5A11         |      |       |        |       | -                         |         |
| Other       | PV tag name | 3   | Tag name 3 | 6674        | 1A12         | 23058          | 5A12         |      |       |        |       | -                         |         |
| Other       | PV tag name | 3   | Tag name 4 | 6675        | 1A13         | 23059          | 5A13         |      |       |        |       | -                         |         |
| Other       | PV tag name | 3   | Tag name 5 | 6676        | 1A14         | 23060          | 5A14         |      |       |        |       | -                         |         |
| Other       | PV tag name | 3   | Tag name 6 | 6677        | 1A15         | 23061          | 5A15         |      |       |        |       | -                         |         |
| Other       | PV tag name | 3   | Tag name 7 | 6678        | 1A16         | 23062          | 5A16         |      |       |        |       | -                         |         |
| Other       | PV tag name | 3   | Tag name 8 | 6679        | 1A17         | 23063          | 5A17         |      |       |        |       | -                         |         |
| Other       | PV tag name | 4   | Tag name 1 | 6688        | 1A20         | 23072          | 5A20         |      |       |        |       | -                         |         |
| Other       | PV tag name | 4   | Tag name 2 | 6689        | 1A21         | 23073          | 5A21         |      |       |        |       | -                         |         |
| Other       | PV tag name | 4   | Tag name 3 | 6690        | 1A22         | 23074          | 5A22         |      |       |        |       | -                         |         |
| Other       | PV tag name | 4   | Tag name 4 | 6691        | 1A23         | 23075          | 5A23         |      |       |        |       | -                         |         |
| Other       | PV tag name | 4   | Tag name 5 | 6692        | 1A24         | 23076          | 5A24         |      |       |        |       | -                         |         |
| Other       | PV tag name | 4   | Tag name 6 | 6693        | 1A25         | 23077          | 5A25         |      |       |        |       | -                         |         |
| Other       | PV tag name | 4   | Tag name 7 | 6694        | 1A26         | 23078          | 5A26         |      |       |        |       | -                         |         |
| Other       | PV tag name | 4   | Tag name 8 | 6695        | 1A27         | 23079          | 5A27         |      |       |        |       | -                         |         |



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Chapter 11. LIST OF COMMUNICATION DATA

Other/OUT Tag Name

| Folder name | Bank name    | No. | Item name  | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|--------------|-----|------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |              |     |            | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Other       | OUT tag name | 1   | Tag name 1 | 6704        | 1A30         | 23088          | 5A30         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 1   | Tag name 2 | 6705        | 1A31         | 23089          | 5A31         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 1   | Tag name 3 | 6706        | 1A32         | 23090          | 5A32         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 1   | Tag name 4 | 6707        | 1A33         | 23091          | 5A33         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 1   | Tag name 5 | 6708        | 1A34         | 23092          | 5A34         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 1   | Tag name 6 | 6709        | 1A35         | 23093          | 5A35         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 1   | Tag name 7 | 6710        | 1A36         | 23094          | 5A36         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 1   | Tag name 8 | 6711        | 1A37         | 23095          | 5A37         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 2   | Tag name 1 | 6720        | 1A40         | 23104          | 5A40         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 2   | Tag name 2 | 6721        | 1A41         | 23105          | 5A41         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 2   | Tag name 3 | 6722        | 1A42         | 23106          | 5A42         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 2   | Tag name 4 | 6723        | 1A43         | 23107          | 5A43         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 2   | Tag name 5 | 6724        | 1A44         | 23108          | 5A44         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 2   | Tag name 6 | 6725        | 1A45         | 23109          | 5A45         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 2   | Tag name 7 | 6726        | 1A46         | 23110          | 5A46         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 2   | Tag name 8 | 6727        | 1A47         | 23111          | 5A47         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 3   | Tag name 1 | 6736        | 1A50         | 23120          | 5A50         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 3   | Tag name 2 | 6737        | 1A51         | 23121          | 5A51         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 3   | Tag name 3 | 6738        | 1A52         | 23122          | 5A52         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 3   | Tag name 4 | 6739        | 1A53         | 23123          | 5A53         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 3   | Tag name 5 | 6740        | 1A54         | 23124          | 5A54         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 3   | Tag name 6 | 6741        | 1A55         | 23125          | 5A55         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 3   | Tag name 7 | 6742        | 1A56         | 23126          | 5A56         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 3   | Tag name 8 | 6743        | 1A57         | 23127          | 5A57         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 4   | Tag name 1 | 6752        | 1A60         | 23136          | 5A60         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 4   | Tag name 2 | 6753        | 1A61         | 23137          | 5A61         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 4   | Tag name 3 | 6754        | 1A62         | 23138          | 5A62         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 4   | Tag name 4 | 6755        | 1A63         | 23139          | 5A63         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 4   | Tag name 5 | 6756        | 1A64         | 23140          | 5A64         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 4   | Tag name 6 | 6757        | 1A65         | 23141          | 5A65         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 4   | Tag name 7 | 6758        | 1A66         | 23142          | 5A66         |      |       |        |       | -                         |         |
| Other       | OUT tag name | 4   | Tag name 8 | 6759        | 1A67         | 23143          | 5A67         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Other/Option Tag Name

| Folder name | Bank name       | No. | Item name  | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-----------------|-----|------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                 |     |            | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Other       | Option tag name | 1   | Tag name 1 | 6768        | 1A70         | 23152          | 5A70         |      |       |        |       | -                         |         |
| Other       | Option tag name | 1   | Tag name 2 | 6769        | 1A71         | 23153          | 5A71         |      |       |        |       | -                         |         |
| Other       | Option tag name | 1   | Tag name 3 | 6770        | 1A72         | 23154          | 5A72         |      |       |        |       | -                         |         |
| Other       | Option tag name | 1   | Tag name 4 | 6771        | 1A73         | 23155          | 5A73         |      |       |        |       | -                         |         |
| Other       | Option tag name | 1   | Tag name 5 | 6772        | 1A74         | 23156          | 5A74         |      |       |        |       | -                         |         |
| Other       | Option tag name | 1   | Tag name 6 | 6773        | 1A75         | 23157          | 5A75         |      |       |        |       | -                         |         |
| Other       | Option tag name | 1   | Tag name 7 | 6774        | 1A76         | 23158          | 5A76         |      |       |        |       | -                         |         |
| Other       | Option tag name | 1   | Tag name 8 | 6775        | 1A77         | 23159          | 5A77         |      |       |        |       | -                         |         |
| Other       | Option tag name | 2   | Tag name 1 | 6784        | 1A80         | 23168          | 5A80         |      |       |        |       | -                         |         |
| Other       | Option tag name | 2   | Tag name 2 | 6785        | 1A81         | 23169          | 5A81         |      |       |        |       | -                         |         |
| Other       | Option tag name | 2   | Tag name 3 | 6786        | 1A82         | 23170          | 5A82         |      |       |        |       | -                         |         |
| Other       | Option tag name | 2   | Tag name 4 | 6787        | 1A83         | 23171          | 5A83         |      |       |        |       | -                         |         |
| Other       | Option tag name | 2   | Tag name 5 | 6788        | 1A84         | 23172          | 5A84         |      |       |        |       | -                         |         |
| Other       | Option tag name | 2   | Tag name 6 | 6789        | 1A85         | 23173          | 5A85         |      |       |        |       | -                         |         |
| Other       | Option tag name | 2   | Tag name 7 | 6790        | 1A86         | 23174          | 5A86         |      |       |        |       | -                         |         |
| Other       | Option tag name | 2   | Tag name 8 | 6791        | 1A87         | 23175          | 5A87         |      |       |        |       | -                         |         |
| Other       | Option tag name | 3   | Tag name 1 | 6800        | 1A90         | 23184          | 5A90         |      |       |        |       | -                         |         |
| Other       | Option tag name | 3   | Tag name 2 | 6801        | 1A91         | 23185          | 5A91         |      |       |        |       | -                         |         |
| Other       | Option tag name | 3   | Tag name 3 | 6802        | 1A92         | 23186          | 5A92         |      |       |        |       | -                         |         |
| Other       | Option tag name | 3   | Tag name 4 | 6803        | 1A93         | 23187          | 5A93         |      |       |        |       | -                         |         |
| Other       | Option tag name | 3   | Tag name 5 | 6804        | 1A94         | 23188          | 5A94         |      |       |        |       | -                         |         |
| Other       | Option tag name | 3   | Tag name 6 | 6805        | 1A95         | 23189          | 5A95         |      |       |        |       | -                         |         |
| Other       | Option tag name | 3   | Tag name 7 | 6806        | 1A96         | 23190          | 5A96         |      |       |        |       | -                         |         |
| Other       | Option tag name | 3   | Tag name 8 | 6807        | 1A97         | 23191          | 5A97         |      |       |        |       | -                         |         |
| Other       | Option tag name | 4   | Tag name 1 | 6816        | 1AA0         | 23200          | 5AA0         |      |       |        |       | -                         |         |
| Other       | Option tag name | 4   | Tag name 2 | 6817        | 1AA1         | 23201          | 5AA1         |      |       |        |       | -                         |         |
| Other       | Option tag name | 4   | Tag name 3 | 6818        | 1AA2         | 23202          | 5AA2         |      |       |        |       | -                         |         |
| Other       | Option tag name | 4   | Tag name 4 | 6819        | 1AA3         | 23203          | 5AA3         |      |       |        |       | -                         |         |
| Other       | Option tag name | 4   | Tag name 5 | 6820        | 1AA4         | 23204          | 5AA4         |      |       |        |       | -                         |         |
| Other       | Option tag name | 4   | Tag name 6 | 6821        | 1AA5         | 23205          | 5AA5         |      |       |        |       | -                         |         |
| Other       | Option tag name | 4   | Tag name 7 | 6822        | 1AA6         | 23206          | 5AA6         |      |       |        |       | -                         |         |
| Other       | Option tag name | 4   | Tag name 8 | 6823        | 1AA7         | 23207          | 5AA7         |      |       |        |       | -                         |         |



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## Chapter 11. LIST OF COMMUNICATION DATA

### Other/Tag for All Loops

| Folder name | Bank name         | No. | Item name  | RAM address |              | EEPROM address |              | RAM  |       | EEPROM |       | Decimal point information | Remarks |
|-------------|-------------------|-----|------------|-------------|--------------|----------------|--------------|------|-------|--------|-------|---------------------------|---------|
|             |                   |     |            | Decimal     | Hexa-decimal | Decimal        | Hexa-decimal | Read | Write | Read   | Write |                           |         |
| Other       | Tag for all loops | 1   | Tag name 1 | 6832        | 1AB0         | 23216          | 5AB0         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 1   | Tag name 2 | 6833        | 1AB1         | 23217          | 5AB1         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 1   | Tag name 3 | 6834        | 1AB2         | 23218          | 5AB2         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 1   | Tag name 4 | 6835        | 1AB3         | 23219          | 5AB3         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 1   | Tag name 5 | 6836        | 1AB4         | 23220          | 5AB4         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 1   | Tag name 6 | 6837        | 1AB5         | 23221          | 5AB5         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 1   | Tag name 7 | 6838        | 1AB6         | 23222          | 5AB6         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 1   | Tag name 8 | 6839        | 1AB7         | 23223          | 5AB7         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 2   | Tag name 1 | 6848        | 1AC0         | 23232          | 5AC0         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 2   | Tag name 2 | 6849        | 1AC1         | 23233          | 5AC1         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 2   | Tag name 3 | 6850        | 1AC2         | 23234          | 5AC2         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 2   | Tag name 4 | 6851        | 1AC3         | 23235          | 5AC3         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 2   | Tag name 5 | 6852        | 1AC4         | 23236          | 5AC4         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 2   | Tag name 6 | 6853        | 1AC5         | 23237          | 5AC5         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 2   | Tag name 7 | 6854        | 1AC6         | 23238          | 5AC6         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 2   | Tag name 8 | 6855        | 1AC7         | 23239          | 5AC7         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 3   | Tag name 1 | 6864        | 1AD0         | 23248          | 5AD0         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 3   | Tag name 2 | 6865        | 1AD1         | 23249          | 5AD1         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 3   | Tag name 3 | 6866        | 1AD2         | 23250          | 5AD2         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 3   | Tag name 4 | 6867        | 1AD3         | 23251          | 5AD3         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 3   | Tag name 5 | 6868        | 1AD4         | 23252          | 5AD4         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 3   | Tag name 6 | 6869        | 1AD5         | 23253          | 5AD5         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 3   | Tag name 7 | 6870        | 1AD6         | 23254          | 5AD6         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 3   | Tag name 8 | 6871        | 1AD7         | 23255          | 5AD7         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 4   | Tag name 1 | 6880        | 1AE0         | 23264          | 5AE0         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 4   | Tag name 2 | 6881        | 1AE1         | 23265          | 5AE1         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 4   | Tag name 3 | 6882        | 1AE2         | 23266          | 5AE2         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 4   | Tag name 4 | 6883        | 1AE3         | 23267          | 5AE3         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 4   | Tag name 5 | 6884        | 1AE4         | 23268          | 5AE4         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 4   | Tag name 6 | 6885        | 1AE5         | 23269          | 5AE5         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 4   | Tag name 7 | 6886        | 1AE6         | 23270          | 5AE6         |      |       |        |       | -                         |         |
| Other       | Tag for all loops | 4   | Tag name 8 | 6887        | 1AE7         | 23271          | 5AE7         |      |       |        |       | -                         |         |



## Chapter 11. LIST OF COMMUNICATION DATA

## Bitmap assignment

## ■ Alarm information

## ● Alarm information 1

RAM address : 10288 (2830H)

EEPROM address : 26672 (6830H)

LSB

|  | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | 16              | 15              | 14              | 13              | 12              | 11              | 10             | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |

1 : PV1 high limit (soft failure) AL01

2 : PV1 low limit (soft failure) AL02

3 : PV2 high limit (soft failure) AL03

4 : PV2 low limit (soft failure) AL04

5 : PV3 high limit (soft failure) AL05

6 : PV3 low limit (soft failure) AL06

7 : PV4 high limit (soft failure) AL07

8 : PV4 low limit (soft failure) AL08

9 : AD1 fault (soft failure) AL11

10 : AD2 fault (soft failure) AL12

11 : AD3 fault (soft failure) AL13

12 : AD4 fault (soft failure) AL14

13 – 16 : Undefined

## ● Alarm information 2

RAM address : 10289 (2831H)

EEPROM address : 26673 (6831H)

LSB

|  | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | 16              | 15              | 14              | 13              | 12              | 11              | 10             | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |

1 – 4 : Undefined

5 : CT1 input error (soft failure) AL25

6 : CT2 input error (soft failure) AL26

7 : CT3 input error (soft failure) AL27

8 : CT4 input error (soft failure) AL28

9 : Reception monitors 1–16 (soft failure) AL31

10 : Transmission timeout between modules (soft failure) AL32

11 : RS-485 setting error (soft failure) AL33

12 – 16 : Undefined



## Chapter 11. LIST OF COMMUNICATION DATA

## • Alarm information 3

RAM address : 10290 (2832H)

EEPROM address : 26674 (6832H)

LSB

|  | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | 16              | 15              | 14              | 13              | 12              | 11              | 10             | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |

1 : Base EEPROM read/write error (hard failure) AL87

2 : Base EEPROM error (soft failure) AL88

3 – 16 : Undefined

## • Alarm information 4

RAM address : 10291 (2833H)

EEPROM address : 26675 (6833H)

LSB

|  | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | 16              | 15              | 14              | 13              | 12              | 11              | 10             | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |

1 : CJ1 error (soft failure) AL71

2 : CJ2 error (soft failure) AL72

3 : CJ3 error (soft failure) AL73

4 : CJ4 error (soft failure) AL74

5 : Undefined

6 : Undefined

7 : Base EEPROM not initialized (hard failure) AL83

8 : MAC address error (hard failure) AL84

9 : RAM read/write error (hard failure) AL85

10 : EEPROM read/write error (hard failure) AL86

11 : Parameter data RAM error (soft failure) AL94

12 : Adjustment data RAM error (soft failure) AL95

13 : Undefined

14 : Parameter data EEPROM error (soft failure) AL97

15 : Adjustment data EEPROM error (soft failure) AL98

16 : ROM error (hard failure) AL99



## Chapter 11. LIST OF COMMUNICATION DATA

## ■ Instrument internal computation result

## ● Internal computation result 1

RAM address : 10608 (2970H)

EEPROM address : 26992 (6970H)

LSB

|  | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | 16              | 15              | 14              | 13              | 12              | 11              | 10             | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |

|    |                            |      |
|----|----------------------------|------|
| 1  | : Internal event status 1  | EV01 |
| 2  | : Internal event status 2  | EV02 |
| 3  | : Internal event status 3  | EV03 |
| 4  | : Internal event status 4  | EV04 |
| 5  | : Internal event status 5  | EV05 |
| 6  | : Internal event status 6  | EV06 |
| 7  | : Internal event status 7  | EV07 |
| 8  | : Internal event status 8  | EV08 |
| 9  | : Internal event status 9  | EV09 |
| 10 | : Internal event status 10 | EV10 |
| 11 | : Internal event status 11 | EV11 |
| 12 | : Internal event status 12 | EV12 |
| 13 | : Internal event status 13 | EV13 |
| 14 | : Internal event status 14 | EV14 |
| 15 | : Internal event status 15 | EV15 |
| 16 | : Internal event status 16 | EV16 |

## ● Internal computation result 2

RAM address : 10609 (2971H)

EEPROM address : 26993 (6971H)

LSB

|  | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | 16              | 15              | 14              | 13              | 12              | 11              | 10             | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |

|        |                            |      |
|--------|----------------------------|------|
| 1      | : Internal event status 17 | EV17 |
| 2      | : Internal event status 18 | EV18 |
| 3      | : Internal event status 19 | EV19 |
| 4      | : Internal event status 20 | EV20 |
| 5      | : Internal event status 21 | EV21 |
| 6      | : Internal event status 22 | EV22 |
| 7      | : Internal event status 23 | EV23 |
| 8      | : Internal event status 24 | EV24 |
| 9 – 16 | : Undefined                |      |



## Chapter 11. LIST OF COMMUNICATION DATA

## • Internal computation result 3

RAM address : 10610 (2972H)

EEPROM address : 26994 (6972H)

LSB

|  | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | 16              | 15              | 14              | 13              | 12              | 11              | 10             | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |

- 1 : Heater line break detection CT1
- 2 : Heater line break detection CT2
- 3 : Heater line break detection CT3
- 4 : Heater line break detection CT4
- 5 : Excessive current detection CT1
- 6 : Excessive current detection CT2
- 7 : Excessive current detection CT3
- 8 : Excessive current detection CT4
- 9 : Short-circuit detection CT1
- 10 : Short-circuit detection CT2
- 11 : Short-circuit detection CT3
- 12 : Short-circuit detection CT4
- 13 – 16 : Undefined

## • Internal computation result 5

RAM address : 10612 (2974H)

EEPROM address : 26996 (6974H)

LSB

|  | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | 16              | 15              | 14              | 13              | 12              | 11              | 10             | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |

- 1 : Terminal status D11
- 2 : Terminal status D12
- 3 : Terminal status D13
- 4 : Terminal status D14
- 5 – 16 : Undefined

## • Internal computation result 13

RAM address : 10620 (297CH)

EEPROM address : 27004 (697CH)

LSB

|  | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | 16              | 15              | 14              | 13              | 12              | 11              | 10             | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |

- 1 : Terminal status OUT1
- 2 : Terminal status OUT2
- 3 : Terminal status OUT3
- 4 : Terminal status OUT4
- 5 : Terminal status D01
- 6 : Terminal status D02
- 7 : Terminal status D03
- 8 : Terminal status D04
- 9 – 16 : Undefined



## Chapter 11. LIST OF COMMUNICATION DATA

- Internal computation result 21

RAM address : 10628 (2984H)

EEPROM address : 27012 (6984H)

LSB

|    | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 16 | 15              | 14              | 13              | 12              | 11              | 10              | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |                |

|    |                                  |      |
|----|----------------------------------|------|
| 1  | : Result of logical operation 1  | BF01 |
| 2  | : Result of logical operation 2  | BF02 |
| 3  | : Result of logical operation 3  | BF03 |
| 4  | : Result of logical operation 4  | BF04 |
| 5  | : Result of logical operation 5  | BF05 |
| 6  | : Result of logical operation 6  | BF06 |
| 7  | : Result of logical operation 7  | BF07 |
| 8  | : Result of logical operation 8  | BF08 |
| 9  | : Result of logical operation 9  | BF09 |
| 10 | : Result of logical operation 10 | BF10 |
| 11 | : Result of logical operation 11 | BF11 |
| 12 | : Result of logical operation 12 | BF12 |
| 13 | : Result of logical operation 13 | BF13 |
| 14 | : Result of logical operation 14 | BF14 |
| 15 | : Result of logical operation 15 | BF15 |
| 16 | : Result of logical operation 16 | BF16 |

- Internal computation result 55

RAM address : 10662 (29A6H)

EEPROM address : 27046 (69A6H)

LSB

|    | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 16 | 15              | 14              | 13              | 12              | 11              | 10              | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |                |

|    |                           |      |
|----|---------------------------|------|
| 1  | : Reception monitoring 1  | TF01 |
| 2  | : Reception monitoring 2  | TF02 |
| 3  | : Reception monitoring 3  | TF03 |
| 4  | : Reception monitoring 4  | TF04 |
| 5  | : Reception monitoring 5  | TF05 |
| 6  | : Reception monitoring 6  | TF06 |
| 7  | : Reception monitoring 7  | TF07 |
| 8  | : Reception monitoring 8  | TF08 |
| 9  | : Reception monitoring 9  | TF09 |
| 10 | : Reception monitoring 10 | TF10 |
| 11 | : Reception monitoring 11 | TF11 |
| 12 | : Reception monitoring 12 | TF12 |
| 13 | : Reception monitoring 13 | TF13 |
| 14 | : Reception monitoring 14 | TF14 |
| 15 | : Reception monitoring 15 | TF15 |
| 16 | : Reception monitoring 16 | TF16 |



## Chapter 11. LIST OF COMMUNICATION DATA

## ■ User-defined bit

## ● User-defined bits 1–16

RAM address : 10080 (2760H)

EEPROM address : 26464 (6760H)

LSB

|  | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | 16              | 15              | 14              | 13              | 12              | 11              | 10             | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |

- 1 : User-defined bit 1 UB01
- 2 : User-defined bit 2 UB02
- 3 : User-defined bit 3 UB03
- 4 : User-defined bit 4 UB04
- 5 : User-defined bit 5 UB05
- 6 : User-defined bit 6 UB06
- 7 : User-defined bit 7 UB07
- 8 : User-defined bit 8 UB08
- 9 : User-defined bit 9 UB09
- 10 : User-defined bit 10 UB10
- 11 : User-defined bit 11 UB11
- 12 : User-defined bit 12 UB12
- 13 : User-defined bit 13 UB13
- 14 : User-defined bit 14 UB14
- 15 : User-defined bit 15 UB15
- 16 : User-defined bit 16 UB16

## ● User-defined bits 17–32

RAM address : 10097 (2771H)

EEPROM address : 26481 (6771H)

LSB

|  | b <sup>15</sup> | b <sup>14</sup> | b <sup>13</sup> | b <sup>12</sup> | b <sup>11</sup> | b <sup>10</sup> | b <sup>9</sup> | b <sup>8</sup> | b <sup>7</sup> | b <sup>6</sup> | b <sup>5</sup> | b <sup>4</sup> | b <sup>3</sup> | b <sup>2</sup> | b <sup>1</sup> | b <sup>0</sup> |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | 16              | 15              | 14              | 13              | 12              | 11              | 10             | 9              | 8              | 7              | 6              | 5              | 4              | 3              | 2              | 1              |

- 1 : User-defined bit 17 UB17
- 2 : User-defined bit 18 UB18
- 3 : User-defined bit 19 UB19
- 4 : User-defined bit 20 UB20
- 5 : User-defined bit 21 UB21
- 6 : User-defined bit 22 UB22
- 7 : User-defined bit 23 UB23
- 8 : User-defined bit 24 UB24
- 9 : User-defined bit 25 UB25
- 10 : User-defined bit 26 UB26
- 11 : User-defined bit 27 UB27
- 12 : User-defined bit 28 UB28
- 13 : User-defined bit 29 UB29
- 14 : User-defined bit 30 UB30
- 15 : User-defined bit 31 UB31
- 16 : User-defined bit 32 UB32





## Chapter 12. LIST OF PARAMETER SETTINGS

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| Other/Option Tag Name .....                  | 12-74 |
| Other/Tag for All Loops .....                | 12-75 |



## Chapter 12. LIST OF PARAMETER SETTINGS

### Meaning of display levels

- 0 : Displayed in simple, standard or multiple functions
- 1 : Displayed in standard or multiple functions
- 2 : Displayed in multiple functions

### NX-D15 and NX-D25

- No symbol : Supported
- × : Not supported

### Meaning of the decimal point position in the Remarks field

- PID\_PV : Determined by the settings for loops 1 to 4 in the loop (basic) bank (loop PV/SV decimal point position).
- PV : Determined by the settings for PV1 to 4 in the PV input bank (decimal point position).
- RAMP : Determined by the settings for loops 1 to 4 in the SP configuration bank (SP ramp unit).
- OUT : Determined by the settings for outputs 1 to 4 in the continuous output bank (output decimal point position).
- EV : Determined by the settings for event Nos. 1 to 24 in the event configuration bank (decimal point position).
- PID : Determined by the settings for loops 1 to 4 in the loop (extended) bank (integral time/derivative time decimal point position).



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/Communications Profile

| Folder name | Bank name         | No. | Item name          | Setting range                   | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|-------------------|-----|--------------------|---------------------------------|---------------|------|------------|---------------------------------|--------|--------|
| Monitor     | Comm. (device)    | 1   | READY/RUN          | 0: RUN 1: READY                 | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 1   | Auto/Manual        | 0: AUTO 1: MANUAL               | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 1   | AT cancel/execute  | 0: AT stop 1: AT execute        | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 1   | LSP/RSP            | 0: LSP 1: RSP                   | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 1   | PV (loop)          |                                 | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Comm. (device)    | 1   | SP                 |                                 | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Comm. (device)    | 1   | MV                 |                                 | -             | %    | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 2   | READY/RUN          | 0: RUN 1: READY                 | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 2   | Auto/Manual        | 0: AUTO 1: MANUAL               | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 2   | AT cancel/execute  | 0: AT stop 1: AT execute        | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 2   | LSP/RSP            | 0: LSP 1: RSP                   | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 2   | PV (loop)          |                                 | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Comm. (device)    | 2   | SP                 |                                 | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Comm. (device)    | 2   | MV                 |                                 | -             | %    | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 3   | READY/RUN          | 0: RUN 1: READY                 | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 3   | Auto/Manual        | 0: AUTO 1: MANUAL               | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 3   | AT cancel/execute  | 0: AT stop 1: AT execute        | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 3   | PV (loop)          |                                 | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Comm. (device)    | 3   | SP                 |                                 | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Comm. (device)    | 3   | MV                 |                                 | -             | %    | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 4   | READY/RUN          | 0: RUN 1: READY                 | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 4   | Auto/Manual        | 0: AUTO 1: MANUAL               | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 4   | AT cancel/execute  | 0: AT stop 1: AT execute        | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (device)    | 4   | PV (loop)          |                                 | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Comm. (device)    | 4   | SP                 |                                 | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Comm. (device)    | 4   | MV                 |                                 | -             | %    | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 1   | SP group selection | 1 to SP system group (4 max.)   | 1             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 1   | LSP                | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Comm. (operation) | 1   | Manual MV          | -10.0 to 110.0%                 | 0.0           | %    | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 1   | READY/RUN          | 0: RUN 1: READY                 | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 1   | Auto/Manual        | 0: AUTO 1: MANUAL               | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 1   | AT cancel/execute  | 0: AT stop 1: AT execute        | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 1   | LSP/RSP            | 0: LSP 1: RSP                   | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 2   | SP group selection | 1 to SP system group (4 max.)   | 1             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 2   | LSP                | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Comm. (operation) | 2   | Manual MV          | -10.0 to 110.0%                 | 0.0           | %    | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 2   | READY/RUN          | 0: RUN 1: READY                 | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 2   | Auto/Manual        | 0: AUTO 1: MANUAL               | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 2   | AT cancel/execute  | 0: AT stop 1: AT execute        | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 2   | LSP/RSP            | 0: LSP 1: RSP                   | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 3   | SP group selection | 1 to SP system group (4 max.)   | 1             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 3   | LSP                | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Comm. (operation) | 3   | Manual MV          | -10.0 to 110.0%                 | 0.0           | %    | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 3   | READY/RUN          | 0: RUN 1: READY                 | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 3   | Auto/Manual        | 0: AUTO 1: MANUAL               | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 3   | AT cancel/execute  | 0: AT stop 1: AT execute        | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 4   | SP group selection | 1 to SP system group (4 max.)   | 1             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 4   | LSP                | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Comm. (operation) | 4   | Manual MV          | -10.0 to 110.0%                 | 0.0           | %    | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 4   | READY/RUN          | 0: RUN 1: READY                 | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 4   | Auto/Manual        | 0: AUTO 1: MANUAL               | 0             |      | 0          |                                 |        |        |
| Monitor     | Comm. (operation) | 4   | AT cancel/execute  | 0: AT stop 1: AT execute        | 0             |      | 0          |                                 |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/Communications Profile

| Folder name | Bank name           | No. | Item name                             | Setting range                                                                                | Initial value | Unit | User level | Remarks                      | NX-D15 | NX-D25 |
|-------------|---------------------|-----|---------------------------------------|----------------------------------------------------------------------------------------------|---------------|------|------------|------------------------------|--------|--------|
| Monitor     | Comm. (current PID) | 1   | Current proportional band             | 0.1 to 3200.0%                                                                               | 5.0           | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 1   | Current integral time                 | 0 to 32000 s, 0.0 to 3200.0s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID |        |        |
| Monitor     | Comm. (current PID) | 1   | Current derivative time               | 0 to 32000 s, 0.0 to 3200.0s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID |        |        |
| Monitor     | Comm. (current PID) | 1   | Current manual reset                  | -10.0 to 110.0%                                                                              | 50.0          | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 1   | Current output low limit              | -10.0 to 110.0%                                                                              | 0.0           | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 1   | Current output high limit             | -10.0 to 110.0%                                                                              | 100.0         | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 1   | Current proportional band for cooling | 0.1 to 3200.0%                                                                               | 5.0           | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 1   | Current integral time for cooling     | 0 to 32000 s, 0.0 to 3200.0s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID |        |        |
| Monitor     | Comm. (current PID) | 1   | Current derivative time for cooling   | 0 to 32000 s, 0.0 to 3200.0s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID |        |        |
| Monitor     | Comm. (current PID) | 1   | Current MV low limit for cooling      | -10.0 to 110.0%                                                                              | 0.0           | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 1   | Current MV high limit for cooling     | -10.0 to 110.0%                                                                              | 100.0         | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 2   | Current proportional band             | 0.1 to 3200.0%                                                                               | 5.0           | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 2   | Current integral time                 | 0 to 32000 s, 0.0 to 3200.0s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID |        |        |
| Monitor     | Comm. (current PID) | 2   | Current derivative time               | 0 to 32000 s, 0.0 to 3200.0s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID |        |        |
| Monitor     | Comm. (current PID) | 2   | Current manual reset                  | -10.0 to 110.0%                                                                              | 50.0          | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 2   | Current output low limit              | -10.0 to 110.0%                                                                              | 0.0           | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 2   | Current output high limit             | -10.0 to 110.0%                                                                              | 100.0         | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 2   | Current proportional band for cooling | 0.1 to 3200.0%                                                                               | 5.0           | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 2   | Current integral time for cooling     | 0 to 32000 s, 0.0 to 3200.0s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID |        |        |
| Monitor     | Comm. (current PID) | 2   | Current derivative time for cooling   | 0 to 32000 s, 0.0 to 3200.0s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID |        |        |
| Monitor     | Comm. (current PID) | 2   | Current MV low limit for cooling      | -10.0 to 110.0%                                                                              | 0.0           | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 2   | Current MV high limit for cooling     | -10.0 to 110.0%                                                                              | 100.0         | %    | 0          |                              |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/Communications Profile

| Folder name | Bank name           | No. | Item name                 | Setting range                                                                                | Initial value | Unit | User level | Remarks                      | NX-D15 | NX-D25 |
|-------------|---------------------|-----|---------------------------|----------------------------------------------------------------------------------------------|---------------|------|------------|------------------------------|--------|--------|
| Monitor     | Comm. (current PID) | 3   | Current proportional band | 0.1 to 3200.0%                                                                               | 5.0           | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 3   | Current integral time     | 0 to 32000 s, 0.0 to 3200.0s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID |        |        |
| Monitor     | Comm. (current PID) | 3   | Current derivative time   | 0 to 32000 s, 0.0 to 3200.0s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID |        |        |
| Monitor     | Comm. (current PID) | 3   | Current manual reset      | -10.0 to 110.0%                                                                              | 50.0          | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 3   | Current output low limit  | -10.0 to 110.0%                                                                              | 0.0           | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 3   | Current output high limit | -10.0 to 110.0%                                                                              | 100.0         | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 4   | Current proportional band | 0.1 to 3200.0%                                                                               | 5.0           | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 4   | Current integral time     | 0 to 32000 s, 0.0 to 3200.0s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID |        |        |
| Monitor     | Comm. (current PID) | 4   | Current derivative time   | 0 to 32000 s, 0.0 to 3200.0s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID |        |        |
| Monitor     | Comm. (current PID) | 4   | Current manual reset      | -10.0 to 110.0%                                                                              | 50.0          | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 4   | Current output low limit  | -10.0 to 110.0%                                                                              | 0.0           | %    | 0          |                              |        |        |
| Monitor     | Comm. (current PID) | 4   | Current output high limit | -10.0 to 110.0%                                                                              | 100.0         | %    | 0          |                              |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/Loop Mode

| Folder name | Bank name | No. | Item name     | Setting range          | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-----------|-----|---------------|------------------------|---------------|------|------------|---------|--------|--------|
| Monitor     | Loop mode | 1   | RUN/READY     | 0: RUN 1: READY        | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 1   | Auto/Manual   | 0: AUTO 1: MANUAL      | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 1   | AT stop/start | 0: AT stop 1: AT start | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 1   | LSP/RSP       | 0: LSP 1: RSP          | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 2   | RUN/READY     | 0: RUN 1: READY        | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 2   | Auto/Manual   | 0: AUTO 1: MANUAL      | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 2   | AT stop/start | 0: AT stop 1: AT start | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 2   | LSP/RSP       | 0: LSP 1: RSP          | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 3   | RUN/READY     | 0: RUN 1: READY        | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 3   | Auto/Manual   | 0: AUTO 1: MANUAL      | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 3   | AT stop/start | 0: AT stop 1: AT start | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 4   | RUN/READY     | 0: RUN 1: READY        | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 4   | Auto/Manual   | 0: AUTO 1: MANUAL      | 0             |      | 0          |         |        |        |
| Monitor     | Loop mode | 4   | AT stop/start | 0: AT stop 1: AT start | 0             |      | 0          |         |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Monitor/Monitor

| Folder name | Bank name | No. | Item name           | Setting range                         | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|-----------|-----|---------------------|---------------------------------------|---------------|------|------------|---------------------------------|--------|--------|
| Monitor     | Alarm     | 1   | Alarm information 1 |                                       | -             |      | 0          | See Alarm information 1         |        |        |
| Monitor     | Alarm     | 1   | Alarm information 2 |                                       | -             |      | 0          | See Alarm information 2         |        |        |
| Monitor     | Alarm     | 1   | Alarm information 3 |                                       | -             |      | 0          | See Alarm information 3         |        |        |
| Monitor     | Alarm     | 1   | Alarm information 4 |                                       | -             |      | 0          | See Alarm information 4         |        |        |
| Monitor     | Basic     | 1   | PV (loop)           |                                       | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Basic     | 1   | SP                  |                                       | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Basic     | 1   | MV                  |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 1   | Heat MV             |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 1   | Cool MV             |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 1   | AT progress         | 0: Stopped 1 to 4: AT progress number | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 1   | SP group selection  |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 1   | PID group selection |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 1   | PV (input channel)  |                                       | -             |      | 0          | Decimal point position = PV     |        |        |
| Monitor     | Basic     | 2   | PV (loop)           |                                       | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Basic     | 2   | SP                  |                                       | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Basic     | 2   | MV                  |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 2   | Heat MV             |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 2   | Cool MV             |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 2   | AT progress         | 0: Stopped 1 to 4: AT progress number | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 2   | SP group selection  |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 2   | PID group selection |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 2   | PV (input channel)  |                                       | -             |      | 0          | Decimal point position = PV     |        |        |
| Monitor     | Basic     | 3   | PV (loop)           |                                       | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Basic     | 3   | SP                  |                                       | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Basic     | 3   | MV                  |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 3   | AT progress         | 0: Stopped 1 to 4: AT progress number | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 3   | SP group selection  |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 3   | PID group selection |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 3   | PV (input channel)  |                                       | -             |      | 0          | Decimal point position = PV     |        |        |
| Monitor     | Basic     | 4   | PV (loop)           |                                       | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Basic     | 4   | SP                  |                                       | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Basic     | 4   | MV                  |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 4   | AT progress         | 0: Stopped 1 to 4: AT progress number | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 4   | SP group selection  |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 4   | PID group selection |                                       | -             |      | 0          |                                 |        |        |
| Monitor     | Basic     | 4   | PV (input channel)  |                                       | -             |      | 0          | Decimal point position = PV     |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/Monitor

| Folder name | Bank name              | No. | Item name                    | Setting range | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|------------------------|-----|------------------------------|---------------|---------------|------|------------|---------|--------|--------|
| Monitor     | AO percent             | 1   | AO percent data              |               | -             | %    | 0          |         |        |        |
| Monitor     | AO percent             | 2   | AO percent data              |               | -             | %    | 0          |         |        |        |
| Monitor     | AO percent             | 3   | AO percent data              |               | -             | %    | 0          |         |        |        |
| Monitor     | AO percent             | 4   | AO percent data              |               | -             | %    | 0          |         |        |        |
| Monitor     | OUT/DO terminal ON/OFF | 1   | OUT/DO terminal, ON/OFF data |               | -             |      | 0          |         |        |        |
| Monitor     | OUT/DO terminal ON/OFF | 2   | OUT/DO terminal, ON/OFF data |               | -             |      | 0          |         |        |        |
| Monitor     | OUT/DO terminal ON/OFF | 3   | OUT/DO terminal, ON/OFF data |               | -             |      | 0          |         |        |        |
| Monitor     | OUT/DO terminal ON/OFF | 4   | OUT/DO terminal, ON/OFF data |               | -             |      | 0          |         |        |        |
| Monitor     | OUT/DO terminal ON/OFF | 5   | OUT/DO terminal, ON/OFF data |               | -             |      | 0          |         |        |        |
| Monitor     | OUT/DO terminal ON/OFF | 6   | OUT/DO terminal, ON/OFF data |               | -             |      | 0          |         |        |        |
| Monitor     | OUT/DO terminal ON/OFF | 7   | OUT/DO terminal, ON/OFF data |               | -             |      | 0          |         |        |        |
| Monitor     | OUT/DO terminal ON/OFF | 8   | OUT/DO terminal, ON/OFF data |               | -             |      | 0          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/Remaining Delay Time

| Folder name | Bank name            | No. | Item name            | Setting range | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|----------------------|-----|----------------------|---------------|---------------|------|------------|---------|--------|--------|
| Monitor     | Remaining delay time | 1   | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 2   | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 3   | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 4   | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 5   | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 6   | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 7   | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 8   | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 9   | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 10  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 11  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 12  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 13  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 14  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 15  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 16  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 17  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 18  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 19  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 20  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 21  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 22  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 23  | Remaining delay time |               | -             | s    | 0          |         |        |        |
| Monitor     | Remaining delay time | 24  | Remaining delay time |               | -             | s    | 0          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/Computation Result

| Folder name | Bank name          | No. | Item name                                          | Setting range | Initial value | Unit | User level | Remarks                                       | NX-D15 | NX-D25 |
|-------------|--------------------|-----|----------------------------------------------------|---------------|---------------|------|------------|-----------------------------------------------|--------|--------|
| Monitor     | Computation result | 1   | Instrument internal computation result 1 (bitmap)  |               | -             |      | 0          | See Instrument internal computation result 1  |        |        |
| Monitor     | Computation result | 1   | Instrument internal computation result 2 (bitmap)  |               | -             |      | 0          | See Instrument internal computation result 2  |        |        |
| Monitor     | Computation result | 1   | Instrument internal computation result 3 (bitmap)  |               | -             |      | 0          | See Instrument internal computation result 3  |        |        |
| Monitor     | Computation result | 1   | Instrument internal computation result 5 (bitmap)  |               | -             |      | 0          | See Instrument internal computation result 5  |        |        |
| Monitor     | Computation result | 1   | Instrument internal computation result 13 (bitmap) |               | -             |      | 0          | See Instrument internal computation result 13 |        |        |
| Monitor     | Computation result | 1   | Instrument internal computation result 21 (bitmap) |               | -             |      | 0          | See Instrument internal computation result 21 |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS Monitor/Standard Bit

| Folder name | Bank name       | No. | Item name                       | Setting range | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-----------------|-----|---------------------------------|---------------|---------------|------|------------|---------|--------|--------|
| Monitor     | Bits: 1024-1151 | 1   | Always 0 (Off)                  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Always 1 (On)                   |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 1                         |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 2                         |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 3                         |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 4                         |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 5                         |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 6                         |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 7                         |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 8                         |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 9                         |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 10                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 11                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 12                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 13                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 14                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 15                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 16                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 17                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 18                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 19                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 20                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 21                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 22                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 23                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | Event 24                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | CT1 heater line break detection |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | CT2 heater line break detection |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | CT3 heater line break detection |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | CT4 heater line break detection |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | CT1 overcurrent detection       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | CT2 overcurrent detection       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | CT3 overcurrent detection       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | CT4 overcurrent detection       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | CT1 short-circuit detection     |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | CT2 short-circuit detection     |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | CT3 short-circuit detection     |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1024-1151 | 1   | CT4 short-circuit detection     |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1152-1279 | 1   | DI1 terminal status             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1152-1279 | 1   | DI2 terminal status             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1152-1279 | 1   | DI3 terminal status             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1152-1279 | 1   | DI4 terminal status             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1280-1407 | 1   | OUT1 terminal status            |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1280-1407 | 1   | OUT2 terminal status            |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1280-1407 | 1   | OUT3 terminal status            |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1280-1407 | 1   | OUT4 terminal status            |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1280-1407 | 1   | DO1 terminal status             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1280-1407 | 1   | DO2 terminal status             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1280-1407 | 1   | DO3 terminal status             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1280-1407 | 1   | DO4 terminal status             |               | -             |      | 0          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/Standard Bit

| Folder name | Bank name       | No. | Item name                       | Setting range | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-----------------|-----|---------------------------------|---------------|---------------|------|------------|---------|--------|--------|
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 1              |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 2              |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 3              |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 4              |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 5              |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 6              |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 7              |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 8              |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 9              |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 10             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 11             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 12             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 13             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 14             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 15             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 16             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 17             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 18             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 19             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 20             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 21             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 22             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 23             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 24             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 25             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 26             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 27             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 28             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 29             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 30             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 31             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | User-defined bit 32             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 1  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 2  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 3  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 4  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 5  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 6  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 7  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 8  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 9  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 10 |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 11 |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 12 |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 13 |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 14 |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 15 |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1408-1535 | 1   | Results of logical operation 16 |               | -             |      | 0          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/Standard Bit

| Folder name | Bank name       | No. | Item name                                      | Setting range | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-----------------|-----|------------------------------------------------|---------------|---------------|------|------------|---------|--------|--------|
| Monitor     | Bits: 1536-1663 | 1   | RS-485 status (normal transmission of 1 frame) |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 1 RUN/READY status                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 2 RUN/READY status                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 3 RUN/READY status                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 4 RUN/READY status                        |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 1 AUTO/MANUAL status                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 2 AUTO/MANUAL status                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 3 AUTO/MANUAL status                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 4 AUTO/MANUAL status                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 1 AT pause/AT status                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 2 AT pause/AT status                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 3 AT pause/AT status                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 4 AT pause/AT status                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 1 LSP/RSP status                          |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 2 LSP/RSP status                          |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 1 SP ramp-up in progress                  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 2 SP ramp-up in progress                  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 3 SP ramp-up in progress                  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1536-1663 | 1   | Loop 4 SP ramp-up in progress                  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1664-1791 | 1   | Loop 1 SP ramp-down in progress                |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1664-1791 | 1   | Loop 2 SP ramp-down in progress                |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1664-1791 | 1   | Loop 3 SP ramp-down in progress                |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1664-1791 | 1   | Loop 4 SP ramp-down in progress                |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | Representative of all alarms                   |               | -             |      | 0          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/Standard Bit

| Folder name | Bank name       | No. | Item name                                    | Setting range | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-----------------|-----|----------------------------------------------|---------------|---------------|------|------------|---------|--------|--------|
| Monitor     | Bits: 1792-1919 | 1   | AD1 fault (AL11)                             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | AD2 fault (AL12)                             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | AD3 fault (AL13)                             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | AD4 fault (AL14)                             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | PV1 high limit error (AL01)                  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | PV2 high limit error (AL03)                  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | PV3 high limit error (AL05)                  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | PV4 high limit error (AL07)                  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | PV1 low limit error (AL02)                   |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | PV2 low limit error (AL04)                   |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | PV3 low limit error (AL06)                   |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | PV4 low limit error (AL08)                   |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | CJ1 error (AL71)                             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | CJ2 error (AL72)                             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | CJ3 error (AL73)                             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1792-1919 | 1   | CJ4 error (AL74)                             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 1                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 2                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 3                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 4                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 5                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 6                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 7                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 8                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 9                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 10                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 11                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 12                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 13                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 14                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 15                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitoring 16                      |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | CT1 input error (AL25)                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | CT2 input error (AL26)                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | CT3 input error (AL27)                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | CT4 input error (AL28)                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Parameter error (AL94/AL97)                  |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Adjustment data error (AL95/AL98)            |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | EEPROM not initialized (AL83)                |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | ROM error (AL99)                             |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | EEPROM RW error (AL86)                       |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Reception monitors 1-16 (AL31)               |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Transmission time-out between modules (AL32) |               | -             |      | 0          |         |        |        |
| Monitor     | Bits: 1920-2047 | 1   | Writing to EEPROM                            |               | -             |      | 0          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/Standard Numerical Code

| Folder name | Bank name          | No. | Item name                           | Setting range | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|--------------------|-----|-------------------------------------|---------------|---------------|------|------------|---------------------------------|--------|--------|
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 1               |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 2               |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 3               |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 4               |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 5               |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 6               |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 7               |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 8               |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 9               |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 10              |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 11              |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 12              |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 13              |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 14              |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 15              |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2048-2175 | 1   | User-defined number 16              |               | -             |      | 0          |                                 |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | PV1                                 |               | -             |      | 0          | Decimal point position = PV     |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | PV2                                 |               | -             |      | 0          | Decimal point position = PV     |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | PV3                                 |               | -             |      | 0          | Decimal point position = PV     |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | PV4                                 |               | -             |      | 0          | Decimal point position = PV     |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | AI1                                 |               | -             |      | 0          | Decimal point position = PV     |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | AI2                                 |               | -             |      | 0          | Decimal point position = PV     |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | AI3                                 |               | -             |      | 0          | Decimal point position = PV     |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | AI4                                 |               | -             |      | 0          | Decimal point position = PV     |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 1 PV                           |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 2 PV                           |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 3 PV                           |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 4 PV                           |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 1 SP (in use)                  |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 2 SP (in use)                  |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 3 SP (in use)                  |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 4 SP (in use)                  |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 1 SP (final value)             |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 2 SP (final value)             |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 3 SP (final value)             |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 4 SP (final value)             |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 1 MV                           |               | 0.0           | %    | 0          |                                 |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 2 MV                           |               | 0.0           | %    | 0          |                                 |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 3 MV                           |               | 0.0           | %    | 0          |                                 |        |        |
| Monitor     | Numbers: 2304-2431 | 1   | Loop 4 MV                           |               | 0.0           | %    | 0          |                                 |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | Loop 1 MV for heating               |               | 0.0           | %    | 0          |                                 |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | Loop 2 MV for heating               |               | 0.0           | %    | 0          |                                 |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | Loop 1 MV for cooling               |               | 0.0           | %    | 0          |                                 |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | Loop 2 MV for cooling               |               | 0.0           | %    | 0          |                                 |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | CT1 measured current when output ON |               | 0.0           | A    | 0          |                                 |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | CT2 measured current when output ON |               | 0.0           | A    | 0          |                                 |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | CT3 measured current when output ON |               | 0.0           | A    | 0          |                                 |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | CT4 measured current when output ON |               | 0.0           | A    | 0          |                                 |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/Standard Numerical Code

| Folder name | Bank name          | No. | Item name                            | Setting range | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|--------------------|-----|--------------------------------------|---------------|---------------|------|------------|---------------------------------|--------|--------|
| Monitor     | Numbers: 2432-2559 | 1   | CT1 measured current when output OFF |               | 0.0           | A    | 0          |                                 |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | CT2 measured current when output OFF |               | 0.0           | A    | 0          |                                 |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | CT3 measured current when output OFF |               | 0.0           | A    | 0          |                                 |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | CT4 measured current when output OFF |               | 0.0           | A    | 0          |                                 |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | Loop 1 deviation (PV - SP)           |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | Loop 2 deviation (PV - SP)           |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | Loop 3 deviation (PV - SP)           |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2432-2559 | 1   | Loop 4 deviation (PV - SP)           |               | -             |      | 0          | Decimal point position = PID_PV |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 1 timer remaining time         |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 2 timer remaining time         |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 3 timer remaining time         |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 4 timer remaining time         |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 5 timer remaining time         |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 6 timer remaining time         |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 7 timer remaining time         |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 8 timer remaining time         |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 9 timer remaining time         |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 10 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 11 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 12 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 13 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 14 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 15 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 16 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 17 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 18 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 19 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 20 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 21 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 22 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 23 timer remaining time        |               | -             | s    | 0          |                                 |        |        |
| Monitor     | Numbers: 2560-2687 | 1   | Event 24 timer remaining time        |               | -             | s    | 0          |                                 |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/User-defined Bit

| Folder name | Bank name        | No. | Item name               | Setting range | Initial value | Unit | User level | Remarks                     | NX-D15 | NX-D25 |
|-------------|------------------|-----|-------------------------|---------------|---------------|------|------------|-----------------------------|--------|--------|
| Monitor     | User-defined bit | 1   | User-defined bits 1-16  |               | 0             |      | 0          | See User-defined bits 1-16  |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 1      | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 2      | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 3      | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 4      | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 5      | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 6      | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 7      | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 8      | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 9      | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 10     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 11     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 12     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 13     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 14     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 15     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 16     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bits 17-32 |               | 0             |      | 0          | See User-defined bits 17-32 |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 17     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 18     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 19     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 20     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 21     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 22     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 23     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 24     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 25     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 26     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 27     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 28     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 29     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 30     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 31     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |
| Monitor     | User-defined bit | 1   | User-defined bit 32     | 0: OFF 1: ON  | 0             |      | 0          |                             |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Monitor/User-defined Number

| Folder name | Bank name           | No. | Item name              | Setting range   | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|---------------------|-----|------------------------|-----------------|---------------|------|------------|---------|--------|--------|
| Monitor     | User-defined number | 1   | User-defined number 1  | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 2  | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 3  | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 4  | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 5  | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 6  | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 7  | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 8  | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 9  | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 10 | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 11 | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 12 | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 13 | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 14 | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 15 | -32768 to 32767 | 0             |      | 1          |         |        |        |
| Monitor     | User-defined number | 1   | User-defined number 16 | -32768 to 32767 | 0             |      | 1          |         |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Communications/Ethernet Communications

| Folder name    | Bank name               | No. | Item name               | Setting range | Initial value    | Unit | User level | Remarks                                                   | NX-D15 | NX-D25 |
|----------------|-------------------------|-----|-------------------------|---------------|------------------|------|------------|-----------------------------------------------------------|--------|--------|
| Communications | Ethernet communications | 1   | MAC address 1           | 0 to 255      | 0                |      | 0          |                                                           |        |        |
| Communications | Ethernet communications | 1   | MAC address 2           | 0 to 255      | 32               |      | 0          |                                                           |        |        |
| Communications | Ethernet communications | 1   | MAC address 3           | 0 to 255      | 4                |      | 0          |                                                           |        |        |
| Communications | Ethernet communications | 1   | MAC address 4           | 0 to 255      | 98               |      | 0          |                                                           |        |        |
| Communications | Ethernet communications | 1   | MAC address 5           | 0 to 255      | Unique to device |      | 0          |                                                           |        |        |
| Communications | Ethernet communications | 1   | MAC address 6           | 0 to 255      | Unique to device |      | 0          |                                                           |        |        |
| Communications | Ethernet communications | 1   | IPv4 address 1          | 0 to 255      | 192              |      | 0          | Changed settings are enabled after the power is restarted |        |        |
| Communications | Ethernet communications | 1   | IPv4 address 2          | 0 to 255      | 168              |      | 0          | Changed settings are enabled after the power is restarted |        |        |
| Communications | Ethernet communications | 1   | IPv4 address 3          | 0 to 255      | 255              |      | 0          | Changed settings are enabled after the power is restarted |        |        |
| Communications | Ethernet communications | 1   | IPv4 address 4          | 0 to 255      | 254              |      | 0          | Changed settings are enabled after the power is restarted |        |        |
| Communications | Ethernet communications | 1   | IPv4 address net mask 1 | 0 to 255      | 255              |      | 0          | Changed settings are enabled after the power is restarted |        |        |
| Communications | Ethernet communications | 1   | IPv4 address net mask 2 | 0 to 255      | 255              |      | 0          | Changed settings are enabled after the power is restarted |        |        |
| Communications | Ethernet communications | 1   | IPv4 address net mask 3 | 0 to 255      | 255              |      | 0          | Changed settings are enabled after the power is restarted |        |        |
| Communications | Ethernet communications | 1   | IPv4 address net mask 4 | 0 to 255      | 0                |      | 0          | Changed settings are enabled after the power is restarted |        |        |
| Communications | Ethernet communications | 1   | IPv4 default gateway 1  | 0 to 255      | 0                |      | 0          | Changed settings are enabled after the power is restarted |        |        |
| Communications | Ethernet communications | 1   | IPv4 default gateway 2  | 0 to 255      | 0                |      | 0          | Changed settings are enabled after the power is restarted |        |        |
| Communications | Ethernet communications | 1   | IPv4 default gateway 3  | 0 to 255      | 0                |      | 0          | Changed settings are enabled after the power is restarted |        |        |
| Communications | Ethernet communications | 1   | IPv4 default gateway 4  | 0 to 255      | 0                |      | 0          | Changed settings are enabled after the power is restarted |        |        |
| Communications | Ethernet communications | 1   | MODBUS TCP port number  | 0 to 65535    | 502              |      | 0          | Changed settings are enabled after the power is restarted |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Communications/RS-485 Communications

| Folder name    | Bank name            | No. | Item name                 | Setting range                                                                               | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|----------------|----------------------|-----|---------------------------|---------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Communications | RS-485 communication | 1   | Communications type       | 0: CPL<br>1: MODBUS ASCII<br>2: MODBUS RTU                                                  | 0             |      |            |         |        |        |
| Communications | RS-485 communication | 1   | Station address           | 0 to 127                                                                                    | 127           |      |            |         |        |        |
| Communications | RS-485 communication | 1   | Transmission speed        | 0: 4800 bps<br>1: 9600 bps<br>2: 19200 bps<br>3: 38400 bps<br>4: 57600 bps<br>5: 115200 bps | 2             |      |            |         |        |        |
| Communications | RS-485 communication | 1   | Data format (data length) | 0: 7 bits<br>1: 8 bits                                                                      | 1             |      |            |         |        |        |
| Communications | RS-485 communication | 1   | Data format (parity)      | 0: Even parity<br>1: Odd parity<br>2: No parity                                             | 0             |      |            |         |        |        |
| Communications | RS-485 communication | 1   | Data format (stop bit)    | 0: 1 stop bit<br>1: 2 stop bits                                                             | 0             |      |            |         |        |        |
| Communications | RS-485 communication | 1   | Minimum response time     | 1 to 250                                                                                    | 3             | ms   |            |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Basic/Setup

| Folder name | Bank name | No. | Item name                     | Setting range                                                                                                                                                                                                                                   | Initial value                       | Unit | User level | Remarks                                                   | NX-D15 | NX-D25 |
|-------------|-----------|-----|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------|------------|-----------------------------------------------------------|--------|--------|
| Basic       | Setup     | 1   | SP system group               | 1 to 4                                                                                                                                                                                                                                          | 1                                   |      | 0          |                                                           |        |        |
| Basic       | Setup     | 1   | Start delay at power ON       | 0 to 60 s                                                                                                                                                                                                                                       | 2                                   | s    | 1          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 1  | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 2  | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 3  | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 4  | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 5  | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 6  | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 7  | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 8  | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 9  | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 10 | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 11 | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 12 | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 13 | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 14 | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 15 | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Advanced function password 16 | 0 to 65535                                                                                                                                                                                                                                      | 0                                   |      | 2          |                                                           |        |        |
| Basic       | Setup     | 1   | Loop type                     | 0: 1 loop<br>1: 2 loops<br>2: 1 loop (RSP)<br>5: 2 loops (1 loop with RSP)<br>8: 2 loops (RSP) + MV branching output<br>9: 2 loops (RSP)<br>1: 3 loops<br>22: 4 loops<br>23: 3 loops + MV branching output<br>24: 4 loops + MV branching output | 4-loop model = 22, 2-loop model = 1 |      | 1          | Changed settings are enabled after the power is restarted |        |        |
| Basic       | Setup     | 1   | Release all latches           | 0: Continue latch<br>1: Release latch                                                                                                                                                                                                           | 0                                   |      | 1          |                                                           |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Basic/Loop (Input)

| Folder name | Bank name    | No. | Item name    | Setting range                                                                                                                               | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|--------------|-----|--------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Basic       | Loop (input) | 1   | Assigned PV  | 0: Default 1: PV1 2: PV2<br>3: PV3 4: PV4<br>2048-3071: Standard numerical codes                                                            | 0             |      | 1          |         |        |        |
| Basic       | Loop (input) | 1   | Assigned RSP | 0: Default 1: PV1 2: PV2<br>3: PV3 4: PV4<br>2048-3071: Standard numerical codes                                                            | 0             |      | 1          |         |        |        |
| Basic       | Loop (input) | 1   | Assigned AI  | D15<br>0: Default 1: AI1 2: AI2<br>3: AI3 4: AI4<br>D25<br>0: Default 1: AI1 2: AI2<br>3: AI3 4: AI4<br>2048-3071: Standard numerical codes | 0             |      | 1          |         |        |        |
| Basic       | Loop (input) | 2   | Assigned PV  | 0: Default 1: PV1 2: PV2<br>3: PV3 4: PV4<br>2048-3071: Standard numerical codes                                                            | 0             |      | 1          |         |        |        |
| Basic       | Loop (input) | 2   | Assigned RSP | 0: Default 1: PV1 2: PV2<br>3: PV3 4: PV4<br>2048-3071: Standard numerical codes                                                            | 0             |      | 1          |         |        |        |
| Basic       | Loop (input) | 2   | Assigned AI  | D15<br>0: Default 1: AI1 2: AI2<br>3: AI3 4: AI4<br>D25<br>0: Default 1: AI1 2: AI2<br>3: AI3 4: AI4<br>2048-3071: Standard numerical codes | 0             |      | 1          |         |        |        |
| Basic       | Loop (input) | 3   | Assigned PV  | 0: Default 1: PV1 2: PV2<br>3: PV3 4: PV4<br>2048-3071: Standard numerical codes                                                            | 0             |      | 1          |         |        |        |
| Basic       | Loop (input) | 3   | Assigned AI  | D15<br>0: Default 1: AI1 2: AI2<br>3: AI3 4: AI4<br>D25<br>0: Default 1: AI1 2: AI2<br>3: AI3 4: AI4<br>2048-3071: Standard numerical codes | 0             |      | 1          |         |        |        |
| Basic       | Loop (input) | 4   | Assigned PV  | 0: Default 1: PV1 2: PV2<br>3: PV3 4: PV4<br>2048-3071: Standard numerical codes                                                            | 0             |      | 1          |         |        |        |
| Basic       | Loop (input) | 4   | Assigned AI  | D15<br>0: Default 1: AI1 2: AI2<br>3: AI3 4: AI4<br>D25<br>0: Default 1: AI1 2: AI2<br>3: AI3 4: AI4<br>2048-3071: Standard numerical codes | 0             |      | 1          |         |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Basic/Loop

| Folder name | Bank name    | No. | Item name                              | Setting range                                                                                                                                                                  | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|--------------|-----|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------------------------------|--------|--------|
| Basic       | Loop (basic) | 1   | Loop PV/SP decimal point position      | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 1             |      | 1          |                                 |        |        |
| Basic       | Loop (basic) | 1   | Control action                         | 0: Reverse action (heating)<br>1: Direct action (cooling)<br>2: Heat/Cool<br>4: Reverse action (ON/OFF)<br>5: Direct action (ON/OFF)                                           | 0             |      | 0          |                                 |        |        |
| Basic       | Loop (basic) | 1   | Range low limit for proportional band  | -19999 to 32000 U                                                                                                                                                              | 0.0           |      | 1          | Decimal point position = PID_PV |        |        |
| Basic       | Loop (basic) | 1   | Range high limit for proportional band | -19999 to 32000 U                                                                                                                                                              | 1000.0        |      | 1          | Decimal point position = PID_PV |        |        |
| Basic       | Loop (basic) | 1   | AT type                                | 0: Normal (regular control characteristics)<br>1: Fast (response to disturbance)<br>2: Stable (minimal up/down PV fluctuation)                                                 | 0             |      | 1          |                                 |        |        |
| Basic       | Loop (basic) | 1   | Heat/cool dead zone                    | -100.0 to 100.0%                                                                                                                                                               | 0.0           | %    | 1          |                                 |        |        |
| Basic       | Loop (basic) | 1   | Initial output of PID control          | -10.0 to 110.0%                                                                                                                                                                | 0.0           | %    | 1          |                                 |        |        |
| Basic       | Loop (basic) | 2   | Loop PV/SP decimal point position      | 0: No decimal point 1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point    | 1             |      | 1          |                                 |        |        |
| Basic       | Loop (basic) | 2   | Control action                         | 0: Reverse action (heating)<br>1: Direct action (cooling)<br>2: Heat/Cool<br>4: Reverse action (ON/OFF)<br>5: Direct action (ON/OFF)                                           | 0             |      | 0          |                                 |        |        |
| Basic       | Loop (basic) | 2   | Range low limit for proportional band  | -19999 to 32000 U                                                                                                                                                              | 0.0           |      | 1          | Decimal point position = PID_PV |        |        |
| Basic       | Loop (basic) | 2   | Range high limit for proportional band | -19999 to 32000 U                                                                                                                                                              | 1000.0        |      | 1          | Decimal point position = PID_PV |        |        |
| Basic       | Loop (basic) | 2   | AT type                                | 0: Normal (regular control characteristics)<br>1: Fast (response to disturbance)<br>2: Stable (minimal up/down PV fluctuation)                                                 | 0             |      | 0          |                                 |        |        |
| Basic       | Loop (basic) | 2   | Heat/cool dead zone                    | -100.0 to 100.0%                                                                                                                                                               | 0.0           | %    | 1          |                                 |        |        |
| Basic       | Loop (basic) | 2   | Initial output of PID control          | -10.0 to 110.0%                                                                                                                                                                | 0.0           | %    | 1          |                                 |        |        |
| Basic       | Loop (basic) | 3   | Loop PV/SP decimal point position      | 0: No decimal point 1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point    | 1             |      | 1          |                                 |        |        |
| Basic       | Loop (basic) | 3   | Control action                         | 0: Reverse action (heating)<br>1: Direct action (cooling)<br>2: Heat/Cool<br>4: Reverse action (ON/OFF)<br>5: Direct action (ON/OFF)                                           | 0             |      | 0          |                                 |        |        |
| Basic       | Loop (basic) | 3   | Range low limit for proportional band  | -19999 to 32000 U                                                                                                                                                              | 0.0           |      | 1          | Decimal point position = PID_PV |        |        |
| Basic       | Loop (basic) | 3   | Range high limit for proportional band | -19999 to 32000 U                                                                                                                                                              | 1000.0        |      | 1          | Decimal point position = PID_PV |        |        |
| Basic       | Loop (basic) | 3   | AT type                                | 0: Normal (regular control characteristics)<br>1: Fast (response to disturbance)<br>2: Stable (minimal up/down PV fluctuation)                                                 | 0             |      | 0          |                                 |        |        |
| Basic       | Loop (basic) | 3   | Initial output of PID control          | -10.0 to 110.0%                                                                                                                                                                | 0.0           | %    | 1          |                                 |        |        |
| Basic       | Loop (basic) | 4   | Loop PV/SP decimal point position      | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 1             |      | 1          |                                 |        |        |
| Basic       | Loop (basic) | 4   | Control action                         | 0: Reverse action (heating)<br>1: Direct action (cooling)<br>2: Heat/Cool<br>4: Reverse action (ON/OFF)<br>5: Direct action (ON/OFF)                                           | 0             |      | 0          |                                 |        |        |
| Basic       | Loop (basic) | 4   | Range low limit for proportional band  | -19999 to 32000 U                                                                                                                                                              | 0.0           |      | 1          | Decimal point position = PID_PV |        |        |
| Basic       | Loop (basic) | 4   | Range high limit for proportional band | -19999 to 32000 U                                                                                                                                                              | 1000.0        |      | 1          | Decimal point position = PID_PV |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Basic/Loop

| Folder name | Bank name       | No. | Item name                                            | Setting range                                                                                                                  | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-----------------|-----|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Basic       | Loop (basic)    | 4   | AT type                                              | 0: Normal (regular control characteristics)<br>1: Fast (response to disturbance)<br>2: Stable (minimal up/down PV fluctuation) | 0             |      | 0          |         |        |        |
| Basic       | Loop (basic)    | 4   | Initial output of PID control                        | -10.0 to 110.0%                                                                                                                | 0.0           | %    | 1          |         |        |        |
| Basic       | Loop (extended) | 1   | PID control initialization                           | 0: Automatic 1: No initialization<br>2: With initialization (when an SP differing from the current one is input)               | 0             |      | 0          |         |        |        |
| Basic       | Loop (extended) | 1   | Integral time/derivative time decimal point position | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point                               | 0             |      | 1          |         |        |        |
| Basic       | Loop (extended) | 1   | Output operation at changing Auto/Manual             | 0: Bumpless 1: Preset                                                                                                          | 0             |      | 0          |         |        |        |
| Basic       | Loop (extended) | 1   | Preset MANUAL value                                  | -10.0 to 110.0%                                                                                                                | 0.0           | %    | 0          |         |        |        |
| Basic       | Loop (extended) | 1   | MV increase change limit                             | 0.00: No limit 0.01 to 320.00: %/s                                                                                             | 0.00          | %/s  | 0          |         | ×      |        |
| Basic       | Loop (extended) | 1   | MV decrease change limit                             | 0.00: No limit 0.01 to 320.00: %/s                                                                                             | 0.00          | %/s  | 0          |         | ×      |        |
| Basic       | Loop (extended) | 1   | MV low limit during AT                               | -10.0 to 110.0%                                                                                                                | 0.0           | %    | 1          |         |        |        |
| Basic       | Loop (extended) | 1   | MV high limit during AT                              | -10.0 to 110.0%                                                                                                                | 100.0         | %    | 1          |         |        |        |
| Basic       | Loop (extended) | 2   | PID control initialization                           | 0: Automatic 1: No initialization<br>2: With initialization (when an SP differing from the current one is input)               | 0             |      | 0          |         |        |        |
| Basic       | Loop (extended) | 2   | Integral time/derivative time decimal point position | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point                               | 0             |      | 1          |         |        |        |
| Basic       | Loop (extended) | 2   | Output operation at changing Auto/Manual             | 0: Bumpless 1: Preset                                                                                                          | 0             |      | 0          |         |        |        |
| Basic       | Loop (extended) | 2   | Preset MANUAL value                                  | -10.0 to 110.0%                                                                                                                | 0.0           | %    | 0          |         |        |        |
| Basic       | Loop (extended) | 2   | MV increase change limit                             | 0.00: No limit 0.01 to 320.00: %/s                                                                                             | 0.00          | %/s  | 0          |         | ×      |        |
| Basic       | Loop (extended) | 2   | MV decrease change limit                             | 0.00: No limit 0.01 to 320.00: %/s                                                                                             | 0.00          | %/s  | 0          |         | ×      |        |
| Basic       | Loop (extended) | 2   | MV low limit during AT                               | -10.0 to 110.0%                                                                                                                | 0.0           | %    | 1          |         |        |        |
| Basic       | Loop (extended) | 2   | MV high limit during AT                              | -10.0 to 110.0%                                                                                                                | 100.0         | %    | 1          |         |        |        |
| Basic       | Loop (extended) | 3   | PID control initialization                           | 0: Automatic 1: No initialization<br>2: With initialization (when an SP differing from the current one is input)               | 0             |      | 0          |         |        |        |
| Basic       | Loop (extended) | 3   | Integral time/derivative time decimal point position | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point                               | 0             |      | 1          |         |        |        |
| Basic       | Loop (extended) | 3   | Output operation at changing Auto/Manual             | 0: Bumpless 1: Preset                                                                                                          | 0             |      | 0          |         |        |        |
| Basic       | Loop (extended) | 3   | Preset MANUAL value                                  | -10.0 to 110.0%                                                                                                                | 0.0           | %    | 0          |         |        |        |
| Basic       | Loop (extended) | 3   | MV increase change limit                             | 0.00: No limit 0.01 to 320.00: %/s                                                                                             | 0.00          | %/s  | 0          |         | ×      |        |
| Basic       | Loop (extended) | 3   | MV decrease change limit                             | 0.00: No limit 0.01 to 320.00: %/s                                                                                             | 0.00          | %/s  | 0          |         | ×      |        |
| Basic       | Loop (extended) | 3   | MV low limit during AT                               | -10.0 to 110.0%                                                                                                                | 0.0           | %    | 1          |         |        |        |
| Basic       | Loop (extended) | 3   | MV high limit during AT                              | -10.0 to 110.0%                                                                                                                | 100.0         | %    | 1          |         |        |        |
| Basic       | Loop (extended) | 4   | PID control initialization                           | 0: Automatic 1: No initialization<br>2: With initialization (when an SP differing from the current one is input)               | 0             |      | 0          |         |        |        |
| Basic       | Loop (extended) | 4   | Integral time/derivative time decimal point position | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point                               | 0             |      | 1          |         |        |        |
| Basic       | Loop (extended) | 4   | Output operation at changing Auto/Manual             | 0: Bumpless 1: Preset                                                                                                          | 0             |      | 0          |         |        |        |
| Basic       | Loop (extended) | 4   | Preset MANUAL value                                  | -10.0 to 110.0%                                                                                                                | 0.0           | %    | 0          |         |        |        |
| Basic       | Loop (extended) | 4   | MV increase change limit                             | 0.00: No limit 0.01 to 320.00: %/s                                                                                             | 0.00          | %/s  | 0          |         | ×      |        |
| Basic       | Loop (extended) | 4   | MV decrease change limit                             | 0.00: No limit 0.01 to 320.00: %/s                                                                                             | 0.00          | %/s  | 0          |         | ×      |        |
| Basic       | Loop (extended) | 4   | MV low limit during AT                               | -10.0 to 110.0%                                                                                                                | 0.0           | %    | 1          |         |        |        |
| Basic       | Loop (extended) | 4   | MV high limit during AT                              | -10.0 to 110.0%                                                                                                                | 100.0         | %    | 1          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Basic/Loop

| Folder name | Bank name        | No. | Item name                                | Setting range  | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|------------------|-----|------------------------------------------|----------------|---------------|------|------------|---------|--------|--------|
| Basic       | Loop (algorithm) | 1   | AT adjustment factor, proportional band  | 0.00 to 320.00 | 1.00          |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 1   | AT adjustment factor, integral time      | 0.00 to 320.00 | 1.00          |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 1   | AT adjustment factor, derivative time    | 0.00 to 320.00 | 1.00          |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 1   | Just-FiTTER settling band                | 0.00 to 10.00  | 0.30          |      | 2          |         |        |        |
| Basic       | Loop (algorithm) | 1   | Just-FiTTER overshoot suppression factor | 0 to 99        | 0             |      | 2          |         |        |        |
| Basic       | Loop (algorithm) | 1   | SP lag factor                            | 0.0 to 3200.0  | 0.0           |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 2   | AT adjustment factor, proportional band  | 0.00 to 320.00 | 1.00          |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 2   | AT adjustment factor, integral time      | 0.00 to 320.00 | 1.00          |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 2   | AT adjustment factor, derivative time    | 0.00 to 320.00 | 1.00          |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 2   | Just-FiTTER settling band                | 0.00 to 10.00  | 0.30          |      | 2          |         |        |        |
| Basic       | Loop (algorithm) | 2   | Just-FiTTER overshoot suppression factor | 0 to 99        | 0             |      | 2          |         |        |        |
| Basic       | Loop (algorithm) | 2   | SP lag factor                            | 0.0 to 3200.0  | 0.0           |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 3   | AT adjustment factor, proportional band  | 0.00 to 320.00 | 1.00          |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 3   | AT adjustment factor, integral time      | 0.00 to 320.00 | 1.00          |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 3   | AT adjustment factor, derivative time    | 0.00 to 320.00 | 1.00          |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 3   | Just-FiTTER settling band                | 0.00 to 10.00  | 0.30          |      | 2          |         |        |        |
| Basic       | Loop (algorithm) | 3   | Just-FiTTER overshoot suppression factor | 0 to 99        | 0             |      | 2          |         |        |        |
| Basic       | Loop (algorithm) | 3   | SP lag factor                            | 0.0 to 3200.0  | 0.0           |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 4   | AT adjustment factor, proportional band  | 0.00 to 320.00 | 1.00          |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 4   | AT adjustment factor, integral time      | 0.00 to 320.00 | 1.00          |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 4   | AT adjustment factor, derivative time    | 0.00 to 320.00 | 1.00          |      | 1          |         |        |        |
| Basic       | Loop (algorithm) | 4   | Just-FiTTER settling band                | 0.00 to 10.00  | 0.30          |      | 2          |         |        |        |
| Basic       | Loop (algorithm) | 4   | Just-FiTTER overshoot suppression factor | 0 to 99        | 0             |      | 2          |         |        |        |
| Basic       | Loop (algorithm) | 4   | SP lag factor                            | 0.0 to 3200.0  | 0.0           |      | 1          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Basic/Loop Output

| Folder name | Bank name        | No. | Item name                         | Setting range                                                   | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|------------------|-----|-----------------------------------|-----------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Basic       | Loop output (MV) | 1   | Output at READY                   | -10.0 to 110.0%                                                 | 0.0           | %    | 0          |         |        |        |
| Basic       | Loop output (MV) | 1   | Output at READY (Heat)            | -10.0 to 110.0%                                                 | 0.0           | %    | 1          |         |        |        |
| Basic       | Loop output (MV) | 1   | Output at READY (Cool)            | -10.0 to 110.0%                                                 | 0.0           | %    | 1          |         |        |        |
| Basic       | Loop output (MV) | 1   | Selection of MV if PV is abnormal | 0: Continue control operation<br>1: Output MV if PV is abnormal | 0             |      | 0          |         |        |        |
| Basic       | Loop output (MV) | 1   | Output at PV error                | -10.0 to 110.0%                                                 | 0.0           | %    | 0          |         |        |        |
| Basic       | Loop output (MV) | 2   | Output at READY                   | -10.0 to 110.0%                                                 | 0.0           | %    | 0          |         |        |        |
| Basic       | Loop output (MV) | 2   | Output at READY (Heat)            | -10.0 to 110.0%                                                 | 0.0           | %    | 1          |         |        |        |
| Basic       | Loop output (MV) | 2   | Output at READY (Cool)            | -10.0 to 110.0%                                                 | 0.0           | %    | 1          |         |        |        |
| Basic       | Loop output (MV) | 2   | Selection of MV if PV is abnormal | 0: Continue control operation<br>1: Output MV if PV is abnormal | 0             |      | 0          |         |        |        |
| Basic       | Loop output (MV) | 2   | Output at PV error                | -10.0 to 110.0%                                                 | 0.0           | %    | 0          |         |        |        |
| Basic       | Loop output (MV) | 3   | Output at READY                   | -10.0 to 110.0%                                                 | 0.0           | %    | 0          |         |        |        |
| Basic       | Loop output (MV) | 3   | Output at READY (Heat)            | -10.0 to 110.0%                                                 | 0.0           | %    | 1          |         |        |        |
| Basic       | Loop output (MV) | 3   | Selection of MV if PV is abnormal | 0: Continue control operation<br>1: Output MV if PV is abnormal | 0             |      | 0          |         |        |        |
| Basic       | Loop output (MV) | 3   | Output at PV error                | -10.0 to 110.0%                                                 | 0.0           | %    | 0          |         |        |        |
| Basic       | Loop output (MV) | 4   | Output at READY                   | -10.0 to 110.0%                                                 | 0.0           | %    | 0          |         |        |        |
| Basic       | Loop output (MV) | 4   | Output at READY (Heat)            | -10.0 to 110.0%                                                 | 0.0           | %    | 1          |         |        |        |
| Basic       | Loop output (MV) | 4   | Selection of MV if PV is abnormal | 0: Continue control operation<br>1: Output MV if PV is abnormal | 0             |      | 0          |         |        |        |
| Basic       | Loop output (MV) | 4   | Output at PV error                | -10.0 to 110.0%                                                 | 0.0           | %    | 0          |         |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Input-output/PV Input

| Folder name  | Bank name | No. | Item name                      | Setting range                                                                                                                                                                  | Initial value | Unit | User level | Remarks                     | NX-D15 | NX-D25 |
|--------------|-----------|-----|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-----------------------------|--------|--------|
| Input-output | PV input  | 1   | Range type                     | * See the range table                                                                                                                                                          | 88            |      | 0          |                             |        |        |
| Input-output | PV input  | 1   | Decimal point position         | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 1             |      | 0          |                             |        |        |
| Input-output | PV input  | 1   | Temperature unit               | 0: Celsius (°C) 1: Fahrenheit (°F)<br>2: Kelvin (K)                                                                                                                            | 0             |      | 0          |                             |        |        |
| Input-output | PV input  | 1   | Alarm setting low limit        | -19999 to 32000 U                                                                                                                                                              | -1999.9       |      | 1          | Decimal point position = PV |        |        |
| Input-output | PV input  | 1   | Alarm setting high limit       | -19999 to 32000 U                                                                                                                                                              | 3200.0        |      | 1          | Decimal point position = PV |        |        |
| Input-output | PV input  | 1   | Cold junction compensation     | 0: Use internal compensation<br>1: Do not use internal compensation                                                                                                            | 0             |      | 1          |                             |        |        |
| Input-output | PV input  | 1   | Linear scaling low limit       | -19999 to 32000 U                                                                                                                                                              | 0.0           |      | 0          | Decimal point position = PV |        |        |
| Input-output | PV input  | 1   | Linear scaling high limit      | -19999 to 32000 U                                                                                                                                                              | 1000.0        |      | 0          | Decimal point position = PV |        |        |
| Input-output | PV input  | 1   | Square root extraction dropout | 0.0 to 10.0%                                                                                                                                                                   | 0.0           | %    | 1          |                             |        |        |
| Input-output | PV input  | 1   | Filter                         | 0.00 to 120.00 s                                                                                                                                                               | 0.0           | s    | 0          |                             |        |        |
| Input-output | PV input  | 1   | Bias                           | -19999 to 32000 U                                                                                                                                                              | 0.0           |      | 0          | Decimal point position = PV |        |        |
| Input-output | PV input  | 1   | Ratio                          | 0.001 to 32.000                                                                                                                                                                | 1.000         |      | 0          |                             |        |        |
| Input-output | PV input  | 2   | Range type                     | * See the range table                                                                                                                                                          | 88            |      | 0          |                             |        |        |
| Input-output | PV input  | 2   | Decimal point position         | 0: No decimal point 1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point    | 1             |      | 0          |                             |        |        |
| Input-output | PV input  | 2   | Temperature unit               | 0: Celsius (°C) 1: Fahrenheit (°F)<br>2: Kelvin (K)                                                                                                                            | 0             |      | 0          |                             |        |        |
| Input-output | PV input  | 2   | Alarm setting low limit        | -19999 to 32000 U                                                                                                                                                              | -1999.9       |      | 1          | Decimal point position = PV |        |        |
| Input-output | PV input  | 2   | Alarm setting high limit       | -19999 to 32000 U                                                                                                                                                              | 3200.0        |      | 1          | Decimal point position = PV |        |        |
| Input-output | PV input  | 2   | Cold junction compensation     | 0: Use internal compensation<br>1: Do not use internal compensation                                                                                                            | 0             |      | 1          |                             |        |        |
| Input-output | PV input  | 2   | Linear scaling low limit       | -19999 to 32000 U                                                                                                                                                              | 0.0           |      | 0          | Decimal point position = PV |        |        |
| Input-output | PV input  | 2   | Linear scaling high limit      | -19999 to 32000 U                                                                                                                                                              | 1000.0        |      | 0          | Decimal point position = PV |        |        |
| Input-output | PV input  | 2   | Square root extraction dropout | 0.0 to 10.0%                                                                                                                                                                   | 0.0           | %    | 1          |                             |        |        |
| Input-output | PV input  | 2   | Filter                         | 0.00 to 120.00 s                                                                                                                                                               | 0.0           | s    | 0          |                             |        |        |
| Input-output | PV input  | 2   | Bias                           | -19999 to 32000 U                                                                                                                                                              | 0.0           |      | 0          | Decimal point position = PV |        |        |
| Input-output | PV input  | 2   | Ratio                          | 0.001 to 32.000                                                                                                                                                                | 1.000         |      | 0          |                             |        |        |
| Input-output | PV input  | 3   | Range type                     | * See the range table                                                                                                                                                          | 88            |      | 0          |                             |        |        |
| Input-output | PV input  | 3   | Decimal point position         | 0: No decimal point 1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point    | 1             |      | 0          |                             |        |        |
| Input-output | PV input  | 3   | Temperature unit               | 0: Celsius (°C) 1: Fahrenheit (°F)<br>2: Kelvin (K)                                                                                                                            | 0             |      | 0          |                             |        |        |
| Input-output | PV input  | 3   | Alarm setting low limit        | -19999 to 32000 U                                                                                                                                                              | -1999.9       |      | 1          | Decimal point position = PV |        |        |
| Input-output | PV input  | 3   | Alarm setting high limit       | -19999 to 32000 U                                                                                                                                                              | 3200.0        |      | 1          | Decimal point position = PV |        |        |
| Input-output | PV input  | 3   | Cold junction compensation     | 0: Use internal compensation<br>1: Do not use internal compensation                                                                                                            | 0             |      | 1          |                             |        |        |
| Input-output | PV input  | 3   | Linear scaling low limit       | -19999 to 32000 U                                                                                                                                                              | 0.0           |      | 0          | Decimal point position = PV |        |        |
| Input-output | PV input  | 3   | Linear scaling high limit      | -19999 to 32000 U                                                                                                                                                              | 1000.0        |      | 0          | Decimal point position = PV |        |        |
| Input-output | PV input  | 3   | Square root extraction dropout | 0.0 to 10.0%                                                                                                                                                                   | 0.0           | %    | 1          |                             |        |        |
| Input-output | PV input  | 3   | Filter                         | 0.00 to 120.00 s                                                                                                                                                               | 0.0           | s    | 0          |                             |        |        |
| Input-output | PV input  | 3   | Bias                           | -19999 to 32000 U                                                                                                                                                              | 0.0           |      | 0          | Decimal point position = PV |        |        |
| Input-output | PV input  | 3   | Ratio                          | 0.001 to 32.000                                                                                                                                                                | 1.000         |      | 0          |                             |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Input-output/PV Input

| Folder name  | Bank name | No. | Item name                      | Setting range                                                                                                                                                                  | Initial value | Unit | User level | Remarks                     | NX-D15 | NX-D25 |
|--------------|-----------|-----|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-----------------------------|--------|--------|
| Input-output | PV input  | 4   | Range type                     | * See the range table                                                                                                                                                          | 88            |      | 0          |                             |        |        |
| Input-output | PV input  | 4   | Decimal point position         | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 1             |      | 0          |                             |        |        |
| Input-output | PV input  | 4   | Temperature unit               | 0: Celsius (°C) 1: Fahrenheit (°F)<br>2: Kelvin (K)                                                                                                                            | 0             |      | 0          |                             |        |        |
| Input-output | PV input  | 4   | Alarm setting low limit        | -19999 to 32000 U                                                                                                                                                              | -1999.9       |      | 1          | Decimal point position = PV |        |        |
| Input-output | PV input  | 4   | Alarm setting high limit       | -19999 to 32000 U                                                                                                                                                              | 3200.0        |      | 1          | Decimal point position = PV |        |        |
| Input-output | PV input  | 4   | Cold junction compensation     | 0: Use internal compensation<br>1: Do not use internal compensation                                                                                                            | 0             |      | 1          |                             |        |        |
| Input-output | PV input  | 4   | Linear scaling low limit       | -19999 to 32000 U                                                                                                                                                              | 0.0           |      | 0          | Decimal point position = PV |        |        |
| Input-output | PV input  | 4   | Linear scaling high limit      | -19999 to 32000 U                                                                                                                                                              | 1000.0        |      | 0          | Decimal point position = PV |        |        |
| Input-output | PV input  | 4   | Square root extraction dropout | 0.0 to 10.0%                                                                                                                                                                   | 0.0           | %    | 1          |                             |        |        |
| Input-output | PV input  | 4   | Filter                         | 0.00 to 120.00 s                                                                                                                                                               | 0.0           | s    | 0          |                             |        |        |
| Input-output | PV input  | 4   | Bias                           | -19999 to 32000 U                                                                                                                                                              | 0.0           |      | 0          | Decimal point position = PV |        |        |
| Input-output | PV input  | 4   | Ratio                          | 0.001 to 32.000                                                                                                                                                                | 1.000         |      | 0          |                             |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Input-output/Continuous Output

| Folder name  | Bank name         | No. | Item name                     | Setting range                                                                                                                                                                                                    | Initial value | Unit | User level | Remarks                      | NX-D15 | NX-D25 |
|--------------|-------------------|-----|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|------------------------------|--------|--------|
| Input-output | Continuous output | 1   | Output range                  | Analog current output<br>0: 4 to 20 mA 1: 0 to 20 mA<br>Analog voltage output<br>0: 1 to 5 V 1: 0 to 5 V<br>2: 0 to 10 V 3: 2 to 10 V                                                                            | 0             |      | 0          |                              |        |        |
| Input-output | Continuous output | 1   | Output type                   | 0: 0 % (fixed) 1: MV<br>2: Heat MV (for heat/cool control)<br>3: Cool MV (for heat/cool control)<br>4: PV (loop) 5: SP<br>6: Deviation (PV - SP)<br>7: PV (input channel)<br>2048-3071: Standard numerical codes | 1             |      | 0          |                              |        |        |
| Input-output | Continuous output | 1   | Loop/channel definition       | 0: Invalid<br>1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>5: Channel 5 6: Channel 6<br>7: Channel 7 8: Channel 8                                                 | 1             |      | 0          |                              |        |        |
| Input-output | Continuous output | 1   | Output decimal point position | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point                                   | 1             |      | 0          |                              |        |        |
| Input-output | Continuous output | 1   | Output scaling low limit      | -19999 to 32000 U                                                                                                                                                                                                | 0.0           |      | 0          | Decimal point position = OUT |        |        |
| Input-output | Continuous output | 1   | Output scaling high limit     | -19999 to 32000 U                                                                                                                                                                                                | 100.0         |      | 0          | Decimal point position = OUT |        |        |
| Input-output | Continuous output | 2   | Output range                  | Analog current output<br>0: 4 to 20 mA 1: 0 to 20 mA<br>Analog voltage output<br>0: 0 to 5 V 1: 0 to 5 V<br>2: 0 to 10 V 3: 2 to 10 V                                                                            | 0             |      | 0          |                              |        |        |
| Input-output | Continuous output | 2   | Output type                   | 0: 0 % (fixed) 1: MV<br>2: Heat MV (for heat/cool control)<br>3: Cool MV (for heat/cool control)<br>4: PV (loop) 5: SP<br>6: Deviation (PV - SP)<br>7: PV (input channel)<br>2048-3071: Standard numerical codes | 1             |      | 0          |                              |        |        |
| Input-output | Continuous output | 2   | Loop/channel definition       | 0: Invalid 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>5: Channel 5 6: Channel 6<br>7: Channel 7 8: Channel 8                                                    | 2             |      | 0          |                              |        |        |
| Input-output | Continuous output | 2   | Output decimal point position | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point                                   | 1             |      | 0          |                              |        |        |
| Input-output | Continuous output | 2   | Output scaling low limit      | -19999 to 32000 U                                                                                                                                                                                                | 0.0           |      | 0          | Decimal point position = OUT |        |        |
| Input-output | Continuous output | 2   | Output scaling high limit     | -19999 to 32000 U                                                                                                                                                                                                | 100.0         |      | 0          | Decimal point position = OUT |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Input-output/Continuous Output

| Folder name  | Bank name         | No. | Item name                     | Setting range                                                                                                                                                                                                    | Initial value | Unit | User level | Remarks                      | NX-D15 | NX-D25 |
|--------------|-------------------|-----|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|------------------------------|--------|--------|
| Input-output | Continuous output | 3   | Output range                  | Analog current output<br>0: 4 to 20 mA 1: 0 to 20 mA<br>Analog voltage output<br>0: 1 to 5 V 1: 0 to 5 V<br>2: 0 to 10 V 3: 2 to 10 V                                                                            | 0             |      | 0          |                              |        |        |
| Input-output | Continuous output | 3   | Output type                   | 0: 0 % (fixed) 1: MV<br>2: Heat MV (for heat/cool control)<br>3: Cool MV (for heat/cool control)<br>4: PV (loop) 5: SP<br>6: Deviation (PV - SP)<br>7: PV (input channel)<br>2048-3071: Standard numerical codes | 1             |      | 0          |                              |        |        |
| Input-output | Continuous output | 3   | Loop/channel definition       | 0: Invalid<br>1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>5: Channel 5 6: Channel 6<br>7: Channel 7 8: Channel 8                                                 | 3             |      | 0          |                              |        |        |
| Input-output | Continuous output | 3   | Output decimal point position | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point                                   | 1             |      | 0          |                              |        |        |
| Input-output | Continuous output | 3   | Output scaling low limit      | -19999 to 32000 U                                                                                                                                                                                                | 0.0           |      | 0          | Decimal point position = OUT |        |        |
| Input-output | Continuous output | 3   | Output scaling high limit     | -19999 to 32000 U                                                                                                                                                                                                | 100.0         |      | 0          | Decimal point position = OUT |        |        |
| Input-output | Continuous output | 4   | Output range                  | Analog current output<br>0: 4 to 20 mA 1: 0 to 20 mA<br>Analog voltage output<br>0: 1 to 5 V 1: 0 to 5 V<br>2: 0 to 10 V 3: 2 to 10 V                                                                            | 0             |      | 0          |                              |        |        |
| Input-output | Continuous output | 4   | Output type                   | 0: 0 % (fixed) 1: MV<br>2: Heat MV (for heat/cool control)<br>3: Cool MV (for heat/cool control)<br>4: PV (loop) 5: SP<br>6: Deviation (PV - SP)<br>7: PV (input channel)<br>2048-3071: Standard numerical codes | 1             |      | 0          |                              |        |        |
| Input-output | Continuous output | 4   | Loop/channel definition       | 0: Invalid<br>1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>5: Channel 5 6: Channel 6<br>7: Channel 7 8: Channel 8                                                 | 4             |      | 0          |                              |        |        |
| Input-output | Continuous output | 4   | Output decimal point position | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point                                   | 1             |      | 0          |                              |        |        |
| Input-output | Continuous output | 4   | Output scaling low limit      | -19999 to 32000 U                                                                                                                                                                                                | 0.0           |      | 0          | Decimal point position = OUT |        |        |
| Input-output | Continuous output | 4   | Output scaling high limit     | -19999 to 32000 U                                                                                                                                                                                                | 100.0         |      | 0          | Decimal point position = OUT |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Input-output / OUT/DO Output

| Folder name  | Bank name     | No. | Item name                        | Setting range                                                                                                                                                                                                                                                                       | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|--------------|---------------|-----|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Input-output | OUT/DO output | 1   | Output type                      | 0: OFF 1: Loop 1 MV<br>2: Loop 1 heat MV (for heat/cool control)<br>3: Loop 1 cool MV (for heat/cool control)<br>4: Loop 2 MV<br>5: Loop 2 heat MV (for heat/cool control)<br>6: Loop 2 cool MV (for heat/cool control)<br>7: Loop 3 MV 10: Loop 4 MV<br>1024 to 2047: Standard bit | 1             |      | 0          |         |        |        |
| Input-output | OUT/DO output | 1   | Latch                            | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                                                                                                                                      | 0             |      | 1          |         |        |        |
| Input-output | OUT/DO output | 1   | Time proportional operation type | 0: Control oriented<br>1: Actuator-life oriented                                                                                                                                                                                                                                    | 0             |      | 0          |         |        |        |
| Input-output | OUT/DO output | 1   | Min. ON/OFF time                 | 0 to 300 ms                                                                                                                                                                                                                                                                         | 10            | ms   | 0          |         |        |        |
| Input-output | OUT/DO output | 1   | Time proportional cycle          | 0.1 to 120.0 s                                                                                                                                                                                                                                                                      | 2.0           | s    | 0          |         |        |        |
| Input-output | OUT/DO output | 1   | Phase shift                      | 0 to 32000 ms                                                                                                                                                                                                                                                                       | 0             | ms   | 0          |         |        |        |
| Input-output | OUT/DO output | 2   | Output type                      | 0: OFF 1: Loop 1 MV<br>2: Loop 1 heat MV (for heat/cool control)<br>3: Loop 1 cool MV (for heat/cool control)<br>4: Loop 2 MV<br>5: Loop 2 heat MV (for heat/cool control)<br>6: Loop 2 cool MV (for heat/cool control)<br>7: Loop 3 MV 10: Loop 4 MV<br>1024 to 2047: Standard bit | 4             |      | 0          |         |        |        |
| Input-output | OUT/DO output | 2   | Latch                            | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                                                                                                                                      | 0             |      | 1          |         |        |        |
| Input-output | OUT/DO output | 2   | Time proportional operation type | 0: Control oriented<br>1: Actuator-life oriented                                                                                                                                                                                                                                    | 0             |      | 0          |         |        |        |
| Input-output | OUT/DO output | 2   | Min. ON/OFF time                 | 0 to 300 ms                                                                                                                                                                                                                                                                         | 10            | ms   | 0          |         |        |        |
| Input-output | OUT/DO output | 2   | Time proportional cycle          | 0.1 to 120.0 s                                                                                                                                                                                                                                                                      | 2.0           | s    | 0          |         |        |        |
| Input-output | OUT/DO output | 2   | Phase shift                      | 0 to 32000 ms                                                                                                                                                                                                                                                                       | 0             | ms   | 2          |         |        |        |
| Input-output | OUT/DO output | 3   | Output type                      | 0: OFF 1: Loop 1 MV<br>2: Loop 1 heat MV (for heat/cool control)<br>3: Loop 1 cool MV (for heat/cool control)<br>4: Loop 2 MV<br>5: Loop 2 heat MV (for heat/cool control)<br>6: Loop 2 cool MV (for heat/cool control)<br>7: Loop 3 MV 10: Loop 4 MV<br>1024 to 2047: Standard bit | 7             |      | 0          |         |        |        |
| Input-output | OUT/DO output | 3   | Latch                            | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                                                                                                                                      | 0             |      | 1          |         |        |        |
| Input-output | OUT/DO output | 3   | Time proportional operation type | 0: Control oriented 1: Actuator-life oriented                                                                                                                                                                                                                                       | 0             |      | 0          |         |        |        |
| Input-output | OUT/DO output | 3   | Min. ON/OFF time                 | 0 to 300 ms                                                                                                                                                                                                                                                                         | 10            | ms   | 0          |         |        |        |
| Input-output | OUT/DO output | 3   | Time proportional cycle          | 0.1 to 120.0 s                                                                                                                                                                                                                                                                      | 2.0           | s    | 0          |         |        |        |
| Input-output | OUT/DO output | 3   | Phase shift                      | 0 to 32000 ms                                                                                                                                                                                                                                                                       | 0             | ms   | 2          |         |        |        |
| Input-output | OUT/DO output | 4   | Output type                      | 0: OFF 1: Loop 1 MV<br>2: Loop 1 heat MV (for heat/cool control)<br>3: Loop 1 cool MV (for heat/cool control)<br>4: Loop 2 MV<br>5: Loop 2 heat MV (for heat/cool control)<br>6: Loop 2 cool MV (for heat/cool control)<br>7: Loop 3 MV 10: Loop 4 MV<br>1024 to 2047: Standard bit | 10            |      | 0          |         |        |        |
| Input-output | OUT/DO output | 4   | Latch                            | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                                                                                                                                      | 0             |      | 1          |         |        |        |
| Input-output | OUT/DO output | 4   | Time proportional operation type | 0: Control oriented<br>1: Actuator-life oriented                                                                                                                                                                                                                                    | 0             |      | 0          |         |        |        |
| Input-output | OUT/DO output | 4   | Min. ON/OFF time                 | 0 to 300 ms                                                                                                                                                                                                                                                                         | 10            | ms   | 0          |         |        |        |
| Input-output | OUT/DO output | 4   | Time proportional cycle          | 0.1 to 120.0 s                                                                                                                                                                                                                                                                      | 2.0           | s    | 0          |         |        |        |
| Input-output | OUT/DO output | 4   | Phase shift                      | 0 to 32000 ms                                                                                                                                                                                                                                                                       | 0             | ms   | 2          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Input-output / OUT/DO Output

| Folder name  | Bank name     | No. | Item name                        | Setting range                                                                                                                                                                                                                                                                       | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|--------------|---------------|-----|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Input-output | OUT/DO output | 5   | Output type                      | 0: OFF 1: Loop 1 MV<br>2: Loop 1 heat MV (for heat/cool control)<br>3: Loop 1 cool MV (for heat/cool control)<br>4: Loop 2 MV<br>5: Loop 2 heat MV (for heat/cool control)<br>6: Loop 2 cool MV (for heat/cool control)<br>7: Loop 3 MV 10: Loop 4 MV<br>1024 to 2047: Standard bit | 1088          |      | 0          |         |        |        |
| Input-output | OUT/DO output | 5   | Latch                            | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                                                                                                                                      | 0             |      | 1          |         |        |        |
| Input-output | OUT/DO output | 5   | Time proportional operation type | 0: Control oriented 1: Actuator-life oriented                                                                                                                                                                                                                                       | 0             |      | 0          |         |        |        |
| Input-output | OUT/DO output | 5   | Min. ON/OFF time                 | 0 to 300 ms                                                                                                                                                                                                                                                                         | 10            | ms   | 0          |         |        |        |
| Input-output | OUT/DO output | 5   | Time proportional cycle          | 0.1 to 120.0 s                                                                                                                                                                                                                                                                      | 2.0           | s    | 0          |         |        |        |
| Input-output | OUT/DO output | 5   | Phase shift                      | 0 to 32000 ms                                                                                                                                                                                                                                                                       | 0             | ms   | 2          |         |        |        |
| Input-output | OUT/DO output | 6   | Output type                      | 0: OFF 1: Loop 1 MV<br>2: Loop 1 heat MV (for heat/cool control)<br>3: Loop 1 cool MV (for heat/cool control)<br>4: Loop 2 MV<br>5: Loop 2 heat MV (for heat/cool control)<br>6: Loop 2 cool MV (for heat/cool control)<br>7: Loop 3 MV 10: Loop 4 MV<br>1024 to 2047: Standard bit | 1089          |      | 0          |         |        |        |
| Input-output | OUT/DO output | 6   | Latch                            | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                                                                                                                                      | 0             |      | 1          |         |        |        |
| Input-output | OUT/DO output | 6   | Time proportional operation type | 0: Control oriented 1: Actuator-life oriented                                                                                                                                                                                                                                       | 0             |      | 0          |         |        |        |
| Input-output | OUT/DO output | 6   | Min. ON/OFF time                 | 0 to 300 ms                                                                                                                                                                                                                                                                         | 10            | ms   | 0          |         |        |        |
| Input-output | OUT/DO output | 6   | Time proportional cycle          | 0.1 to 120.0 s                                                                                                                                                                                                                                                                      | 2.0           | s    | 0          |         |        |        |
| Input-output | OUT/DO output | 6   | Phase shift                      | 0 to 32000 ms                                                                                                                                                                                                                                                                       | 0             | ms   | 2          |         |        |        |
| Input-output | OUT/DO output | 7   | Output type                      | 0: OFF 1: Loop 1 MV<br>2: Loop 1 heat MV (for heat/cool control)<br>3: Loop 1 cool MV (for heat/cool control)<br>4: Loop 2 MV<br>5: Loop 2 heat MV (for heat/cool control)<br>6: Loop 2 cool MV (for heat/cool control)<br>7: Loop 3 MV 10: Loop 4 MV<br>1024 to 2047: Standard bit | 1090          |      | 0          |         |        |        |
| Input-output | OUT/DO output | 7   | Latch                            | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                                                                                                                                      | 0             |      | 1          |         |        |        |
| Input-output | OUT/DO output | 7   | Time proportional operation type | 0: Control oriented 1: Actuator-life oriented                                                                                                                                                                                                                                       | 0             |      | 0          |         |        |        |
| Input-output | OUT/DO output | 7   | Min. ON/OFF time                 | 0 to 300 ms                                                                                                                                                                                                                                                                         | 10            | ms   | 0          |         |        |        |
| Input-output | OUT/DO output | 7   | Time proportional cycle          | 0.1 to 120.0 s                                                                                                                                                                                                                                                                      | 2.0           | s    | 0          |         |        |        |
| Input-output | OUT/DO output | 7   | Phase shift                      | 0 to 32000 ms                                                                                                                                                                                                                                                                       | 0             | ms   | 2          |         |        |        |
| Input-output | OUT/DO output | 8   | Output type                      | 0: OFF 1: Loop 1 MV<br>2: Loop 1 heat MV (for heat/cool control)<br>3: Loop 1 cool MV (for heat/cool control)<br>4: Loop 2 MV<br>5: Loop 2 heat MV (for heat/cool control)<br>6: Loop 2 cool MV (for heat/cool control)<br>7: Loop 3 MV 10: Loop 4 MV<br>1024 to 2047: Standard bit | 1091          |      | 0          |         |        |        |
| Input-output | OUT/DO output | 8   | Latch                            | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                                                                                                                                      | 0             |      | 1          |         |        |        |
| Input-output | OUT/DO output | 8   | Time proportional operation type | 0: Control oriented 1: Actuator-life oriented                                                                                                                                                                                                                                       | 0             |      | 0          |         |        |        |
| Input-output | OUT/DO output | 8   | Min. ON/OFF time                 | 0 to 300 ms                                                                                                                                                                                                                                                                         | 10            | ms   | 0          |         |        |        |
| Input-output | OUT/DO output | 8   | Time proportional cycle          | 0.1 to 120.0 s                                                                                                                                                                                                                                                                      | 2.0           | s    | 0          |         |        |        |
| Input-output | OUT/DO output | 8   | Phase shift                      | 0 to 32000 ms                                                                                                                                                                                                                                                                       | 0             | ms   | 2          |         |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Input-output/CT Input

| Folder name  | Bank name | No. | Item name                                         | Setting range                                                                                                                                                                                                                                                                    | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|--------------|-----------|-----|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Input-output | CT input  | 1   | CT operation                                      | 0: Continuous current measurement (clamp meter mode)<br>1: Detection of heater line break for terminal OUT1<br>2: Detection of heater line break for terminal OUT2<br>3: Detection of heater line break for terminal OUT3<br>4: Detection of heater line break for terminal OUT4 | 0             |      | 0          |         |        |        |
| Input-output | CT input  | 1   | Waiting time for CT measurement                   | 30 to 300 ms                                                                                                                                                                                                                                                                     | 30            | ms   | 0          |         |        |        |
| Input-output | CT input  | 1   | Number of CT turns                                | 100 to 4000                                                                                                                                                                                                                                                                      | 800           |      | 1          |         |        |        |
| Input-output | CT input  | 1   | Number of CT power line passes                    | 1 to 6                                                                                                                                                                                                                                                                           | 1             |      | 1          |         |        |        |
| Input-output | CT input  | 1   | Heater burnout detection current value            | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 0.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 1   | Minimum current defined as overcurrent            | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 0.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 1   | Minimum current defined as short circuit          | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 0.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 1   | Hysteresis                                        | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 5.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 1   | Delay time                                        | 0 to 3200.0 s                                                                                                                                                                                                                                                                    | 0.0           | s    | 1          |         |        |        |
| Input-output | CT input  | 1   | Condition for restoring status before measurement | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                       | 1024          |      | 1          |         |        |        |
| Input-output | CT input  | 2   | CT operation                                      | 0: Continuous current measurement (clamp meter mode)<br>1: Detection of heater line break for terminal OUT1<br>2: Detection of heater line break for terminal OUT2<br>3: Detection of heater line break for terminal OUT3<br>4: Detection of heater line break for terminal OUT4 | 0             |      | 0          |         |        |        |
| Input-output | CT input  | 2   | Waiting time for CT measurement                   | 30 to 300 ms                                                                                                                                                                                                                                                                     | 30            | ms   | 0          |         |        |        |
| Input-output | CT input  | 2   | Number of CT turns                                | 100 to 4000                                                                                                                                                                                                                                                                      | 800           |      | 1          |         |        |        |
| Input-output | CT input  | 2   | Number of CT power line passes                    | 1 to 6                                                                                                                                                                                                                                                                           | 1             |      | 1          |         |        |        |
| Input-output | CT input  | 2   | Heater burnout detection current value            | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 0.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 2   | Minimum current defined as overcurrent            | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 0.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 2   | Minimum current defined as short circuit          | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 0.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 2   | Hysteresis                                        | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 5.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 2   | Delay time                                        | 0 to 3200.0 s                                                                                                                                                                                                                                                                    | 0.0           | s    | 1          |         |        |        |
| Input-output | CT input  | 2   | Condition for restoring status before measurement | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                       | 1024          |      | 1          |         |        |        |
| Input-output | CT input  | 3   | CT operation                                      | 0: Continuous current measurement (clamp meter mode)<br>1: Detection of heater line break for terminal OUT1<br>2: Detection of heater line break for terminal OUT2<br>3: Detection of heater line break for terminal OUT3<br>4: Detection of heater line break for terminal OUT4 | 0             |      | 0          |         |        |        |
| Input-output | CT input  | 3   | Waiting time for CT measurement                   | 30 to 300 ms                                                                                                                                                                                                                                                                     | 30            | ms   | 0          |         |        |        |
| Input-output | CT input  | 3   | Number of CT turns                                | 100 to 4000                                                                                                                                                                                                                                                                      | 800           |      | 1          |         |        |        |
| Input-output | CT input  | 3   | Number of CT power line passes                    | 1 to 6                                                                                                                                                                                                                                                                           | 1             |      | 1          |         |        |        |
| Input-output | CT input  | 3   | Heater burnout detection current value            | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 0.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 3   | Minimum current defined as overcurrent            | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 0.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 3   | Minimum current defined as short circuit          | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 0.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 3   | Hysteresis                                        | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 5.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 3   | Delay time                                        | 0 to 3200.0 s                                                                                                                                                                                                                                                                    | 0.0           | s    | 1          |         |        |        |
| Input-output | CT input  | 3   | Condition for restoring status before measurement | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                       | 1024          |      | 1          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Input-output/CT Input

| Folder name  | Bank name | No. | Item name                                         | Setting range                                                                                                                                                                                                                                                                    | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|--------------|-----------|-----|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Input-output | CT input  | 4   | CT operation                                      | 0: Continuous current measurement (clamp meter mode)<br>1: Detection of heater line break for terminal OUT1<br>2: Detection of heater line break for terminal OUT2<br>3: Detection of heater line break for terminal OUT3<br>4: Detection of heater line break for terminal OUT4 | 0             |      | 0          |         |        |        |
| Input-output | CT input  | 4   | Waiting time for CT measurement                   | 30 to 300 ms                                                                                                                                                                                                                                                                     | 30            | ms   | 0          |         |        |        |
| Input-output | CT input  | 4   | Number of CT turns                                | 100 to 4000                                                                                                                                                                                                                                                                      | 800           |      | 1          |         |        |        |
| Input-output | CT input  | 4   | Number of CT power line passes                    | 1 to 6                                                                                                                                                                                                                                                                           | 1             |      | 1          |         |        |        |
| Input-output | CT input  | 4   | Heater burnout detection current value            | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 0.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 4   | Minimum current defined as overcurrent            | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 0.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 4   | Minimum current defined as short circuit          | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 0.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 4   | Hysteresis                                        | 0.0 to 350.0 A                                                                                                                                                                                                                                                                   | 5.0           | A    | 1          |         |        |        |
| Input-output | CT input  | 4   | Delay time                                        | 0 to 3200.0 s                                                                                                                                                                                                                                                                    | 0.0           | s    | 1          |         |        |        |
| Input-output | CT input  | 4   | Condition for restoring status before measurement | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                       | 1024          |      | 1          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### SP/SP Group Selection

| Folder name | Bank name          | No. | Item name          | Setting range                 | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|--------------------|-----|--------------------|-------------------------------|---------------|------|------------|---------|--------|--------|
| SP          | SP group selection | 1   | SP group selection | 1 to SP system group (4 max.) | 1             |      | 0          |         |        |        |
| SP          | SP group selection | 2   | SP group selection | 1 to SP system group (4 max.) | 1             |      | 0          |         |        |        |
| SP          | SP group selection | 3   | SP group selection | 1 to SP system group (4 max.) | 1             |      | 0          |         |        |        |
| SP          | SP group selection | 4   | SP group selection | 1 to SP system group (4 max.) | 1             |      | 0          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### SP/LSP

| Folder name | Bank name | No. | Item name                        | Setting range                   | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|-----------|-----|----------------------------------|---------------------------------|---------------|------|------------|---------------------------------|--------|--------|
| SP          | LSP       | 1   | LSP1                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 1   | PID group definition 1 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 1   | LSP2                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 1   | PID group definition 2 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 1   | LSP3                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 1   | PID group definition 3 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 1   | LSP4                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 1   | PID group definition 4 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 2   | LSP1                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 2   | PID group definition 1 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 2   | LSP2                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 2   | PID group definition 2 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 2   | LSP3                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 2   | PID group definition 3 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 2   | LSP4                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 2   | PID group definition 4 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 3   | LSP1                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 3   | PID group definition 1 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 3   | LSP2                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 3   | PID group definition 2 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 3   | LSP3                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 3   | PID group definition 3 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 3   | LSP4                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 3   | PID group definition 4 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 4   | LSP1                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 4   | PID group definition 1 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 4   | LSP2                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 4   | PID group definition 2 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 4   | LSP3                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 4   | PID group definition 3 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |
| SP          | LSP       | 4   | LSP4                             | SP low limit to SP high limit U | 0.0           |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | LSP       | 4   | PID group definition 4 (for LSP) | 1 to 4                          | 1             |      | 0          |                                 |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### SP/RSP

| Folder name | Bank name | No. | Item name                      | Setting range | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|-----------|-----|--------------------------------|---------------|---------------|------|------------|---------------------------------|--------|--------|
| SP          | RSP       | 1   | RSP                            |               | -             |      | 1          | Decimal point position = PID_PV |        |        |
| SP          | RSP       | 1   | PID group definition (for RSP) | 1 to 4        | 1             |      | 1          |                                 |        |        |
| SP          | RSP       | 2   | RSP                            |               | -             |      | 1          | Decimal point position = PID_PV |        |        |
| SP          | RSP       | 2   | PID group definition (for RSP) | 1 to 4        | 1             |      | 1          |                                 |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

### SP/SP Configuration

| Folder name | Bank name        | No. | Item name            | Setting range                                                                                                                                                                                                     | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|------------------|-----|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------------------------------|--------|--------|
| SP          | SP configuration | 1   | SP low limit         | -19999 to 32000 U                                                                                                                                                                                                 | -1999.9       |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | SP configuration | 1   | SP high limit        | -19999 to 32000 U                                                                                                                                                                                                 | 3200.0        |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | SP configuration | 2   | SP low limit         | -19999 to 32000 U                                                                                                                                                                                                 | -1999.9       |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | SP configuration | 2   | SP high limit        | -19999 to 32000 U                                                                                                                                                                                                 | 3200.0        |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | SP configuration | 3   | SP low limit         | -19999 to 32000 U                                                                                                                                                                                                 | -1999.9       |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | SP configuration | 3   | SP high limit        | -19999 to 32000 U                                                                                                                                                                                                 | 3200.0        |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | SP configuration | 4   | SP low limit         | -19999 to 32000 U                                                                                                                                                                                                 | -1999.9       |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | SP configuration | 4   | SP high limit        | -19999 to 32000 U                                                                                                                                                                                                 | 3200.0        |      | 0          | Decimal point position = PID_PV |        |        |
| SP          | SP configuration | 1   | SP ramp unit         | 0 = No decimal point/s,<br>1 = No decimal point/min,<br>2 = No decimal point/h,<br>3 = 0.1/s, 4 = 0.1/min,<br>5 = 0.1/h, 6 = 0.01/s,<br>7 = 0.01/min, 8 = 0.01/h,<br>9 = 0.001/s, 10 = 0.001/min,<br>11 = 0.001/h | 0             |      | 1          |                                 |        |        |
| SP          | SP configuration | 1   | SP ramp-up for LSP   | 0 U (No ramp) 1 to 32000 U                                                                                                                                                                                        | 0             |      | 1          | Decimal point position = RAMP   |        |        |
| SP          | SP configuration | 1   | SP ramp-down for LSP | 0 U (No ramp) 1 to 32000 U                                                                                                                                                                                        | 0             |      | 1          | Decimal point position = RAMP   |        |        |
| SP          | SP configuration | 1   | SP ramp-up for RSP   | 0 U (No ramp) 1 to 32000 U                                                                                                                                                                                        | 0             |      | 1          | Decimal point position = RAMP   |        |        |
| SP          | SP configuration | 1   | SP ramp-down for RSP | 0 U (No ramp) 1 to 32000 U                                                                                                                                                                                        | 0             |      | 1          | Decimal point position = RAMP   |        |        |
| SP          | SP configuration | 1   | PV start for LSP     | 0: Allow PV start 1: Prevent PV start                                                                                                                                                                             | 0             |      | 1          |                                 |        |        |
| SP          | SP configuration | 1   | PV start for RSP     | 0: Allow PV start 1: Prevent PV start                                                                                                                                                                             | 0             |      | 1          |                                 |        |        |
| SP          | SP configuration | 2   | SP ramp unit         | 0 = No decimal point/s,<br>1 = No decimal point/min,<br>2 = No decimal point/h,<br>3 = 0.1/s, 4 = 0.1/min,<br>5 = 0.1/h, 6 = 0.01/s,<br>7 = 0.01/min, 8 = 0.01/h,<br>9 = 0.001/s, 10 = 0.001/min,<br>11 = 0.001/h | 0             |      | 1          |                                 |        |        |
| SP          | SP configuration | 2   | SP ramp-up for LSP   | 0 U (No ramp) 1 to 32000 U                                                                                                                                                                                        | 0             |      | 1          | Decimal point position = RAMP   |        |        |
| SP          | SP configuration | 2   | SP ramp-down for LSP | 0 U (No ramp) 1 to 32000 U                                                                                                                                                                                        | 0             |      | 1          | Decimal point position = RAMP   |        |        |
| SP          | SP configuration | 2   | SP ramp-up for RSP   | 0 U (No ramp) 1 to 32000 U                                                                                                                                                                                        | 0             |      | 1          | Decimal point position = RAMP   |        |        |
| SP          | SP configuration | 2   | SP ramp-down for RSP | 0 U (No ramp) 1 to 32000 U                                                                                                                                                                                        | 0             |      | 1          | Decimal point position = RAMP   |        |        |
| SP          | SP configuration | 2   | PV start for LSP     | 0: Allow PV start 1: Prevent PV start                                                                                                                                                                             | 0             |      | 1          |                                 |        |        |
| SP          | SP configuration | 2   | PV start for RSP     | 0: Allow PV start 1: Prevent PV start                                                                                                                                                                             | 0             |      | 1          |                                 |        |        |
| SP          | SP configuration | 3   | SP ramp unit         | 0 = No decimal point/s,<br>1 = No decimal point/min,<br>2 = No decimal point/h,<br>3 = 0.1/s, 4 = 0.1/min,<br>5 = 0.1/h, 6 = 0.01/s,<br>7 = 0.01/min, 8 = 0.01/h,<br>9 = 0.001/s, 10 = 0.001/min,<br>11 = 0.001/h | 0             |      | 1          |                                 |        |        |
| SP          | SP configuration | 3   | SP ramp-up for LSP   | 0 U (No ramp) 1 to 32000 U                                                                                                                                                                                        | 0             |      | 1          | Decimal point position = RAMP   |        |        |
| SP          | SP configuration | 3   | SP ramp-down for LSP | 0 U (No ramp) 1 to 32000 U                                                                                                                                                                                        | 0             |      | 1          | Decimal point position = RAMP   |        |        |
| SP          | SP configuration | 3   | PV start for LSP     | 0: Allow PV start 1: Prevent PV start                                                                                                                                                                             | 0             |      | 1          |                                 |        |        |
| SP          | SP configuration | 4   | SP ramp unit         | 0 = No decimal point/s,<br>1 = No decimal point/min,<br>2 = No decimal point/h,<br>3 = 0.1/s, 4 = 0.1/min,<br>5 = 0.1/h, 6 = 0.01/s,<br>7 = 0.01/min, 8 = 0.01/h,<br>9 = 0.001/s, 10 = 0.001/min,<br>11 = 0.001/h | 0             |      | 1          |                                 |        |        |
| SP          | SP configuration | 4   | SP ramp-up for LSP   | 0 U (No ramp) 1 to 32000 U                                                                                                                                                                                        | 0             |      | 1          | Decimal point position = RAMP   |        |        |
| SP          | SP configuration | 4   | SP ramp-down for LSP | 0 U (No ramp) 1 to 32000 U                                                                                                                                                                                        | 0             |      | 1          | Decimal point position = RAMP   |        |        |
| SP          | SP configuration | 4   | PV start for LSP     | 0: Allow PV start 1: Prevent PV start                                                                                                                                                                             | 0             |      | 1          |                                 |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Event/Event Settings

| Folder name | Bank name       | No. | Item name          | Setting range     | Initial value | Unit | User level | Remarks                     | NX-D15 | NX-D25 |
|-------------|-----------------|-----|--------------------|-------------------|---------------|------|------------|-----------------------------|--------|--------|
| Event       | Operating point | 1   | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 1   | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 2   | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 2   | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 3   | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 3   | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 4   | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 4   | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 5   | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 5   | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 6   | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 6   | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 7   | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 7   | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 8   | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 8   | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 9   | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 9   | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 10  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 10  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 11  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 11  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 12  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 12  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 13  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 13  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 14  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 14  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 15  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 15  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 16  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 16  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 17  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 17  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 18  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 18  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 19  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 19  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 20  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 20  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 21  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 21  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 22  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 22  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 23  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 23  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 24  | Event main setting | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Operating point | 24  | Event sub-setting  | -19999 to 32000 U | 0.0           |      | 0          | Decimal point position = EV |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

### Event/Event Configuration

| Folder name | Bank name     | No. | Item name               | Setting range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Initial value | Unit | User level | Remarks                     | NX-D15 | NX-D25 |
|-------------|---------------|-----|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-----------------------------|--------|--------|
| Event       | Event config. | 1   | Operation type          | 0: No event<br>1: PV high limit 2: PV low limit<br>3: PV high and low limits<br>4: Deviation high limit<br>5: Deviation low limit<br>6: Deviation high and low limits<br>7: Deviation high limit (final SP basis)<br>8: Deviation low limit (final SP basis)<br>9: Deviation high and low limits (final SP basis)<br>10: SP high limit 11: SP low limit<br>12: SP high and low limits<br>13: MV high limit 14: MV low limit<br>15: MV high and low limits<br>18: AI high limit 19: AI low limit<br>20: AI high and low limits<br>26: Upper limit for standard numerical codes<br>27: Lower limit for standard numerical codes<br>28: Upper and lower limits for standard numerical codes<br>29: PV change rate<br>31: High limit of deviation between channels (specified by PV1)<br>32: High limit of deviation between channels (specified by PV2)<br>33: High limit of deviation between channels (specified by PV3)<br>34: High limit of deviation between channels (specified by PV4)<br>35: Low limit of deviation between channels (specified by PV1)<br>36: Low limit of deviation between channels (specified by PV2)<br>37: Low limit of deviation between channels (specified by PV3)<br>38: Low limit of deviation between channels (specified by PV4)<br>39: High and low limits of deviation between channels (specified by PV1)<br>40: High and low limits of deviation between channels (specified by PV2)<br>41: High and low limits of deviation between channels (specified by PV3)<br>42: High and low limits of deviation between channels (specified by PV4)<br>61: Alarm (status) 62: READY (status)<br>63: MANUAL (status) 64: RSP (status)<br>65: During AT (status)<br>66: During SP ramp (status)<br>67: Control direct action (status)<br>70: Timer (status) | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 1   | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 1   | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 1   | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 1   | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 1   | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 1   | Hysteresis              | 0 to 32000 U                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 1   | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 1   | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 2   | Operation type          | Same as Event 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 2   | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 2   | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0             |      | 0          |                             |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Event/Event Configuration

| Folder name | Bank name     | No. | Item name               | Setting range                                                                                                                                                                  | Initial value | Unit | User level | Remarks                     | NX-D15 | NX-D25 |
|-------------|---------------|-----|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-----------------------------|--------|--------|
| Event       | Event config. | 2   | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 2   | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 2   | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 2   | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 2   | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 2   | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 3   | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 3   | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 3   | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 3   | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 3   | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 3   | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 3   | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 3   | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 3   | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 4   | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 4   | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 4   | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 4   | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 4   | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 4   | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 4   | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 4   | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 4   | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 5   | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 5   | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 5   | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 5   | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 5   | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 5   | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 5   | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 5   | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 5   | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 6   | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 6   | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Event/Event Configuration

| Folder name | Bank name     | No. | Item name               | Setting range                                                                                                                                                                  | Initial value | Unit | User level | Remarks                     | NX-D15 | NX-D25 |
|-------------|---------------|-----|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-----------------------------|--------|--------|
| Event       | Event config. | 6   | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 6   | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 6   | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 6   | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 6   | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 6   | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 6   | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 7   | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 7   | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 7   | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 7   | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 7   | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 7   | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 7   | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 7   | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 7   | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 8   | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 8   | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 8   | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 8   | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 8   | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 8   | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 8   | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 8   | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 8   | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 9   | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 9   | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 9   | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 9   | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 9   | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 9   | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 9   | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 9   | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 9   | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Event/Event Configuration

| Folder name | Bank name     | No. | Item name               | Setting range                                                                                                                                                                  | Initial value | Unit | User level | Remarks                     | NX-D15 | NX-D25 |
|-------------|---------------|-----|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-----------------------------|--------|--------|
| Event       | Event config. | 10  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 10  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 10  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 10  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 10  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 10  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 10  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 10  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 10  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 11  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 11  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 11  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 11  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 11  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 11  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 11  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 11  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 11  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 12  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 12  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 12  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 12  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 12  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 12  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 12  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 12  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 12  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Event/Event Configuration

| Folder name | Bank name     | No. | Item name               | Setting range                                                                                                                                                                  | Initial value | Unit | User level | Remarks                     | NX-D15 | NX-D25 |
|-------------|---------------|-----|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-----------------------------|--------|--------|
| Event       | Event config. | 13  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 13  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 13  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 13  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 13  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 13  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 13  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 13  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 13  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 14  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 14  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 14  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 14  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 14  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 14  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 14  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 14  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 14  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 15  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 15  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 15  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 15  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 15  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 15  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 15  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 15  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 15  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Event/Event Configuration

| Folder name | Bank name     | No. | Item name               | Setting range                                                                                                                                                                  | Initial value | Unit | User level | Remarks                     | NX-D15 | NX-D25 |
|-------------|---------------|-----|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-----------------------------|--------|--------|
| Event       | Event config. | 16  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 16  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 16  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 16  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 16  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 16  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 16  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 16  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 16  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 17  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 17  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 17  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 17  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 17  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 17  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 17  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 17  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 17  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 18  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 18  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 18  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 18  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 18  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 18  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 18  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 18  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 18  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 19  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Event/Event Configuration

| Folder name | Bank name     | No. | Item name               | Setting range                                                                                                                                                                  | Initial value | Unit | User level | Remarks                     | NX-D15 | NX-D25 |
|-------------|---------------|-----|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-----------------------------|--------|--------|
| Event       | Event config. | 19  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 19  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 19  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 19  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 19  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 19  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 19  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 19  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 20  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 20  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 20  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 20  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 20  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 20  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 20  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 20  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 20  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 21  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 21  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 21  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 21  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 21  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 21  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 21  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 21  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 21  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Event/Event Configuration

| Folder name | Bank name     | No. | Item name               | Setting range                                                                                                                                                                  | Initial value | Unit | User level | Remarks                     | NX-D15 | NX-D25 |
|-------------|---------------|-----|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-----------------------------|--------|--------|
| Event       | Event config. | 22  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 22  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 22  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 22  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 22  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 22  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 22  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 22  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 22  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 23  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 23  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 23  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 23  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 23  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 23  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 23  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 23  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 23  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 24  | Operation type          | Same as Event 1                                                                                                                                                                | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 24  | Loop/channel definition | 1: Loop 1/Channel 1<br>2: Loop 2/Channel 2<br>3: Loop 3/Channel 3<br>4: Loop 4/Channel 4<br>2048-3071: Standard numerical codes                                                | 1             |      | 0          |                             |        |        |
| Event       | Event config. | 24  | Direct/Reverse          | 0: Direct 1: Reverse                                                                                                                                                           | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 24  | Standby                 | 0: No standby 1: Standby<br>2: Standby + standby when the SP is modified                                                                                                       | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 24  | EVENT state at READY    | 0: Continuation 1: Forced OFF                                                                                                                                                  | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 24  | Decimal point position  | 0: No decimal point<br>1: 1 digit after the decimal point<br>2: 2 digits after the decimal point<br>3: 3 digits after the decimal point<br>4: 4 digits after the decimal point | 0             |      | 0          |                             |        |        |
| Event       | Event config. | 24  | Hysteresis              | 0 to 32000 U                                                                                                                                                                   | 5.0           |      | 0          | Decimal point position = EV |        |        |
| Event       | Event config. | 24  | ON delay                | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |
| Event       | Event config. | 24  | OFF delay               | 0.0 to 3200.0 s                                                                                                                                                                | 0.0           | s    | 0          |                             |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### PID/PID

| Folder name | Bank name | No. | Item name                         | Setting range                                                                                 | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|-----------|-----|-----------------------------------|-----------------------------------------------------------------------------------------------|---------------|------|------------|---------------------------------|--------|--------|
| PID         | PID       | 1   | Proportional band 1               | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Integral time 1                   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Derivative time 1                 | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Output (MV) low limit 1           | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Output (MV) high limit 1          | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Manual reset 1                    | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Proportional band for cool side 1 | 0.1 to 3200.0%                                                                                | 5.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 1   | Integral time for cool side 1     | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Derivative time for cool side 1   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Output low limit for cool side 1  | -10.0 to 110.0%                                                                               | 0.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 1   | Output high limit for cool side 1 | -10.0 to 110.0%                                                                               | 100.0         | %    | 1          |                                 |        |        |
| PID         | PID       | 1   | Differential 1                    | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |
| PID         | PID       | 1   | Proportional band 2               | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Integral time 2                   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Derivative time 2                 | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Output (MV) low limit 2           | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Output (MV) high limit 2          | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Manual reset 2                    | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Proportional band for cool side 2 | 0.1 to 3200.0%                                                                                | 5.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 1   | Integral time for cool side 2     | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Derivative time for cool side 2   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Output low limit for cool side 2  | -10.0 to 110.0%                                                                               | 0.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 1   | Output high limit for cool side 2 | -10.0 to 110.0%                                                                               | 100.0         | %    | 1          |                                 |        |        |
| PID         | PID       | 1   | Differential 2                    | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### PID/PID

| Folder name | Bank name | No. | Item name                         | Setting range                                                                                 | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|-----------|-----|-----------------------------------|-----------------------------------------------------------------------------------------------|---------------|------|------------|---------------------------------|--------|--------|
| PID         | PID       | 1   | Proportional band 3               | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Integral time 3                   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Derivative time 3                 | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Output (MV) low limit 3           | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Output (MV) high limit 3          | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Manual reset 3                    | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Proportional band for cool side 3 | 0.1 to 3200.0%                                                                                | 5.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 1   | Integral time for cool side 3     | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Derivative time for cool side 3   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Output low limit for cool side 3  | -10.0 to 110.0%                                                                               | 0.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 1   | Output high limit for cool side 3 | -10.0 to 110.0%                                                                               | 100.0         | %    | 1          |                                 |        |        |
| PID         | PID       | 1   | Differential 3                    | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |
| PID         | PID       | 1   | Proportional band 4               | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Integral time 4                   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Derivative time 4                 | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Output (MV) low limit 4           | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Output (MV) high limit 4          | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Manual reset 4                    | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 1   | Proportional band for cool side 4 | 0.1 to 3200.0%                                                                                | 5.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 1   | Integral time for cool side 4     | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Derivative time for cool side 4   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 1   | Output low limit for cool side 4  | -10.0 to 110.0%                                                                               | 0.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 1   | Output high limit for cool side 4 | -10.0 to 110.0%                                                                               | 100.0         | %    | 1          |                                 |        |        |
| PID         | PID       | 1   | Differential 4                    | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### PID/PID

| Folder name | Bank name | No. | Item name                         | Setting range                                                                                 | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|-----------|-----|-----------------------------------|-----------------------------------------------------------------------------------------------|---------------|------|------------|---------------------------------|--------|--------|
| PID         | PID       | 2   | Proportional band 1               | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Integral time 1                   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Derivative time 1                 | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Output (MV) low limit 1           | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Output (MV) high limit 1          | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Manual reset 1                    | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Proportional band for cool side 1 | 0.1 to 3200.0%                                                                                | 5.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 2   | Integral time for cool side 1     | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Derivative time for cool side 1   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Output low limit for cool side 1  | -10.0 to 110.0%                                                                               | 0.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 2   | Output high limit for cool side 1 | -10.0 to 110.0%                                                                               | 100.0         | %    | 1          |                                 |        |        |
| PID         | PID       | 2   | Differential 1                    | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |
| PID         | PID       | 2   | Proportional band 2               | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Integral time 2                   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Derivative time 2                 | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Output (MV) low limit 2           | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Output (MV) high limit 2          | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Manual reset 2                    | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Proportional band for cool side 2 | 0.1 to 3200.0%                                                                                | 5.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 2   | Integral time for cool side 2     | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Derivative time for cool side 2   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Output low limit for cool side 2  | -10.0 to 110.0%                                                                               | 0.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 2   | Output high limit for cool side 2 | -10.0 to 110.0%                                                                               | 100.0         | %    | 1          |                                 |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## PID/PID

| Folder name | Bank name | No. | Item name                         | Setting range                                                                                 | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|-----------|-----|-----------------------------------|-----------------------------------------------------------------------------------------------|---------------|------|------------|---------------------------------|--------|--------|
| PID         | PID       | 2   | Differential 2                    | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |
| PID         | PID       | 2   | Proportional band 3               | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Integral time 3                   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Derivative time 3                 | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Output (MV) low limit 3           | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Output (MV) high limit 3          | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Manual reset 3                    | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Proportional band for cool side 3 | 0.1 to 3200.0%                                                                                | 5.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 2   | Integral time for cool side 3     | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Derivative time for cool side 3   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Output low limit for cool side 3  | -10.0 to 110.0%                                                                               | 0.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 2   | Output high limit for cool side 3 | -10.0 to 110.0%                                                                               | 100.0         | %    | 1          |                                 |        |        |
| PID         | PID       | 2   | Differential 3                    | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |
| PID         | PID       | 2   | Proportional band 4               | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Integral time 4                   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Derivative time 4                 | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Output (MV) low limit 4           | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Output (MV) high limit 4          | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Manual reset 4                    | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 2   | Proportional band for cool side 4 | 0.1 to 3200.0%                                                                                | 5.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 2   | Integral time for cool side 4     | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Derivative time for cool side 4   | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 1          | Decimal point position = PID    |        |        |
| PID         | PID       | 2   | Output low limit for cool side 4  | -10.0 to 110.0%                                                                               | 0.0           | %    | 1          |                                 |        |        |
| PID         | PID       | 2   | Output high limit for cool side 4 | -10.0 to 110.0%                                                                               | 100.0         | %    | 1          |                                 |        |        |
| PID         | PID       | 2   | Differential 4                    | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### PID/PID

| Folder name | Bank name | No. | Item name                | Setting range                                                                                 | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|-----------|-----|--------------------------|-----------------------------------------------------------------------------------------------|---------------|------|------------|---------------------------------|--------|--------|
| PID         | PID       | 3   | Proportional band 1      | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Integral time 1          | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 3   | Derivative time 1        | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 3   | Output (MV) low limit 1  | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Output (MV) high limit 1 | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Manual reset 1           | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Differential 1           | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |
| PID         | PID       | 3   | Proportional band 2      | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Integral time 2          | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 3   | Derivative time 2        | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 3   | Output (MV) low limit 2  | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Output (MV) high limit 2 | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Manual reset 2           | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Differential 2           | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |
| PID         | PID       | 3   | Proportional band 3      | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Integral time 3          | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 3   | Derivative time 3        | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 3   | Output (MV) low limit 3  | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Output (MV) high limit 3 | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Manual reset 3           | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Differential 3           | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |
| PID         | PID       | 3   | Proportional band 4      | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Integral time 4          | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 3   | Derivative time 4        | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 3   | Output (MV) low limit 4  | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Output (MV) high limit 4 | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Manual reset 4           | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 3   | Differential 4           | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## PID/PID

| Folder name | Bank name | No. | Item name                | Setting range                                                                                 | Initial value | Unit | User level | Remarks                         | NX-D15 | NX-D25 |
|-------------|-----------|-----|--------------------------|-----------------------------------------------------------------------------------------------|---------------|------|------------|---------------------------------|--------|--------|
| PID         | PID       | 4   | Proportional band 1      | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Integral time 1          | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 4   | Derivative time 1        | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 4   | Output (MV) low limit 1  | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Output (MV) high limit 1 | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Manual reset 1           | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Differential 1           | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |
| PID         | PID       | 4   | Proportional band 2      | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Integral time 2          | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 4   | Derivative time 2        | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 4   | Output (MV) low limit 2  | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Output (MV) high limit 2 | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Manual reset 2           | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Differential 2           | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |
| PID         | PID       | 4   | Proportional band 3      | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Integral time 3          | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 4   | Derivative time 3        | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 4   | Output (MV) low limit 3  | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Output (MV) high limit 3 | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Manual reset 3           | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Differential 3           | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |
| PID         | PID       | 4   | Proportional band 4      | 0.1 to 3200.0%                                                                                | 5.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Integral time 4          | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No integral operation at 0, 0.0 or 0.00)   | 120           | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 4   | Derivative time 4        | 0 to 32000 s, 0.0 to 3200.0 s or 0.00 to 320.00 s (No derivative operation at 0, 0.0 or 0.00) | 30            | s    | 0          | Decimal point position = PID    |        |        |
| PID         | PID       | 4   | Output (MV) low limit 4  | -10.0 to 110.0%                                                                               | 0.0           | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Output (MV) high limit 4 | -10.0 to 110.0%                                                                               | 100.0         | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Manual reset 4           | -10.0 to 110.0%                                                                               | 50.0          | %    | 0          |                                 |        |        |
| PID         | PID       | 4   | Differential 4           | 0 to 32000 U                                                                                  | 5.0           |      | 1          | Decimal point position = PID_PV |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Function/Internal Contact IN

| Folder name | Bank name           | No. | Item name               | Setting range                                                                                                                                                                                                                                                                                                                                                                      | Initial value | Unit | User level | Remarks                                         | NX-D15 | NX-D25 |
|-------------|---------------------|-----|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-------------------------------------------------|--------|--------|
| Function    | Internal contact IN | 1   | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 1   | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         | 1152          |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 1   | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 1   | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 2   | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 2   | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         | 1153          |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 2   | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 2   | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 3   | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 3   | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         | 1154          |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 3   | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 3   | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 4   | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 4   | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         | 1155          |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 4   | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 4   | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Function/Internal Contact IN

| Folder name | Bank name           | No. | Item name               | Setting range                                                                                                                                                                                                                                                                                                                                                                      | Initial value | Unit | User level | Remarks                                         | NX-D15 | NX-D25 |
|-------------|---------------------|-----|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-------------------------------------------------|--------|--------|
| Function    | Internal contact IN | 5   | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 5   | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         | 1024          |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 5   | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 5   | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 6   | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 6   | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         | 1024          |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 6   | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 6   | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 7   | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 7   | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         | 1024          |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 7   | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 7   | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 8   | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 8   | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         | 1024          |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 8   | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 8   | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Function/Internal Contact IN

| Folder name | Bank name           | No. | Item name               | Setting range                                                                                                                                                                                                                                                                                                                                                                      | Initial value | Unit | User level | Remarks                                         | NX-D15 | NX-D25 |
|-------------|---------------------|-----|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-------------------------------------------------|--------|--------|
| Function    | Internal contact IN | 9   | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 9   | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         |               |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 9   | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 9   | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 10  | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 10  | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         |               |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 10  | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 10  | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 11  | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 11  | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         |               |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 11  | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 11  | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 12  | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 12  | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         |               |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 12  | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 12  | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Function/Internal Contact IN

| Folder name | Bank name           | No. | Item name               | Setting range                                                                                                                                                                                                                                                                                                                                                                      | Initial value | Unit | User level | Remarks                                         | NX-D15 | NX-D25 |
|-------------|---------------------|-----|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|-------------------------------------------------|--------|--------|
| Function    | Internal contact IN | 13  | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 13  | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         |               |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 13  | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 13  | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 14  | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 14  | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         |               |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 14  | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 14  | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 15  | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 15  | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         |               |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 15  | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 15  | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 16  | Operation type          | 0: No function<br>1: SP group selection<br>2: PID group selection<br>9: AI group definition<br>21: RUN/READY mode selection<br>22: AUTO/MANUAL mode selection<br>23: LSP/RSP mode selection<br>24: AT start/stop selection<br>41: Control operation direct/reverse selection<br>42: SP RAMP permit/prohibit selection<br>46: Timer stop/start selection<br>47: Release all latches | 0             |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 16  | Input type              | 1024 to 2047: Standard bit                                                                                                                                                                                                                                                                                                                                                         |               |      | 0          |                                                 |        |        |
| Function    | Internal contact IN | 16  | Loop/channel definition | 0 to 24: (Meaning varies depending on the operation type)                                                                                                                                                                                                                                                                                                                          | 1             |      | 0          | Refer to: ■ Loop/channel definition (page 6-10) |        |        |
| Function    | Internal contact IN | 16  | Weighting               | 0 to 127                                                                                                                                                                                                                                                                                                                                                                           | 1             |      | 0          |                                                 |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Function/Logical Operation

| Folder name | Bank name         | No. | Item name            | Setting range                                                                                                                                                          | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-------------------|-----|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Function    | Logical operation | 1   | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 1   | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 1   | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 1   | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 1   | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 1   | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 1   | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 1   | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 1   | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 1   | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 1   | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 1   | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 1   | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 2   | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 2   | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 2   | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 2   | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 2   | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 2   | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 2   | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 2   | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 2   | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 2   | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 2   | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 2   | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 2   | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 3   | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 3   | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 3   | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 3   | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 3   | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 3   | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 3   | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 3   | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 3   | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 3   | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 3   | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 3   | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 3   | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Function/Logical Operation

| Folder name | Bank name         | No. | Item name            | Setting range                                                                                                                                                          | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-------------------|-----|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Function    | Logical operation | 4   | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 4   | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 4   | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 4   | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 4   | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 4   | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 4   | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 4   | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 4   | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 4   | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 4   | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 4   | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 4   | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 5   | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 5   | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 5   | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 5   | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 5   | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 5   | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 5   | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 5   | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 5   | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 5   | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 5   | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 5   | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 5   | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 6   | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 6   | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 6   | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 6   | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 6   | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 6   | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 6   | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 6   | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 6   | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 6   | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 6   | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 6   | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 6   | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Function/Logical Operation

| Folder name | Bank name         | No. | Item name            | Setting range                                                                                                                                                          | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-------------------|-----|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Function    | Logical operation | 7   | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 7   | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 7   | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 7   | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 7   | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 7   | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 7   | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 7   | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 7   | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 7   | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 7   | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 7   | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 7   | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 8   | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 8   | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 8   | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 8   | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 8   | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 8   | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 8   | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 8   | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 8   | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 8   | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 8   | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 8   | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 8   | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 9   | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 9   | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 9   | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 9   | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 9   | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 9   | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 9   | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 9   | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 9   | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 9   | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 9   | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 9   | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 9   | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Function/Logical Operation

| Folder name | Bank name         | No. | Item name            | Setting range                                                                                                                                                          | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-------------------|-----|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Function    | Logical operation | 10  | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 10  | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 10  | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 10  | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 10  | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 10  | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 10  | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 10  | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 10  | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 10  | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 10  | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 10  | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 10  | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 11  | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 11  | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 11  | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 11  | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 11  | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 11  | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 11  | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 11  | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 11  | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 11  | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 11  | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 11  | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 11  | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 12  | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 12  | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 12  | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 12  | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 12  | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 12  | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 12  | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 12  | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 12  | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 12  | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 12  | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 12  | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 12  | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Function/Logical Operation

| Folder name | Bank name         | No. | Item name            | Setting range                                                                                                                                                          | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-------------------|-----|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Function    | Logical operation | 13  | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 13  | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 13  | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 13  | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 13  | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 13  | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 13  | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 13  | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 13  | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 13  | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 13  | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 13  | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 13  | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 14  | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 14  | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 14  | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 14  | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 14  | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 14  | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 14  | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 14  | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 14  | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 14  | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 14  | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 14  | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 14  | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 15  | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 15  | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 15  | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 15  | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 15  | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 15  | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 15  | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 15  | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 15  | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 15  | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 15  | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 15  | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 15  | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Function/Logical Operation

| Folder name | Bank name         | No. | Item name            | Setting range                                                                                                                                                          | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-------------------|-----|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Function    | Logical operation | 16  | Calculation type     | 1: Calculation 1: (A and B) or (C and D)<br>2: Calculation 2: (A or B) and (C or D)<br>3: Calculation 3: (A or B or C or D)<br>4: Calculation 4: (A and B and C and D) | 1             |      | 1          |         |        |        |
| Function    | Logical operation | 16  | Input assignment A   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 16  | Input assignment B   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 16  | Input assignment C   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 16  | Input assignment D   | 1024 to 2047: Standard bit                                                                                                                                             | 1024          |      | 1          |         |        |        |
| Function    | Logical operation | 16  | Inverted input bit A | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 16  | Inverted input bit B | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 16  | Inverted input bit C | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 16  | Inverted input bit D | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 16  | ON delay time        | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 16  | OFF delay time       | 0.0 to 3200.0 s                                                                                                                                                        | 0.0           | s    | 1          |         |        |        |
| Function    | Logical operation | 16  | Inversion            | 0: Direct 1: Reverse                                                                                                                                                   | 0             |      | 1          |         |        |        |
| Function    | Logical operation | 16  | Latch                | 0: No latch 1: Latch when ON<br>2: Latch when OFF (except OFF before power ON)                                                                                         | 0             |      | 1          |         |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Function/Energy Conservation

| Folder name | Bank name           | No. | Item name                                       | Setting range                                                                                                                                                                                                        | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|---------------------|-----|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Function    | Energy conservation | 1   | Energy conservation time proportional operation | 0: Not used 1: Used                                                                                                                                                                                                  | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 1   | Energy conservation delay time                  | 0 to 1000 ms                                                                                                                                                                                                         | 10            | ms   | 2          |         |        |        |
| Function    | Energy conservation | 1   | Master/slave selection                          | 0: Master<br>1: Other than master                                                                                                                                                                                    | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 1   | Time proportional slave channel                 | 1: Time proportioning 1<br>2: Time proportioning 2<br>3: Time proportioning 3<br>4: Time proportioning 4<br>5: Time proportioning 5<br>6: Time proportioning 6<br>7: Time proportioning 7<br>8: Time proportioning 8 | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 2   | Energy conservation time proportional operation | 0: Not used 1: Used                                                                                                                                                                                                  | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 2   | Energy conservation delay time                  | 0 to 1000 ms                                                                                                                                                                                                         | 10            | ms   | 2          |         |        |        |
| Function    | Energy conservation | 2   | Master/slave selection                          | 0: Master<br>1: Other than master                                                                                                                                                                                    | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 2   | Time proportional slave channel                 | 1: Time proportioning 1<br>2: Time proportioning 2<br>3: Time proportioning 3<br>4: Time proportioning 4<br>5: Time proportioning 5<br>6: Time proportioning 6<br>7: Time proportioning 7<br>8: Time proportioning 8 | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 3   | Energy conservation time proportional operation | 0: Not used 1: Used                                                                                                                                                                                                  | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 3   | Energy conservation delay time                  | 0 to 1000 ms                                                                                                                                                                                                         | 10            | ms   | 2          |         |        |        |
| Function    | Energy conservation | 3   | Master/slave selection                          | 0: Master<br>1: Other than master                                                                                                                                                                                    | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 3   | Time proportional slave channel                 | 1: Time proportioning 1<br>2: Time proportioning 2<br>3: Time proportioning 3<br>4: Time proportioning 4<br>5: Time proportioning 5<br>6: Time proportioning 6<br>7: Time proportioning 7<br>8: Time proportioning 8 | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 4   | Energy conservation time proportional operation | 0: Not used 1: Used                                                                                                                                                                                                  | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 4   | Energy conservation delay time                  | 0 to 1000 ms                                                                                                                                                                                                         | 10            | ms   | 2          |         |        |        |
| Function    | Energy conservation | 4   | Master/slave selection                          | 0: Master<br>1: Other than master                                                                                                                                                                                    | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 4   | Time proportional slave channel                 | 1: Time proportioning 1<br>2: Time proportioning 2<br>3: Time proportioning 3<br>4: Time proportioning 4<br>5: Time proportioning 5<br>6: Time proportioning 6<br>7: Time proportioning 7<br>8: Time proportioning 8 | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 5   | Energy conservation time proportional operation | 0: Not used 1: Used                                                                                                                                                                                                  | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 5   | Energy conservation delay time                  | 0 to 1000 ms                                                                                                                                                                                                         | 10            | ms   | 2          |         |        |        |
| Function    | Energy conservation | 5   | Master/slave selection                          | 0: Master<br>1: Other than master                                                                                                                                                                                    | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 5   | Time proportional slave channel                 | 1: Time proportioning 1<br>2: Time proportioning 2<br>3: Time proportioning 3<br>4: Time proportioning 4<br>5: Time proportioning 5<br>6: Time proportioning 6<br>7: Time proportioning 7<br>8: Time proportioning 8 | 0             |      | 2          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Function/Energy Conservation

| Folder name | Bank name           | No. | Item name                                       | Setting range                                                                                                                                                                                                        | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|---------------------|-----|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Function    | Energy conservation | 6   | Energy conservation time proportional operation | 0: Not used 1: Used                                                                                                                                                                                                  | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 6   | Energy conservation delay time                  | 0 to 1000 ms                                                                                                                                                                                                         | 10            | ms   | 2          |         |        |        |
| Function    | Energy conservation | 6   | Master/slave selection                          | 0: Master<br>1: Other than master                                                                                                                                                                                    | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 6   | Time proportional slave channel                 | 1: Time proportioning 1<br>2: Time proportioning 2<br>3: Time proportioning 3<br>4: Time proportioning 4<br>5: Time proportioning 5<br>6: Time proportioning 6<br>7: Time proportioning 7<br>8: Time proportioning 8 | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 7   | Energy conservation time proportional operation | 0: Not used 1: Used                                                                                                                                                                                                  | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 7   | Energy conservation delay time                  | 0 to 1000 ms                                                                                                                                                                                                         | 10            | ms   | 2          |         |        |        |
| Function    | Energy conservation | 7   | Master/slave selection                          | 0: Master<br>1: Other than master                                                                                                                                                                                    | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 7   | Time proportional slave channel                 | 1: Time proportioning 1<br>2: Time proportioning 2<br>3: Time proportioning 3<br>4: Time proportioning 4<br>5: Time proportioning 5<br>6: Time proportioning 6<br>7: Time proportioning 7<br>8: Time proportioning 8 | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 8   | Energy conservation time proportional operation | 0: Not used 1: Used                                                                                                                                                                                                  | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 8   | Energy conservation delay time                  | 0 to 1000 ms                                                                                                                                                                                                         | 10            | ms   | 2          |         |        |        |
| Function    | Energy conservation | 8   | Master/slave selection                          | 0: Master<br>1: Other than master                                                                                                                                                                                    | 0             |      | 2          |         |        |        |
| Function    | Energy conservation | 8   | Time proportional slave channel                 | 1: Time proportioning 1<br>2: Time proportioning 2<br>3: Time proportioning 3<br>4: Time proportioning 4<br>5: Time proportioning 5<br>6: Time proportioning 6<br>7: Time proportioning 7<br>8: Time proportioning 8 | 0             |      | 2          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Function/MV Branching Output

| Folder name | Bank name           | No. | Item name       | Setting range                                                   | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|---------------------|-----|-----------------|-----------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Function    | MV branching output | 1   | Loop assignment | 0: Not used<br>1: Loop 1<br>2: Loop 2<br>3: Loop 3<br>4: Loop 4 | 0             |      | 2          |         |        |        |
| Function    | MV branching output | 1   | Ratio           | 0.01 to 320.00                                                  | 1.00          |      | 2          |         |        |        |
| Function    | MV branching output | 1   | Bias            | -199.00 to 320.00%                                              | 0.00          | %    | 2          |         |        |        |
| Function    | MV branching output | 2   | Loop assignment | 0: Not used<br>1: Loop 1<br>2: Loop 2<br>3: Loop 3<br>4: Loop 4 | 0             |      | 2          |         |        |        |
| Function    | MV branching output | 2   | Ratio           | 0.01 to 320.00                                                  | 1.00          |      | 2          |         |        |        |
| Function    | MV branching output | 2   | Bias            | -199.00 to 320.00%                                              | 0.00          | %    | 2          |         |        |        |
| Function    | MV branching output | 3   | Loop assignment | 0: Not used<br>1: Loop 1<br>2: Loop 2<br>3: Loop 3<br>4: Loop 4 | 0             |      | 2          |         |        |        |
| Function    | MV branching output | 3   | Ratio           | 0.01 to 320.00                                                  | 1.00          |      | 2          |         |        |        |
| Function    | MV branching output | 3   | Bias            | -199.00 to 320.00%                                              | 0.00          | %    | 2          |         |        |        |
| Function    | MV branching output | 4   | Loop assignment | 0: Not used<br>1: Loop 1<br>2: Loop 2<br>3: Loop 3<br>4: Loop 4 | 0             |      | 2          |         |        |        |
| Function    | MV branching output | 4   | Ratio           | 0.01 to 320.00                                                  | 1.00          |      | 2          |         |        |        |
| Function    | MV branching output | 4   | Bias            | -199.00 to 320.00%                                              | 0.00          | %    | 2          |         |        |        |



## Chapter 12. LIST OF PARAMETER SETTINGS

## Function/Reception Monitoring

| Folder name | Bank name            | No. | Item name    | Setting range                                                   | Initial value | Unit     | User level | Remarks               | NX-D15 | NX-D25 |
|-------------|----------------------|-----|--------------|-----------------------------------------------------------------|---------------|----------|------------|-----------------------|--------|--------|
| Function    | Reception monitoring | 1   | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 1   | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 1   | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 1   | Time-out (l) | 0 to 65535(×10 ms)                                              | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 1   | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 2   | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 2   | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 2   | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 2   | Time-out (l) | 0 to 65535(×10 ms)                                              | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 2   | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 3   | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 3   | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 3   | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 3   | Time-out (l) | 0 to 65535(×10 ms)                                              | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 3   | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 4   | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 4   | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 4   | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 4   | Time-out (l) | 0 to 65535(×10 ms)                                              | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 4   | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 5   | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 5   | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 5   | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 5   | Time-out (l) | 0 to 65535(×10 ms)                                              | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 5   | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 6   | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 6   | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 6   | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 6   | Time-out (l) | 0 to 65535(×10 ms)                                              | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 6   | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 7   | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 7   | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 7   | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 7   | Time-out (l) | 0 to 65535(×10 ms)                                              | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 7   | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 8   | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 8   | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 8   | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 8   | Time-out (l) | 0 to 65535(×10 ms)                                              | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 8   | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 9   | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 9   | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 9   | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 9   | Time-out (l) | 0 to 65535(×10 ms)                                              | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 9   | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Function/Reception Monitoring

| Folder name | Bank name            | No. | Item name    | Setting range                                                   | Initial value | Unit     | User level | Remarks               | NX-D15 | NX-D25 |
|-------------|----------------------|-----|--------------|-----------------------------------------------------------------|---------------|----------|------------|-----------------------|--------|--------|
| Function    | Reception monitoring | 10  | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 10  | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 10  | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 10  | Time-out (l) | 0 to 65535(×10 ms)                                              | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 10  | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 11  | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 11  | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 11  | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 11  | Time-out (l) | 0 to 65535(×10 ms)                                              | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 11  | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 12  | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 12  | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 12  | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 12  | Time-out (l) | 0 to 65535(×10 ms)                                              | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 12  | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 13  | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 13  | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 13  | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 13  | Time-out (l) | 0 to 65535                                                      | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 13  | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 14  | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 14  | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 14  | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 14  | Time-out (l) | 0 to 65535                                                      | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 14  | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 15  | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 15  | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 15  | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 15  | Time-out (l) | 0 to 65535                                                      | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 15  | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 16  | Address (h)  | 0 to 65535                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 16  | Address (l)  | 0 to 65535                                                      | 0             |          | 1          |                       |        |        |
| Function    | Reception monitoring | 16  | Time-out (h) | Fixed at 0                                                      | 0             |          | 1          | When writing, write 0 |        |        |
| Function    | Reception monitoring | 16  | Time-out (l) | 0 to 65535                                                      | 18000         | (×10 ms) | 1          |                       |        |        |
| Function    | Reception monitoring | 16  | Mode         | 0: Without reception monitoring<br>1: With reception monitoring | 0             |          | 1          |                       |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Other/UF LED Settings

| Folder name | Bank name       | No. | Item name               | Setting range                                                                                                                                                       | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-----------------|-----|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Other       | UF LED settings | 1   | Conditions for lighting | 1024 to 2047: Standard bit                                                                                                                                          | 1792          |      | 1          |         |        |        |
| Other       | UF LED settings | 1   | Lighting status         | 0: Off 1: Lit<br>2: Lit (reverse video)<br>3: Fast blink<br>4: Fast blink (conditional reverse video)<br>5: Slow blink<br>6: Slow blink (conditional reverse video) | 3             |      | 1          |         |        |        |
| Other       | UF LED settings | 2   | Conditions for lighting | 1024 to 2047: Standard bit                                                                                                                                          | 1088          |      | 1          |         |        |        |
| Other       | UF LED settings | 2   | Lighting status         | 0: Off 1: Lit<br>2: Lit (reverse video)<br>3: Fast blink<br>4: Fast blink (conditional reverse video)<br>5: Slow blink<br>6: Slow blink (conditional reverse video) | 1             |      | 1          |         |        |        |
| Other       | UF LED settings | 3   | Conditions for lighting | 1024 to 2047: Standard bit                                                                                                                                          | 1089          |      | 1          |         |        |        |
| Other       | UF LED settings | 3   | Lighting status         | 0: Off 1: Lit<br>2: Lit (reverse video)<br>3: Fast blink<br>4: Fast blink (conditional reverse video)<br>5: Slow blink<br>6: Slow blink (conditional reverse video) | 1             |      | 1          |         |        |        |
| Other       | UF LED settings | 4   | Conditions for lighting | 1024 to 2047: Standard bit                                                                                                                                          | 1090          |      | 1          |         |        |        |
| Other       | UF LED settings | 4   | Lighting status         | 0: Off 1: Lit<br>2: Lit (reverse video)<br>3: Fast blink<br>4: Fast blink (conditional reverse video)<br>5: Slow blink<br>6: Slow blink (conditional reverse video) | 1             |      | 1          |         |        |        |
| Other       | UF LED settings | 5   | Conditions for lighting | 1024 to 2047: Standard bit                                                                                                                                          | 1091          |      | 1          |         |        |        |
| Other       | UF LED settings | 5   | Lighting status         | 0: Off 1: Lit<br>2: Lit (reverse video)<br>3: Fast blink<br>4: Fast blink (conditional reverse video)<br>5: Slow blink<br>6: Slow blink (conditional reverse video) | 1             |      | 1          |         |        |        |
| Other       | UF LED settings | 6   | Conditions for lighting | 1024 to 2047: Standard bit                                                                                                                                          | 1092          |      | 1          |         |        |        |
| Other       | UF LED settings | 6   | Lighting status         | 0: Off 1: Lit<br>2: Lit (reverse video)<br>3: Fast blink<br>4: Fast blink (conditional reverse video)<br>5: Slow blink<br>6: Slow blink (conditional reverse video) | 1             |      | 1          |         |        |        |
| Other       | UF LED settings | 7   | Conditions for lighting | 1024 to 2047: Standard bit                                                                                                                                          | 1093          |      | 1          |         |        |        |
| Other       | UF LED settings | 7   | Lighting status         | 0: Off 1: Lit<br>2: Lit (reverse video)<br>3: Fast blink<br>4: Fast blink (conditional reverse video)<br>5: Slow blink<br>6: Slow blink (conditional reverse video) | 1             |      | 1          |         |        |        |
| Other       | UF LED settings | 8   | Conditions for lighting | 1024 to 2047: Standard bit                                                                                                                                          | 1094          |      | 1          |         |        |        |
| Other       | UF LED settings | 8   | Lighting status         | 0: Off 1: Lit<br>2: Lit (reverse video)<br>3: Fast blink<br>4: Fast blink (conditional reverse video)<br>5: Slow blink<br>6: Slow blink (conditional reverse video) | 1             |      | 1          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Other/UF LED Settings

| Folder name | Bank name       | No. | Item name               | Setting range                                                                                                                                                       | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-----------------|-----|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------------|---------|--------|--------|
| Other       | UF LED settings | 9   | Conditions for lighting | 1024 to 2047: Standard bit                                                                                                                                          | 1545          |      | 1          |         |        |        |
| Other       | UF LED settings | 9   | Lighting status         | 0: Off 1: Lit<br>2: Lit (reverse video)<br>3: Fast blink<br>4: Fast blink (conditional reverse video)<br>5: Slow blink<br>6: Slow blink (conditional reverse video) | 3             |      | 1          |         |        |        |
| Other       | UF LED settings | 10  | Conditions for lighting | 1024 to 2047: Standard bit                                                                                                                                          | 1968          |      | 1          |         |        |        |
| Other       | UF LED settings | 10  | Lighting status         | 0: Off 1: Lit<br>2: Lit (reverse video)<br>3: Fast blink<br>4: Fast blink (conditional reverse video)<br>5: Slow blink<br>6: Slow blink (conditional reverse video) | 3             |      | 1          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Other/Instrument Information

| Folder name | Bank name        | No. | Item name                           | Setting range | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|------------------|-----|-------------------------------------|---------------|---------------|------|------------|---------|--------|--------|
| Other       | Instrument info. | 1   | F/W information 1 (ROM ID)          |               | -             |      | 0          |         |        |        |
| Other       | Instrument info. | 1   | F/W information 2 (ROM version 1)   |               | -             |      | 0          |         |        |        |
| Other       | Instrument info. | 1   | F/W information 3 (ROM version 2)   |               | -             |      | 0          |         |        |        |
| Other       | Instrument info. | 1   | F/W information 4 (Version for SLP) |               | -             |      | 0          |         |        |        |
| Other       | Instrument info. | 1   | Date code (year)                    |               | -             |      | 0          |         |        |        |
| Other       | Instrument info. | 1   | Date code (month/day)               |               | -             |      | 0          |         |        |        |
| Other       | Instrument info. | 1   | Production No.                      |               | -             |      | 0          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Other/PV Tag Name

| Folder name | Bank name   | No. | Item name  | Setting range | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-------------|-----|------------|---------------|---------------|------|------------|---------|--------|--------|
| Other       | PV tag name | 1   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 1   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 1   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 1   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 1   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 1   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 1   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 1   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 2   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 2   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 2   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 2   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 2   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 2   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 2   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 2   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 3   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 3   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 3   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 3   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 3   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 3   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 3   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 3   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 4   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 4   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 4   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 4   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 4   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 4   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 4   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | PV tag name | 4   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Other/OUT Tag Name

| Folder name | Bank name    | No. | Item name  | Setting range | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|--------------|-----|------------|---------------|---------------|------|------------|---------|--------|--------|
| Other       | OUT tag name | 1   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 1   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 1   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 1   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 1   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 1   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 1   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 1   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 2   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 2   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 2   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 2   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 2   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 2   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 2   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 2   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 3   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 3   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 3   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 3   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 3   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 3   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 3   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 3   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 4   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 4   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 4   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 4   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 4   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 4   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 4   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | OUT tag name | 4   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Other/Option Tag Name

| Folder name | Bank name       | No. | Item name  | Setting range | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-----------------|-----|------------|---------------|---------------|------|------------|---------|--------|--------|
| Other       | Option tag name | 1   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 1   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 1   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 1   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 1   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 1   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 1   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 1   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 2   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 2   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 2   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 2   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 2   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 2   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 2   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 2   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 3   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 3   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 3   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 3   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 3   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 3   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 3   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 3   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 4   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 4   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 4   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 4   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 4   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 4   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 4   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Option tag name | 4   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |



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## Chapter 12. LIST OF PARAMETER SETTINGS

### Other/Tag for All Loops

| Folder name | Bank name         | No. | Item name  | Setting range | Initial value | Unit | User level | Remarks | NX-D15 | NX-D25 |
|-------------|-------------------|-----|------------|---------------|---------------|------|------------|---------|--------|--------|
| Other       | Tag for all loops | 1   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 1   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 1   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 1   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 1   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 1   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 1   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 1   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 2   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 2   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 2   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 2   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 2   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 2   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 2   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 2   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 3   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 3   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 3   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 3   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 3   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 3   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 3   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 3   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 4   | Tag name 1 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 4   | Tag name 2 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 4   | Tag name 3 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 4   | Tag name 4 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 4   | Tag name 5 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 4   | Tag name 6 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 4   | Tag name 7 | 0 to 65535    | 0             |      | 0          |         |        |        |
| Other       | Tag for all loops | 4   | Tag name 8 | 0 to 65535    | 0             |      | 0          |         |        |        |





## Chapter 13. TROUBLESHOOTING

### ■ Alarm code descriptions and corrective actions

Descriptions of the alarm codes and countermeasures in case the unit operates abnormally are shown below.

| Alarm code | Error name                           | Cause                                                                                                                                                                   | Corrective action                                                                                    |
|------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| AL01       | PV1 high limit error                 | Sensor burnout, incorrect wiring, input voltage, current, incorrect resistance setting, input outside the parameter settings for the alarm setting high limit/low limit | Check the PV wiring.<br>Check the input voltage, current, resistance.                                |
| AL02       | PV1 low limit error                  |                                                                                                                                                                         |                                                                                                      |
| AL03       | PV2 high limit error                 |                                                                                                                                                                         |                                                                                                      |
| AL04       | PV2 low limit error                  |                                                                                                                                                                         |                                                                                                      |
| AL05       | PV3 high limit error                 |                                                                                                                                                                         |                                                                                                      |
| AL06       | PV3 low limit error                  |                                                                                                                                                                         |                                                                                                      |
| AL07       | PV4 high limit error                 |                                                                                                                                                                         |                                                                                                      |
| AL08       | PV4 low limit error                  |                                                                                                                                                                         |                                                                                                      |
| AL11       | AD1 fault                            | AD fault                                                                                                                                                                | Turn the power off and back on again, or replace the main body.                                      |
| AL12       | AD2 fault                            |                                                                                                                                                                         |                                                                                                      |
| AL13       | AD3 fault                            |                                                                                                                                                                         |                                                                                                      |
| AL14       | AD4 fault                            |                                                                                                                                                                         |                                                                                                      |
| AL25       | CT1 input error                      | CT input over-range<br>Incorrect CT input setting<br>AD error                                                                                                           | Check the CT input.<br>Reset the CT input setting.<br>Replace the main body when an AD error occurs. |
| AL26       | CT2 input error                      |                                                                                                                                                                         |                                                                                                      |
| AL27       | CT3 input error                      |                                                                                                                                                                         |                                                                                                      |
| AL28       | CT4 input error                      |                                                                                                                                                                         |                                                                                                      |
| AL31       | Reception monitors 1-16              | No data write communication access to the set address within the set time                                                                                               | Check the module status.<br>Check the settings.                                                      |
| AL32       | Transmission timeout between modules | No response from the destination modules                                                                                                                                |                                                                                                      |
| AL71       | CJ1 error                            | Abnormal terminal temperature<br>AD error                                                                                                                               | Check the ambient temperature.<br>Replace the main body when an AD error occurs.                     |
| AL72       | CJ2 error                            |                                                                                                                                                                         |                                                                                                      |
| AL73       | CJ3 error                            |                                                                                                                                                                         |                                                                                                      |
| AL74       | CJ4 error                            |                                                                                                                                                                         |                                                                                                      |
| AL83       | EEPROM not initialized               | EEPROM read error                                                                                                                                                       | Restart the power, or replace the main body.                                                         |
| AL85       | RAM read write error                 | RAM read write error                                                                                                                                                    |                                                                                                      |
| AL86       | EEPROM read write error              | EEPROM read write error                                                                                                                                                 |                                                                                                      |
| AL87       | Base EEPROM read write error         | Base EEPROM read write error                                                                                                                                            |                                                                                                      |
| AL88       | Base EEPROM error                    | Parameters of the main body and base do not match                                                                                                                       | Turn the power off and back on again, or press the push button                                       |
| AL94       | RAM error (parameter area)           | RAM error                                                                                                                                                               | Turn the power off and back on again, or replace the main body.                                      |
| AL95       | RAM error (adjustment area)          |                                                                                                                                                                         |                                                                                                      |
| AL97       | EEPROM error (parameter area)        | EEPROM read error                                                                                                                                                       |                                                                                                      |
| AL98       | EEPROM error (adjustment area)       |                                                                                                                                                                         |                                                                                                      |
| AL99       | ROM error                            | ROM (memory) fault                                                                                                                                                      |                                                                                                      |





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## Chapter 14. MAINTENANCE, INSPECTION, AND DISPOSAL

### 14 - 1 Maintenance and Inspection

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- |                  |                                                                                                                          |
|------------------|--------------------------------------------------------------------------------------------------------------------------|
| Cleaning         | : When removing dirt from the instrument, wipe it off with a soft cloth rag.                                             |
| Part replacement | : Do not replace any parts of this unit.                                                                                 |
| Fuse replacement | : When replacing the fuse connected to the electric wiring, always use the fuse that is recommended for your power unit. |



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## Chapter 14. MAINTENANCE, INSPECTION, AND DISPOSAL

### 14 - 2 Disposal

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When disposing of this unit, dispose of it appropriately as industrial waste in accordance with local laws and regulations.



# Chapter 15. SPECIFICATIONS

## 15 - 1 Specifications

### ■ PV input

|                                       |                                                                                                                                                                                                                                               |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inputs                                | : 4                                                                                                                                                                                                                                           |
| Thermocouple                          | : K, E, J, T, B, R, S, N (JIS C 1602-1995),<br>WRe5-26 (ASTM E988-96 (Reapproved 2002)),<br>PR40-20 (ASTM E1751-00), Ni-Ni • Mo (ASTM E1751-00),<br>PL II (ASTM E1751-00), DIN U, DIN L (DIN 43710-1985)<br>Gold-iron/Chromel (ASTM E1751-00) |
| Resistance temperature detector (RTD) | : Pt100 (JIS C 1604-1997), JPt100 (JIS C 1604-1989)                                                                                                                                                                                           |
| DC voltage (mV)                       | : 0 to 10 mV, -10 to +10 mV, 0 to 100 mV                                                                                                                                                                                                      |
| DC voltage (V)                        | : 0 to 1 V, -1 to +1 V, 1 to 5 V, 0 to 5 V, 0 to 10 V, 2 to 10 V                                                                                                                                                                              |
| DC current                            | : 4 to 20 mA, 0 to 20 mA                                                                                                                                                                                                                      |
| Sampling cycle                        | : 500 ms (NX-D15), 200 ms (NX-D25)                                                                                                                                                                                                            |

### • Thermocouple input

Indication accuracy (under standard conditions):

| Range type | Sensor type       | Range              |                 | Accuracy                                                                                                                                                                      |
|------------|-------------------|--------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1          | K                 | -200 to +1200°C    | -300 to +2200°F | ±0.3% FS (load range ±0.6% FS) ±1 digit                                                                                                                                       |
| 2          | K                 | 0 to 1200°C        | 0 to 2200°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 3          | K                 | 0.0 to 800.0°C     | 0 to 1500°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 4          | K                 | 0.0 to 600.0°C     | 0 to 1100°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 5          | K                 | 0.0 to 400.0°C     | 0 to 700°F      | ±0.3% FS ±1 digit                                                                                                                                                             |
| 6          | K                 | -200.0 to +400.0°C | -300 to +700°F  | ±0.3% FS (load range ±0.6% FS) ±1 digit                                                                                                                                       |
| 7          | K                 | -200.0 to +200.0°C | -300 to +400°F  | ±0.3% FS (load range ±0.6% FS) ±1 digit                                                                                                                                       |
| 8          | J                 | 0 to 1200°C        | 0 to 2200°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 9          | J                 | 0.0 to 800.0°C     | 0 to 1500°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 10         | J                 | 0.0 to 600.0°C     | 0 to 1100°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 11         | J                 | -200.0 to +400.0°C | -300 to +700°F  | ±0.3% FS (load range ±0.6% FS) ±1 digit                                                                                                                                       |
| 12         | E                 | 0.0 to 800.0°C     | 0 to 1500°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 13         | E                 | 0.0 to 600.0°C     | 0 to 1100°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 14         | T                 | -200.0 to +400.0°C | -300 to +700°F  | ±0.3% FS (load range ±0.6% FS) ±1 digit                                                                                                                                       |
| 15         | R                 | 0 to 1600°C        | 0 to 3000°F     | ±0.4% FS (±6.4°C) ±1 digit                                                                                                                                                    |
| 16         | S                 | 0 to 1600°C        | 0 to 3000°F     | ±0.4% FS (±6.4°C) ±1 digit                                                                                                                                                    |
| 17         | B                 | 0 to 1800°C        | 0 to 3300°F     | 800°C to 1800°C: ±0.4% FS (±7.2°C) ±1 digit<br>260°C to 800°C: ±0.8% FS (±14.4°C) ±1 digit<br>0 to 260°C: ±4% FS (±72°C) ±1 digit<br>Indicated value low limit: 20°C ±1 digit |
| 18         | N                 | 0 to 1300°C        | 0 to 2300°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 19         | PL II             | 0 to 1300°C        | 0 to 2200°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 20         | WRe5-26           | 0 to 1400°C        | 0 to 2400°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 21         | WRe5-26           | 0 to 2300°C        | 0 to 4200°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 22         | Ni-Ni•Mo          | 0 to 1300°C        | 0 to 2300°F     | ±0.3% FS ±1 digit                                                                                                                                                             |
| 23         | PR40-20           | 0 to 1900°C        | 0 to 3400°F     | 800 to 1900°C: ±1.0% FS (±19.0°C) ±1 digit<br>300 to 800°C: ±2% FS (±38°C) ±1 digit<br>0 to 300°C: ±4% FS (±76°C) ±1 digit                                                    |
| 24         | DIN U             | -200.0 to +400.0°C | -300 to +700°F  | ±0.3% FS (load range ±0.6% FS) ±1 digit                                                                                                                                       |
| 25         | DIN L             | -100.0 to +800.0°C | -150 to +1500°F | ±0.3% FS (load range ±0.6% FS) ±1 digit                                                                                                                                       |
| 26         | Gold-iron/Chromel | 0.1 to 360.1 K     | -450 to +180°F  | ±3.0 K ±1 digit                                                                                                                                                               |

Cold junction compensation accuracy

: ±0.5°C (at ambient temperature of 23±2°C)  
±1.5°C (at ambient temperature of 0 to 60°C)

Cold junction compensation method

: Internal/external (0 °C only) compensation selectable



## Chapter 15. SPECIFICATIONS

Maximum allowable input voltage

:  $\pm 1$  V

Input bias current : 0.2  $\mu$ A max. (under standard conditions)

Wiring resistance : 0.2  $\mu$ V/ $\Omega$  max. (total resistance of all wires)

Allowable parallel connection resistance

: 1 M $\Omega$  min.

- RTD input

Indication accuracy (under standard conditions):  $\pm 0.3\%$  FS  $\pm 1$  digit

Measuring current : 1.0 mA TYP. (flowed out from terminals A and B)

Allowable wiring resistance : 85  $\Omega$  max. (per wire)

Effect of wiring resistance : 0.05% FS/ $\Omega$  max.

- DC voltage (V-range) input

Indication accuracy (under standard conditions):  $\pm 0.3\%$  FS  $\pm 1$  digit

Allowable input voltage : -2 to +12 V

Input bias current : 0 to 1 V range: +2  $\mu$ A max. (under standard conditions)

1 to 5 V, 1 to 5 V range: +7  $\mu$ A max. (under standard conditions)

0 to 10 V, 2 to 10 V range: +12  $\mu$ A max. (under standard conditions)

Wiring resistance : 0 to 1 V range: +2  $\mu$ V/ $\Omega$  max. (under standard conditions)

1 to 5 V, 1 to 5 V range: +7  $\mu$ V/ $\Omega$  max. (under standard conditions)

0 to 10 V, 2 to 10 V range: +12  $\mu$ V/ $\Omega$  max. (under standard conditions)

Input impedance : 1 M $\Omega$  min.

- DC voltage (mV-range) input

Indication accuracy (under standard conditions)

:  $\pm 0.3\%$  FS  $\pm 1$  digit

Allowable input voltage :  $\pm 1$  V

Input bias current : 0.2  $\mu$ A max. (under standard conditions)

Wiring resistance : +0.2  $\mu$ V/ $\Omega$  max. (under standard conditions)

Allowable parallel connection resistance

: 1 M $\Omega$  min. (range type 83: 2 M $\Omega$  min.)

- DC current input

Indication accuracy (under standard conditions)

:  $\pm 0.3\%$  FS  $\pm 1$  digit

Allowable input current : 25 mA

Input impedance : 80  $\Omega$  max. (when input is 20 mA)

### ■ Transistor output (output type)

Outputs : 4

Output type : Transistor output (sink type)

External power source rating : DC 5 to 24 V

External power source allowable voltage

: DC 4.5 to 26.4 V

Allowable output current : DC 100 mA max.

OFF-state leakage current : 100  $\mu$ A max.

ON residual voltage : 0.5 V max.



## Chapter 15. SPECIFICATIONS

### ■ Analog current output (output type)

|                           |                                                                |
|---------------------------|----------------------------------------------------------------|
| Outputs                   | : 4                                                            |
| Output current            | : DC 4 to 20 mA (2.4 to 21.6 mA)<br>DC 0 to 20 mA (0 to 22 mA) |
| Allowable load resistance | : 300 $\Omega$ max.                                            |
| Output accuracy           | : $\pm 0.3\%$ FS max.<br>Note that 0 to 0.2 mA is 1% FS        |
| Output resolution         | : 1/10000 (4 to 20 mA range), 1/12500 (0 to 20 mA range)       |
| Open voltage              | : DC 10 V $\pm 10\%$                                           |

### ■ Analog voltage output (output type)

|                           |                                                                                                                                  |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Outputs                   | : 4                                                                                                                              |
| Output voltage            | : DC 0 to 5 V (DC 0 to 5.5 V)<br>DC 1 to 5 V (DC 0.6 to 5.4 V)<br>DC 0 to 10 V (DC 0 to 11 V)<br>DC 2 to 10 V (DC 1.2 to 10.8 V) |
| Allowable load resistance | : 4 k $\Omega$ min.                                                                                                              |
| Output accuracy           | : $\pm 0.3\%$ FS max.<br>Note that 0 to 0.1 V is 1% FS                                                                           |
| Output resolution         | : 1/8000 (1 to 5 V range)<br>1/10000 (0 to 5 V range)<br>1/16000 (2 to 10 V range)<br>1/20000 (0 to 10 V range)                  |

### ■ Current transformer input (optional function)

|                                  |                                                                                          |
|----------------------------------|------------------------------------------------------------------------------------------|
| Outputs                          | : 4                                                                                      |
| Recommended current transformers | : QN206A (hole diameter: 5.8 mm, 800 turns),<br>QN212A (hole diameter: 12 mm, 800 turns) |
| Current measurement range        | : AC 0.4 to 50.0 A                                                                       |
| Maximum allowable current        | : 60 A (when no. of turn penetrations is 1)                                              |
| Indication accuracy              | : $\pm 5\%$ FS $\pm 1$ digit                                                             |
| Indication resolution            | : 0.1 A                                                                                  |

### ■ Digital output (optional function)

|                                         |                                 |
|-----------------------------------------|---------------------------------|
| Outputs                                 | : 4                             |
| Output type                             | : Transistor output (sink type) |
| External power source rating            | : DC 5 to 24 V                  |
| External power source allowable voltage | : DC 4.5 to 26.4 V              |
| Allowable output current                | : DC 100 mA max.                |
| OFF-state leakage current               | : 100 $\mu$ A max.              |
| ON residual voltage                     | : 0.5 V max.                    |



## Chapter 15. SPECIFICATIONS

### ■ Digital input (optional function)

|                                 |                                         |
|---------------------------------|-----------------------------------------|
| Inputs                          | : 4                                     |
| Compatible output type          | : Dry contact or transistor (sink type) |
| Open terminal voltage           | : DC 5 V $\pm 10\%$                     |
| Terminal current (when shorted) | : 5.6 mA (typical)                      |
| Allowable ON resistance         | : 250 $\Omega$ max.                     |
| Allowable OFF resistance        | : 100 k $\Omega$ min.                   |
| Allowable ON residual voltage   | : 1 V max.                              |
| OFF leak current                | : 0.1 mA max.                           |

### ■ Standard conditions

|                     |                                          |
|---------------------|------------------------------------------|
| Ambient temperature | : 23 $\pm 2^\circ\text{C}$               |
| Ambient humidity    | : 60 $\pm 5\%$ RH (without condensation) |
| Rated voltage       | : DC 24 V                                |
| Vibration           | : 0 m/s <sup>2</sup>                     |
| Shock               | : 0 m/s <sup>2</sup>                     |
| Installation angle  | : (Reference plane) $\pm 3^\circ$        |

### ■ Operating conditions

|                             |                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------|
| Ambient temperature         | : 0 to 50 $^\circ\text{C}$ (at unit underside when <del>in</del> )                |
| Ambient humidity            | : 10 to 90% RH (without condensation)                                             |
| Allowable operating voltage | : DC 21.6 to 26.4 V                                                               |
| Vibration                   | : 0 to 3.2 m/s <sup>2</sup> (10 to 150 Hz for 2 h each in X, Y, and Z directions) |
| Shock                       | : 0 to 9.8 m/s <sup>2</sup>                                                       |
| Installation angle          | : (Reference plane) $\pm 3^\circ$                                                 |
| Dust                        | : 0.3 mg/m <sup>3</sup> max.                                                      |
| Corrosive gas               | : None                                                                            |
| Altitude                    | : 2000 m max.                                                                     |

### ■ Transport and storage conditions

|                     |                                                                                                |
|---------------------|------------------------------------------------------------------------------------------------|
| Ambient temperature | : -20 to 70 $^\circ\text{C}$                                                                   |
| Ambient humidity    | : 5 to 95% RH (without condensation)                                                           |
| Vibration           | : 0 to 9.8 m/s <sup>2</sup> (10 to 150 Hz for 2 h each in X, Y, and Z directions)              |
| Shock               | : 0 to 300 m/s <sup>2</sup> (when installed to the DIN rail, 3 times in the up-down direction) |
| Package drop test   | : 60 cm drop height (using the free drop method for 1 corner, 3 ridges and 6 faces)            |



## ■ Other

|                           |                                                                                                   |
|---------------------------|---------------------------------------------------------------------------------------------------|
| Storage method            | : Nonvolatile memory                                                                              |
| Insulation resistance     | : 20 MΩ min.                                                                                      |
| Voltage resistance        | : AC 500 V, 1 min<br>(Power terminal, and between the power terminal and insulated I/O terminals) |
| Power consumption         | : 4 W max. (under operating conditions)                                                           |
| Inrush current            | : Max. 20 A (under operating conditions)                                                          |
| Case material, color      | : Modified PPO resin, black                                                                       |
| Installation method       | : DIN rail installation                                                                           |
| Correct tightening torque | : 0.6 ±0.1 N•m                                                                                    |

## ■ Communication specifications

|                                      |                                           |
|--------------------------------------|-------------------------------------------|
| • Ethernet communication protocol    | : MODBUS TCP                              |
| • RS-485 communication protocol      | : MODBUS (RTU/ASCII), CPL                 |
| Signal level                         | : RS-485 compliant                        |
| Communication/synchronization method | : Half-duplex, start/stop synchronization |
| Max. line length                     | : 500 m                                   |
| Terminating resistor                 | : External (150 Ω 1/2 W min.)             |
| Transmission speed                   | : Max. 115200 bps                         |

## ■ Communication box (sold separately, model no.: NX-CB1\_ \_ \_ \_ )

|                        |                                                                                                                                                                                                                                                                                                                                       |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Transmission path type | : • Ports 1, 2<br>IEEE802.3/IEEE802.3u 10BASE-T/100BASE-TX<br>(With auto-negotiation, Auto MDI/MDI-X functions)<br>• Ports 3, 4<br>IEEE802.3u 100BASE-TX<br>(With Full Duplex, Auto MDI/MDI-X functions. Unless there is a connection between communication boxes, the auto-negotiation should be enabled for the connected devices.) |
| Connector              | : RJ-45                                                                                                                                                                                                                                                                                                                               |
| Cable                  | : UTP cable (4P), category 5e or higher (straight)<br>(EIA/TIA568)                                                                                                                                                                                                                                                                    |

## ■ Communication adapter (sold separately, model nos.: NX-CL1\_ \_ \_ \_ , NX-CR1\_ \_ \_ \_ )

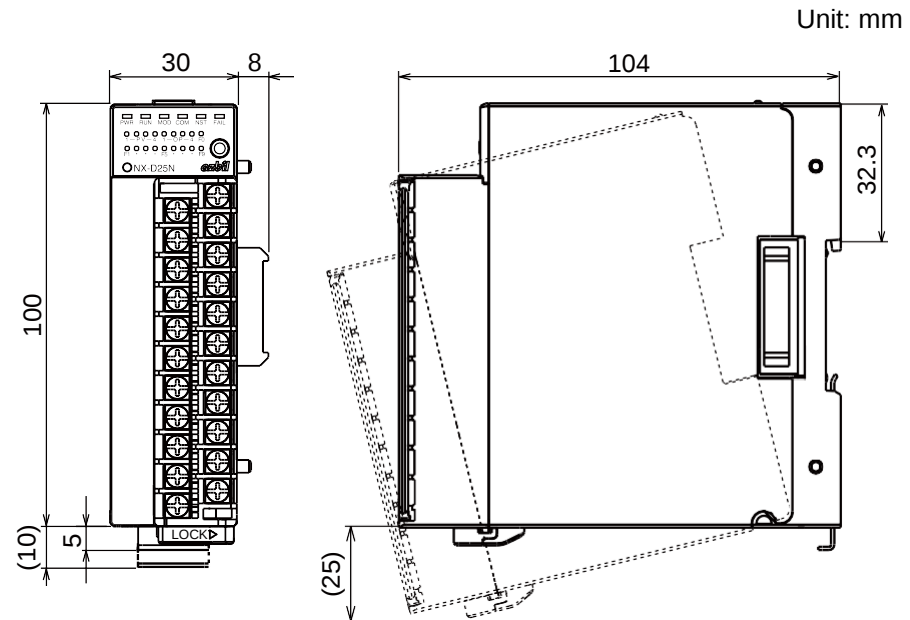
|                        |                                                                                                                                           |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Transmission path type | : IEEE802.3u 100BASE-TX<br>(With Full Duplex, Auto MDI/MDI-X functions. The auto-negotiation should be enabled for the connected devices) |
| Connector              | : RJ-45                                                                                                                                   |
| Cable                  | : UTP cable (4P), category 5e or higher (straight)<br>(EIA/TIA568)                                                                        |

## Chapter 15. SPECIFICATIONS

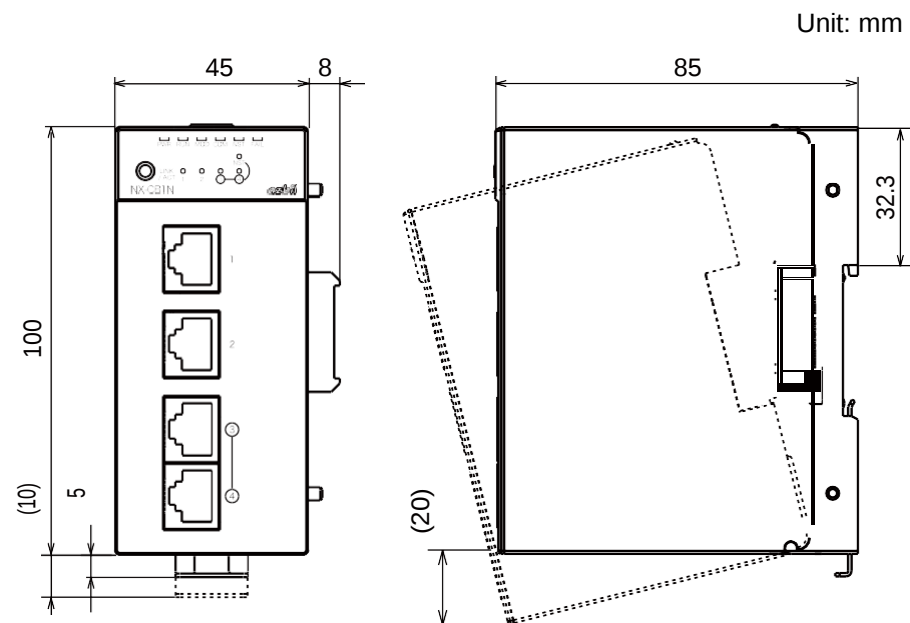
# 15 - 2 External Dimensions

### ■ Controller module

Although the NX-D25 is used in the following diagrams, the dimensions for the NX-D15 and NX-D25 are all the same.



### ■ Communication box





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โทร: 02-888-3472 โทร: ออกแบบ:08-08-170-170 แฟกซ์: 02-888-3258

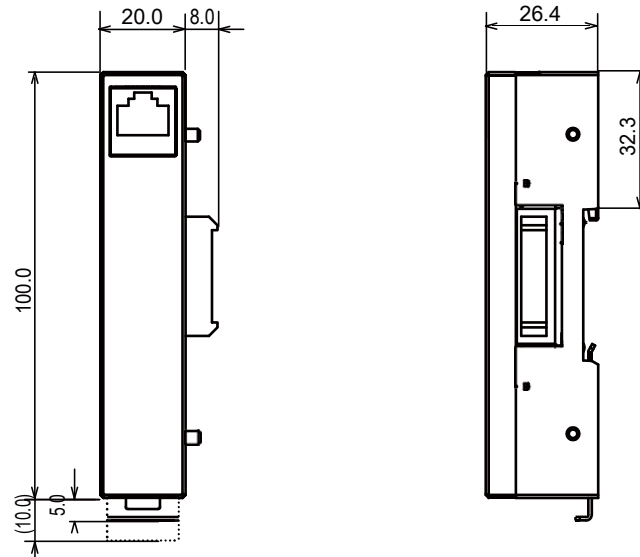
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## Chapter 15.SPECIFICATIONS

### ■ Communication adapter

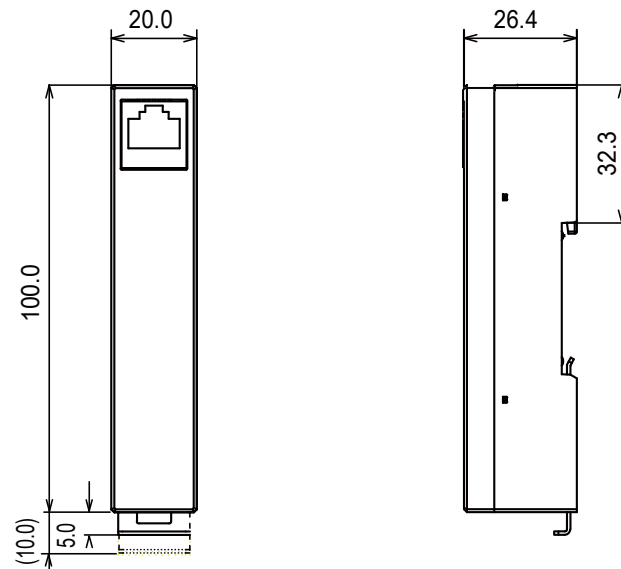
- For left connection

Unit: mm



- For right connection

Unit: mm





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โทร: 02-888-3472 โทร: ออกแบบ:08-08-170-170 แฟกซ์: 02-888-3258

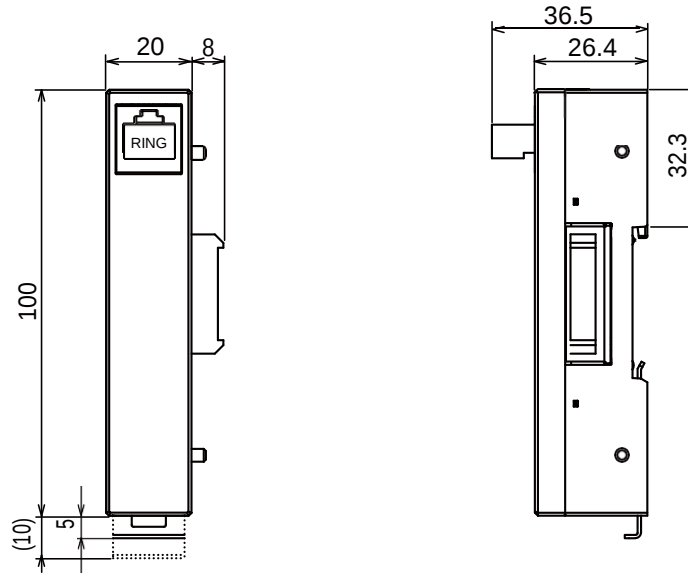
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## Chapter 15. SPECIFICATIONS

### ■ Terminal adapter

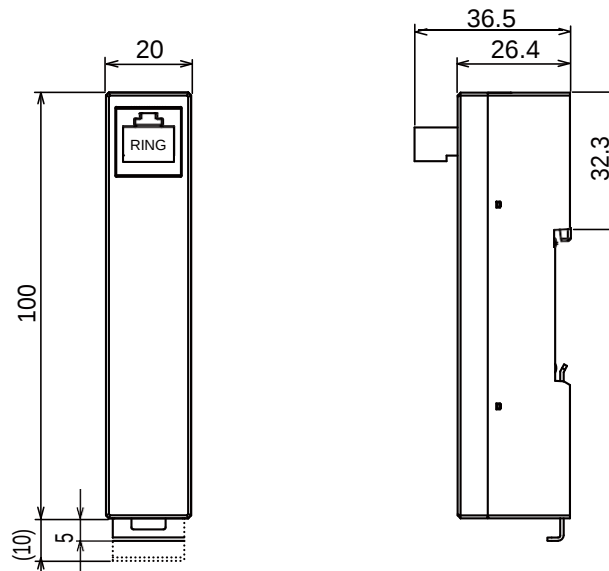
- For left connection

Unit: mm



- For right connection

Unit: mm

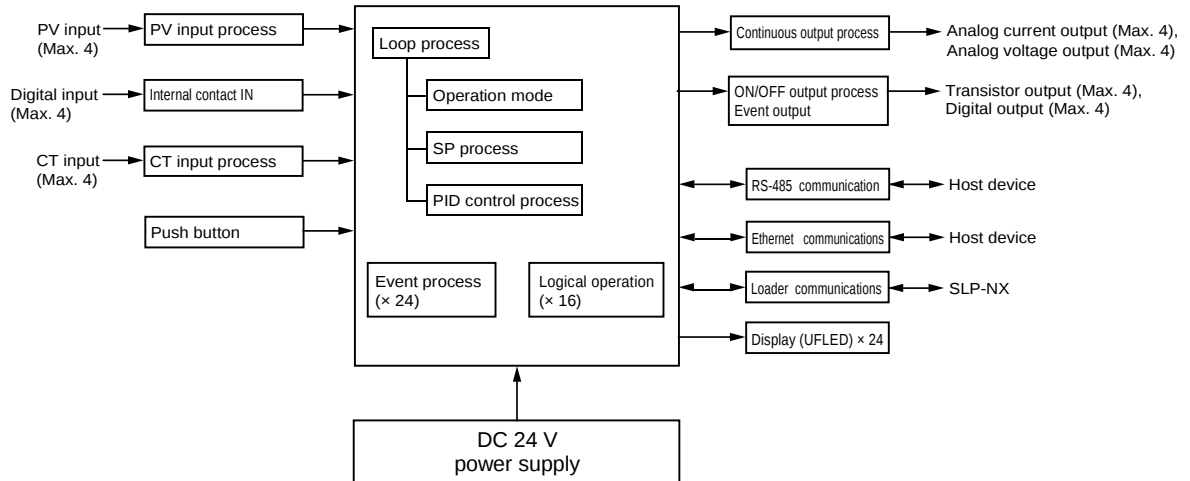




# Appendices

## Appendix - 1 Function Block Diagrams

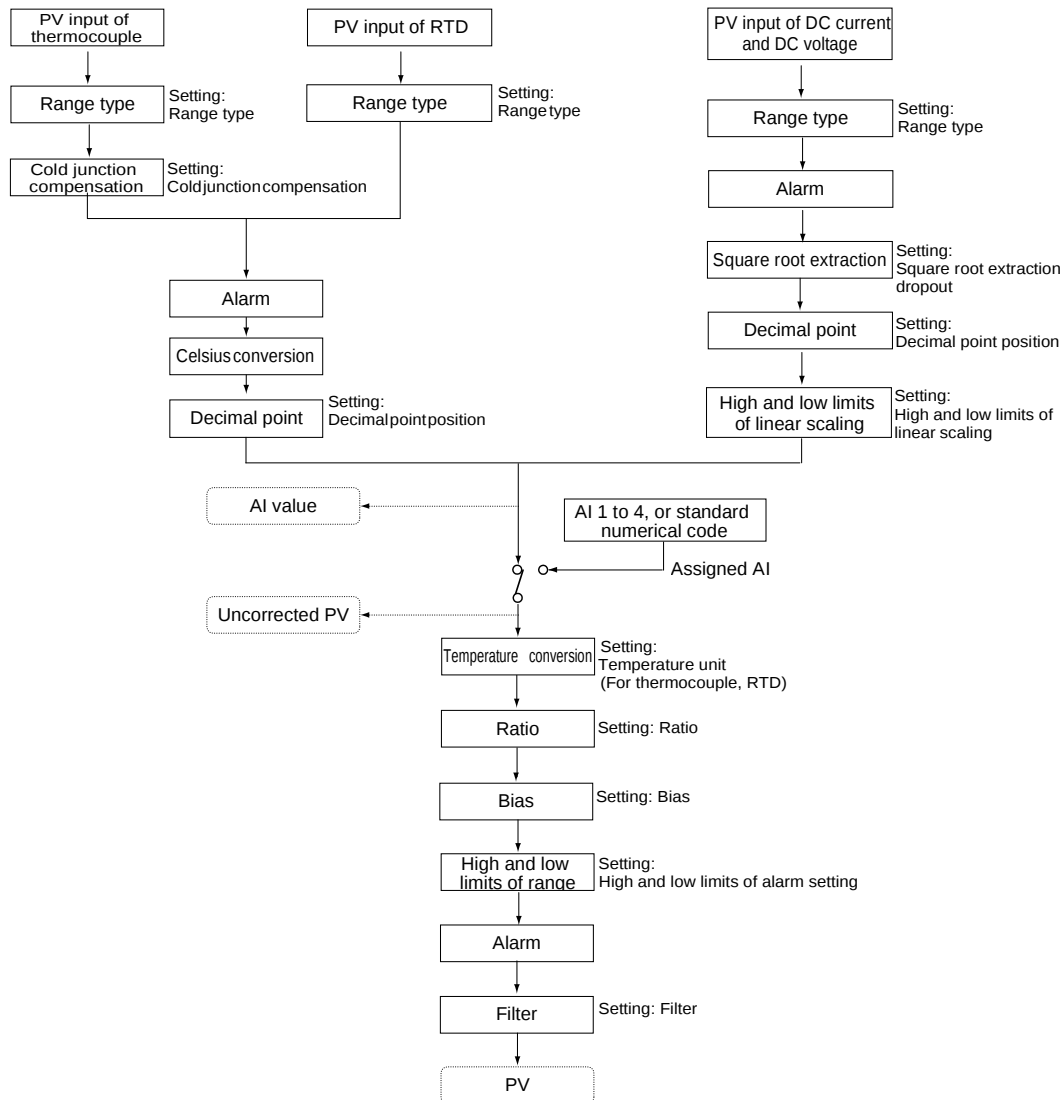
### ■ Basic function block diagram





## Appendices

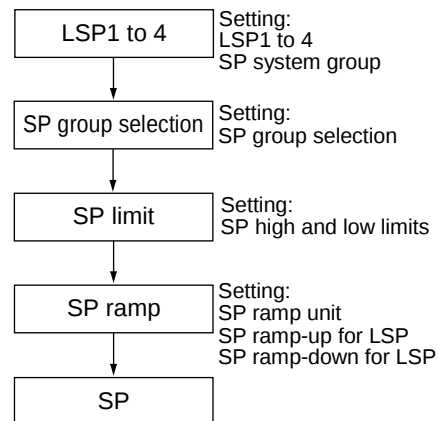
### ■ PV input process block diagram





## ■ SP process block diagram

The following describes an SP process without using RSP.

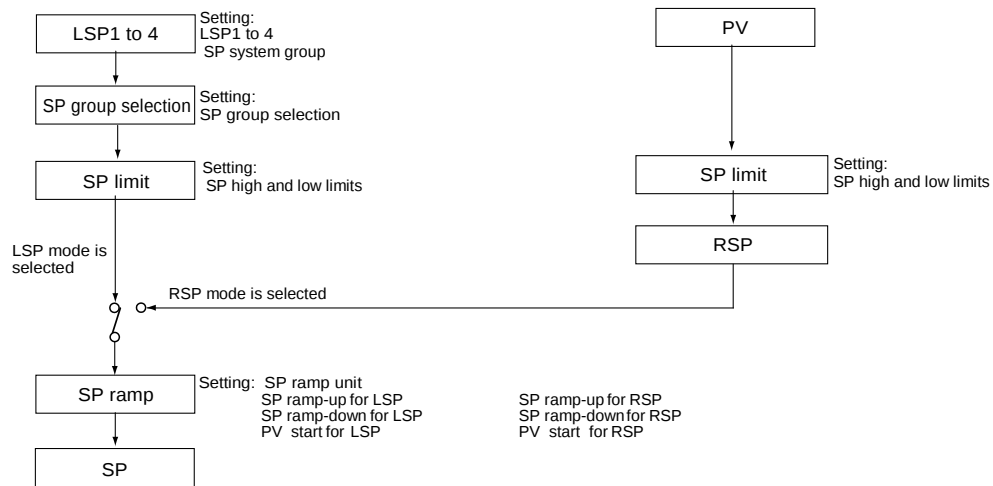




## Appendices

### ■ SP process block diagram (with RSP)

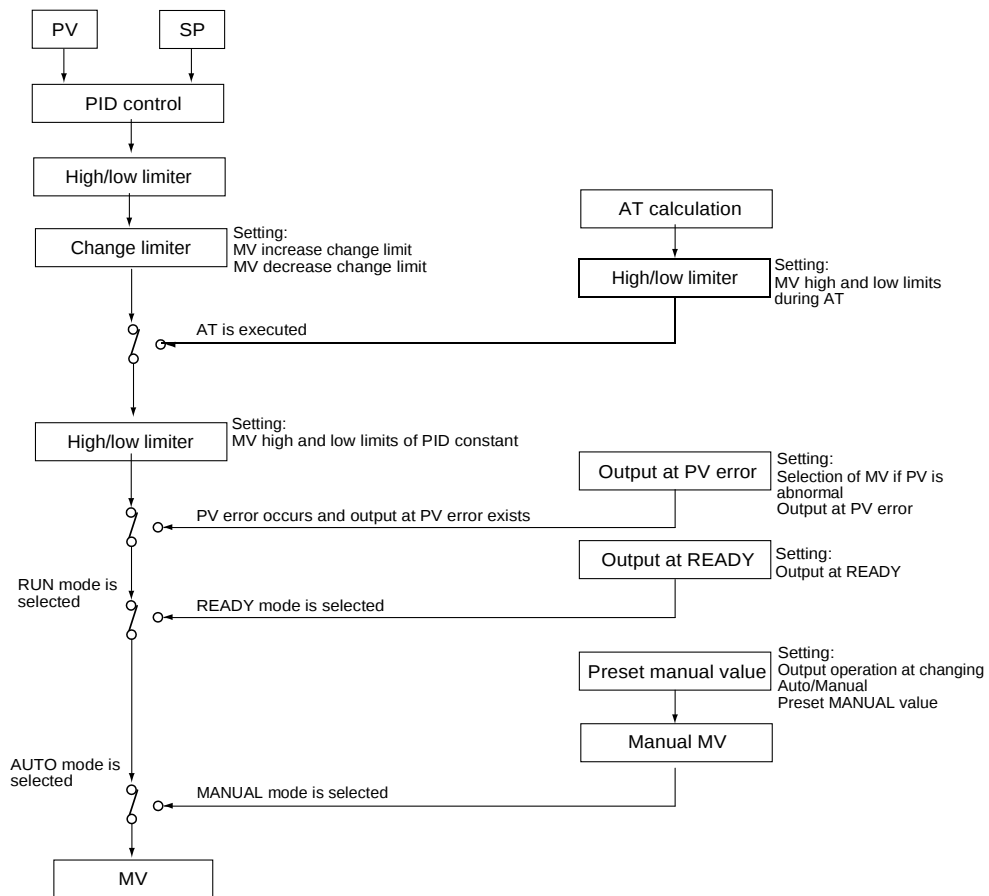
The following describes an SP process with RSP.





## Appendices

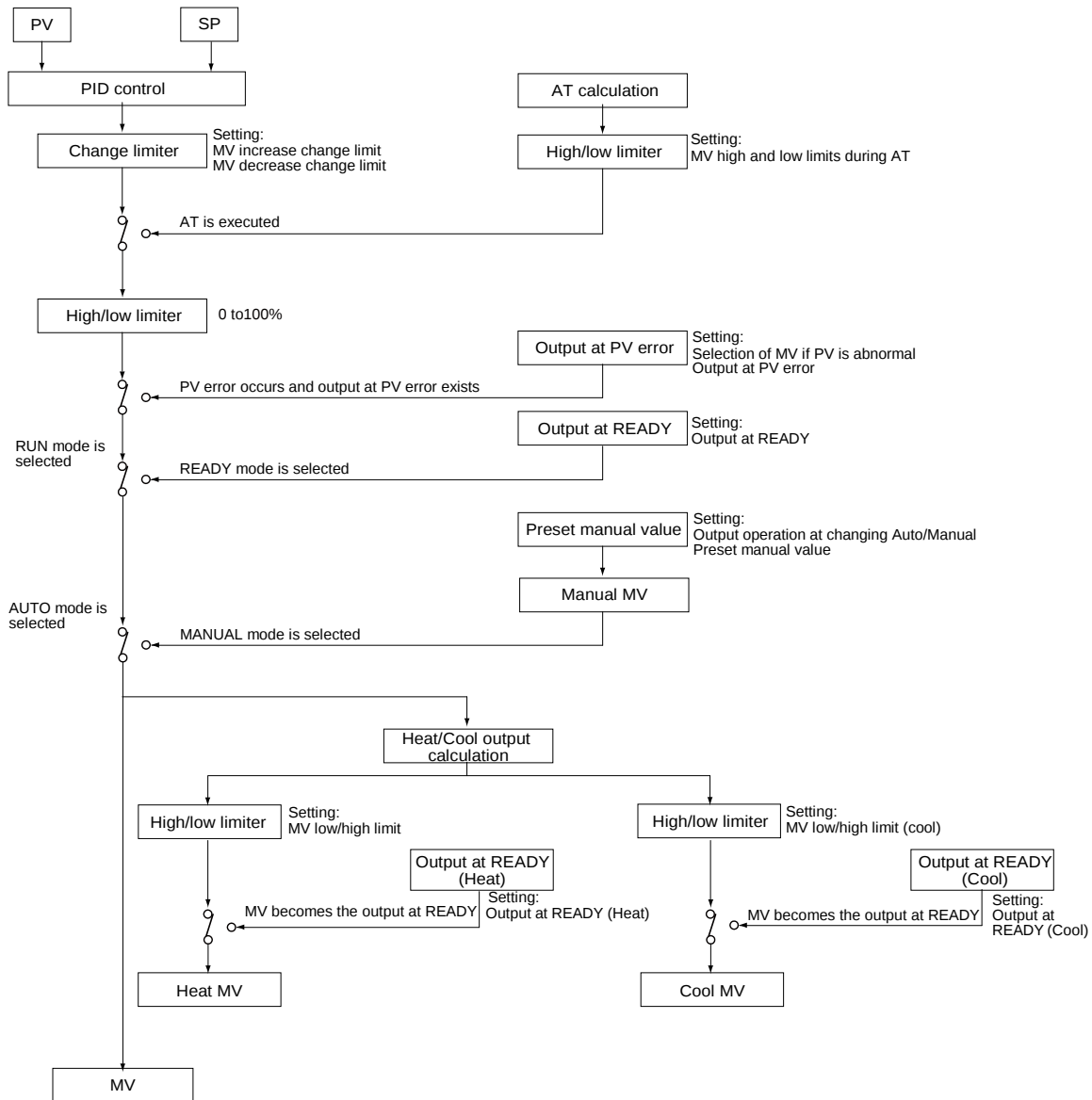
### ■ PID control process block diagram (direct or reverse action)

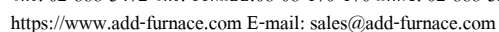




## Appendices

### ■ PID control process block diagram (heat/cool control)



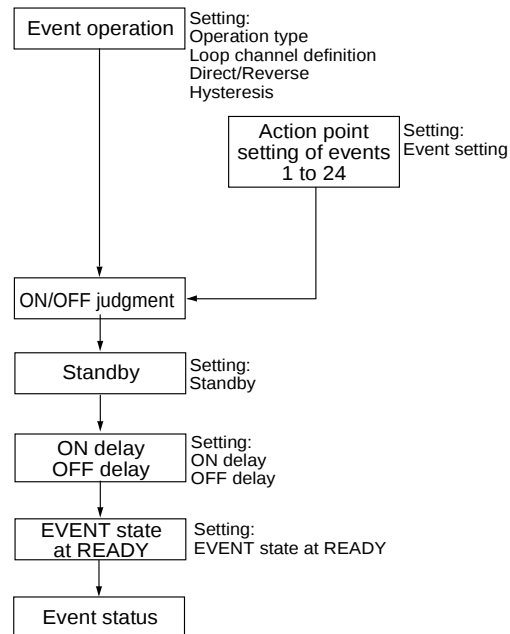




## Appendices

### ■ Event process block diagram

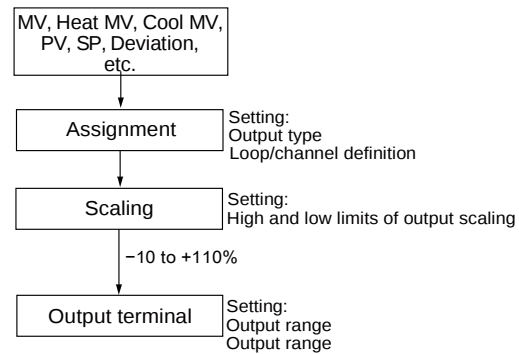
There are 24 groups of event processes. All groups use the same process. Settings are provided for each group.





## ■ Continuous output process block diagram

The following shows the analog current output and analog voltage output processes:

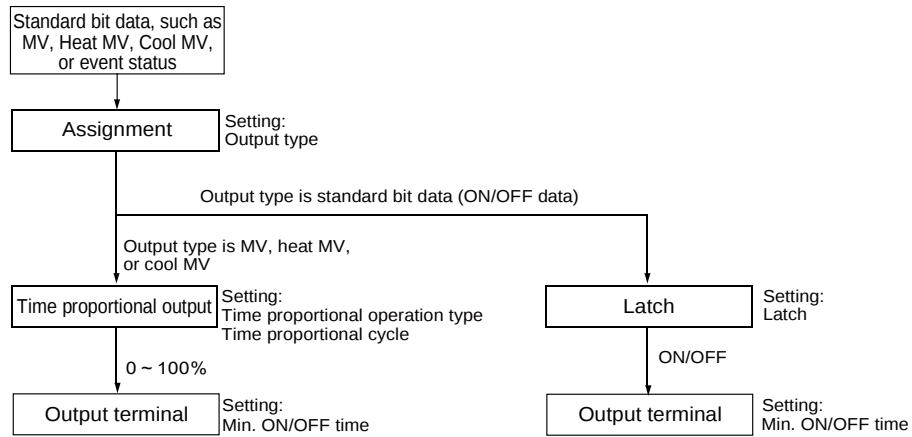




## Appendices

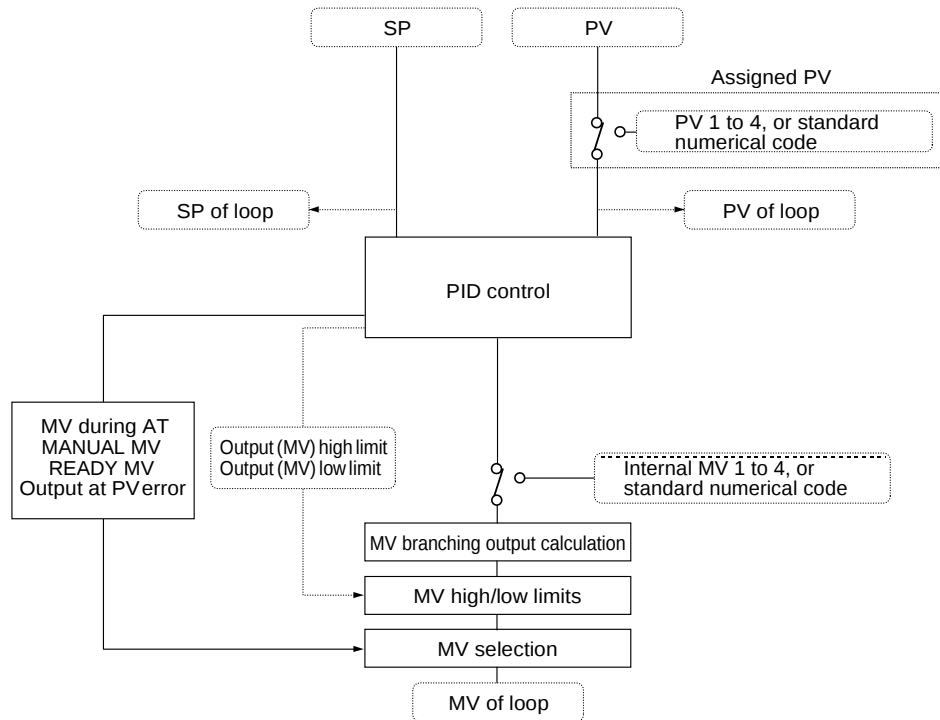
### ■ ON/OFF output process block diagram

The following shows the transistor output and digital output processes:





■ MV branching output process block diagram





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## Appendices

# Appendix - 2 Standard Bit Codes and Standard Numerical Codes

## ■ Standard bit codes

The range of the standard bit codes is 1024 to 2047.

Codes that do not appear in this table are undefined. Do not use such codes.

| Standard bit code | Meaning of standard bit code    | Standard bit code | Meaning of standard bit code                | Standard bit code | Meaning of standard bit code                 |
|-------------------|---------------------------------|-------------------|---------------------------------------------|-------------------|----------------------------------------------|
| 1024              | Always 0 (Off)                  | 1414              | User-defined bit 7                          | 1616              | Loop 1 LSP/RSP status                        |
| 1025              | Always 1 (On)                   | 1415              | User-defined bit 8                          | 1617              | Loop 2 LSP/RSP status                        |
| 1088              | Event 1                         | 1416              | User-defined bit 9                          | 1648              | Loop 1 SP ramp-up in progress                |
| 1089              | Event 2                         | 1417              | User-defined bit 10                         | 1649              | Loop 2 SP ramp-up in progress                |
| 1090              | Event 3                         | 1418              | User-defined bit 11                         | 1650              | Loop 3 SP ramp-up in progress                |
| 1091              | Event 4                         | 1419              | User-defined bit 12                         | 1651              | Loop 4 SP ramp-up in progress                |
| 1092              | Event 5                         | 1420              | User-defined bit 13                         | 1664              | Loop 1 SP ramp-down in progress              |
| 1093              | Event 6                         | 1421              | User-defined bit 14                         | 1665              | Loop 2 SP ramp-down in progress              |
| 1094              | Event 7                         | 1422              | User-defined bit 15                         | 1666              | Loop 3 SP ramp-down in progress              |
| 1095              | Event 8                         | 1423              | User-defined bit 16                         | 1667              | Loop 4 SP ramp-down in progress              |
| 1096              | Event 9                         | 1424              | User-defined bit 17                         | 1792              | Representative of all alarms                 |
| 1097              | Event 10                        | 1425              | User-defined bit 18                         | 1808              | AD1 fault (AL11)                             |
| 1098              | Event 11                        | 1426              | User-defined bit 19                         | 1809              | AD2 fault (AL12)                             |
| 1099              | Event 12                        | 1427              | User-defined bit 20                         | 1810              | AD3 fault (AL13)                             |
| 1100              | Event 13                        | 1428              | User-defined bit 21                         | 1811              | AD4 fault (AL14)                             |
| 1101              | Event 14                        | 1429              | User-defined bit 22                         | 1824              | PV1 high limit error (AL01)                  |
| 1102              | Event 15                        | 1430              | User-defined bit 23                         | 1825              | PV2 high limit error (AL03)                  |
| 1103              | Event 16                        | 1431              | User-defined bit 24                         | 1826              | PV3 high limit error (AL05)                  |
| 1104              | Event 17                        | 1432              | User-defined bit 25                         | 1827              | PV4 high limit error (AL07)                  |
| 1105              | Event 18                        | 1433              | User-defined bit 26                         | 1840              | PV1 low limit error (AL02)                   |
| 1106              | Event 19                        | 1434              | User-defined bit 27                         | 1841              | PV2 low limit error (AL04)                   |
| 1107              | Event 20                        | 1435              | User-defined bit 28                         | 1842              | PV3 low limit error (AL06)                   |
| 1108              | Event 21                        | 1436              | User-defined bit 29                         | 1843              | PV4 low limit error (AL08)                   |
| 1109              | Event 22                        | 1437              | User-defined bit 30                         | 1856              | CJ1 error (AL71)                             |
| 1110              | Event 23                        | 1438              | User-defined bit 31                         | 1857              | CJ2 error (AL72)                             |
| 1111              | Event 24                        | 1439              | User-defined bit 32                         | 1858              | CJ3 error (AL73)                             |
| 1120              | CT1 heater line break detection | 1440              | Results of logical operation 1              | 1859              | CJ4 error (AL74)                             |
| 1121              | CT2 heater line break detection | 1441              | Results of logical operation 2              | 1920              | Reception monitoring 1                       |
| 1122              | CT3 heater line break detection | 1442              | Results of logical operation 3              | 1921              | Reception monitoring 2                       |
| 1123              | CT4 heater line break detection | 1443              | Results of logical operation 4              | 1922              | Reception monitoring 3                       |
| 1124              | CT1 overcurrent detection       | 1444              | Results of logical operation 5              | 1923              | Reception monitoring 4                       |
| 1125              | CT2 overcurrent detection       | 1445              | Results of logical operation 6              | 1924              | Reception monitoring 5                       |
| 1126              | CT3 overcurrent detection       | 1446              | Results of logical operation 7              | 1925              | Reception monitoring 6                       |
| 1127              | CT4 overcurrent detection       | 1447              | Results of logical operation 8              | 1926              | Reception monitoring 7                       |
| 1128              | CT1 short-circuit detection     | 1448              | Results of logical operation 9              | 1927              | Reception monitoring 8                       |
| 1129              | CT2 short-circuit detection     | 1449              | Results of logical operation 10             | 1928              | Reception monitoring 9                       |
| 1130              | CT3 short-circuit detection     | 1450              | Results of logical operation 11             | 1929              | Reception monitoring 10                      |
| 1131              | CT4 short-circuit detection     | 1451              | Results of logical operation 12             | 1930              | Reception monitoring 11                      |
| 1152              | DI1 terminal status             | 1452              | Results of logical operation 13             | 1931              | Reception monitoring 12                      |
| 1153              | DI2 terminal status             | 1453              | Results of logical operation 14             | 1932              | Reception monitoring 13                      |
| 1154              | DI3 terminal status             | 1454              | Results of logical operation 15             | 1933              | Reception monitoring 14                      |
| 1155              | DI4 terminal status             | 1455              | Results of logical operation 16             | 1934              | Reception monitoring 15                      |
| 1280              | OUT1 terminal status            | 1545              | RS-485 status (normal reception of 1 frame) | 1935              | Reception monitoring 16                      |
| 1281              | OUT2 terminal status            | 1568              | Loop 1 RUN/READY status                     | 1952              | CT1 input error (AL25)                       |
| 1282              | OUT3 terminal status            | 1569              | Loop 2 RUN/READY status                     | 1953              | CT2 input error (AL26)                       |
| 1283              | OUT4 terminal status            | 1570              | Loop 3 RUN/READY status                     | 1954              | CT3 input error (AL27)                       |
| 1284              | DO1 terminal status             | 1571              | Loop 4 RUN/READY status                     | 1955              | CT4 input error (AL28)                       |
| 1285              | DO2 terminal status             | 1584              | Loop 1 Auto/Manual status                   | 1968              | Parameter error (AL94/AL97)                  |
| 1286              | DO3 terminal status             | 1585              | Loop 2 Auto/Manual status                   | 1969              | Adjustment data error (AL95/AL98)            |
| 1287              | DO4 terminal status             | 1586              | Loop 3 Auto/Manual status                   | 1970              | EEPROM not initialized (AL83)                |
| 1408              | User-defined bit 1              | 1587              | Loop 4 Auto/Manual status                   | 1972              | ROM error (AL99)                             |
| 1409              | User-defined bit 2              | 1600              | Loop 1 AT pause/AT status                   | 1974              | EEPROM R error (AL86)                        |
| 1410              | User-defined bit 3              | 1601              | Loop 2 AT pause/AT status                   | 1980              | Transmission time-out between modules (AL32) |
| 1411              | User-defined bit 4              | 1602              | Loop 3 AT pause/AT status                   | 1981              | Writing to EEPROM                            |
| 1412              | User-defined bit 5              | 1603              | Loop 4 AT pause/AT status                   |                   |                                              |
| 1413              | User-defined bit 6              |                   |                                             |                   |                                              |



## ■ Standard numerical codes

The range of the standard numerical codes is 2048 to 3071.

Codes that do not appear in this table are undefined. Do not use such codes.

| Standard numerical code | Meaning of standard numerical code |
|-------------------------|------------------------------------|
| 2111                    | User defined number 1              |
| 2112                    | User defined number 2              |
| 2113                    | User defined number 3              |
| 2114                    | User defined number 4              |
| 2115                    | User defined number 5              |
| 2116                    | User defined number 6              |
| 2117                    | User defined number 7              |
| 2118                    | User defined number 8              |
| 2119                    | User defined number 9              |
| 2120                    | User defined number 10             |
| 2121                    | User defined number 11             |
| 2122                    | User defined number 12             |
| 2123                    | User defined number 13             |
| 2124                    | User defined number 14             |
| 2125                    | User defined number 15             |
| 2126                    | User defined number 16             |
| 2304                    | PV1                                |
| 2305                    | PV2                                |
| 2306                    | PV3                                |
| 2307                    | PV4                                |
| 2312                    | AI1                                |
| 2313                    | AI2                                |
| 2314                    | AI3                                |
| 2315                    | AI4                                |
| 2320                    | Loop 1 PV                          |
| 2321                    | Loop 2 PV                          |
| 2322                    | Loop 3 PV                          |
| 2323                    | Loop 4 PV                          |
| 2336                    | Loop 1 SP (in use)                 |
| 2337                    | Loop 2 SP (in use)                 |
| 2338                    | Loop 3 SP (in use)                 |
| 2339                    | Loop 4 SP (in use)                 |
| 2352                    | Loop 1 SP (final value)            |
| 2353                    | Loop 2 SP (final value)            |
| 2354                    | Loop 3 SP (final value)            |
| 2355                    | Loop 4 SP (final value)            |
| 2416                    | Loop 1 MV                          |
| 2417                    | Loop 2 MV                          |
| 2418                    | Loop 3 MV                          |
| 2419                    | Loop 4 MV                          |

| Standard numerical code | Meaning of standard numerical code   |
|-------------------------|--------------------------------------|
| 2432                    | Loop 1 MV for heating                |
| 2433                    | Loop 2 MV for heating                |
| 2448                    | Loop 1 MV for cooling                |
| 2449                    | Loop 2 MV for cooling                |
| 2496                    | CT1 measured current when output ON  |
| 2497                    | CT2 measured current when output ON  |
| 2498                    | CT3 measured current when output ON  |
| 2499                    | CT4 measured current when output ON  |
| 2512                    | CT1 measured current when output OFF |
| 2513                    | CT2 measured current when output OFF |
| 2514                    | CT3 measured current when output OFF |
| 2515                    | CT4 measured current when output OFF |
| 2528                    | Loop 1 deviation (PV - SP)           |
| 2529                    | Loop 2 deviation (PV - SP)           |
| 2530                    | Loop 3 deviation (PV - SP)           |
| 2531                    | Loop 4 deviation (PV - SP)           |
| 2656                    | Event 1 timer remaining time         |
| 2657                    | Event 2 timer remaining time         |
| 2658                    | Event 3 timer remaining time         |
| 2659                    | Event 4 timer remaining time         |
| 2660                    | Event 5 timer remaining time         |
| 2661                    | Event 6 timer remaining time         |
| 2662                    | Event 7 timer remaining time         |
| 2663                    | Event 8 timer remaining time         |
| 2664                    | Event 9 timer remaining time         |
| 2665                    | Event 10 timer remaining time        |
| 2666                    | Event 11 timer remaining time        |
| 2667                    | Event 12 timer remaining time        |
| 2668                    | Event 13 timer remaining time        |
| 2669                    | Event 14 timer remaining time        |
| 2670                    | Event 15 timer remaining time        |
| 2671                    | Event 16 timer remaining time        |
| 2672                    | Event 17 timer remaining time        |
| 2673                    | Event 18 timer remaining time        |
| 2674                    | Event 19 timer remaining time        |
| 2675                    | Event 20 timer remaining time        |
| 2676                    | Event 21 timer remaining time        |
| 2677                    | Event 22 timer remaining time        |
| 2678                    | Event 23 timer remaining time        |
| 2679                    | Event 24 timer remaining time        |

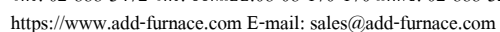


## Appendices

# Appendix - 3 Abbreviations and Terms

Abbreviations are used in the descriptions, tables, and illustrations of this manual. The main abbreviations are described below.

|                  |                                                                                                                                                                                                                                                                                                   |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AT               | : Auto Tuning. The PID is automatically adjusted to the optimal numeric value.                                                                                                                                                                                                                    |
| DI               | : Digital input                                                                                                                                                                                                                                                                                   |
| DO               | : Digital output (control output of relay and voltage pulse, and event output)                                                                                                                                                                                                                    |
| OL               | : Output Low. Output low limit, a minimum limit level for the output, is set.                                                                                                                                                                                                                     |
| OH               | : Output High. Output high limit, a maximum limit level for the output, is set.                                                                                                                                                                                                                   |
| PID              | : PID has the following meanings. P (Proportioning). Proportional operation.<br>I (Integral). Integral operation or reset operation.<br>D (Derivative). Derivative operation or rate operation.                                                                                                   |
| PV               | : Process Variable. Measured values of the thermocouple, RTD, and linear input.                                                                                                                                                                                                                   |
| SP               | : Set value of Set Point. For example, a set point for controlling the temperature.                                                                                                                                                                                                               |
| LSP              | : Local Set Point. A set value stored in the controller.                                                                                                                                                                                                                                          |
| RSP              | : Remote Set Point. A set value given from the outside by an analog signal.                                                                                                                                                                                                                       |
| MV               | : Manipulated Variable. The output of the instrument to be controlled. This output shows the PID control results.                                                                                                                                                                                 |
| Setup            | : The selection of settings to suit the operations of a device that incorporates operating conditions, such as control action.                                                                                                                                                                    |
| Hysteresis       | : An operation gap during event operation. The difference between the value at which the event OFF is changed to ON and the value at which the event ON is changed to OFF. Hysteresis is shown as “HYS” in the Figs. in this manual.                                                              |
| EV               | : Event. EV shows the set value of the event function. The event function is the ON/OFF signal function, which is output depending on the control status. EV with numeric values added, like EV1 or EV2, expresses an event function. The numeric value indicates the corresponding event number. |
| U                | : An abbreviation of “Unit”. This shows the minimum unit of the setting. When the number of digits below the decimal point of the set value is “0”, “1”, “2”, “3”, and “4”,<br>1 U = 1, 1 U = 0.1, 1 U = 0.01, 1 U = 0.001, and 1 U = 0.0001, respectively.                                       |
| Heat/cool output | : Control output, which is output when the heat output is related to the cool output within one controller.                                                                                                                                                                                       |
| AUTO             | : An auto operation status where the PID control result is used as MV.                                                                                                                                                                                                                            |
| MANUAL           | : A manual operation status where a value manually set by the operator is used as MV.                                                                                                                                                                                                             |
| READY            | : A standby status, in which the control calculation is stopped.                                                                                                                                                                                                                                  |
| RUN              | : A status in which the control calculation is executed.                                                                                                                                                                                                                                          |



| Printed date | Manual Number | Edition     | Revised pages | Description      |
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|              |               |             |               |                  |



## Terms and Conditions

We would like to express our appreciation for your purchase and use of Yamatake products.

You are required to acknowledge and agree upon the following terms and conditions for your purchase of Yamatake products (field instruments, control valves, and control products), unless otherwise stated in any separate document, including, without limitation, estimation sheets, written agreements, catalogs, specifications and instruction manuals.

### 1. Warranty period and warranty scope

#### 1.1 Warranty period

Yamatake products shall be warranted for one (1) year from the date of your purchase of the said products or the delivery of the said products to a place designated by you.

#### 1.2 Warranty scope

In the event that Yamatake product has any failure attributable to Yamatake during the aforementioned warranty period, Yamatake shall, without charge, deliver a replacement for the said product to the place where you purchased, or repair the said product and deliver it to the aforementioned place.

Notwithstanding the foregoing, any failure falling under one of the following shall not be covered under this warranty:

- (1) Failure caused by your improper use of Yamatake product (noncompliance with conditions, environment of use, precautions, etc. set forth in catalogs, specifications, instruction manuals, etc.);
- (2) Failure caused for other reasons than Yamatake product;
- (3) Failure caused by any modification or repair made by any person other than Yamatake or Yamatake's subcontractors;
- (4) Failure caused by your use of Yamatake product in a manner not conforming to the intended usage of that product;
- (5) Failure that the state-of-the-art at the time of Yamatake's shipment did not allow Yamatake to predict; or
- (6) Failure that arose from any reason not attributable to Yamatake, including, without limitation, acts of God, disasters, and actions taken by a third party.

Please note that the term "warranty" as used herein refers to equipment-only-warranty, and Yamatake shall not be liable for any damages, including direct, indirect, special, incidental or consequential damages in connection with or arising out of Yamatake products.

### 2. Ascertainment of suitability

You are required to ascertain the suitability of Yamatake product in case of your use of the same with your machinery, equipment, etc. (hereinafter referred to as "Equipment") on your own responsibility, taking the following matters into consideration:

- (1) Regulations and standards or laws that your Equipment is to comply with.
- (2) Examples of application described in any documents provided by Yamatake are for your reference purpose only, and you are required to check the functions and safety of your Equipment prior to your use.
- (3) Measures to be taken to secure the required level of the reliability and safety of your Equipment in your use Although Yamatake is constantly making efforts to improve the quality and reliability of Yamatake products, there exists a possibility that parts and machinery may break down.  
You are required to provide your Equipment with fool-proof design, fail-safe design, anti-flame propagation design, safety design, or the like so that the said Equipment may satisfy the level of the reliability and safety required in your use, whereby preventing any occurrence of physical injuries, fires, significant damage, and so forth.

### 3. Precautions and restrictions on application

Yamatake products other than those explicitly specified as applicable (e.g. Yamatake Limit Switch For Nuclear Energy) shall not be used in a nuclear energy controlled area (radiation controlled area).

Any Yamatake products shall not be used for/with medical equipment. In addition,

you are required to conduct a consultation with our sales representative and understand detail specifications, cautions for operation, and so forth by reference to catalogs, specifications, instruction manual, etc. in case that you intend to use Yamatake product for any purposes specified in (1) through (6) below.

Moreover, you are required to provide your Equipment with fool-proof design, fail-safe design, anti-flame propagation design and other designs of protection/safety circuit on your own responsibility to ensure the reliability and safety, whereby preventing problems caused by failure or nonconformity.

- (1) For use under such conditions or in such environments as not stated in technical documents, including catalogs, specification, and instruction manuals
- (2) For use of specific purposes, such as:
  - \* Nuclear energy/radiation related facilities  
[For use outside nuclear energy controlled areas][For use of Yamatake Limit Switch For Nuclear Energy]
  - \* Machinery or equipment for space/sea bottom
  - \* Transportation equipment  
[Railway, aircraft, vessels, vehicle equipment, etc.]
  - \* Antidisaster/crime-prevention equipment
  - \* Burning appliances
  - \* Electrothermal equipment
  - \* Amusement facilities
- (3) Supply systems such as electricity/gas/water supply systems, large-scale communication systems, and traffic/air traffic control systems requiring high reliability
- (4) Facilities that are to comply with regulations of governmental/public agencies or specific industries
- (5) Machinery or equipment that may affect human lives, human bodies or properties
- (6) Other machinery or equipment equivalent to those set forth in items (1) to (5) above which require high reliability and safety



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4. Precautions against long-term use

Use of Yamatake products, including switches, which contain electronic components, over a prolonged period may degrade insulation or increase contact-resistance and may result in heat generation or any other similar problem causing such product or switch to develop safety hazards such as smoking, ignition, and electrification. Although acceleration of the above situation varies depending on the conditions or environment of use of the products, you are required not to use any Yamatake products for a period exceeding ten (10) years unless otherwise stated in specifications or instruction manuals.

5. Recommendation for renewal

Mechanical components, such as relays and switches, used for Yamatake products will reach the end of their life due to wear by repetitious open/close operations.

In addition, electronic components such as electrolytic capacitors will reach the end of their life due to aged deterioration based on the conditions or environment in which such electronic components are used.

Although acceleration of the above situation varies depending on the conditions or environment of use, the number of open/close operations of relays, etc. as prescribed in specifications or instruction manuals, or depending on the design margin of your machine or equipment, you are required to renew any Yamatake products every 5 to 10 years unless otherwise specified in specifications or instruction manuals.

Field instruments (sensors such as pressure/flow/level sensors, regulating valves, etc.) will reach the end of their life due to aged deterioration of parts.

For those parts that will reach the end of their life due to aged deterioration, recommended replacement cycles are prescribed. You are required to replace parts based on such recommended replacement cycles.

6. Other precautions

Prior to your use of Yamatake products, you are required to understand and comply with specifications (e.g., conditions and environment of use), precautions, warnings/cautions/notices as set forth in the technical documents prepared for individual Yamatake products, such as catalogs, specifications, and instruction manuals to ensure the quality, reliability, and safety of those products.

7. Changes to specifications

Please note that the descriptions contained in any documents provided by Yamatake are subject to change without notice for improvement or for any other reason.

For inquires or information on specifications as you may need to check, please contact our branch offices or sales offices, or your local sales agents.

8. Discontinuance of the supply of products/parts

Please note that the production of any Yamatake product may be discontinued without notice.

For repairable products, we will, in principle, undertake repairs for five (5) years after the discontinuance of those products. In some cases, however, we cannot undertake such repairs for reasons, such as the absence of repair parts.

For field instruments, we may not be able to undertake parts replacement for similar reasons.



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