บริษัท เอดีดี เฟอร์เนส จำกัด
ADD FURNACE CO.,LTD.
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Not for use in Japan

No. CP-SS-1767E

azbil

Specification

DMC10

Distributed Multi-Channel Controller

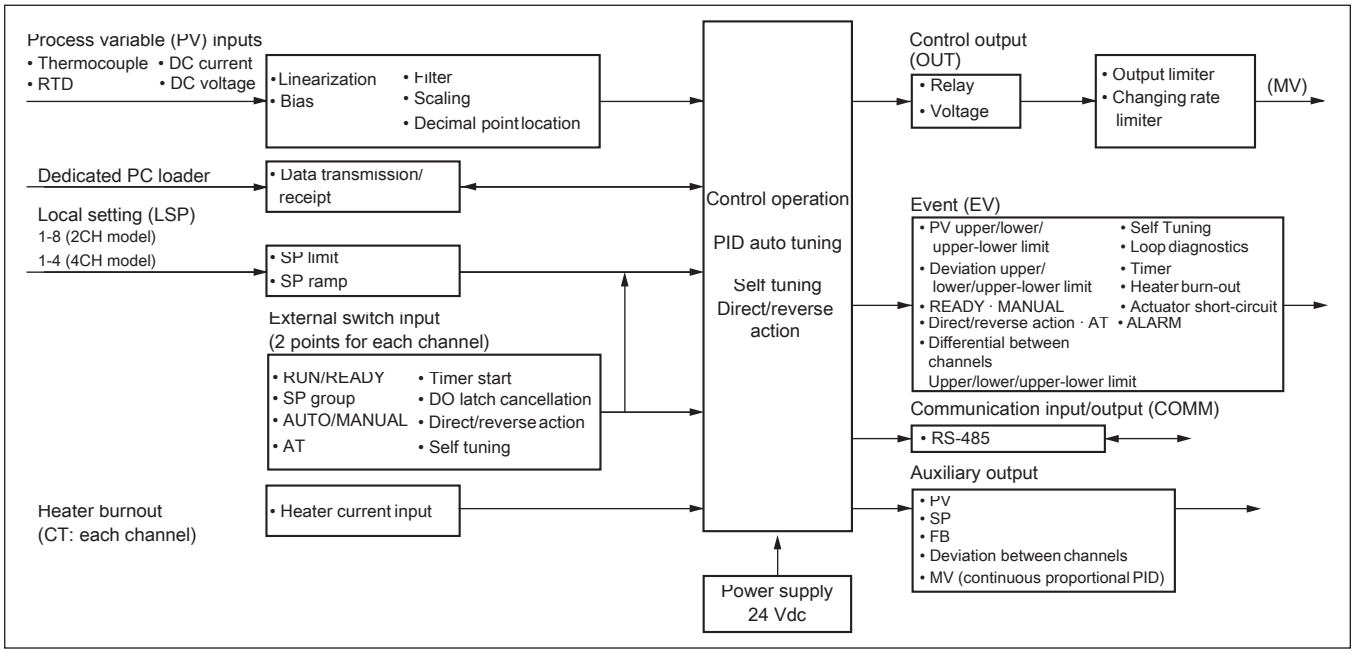
Overview

Distributed Multi-channel controller DMC10 is a module type 2 or 4-channel compact digital controller.
Inputs are full multiple, supporting thermocouple, RTD, DC voltage and DC current inputs.
Control mode is time proportional (ON/OFF) PID control.
Control outputs are relay output and voltage pulse output.
Continuous PID control is attained by an auxiliary output, as an optional function.
A dedicated PC loader configures setup, control parameters and setpoint data.

Features

- Accuracy of ±0.5 %FS
- Sampling cycle of 500 ms
- Full multiple input function is equipped, supporting various analog input sensors.
- Communication function (RS-485) is provided as standard. Communication performance is enhanced by supporting 19200 bps.
- 30 × 100 × 110 mm compact size
- Two event outputs are available for each channel. “AND/OR” logic is used as an event between channels by the internal event function. (Under development)
- Current transformer (CT) input is provided for each channel.
- Easy setting by a personal computer loader, also enabling monitoring of trial operation.
- Connector type and terminal type models available for the I/O wiring unit
- A side-face connector is used to connect modules, therefore communication and power wiring is not required.
- “Quick-FITTER” Control, a high-speed recovery control function is equipped as standard. This function enables the quick recovery of setpoint temperature and over-shoot suppression at the occurrence of disturbances.
- CE approval obtained

Basic function block diagram



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Specifications

Model No.		DMC10_2T	DMC10_2C	DMC10_4T	DMC10_4C
No. of control channels		2	2	4	4
Connection method for external device		Terminal plate	Connector	Terminal plate	Connector
PV input	Input type	Thermocouple, RTD, DC voltage, DC current (see table 1)			
	Sampling cycle	500 ms			
	Indication accuracy	DMC10S		DMC10D	
		±0.5 %FS ±1 digit The negative area of the thermocouple ±1.0 %FS ±1 digit For the thermocouple B Under 260 °C ±5.0 %FS ±1U 260 to 800 °C ±2.0 %FS ±1U 800 to 1800 °C ±1.0 %FS ±1U		±0.3 %FS +/-1 digit The negative area of the thermocouple ±0.6 %FS ±1 digit For the thermocouple B Under 260 °C ±5.0 %FS ±1U 260 to 800 °C ±1.0 %FS ±1U 800 to 1800 °C ±0.5 %FS ±1U	
	Cold junction compensation accuracy	Included in PV readout accuracy			
	Input bias current	T/C input: 0.2 µA max. (a current flow from + terminal) RTD input: 1 mA (under operating conditions) (a current flow from A-terminal) DC voltage input: 5 µA max. (a current flow from + terminal)			
	Allowable wiring	• Thermocouple: 250 Ω max. (total of all leads) resistance • RTD (range 21, 24, 27, 28): 80 Ω max. (per lead) • RTD (range 22, 23, 25, 26, 29, 30, 31, 32, 33, 34): 10 Ω max. (per lead) • Linear: 250 Ω max. (total of all leads)			
	Influence of wiring	• Thermocouple: 0.2 µV/Ω max. • Linear: 5 µV/Ω max.			
	Input impedance	120 Ω max. (4 to 20 mA input range)			
	Action at burnout	T/C: Upscale RTD: (refer to details on the right) Voltage input: Upscale Current input: Downscale		Sensor element broken: Upscale “A” wire broken: Upscale “B” wire broken: Downscale “C” wire broken: Downscale 2 to 3 wires broken: Downscale A-B wires shorted: Downscale A-C wires shorted: Downscale	
Setting, indication	Setting method	By dedicated PC loader (SLP-D10J20) or communication program			
	No. of set points	8 points max. (2CH model) or 4 points max. (4CH model) for each channel			
	Memory storage	Non-volatile semiconductor memory			
	Device address setting	Front rotary switch			
	Front indication LED	1 point, operation contents settable (lights at power ON at factory shipment)			
Control output	Type of control output	Relay output		Voltage pulse output	
	Control action	Time proportional PID or ON/OFF control		Time proportional PID or ON/OFF control	
	No. of PID groups	1 group/channel		1 group/channel	
	Output rating	Contact rating: 3 A (30 Vdc/250 Vac, resistive load) Contact type: 1a Minimum switching voltage: 5 V Minimum switching current: 100 mA Contact life: 100,000 cycles (electrical)		Driving system: Voltage Opening terminal voltage: 13 Vdc ±10 % Internal resistance: 150 Ω ±5 %	
	Time proportional cycle	5 to 120 s		5 to 120 s	
	Proportional band (P)	0.1 to 999.9 %		0.1 to 999.9 %	
	Integral time (I)	0 to 3600 s		0 to 3600 s	
	Derivative time (D)	0 to 1200 s		0 to 1200 s	
	Differential gap (ON/OFF control)	1 to 10000 units		1 to 10000 units	
	Output limiter upper limit	Output limiter lower limit to 100.0 %		Output limiter lower limit to 100.0 %	
	Output limiter lower limit	0.0 to output limiter high limit		0.0 to output limiter high limit	
	Control action changeover	Direct/reverse		Direct/reverse	
	Heat/cool dead zone (DMC10D2 only)	–100.0 to +100.0 %			
	Position proportional dead zone (DMC10D only)	0.1 to 25.0 %			
Event output	No. of outputs	4 (model with event output) 4 (with event output module DMC10E) Event action can be assigned to control output (to be developed) * No. of outputs is 8 max.			
	No. of set points	8 (total of external outputs, plus outputs to internal bus)			

Event output	**Event output types**	Upper PV, Lower PV, Upper & Lower PV, Upper DEV, Lower DEV, Upper & Lower DEV, Upper DEV between channels, Lower DEV between channels, Upper & Lower DEV between channels, READY, MANUAL, Direct-Reverse Op, AT, Self-tuning, Loop diagnostics, Timer, Heater Line break/over-current, Heater short-circuit, Individual channel PV alarm, Individual channel alarm	
	Differential gap	0 to 10000 units	
	Optional functions	Stand-by sequence, latch, delay, AND/OR output (to be developed)	
	Output action	ON/OFF	
	Output rating	250 Vac, 1 A or 30 Vdc, 1 A	
	Contact type	Relay output, 1 A	
	Contact life	100,000 cycles (electrical)	
	Minimum switching voltage	5 V	
	Minimum switching current	10 mA	
External contact input	**No. of input points**	4 (model with external contact input) 4 (input from internal bus)	
	Operation types	SP selection, RUN/READY changeover, AUTO/MANUAL changeover auto-tuning start/stop, self-tuning operation timer event start trigger, event output latch cancellation	
	Addition function	• Direct/reverse • Logic OR/AND	
	Input type	Dry contact or open collector	
	Opening terminal voltage	13 Vdc ±10 %	
	Allowable contact resistance at ON time	250 Ω max. (under operating conditions)	
	Allowable contact resistance at OFF time	100 kΩ min. (under operating conditions)	
	Allowable residual voltage at ON time	2 V max. (under operating conditions)	
	Allowable leak current at OFF time	100 μA max. (under operating conditions)	
	Minimum hold time of ON detection	100 ms	
	Insulation	(Refer to isolation drawing)	
Current transformer input	**No. of inputs**	2	
	Measurement range	0.4 to 50.0 A	
	Effective setting range	0.4 to 50.0 A	
	Current value detection accuracy	±5 %FS ±1 digit	
Auxiliary output (AUX)	**Output type**	0 to 20 mAdc or 4 to 20 mAdc, Selectable in the setup	
	Allowable load resistance	510 Ω max.	
	Output resolution	1/10000 min.	
	Output content	PV, SP, MV, inter-channel	
	Output updating cycle	500 ms	
	Output accuracy	DMC10S: ±0.5 %FS (under reference conditions) DMC10D: ±0.3 %FS (under reference conditions) Note: however, that 1mAdc or less is outside the guaranteed accuracy.	
Communications	**Communication system**	Communication protocol	RS-485 (3-wire type)
		Network	Multi-drop, (slave-station function only provided)
		Data flow	Half duplex
		Synchronization	Start/stop synchronization
		Maximum No of connectable units	16 units including host computer
	Interface system	Transmission system	Balanced (differential)
		Data line	Bit serial
		Signal lines	Data transmission and receipt: 3 wires
		Transmission speed	2400, 4800, 9600, 19200 bps selectable
		Communication distance	500m max.
		Communication response waiting time	1, 10, 100, 200 ms selectable
		Others	RS-485 compliance (3-wire)
	Message characters	Protocol	CPL (Azbil Corporation's standard) MODBUS (ASCII format) MODBUS (RTU format)
		Format	· 8 bit length, even parity and 1 stop bit · 8 bit length, no parity and 2 stop bits

General specifications	**Memory back-up**	Non-volatile semiconductor memory	
	Rated power voltage	24 Vdc	
	Allowable power voltage	24 Vdc ±10 %	
	Power consumption	DMC10S: 5 W max. (under standard conditions) DMC10E: 3 W max. (under standard conditions)	
	Insulation resistance	20MΩ min. between power terminal and secondary terminal (by 500 Vdc megger)	
	Dielectric strength	500Vac, 1 min between power terminal and secondary terminal/case	
	Standard conditions	Ambient temperature	23 ±2 °C
		Ambient humidity	60 ±5 %RH
		Vibration resistance	0 m/s^2
		Shock resistance	0 m/s^2
		Mounting angle	(Reference plane) ±3 °
	Operating conditions	Ambient temperature	0 to 50 °C
		Ambient humidity	10 to 90 %RH (no condensation allowed)
		Vibration resistance	0 to 2 m/s^2 (10 to 60 Hz, 2 hr each in X, Y and Z directions)
		Shock resistance	0 to 10 m/s^2 (3 times in each direction when panel mounted)
		Mounting angle	(Reference plane) ±10 °
	Transport/storage conditions	Ambient temperature	-20 to +70 °C
		Ambient humidity	10 to 90 %RH (no condensation allowed)
		Vibration resistance	0 to 5 m/s^2 (10 to 60 Hz, 2 hr each in X, Y and Z directions)
		Shock resistance	0 to 392 m/s^2 (3 times in each direction when screw mounted)
			0 to 196 m/s^2 (3 times in each direction when DIN rail mounted)
		Package drop test	Drop height: 60 cm (1 angle, 3 edges, 6 planes) free fall
	Case material	Polycarbonate resin	
	Mounting	DIN rail or screw mount	
	Environment for use	Avoid rusting gases and accumulated dust	
	Accessories	User's manual	
	Weight	200 g	

● Unused channel range table

When there is an unused channel, control output and PV alarm output turn OFF by setting to the range Nos. in the following table: PV input processing to unused channels is not required.

Range No.	Specifications
00	PV value: Fixed at 0 °C(°F), control output: OFF, PV alarm: OFF

● Thermocouple PV input type/range table

Range No.	Sensor symbol	Range (Celsius)	Range (Fahrenheit)	Min. resolution (Celsius)	Min. resolution (Fahrenheit)
01	K:CA	0 to 1200 ℃	0 to 2200 °F	1	1
02	K:CA	0 to 600 ℃	0 to 1100 °F	1 *1	1
03	K:CA	0 to 400 ℃	0 to 700 °F	1 *1	1
04	K:CA	-200 to +400 ℃	-300 to +700 °F	1 *1	1
05	J:IC	0 to 800 ℃	0 to 1500 °F	1	1
06	J:IC	-200 to +400 ℃	-300 to +700 °F	1 *1	1
07	E:CRC	0 to 600 ℃	0 to 1100 °F	1	1
08	T:CC	-200 to +400 ℃	-300 to +700 °F	1 *1	1
09	DINU	-200 to +400 ℃	-300 to +700 °F	1 *1	1
10	DINL	0 to 800 ℃	0 to 1500 °F	1	1
11	R	0 to 1600 ℃	0 to 3000 °F	1	1
12	S	0 to 1600 ℃	0 to 3000 °F	1	1
13	PL II	0 to 1200 ℃	—	1	—
14	B	0 to 1800 ℃	—	1	—

*1 The minimum resolution of these ranges is 1, 0.1 °C only on the advanced model DMC10D.

● RTD PV input type/range table

Range No.	Sensor symbol	Range (Celsius)	Range (Fahrenheit)	Min. resolution (Celsius)	Min. resolution (Fahrenheit)
21	Pt100	-200 to +500 ℃	-300 to +700 °F	1	1
22	Pt100	0 to 200 ℃	0 to 300 °F	1, 0.1	1
23	Pt100	-50 to +100 ℃	-50 to +150 °F	1, 0.1	1
24	JPt100	-200 to +500 ℃	-300 to +700 °F	1	1
25	JPt100	0 to 200 ℃	0 to 300 °F	1, 0.1	1
26	JPt100	-50 to +100 ℃	-50 to +150 °F	1, 0.1	1
27	Pt100	-100 to +300 ℃	—	1	—
28	JPt100	-100 to +300 ℃	—	1	—
29	Pt100	-50 to +150 ℃	—	1, 0.1	—
30	JPt100	-50 to +150 ℃	—	1, 0.1	—
31	Pt100	-75 to +175 ℃	—	1, 0.1	—
32	JPt100	-75 to +175 ℃	—	1, 0.1	—
33	Pt100	-100 to +200 ℃	—	1, 0.1	—
34	JPt100	-100 to +200 ℃	—	1, 0.1	—

● Linear input PV input type/range table

Range No.	Sensor symbol	Input range	Range	Min. resolution
41	4-20 mA	4 to 20 mA	-2000 to +10000	1, 0.1, 0.01, 0.001
42	1-5V	1 to 5 V	-2000 to +10000	1, 0.1, 0.01, 0.001
43	0-5V	0 to 5 V	-2000 to +10000	1, 0.1, 0.01, 0.001
44	0-1V	0 to 1 V	-2000 to +10000	1, 0.1, 0.01, 0.001

■ Standard of the sensor

Thermocouple K, J, E, T, R, S, B: JIS C 1602-1995
DIN U, DIN L: DIN43710-1985
RTD Pt100: JIS C 1604-1997
JPt100: JIS C 1604-1989

Event output module specifications DMC10E

Features

- The number of event outputs can be added in combination with the DMC10.
- One event module can be connected to a side-connection gang-mounted group.
- By adding an event output module, this unit can respond to a wide variety of temperature control application requirements.

Contents	Specifications
No. of inputs	4
Output action	ON/OFF
Contact type	Relay output 1a × 2 points, 1c × 2 points
Output rating	250 Vac, 1 A or 30 Vdc, 1 A
Contact life	100,000 cycles (electrical)
Minimum switching voltage	5 V
Minimum switching current	10 mA
Operation types	Upper PV, Lower PV, Upper & Lower PV, Upper DEV, Lower DEV, Upper & Lower DEV, Upper DEV between channels, Lower DEV between channels, Upper & Lower DEV between channels, READY, MANUAL, Direct-Reverse Op, AT, Self-tuning, Loop diagnostics, Timer, Heater Line break/over-current, Heater short-circuit, Individual channel PV alarm, Individual channel alarm
Differential gap	0 to 10000 units
Optional function	Stand-by sequence, latch, delay, AND/OR output (to be developed)
Setting method	Assign the internal bus output of the DMC10S, DMC10D
Mounting method	Connectable by a side connector
No. of connectable units	Up to one unit per group can be connect by a side-connector DMC10S, DMC10D : DMC10E=N : 1
Power voltage	24 Vdc ±10 %
Power consumption	3 W

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Model selection guide

■ Standard model

● 2-channel type

I	II	III	IV	V	VI	VII	VIII

Example: DMC10S2TR0100

I	II	III	IV	V	VI	VII	VIII	Description
Basic model No.	Type	No. of channels	Wiring method	Control output	Options	Additional processing 1	Additional processing 2	
DMC10								Multi-channel controller
	S							Standard function
		2						2 channels
			T					Terminal wiring
			C					Connector wiring
				R				Relay output
				V				Voltage pulse output
					01			2 CT inputs, 4 event relay outputs
					02			2 CT inputs, 4 external switch inputs
					03			2 AUX outputs, 4 event relay outputs
					04			2 AUX outputs, 4 external switch inputs
						0		None
						D		Inspection certificate provided
						Y		Complying with traceability certification
							0	CE marking
							A	CE marking, cUL

● 4-channel type

I	II	III	IV	V	VI	VII	VIII

Example: DMC10S4CR0000

I	II	III	IV	V	VI	VII	VIII	Description
Basic model No.	Type	No. of channels	Wiring method	Control output	Options	Additional processing 1	Additional processing 2	
DMC10								Multi-channel controller
	S							Standard function
		4						4 channels
			T					Terminal wiring
			C					Connector wiring
				R				Relay output
				V				Voltage pulse output
					00			None
						0		None
						D		Inspection certificate provided
						Y		Complying with traceability certification
							0	CE marking
							A	CE marking, cUL

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■ Advanced function model

● 2-channel type

I	II	III	IV	V	VI	VII	VIII

Example: DMC10D2TR0100

I	II	III	IV	V	VI	VII	VIII	Description
Basic model No.	Type	No. of channels	Wiring method	Control output	Options	Additional processing 1	Additional processing 2	
DMC10								Multi-channel controller
	D							Advanced function model
		2						2 channels
			T					Terminal wiring
			C					Connector wiring
				R				Relay output
				V				Voltage pulse output
					01			2 CT inputs, 4 event relay outputs
					02			2 CT inputs, 4 external switch inputs
					03			2 AUX outputs, 4 event relay outputs
					04			2 AUX outputs, 4 external switch inputs
					05			2 CT inputs, 2 event relay outputs, 2 event voltage outputs
					06			2 CT inputs, 2 external switch inputs, 2 event voltage outputs
						0		None
						D		Inspection certificate provided
						Y		Complying with traceability certification
							0	CE marking
							A	CE marking, cUL

● 4-channel type

I	II	III	IV	V	VI	VII	VIII

Example: DMC10D4CR0000

I	II	III	IV	V	VI	VII	VIII	Description
Basic model No.	Type	No. of channels	Wiring method	Control output	Options	Additional processing 1	Additional processing 2	
DMC10								Multi-channel controller
	D							Advanced function model
		4						4 channels
			T					Terminal wiring
			C					Connector wiring
				R				Relay output
				V				Voltage pulse output
					00			None
						0		None
						D		Inspection certificate provided
						Y		Complying with traceability certification
							0	CE marking
							A	CE marking, cUL

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<Heat/cool model choice method>

In the heat/cool control, it is necessary to set up the outputs of each loop. The settings vary according to the model. There is no heat/cool model among the 4-channel models.
The relationship between the settings and the output specifications is shown below.
The settings shown below become effective only after collectively being written by the loader.

● Heat/cool (2-channel model)

Operating terminal type	CH1 output port	CH2 output port	Available models	Remarks
Heat: Relay	OUT1	OUT2	• DMC10D2_R01__ • DMC10D2_R03__	-
Cool: Relay	EV3	EV4		
Heat: Voltage	OUT1	OUT2	• DMC10D2_V01__ • DMC10D2_V03__	-
Cool: Relay	EV3	EV4		
Heat: Relay	EV3	EV4	• DMC10D2_V01__ • DMC10D2_V03__	-
Cool: Voltage	OUT1	OUT2		
Heat: Voltage	EV3	EV4	• DMC10D2_R05__ • DMC10D2_R06__	-
Cool: Relay	OUT1	OUT2		
Heat: Relay	OUT1	OUT2	• DMC10D2_R05__ • DMC10D2_R05__	-
Cool: Voltage	EV3	EV4		
Heat: Voltage	OUT1	OUT2	• DMC10D2_V05__ • DMC10D2_V06__	-
Cool: Voltage	EV3	EV4		
Heat: Relay	OUT1	OUT2	• DMC10D2_R03__ • DMC10D2_R04__	-
Cool: Current	AUX1	AUX2		
Heat: Current	AUX1	AUX2	• DMC10D2_R03__ • DMC10D2_R04__	-
Cool: Relay	OUT1	OUT2		
Heat: Voltage	OUT1	OUT2	• DMC10D2_V03__ • DMC10D2_V04__	-
Cool: Current	AUX1	AUX2		
Heat: Current	AUX1	AUX2	• DMC10D2_V03__ • DMC10D2_V04__	-
Cool: Voltage	OUT1	OUT2		
Heat: Current	AUX1	–	• DMC10D2_X03__ • DMC10D2_X04__	One-loop control only
Cool: Current	AUX2	–		

Peripheral device model numbers

● Event output module

I	II	III	IV	V	VI	VII	VIII

Example: DMC10E4CR0000

I Basic model No.	II Type	III No. of channels	IV Wiring method	V Control output	VI Options	VII Additional processing 1	VIII Additional processing 2	Description
DMC10								Multi-channel controller
	E							Event output module
		4						4 channels
			C					Connector wiring
				R				Relay output
					00			None
						0		None
							0	CE marking
							A	CE marking, cUL

● PC loader software

I	II

Example: SLP-D10J50

I Basic model No.	II Option	Description
SLP-D10		PC Loader for DMC10
	J50	Japanese version (with dedicated cable)

* PC/AT converter complies with Windows 2000/XP

● Connector set

Model No.	Description
81440792-001	Connector set (pack of 4)

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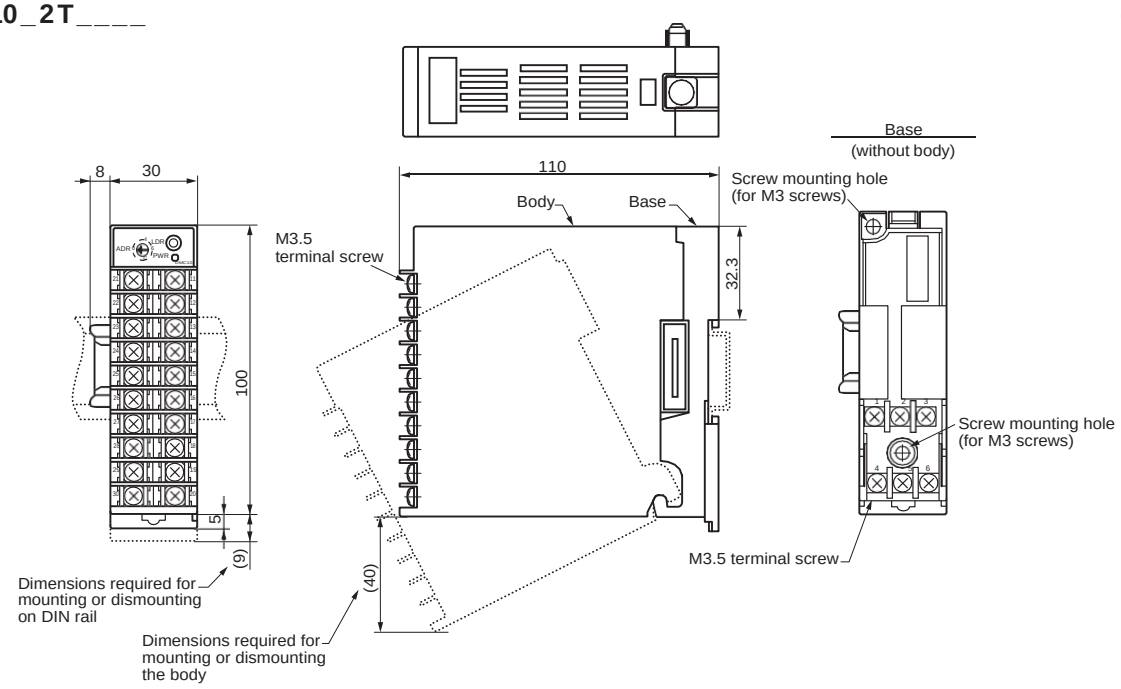
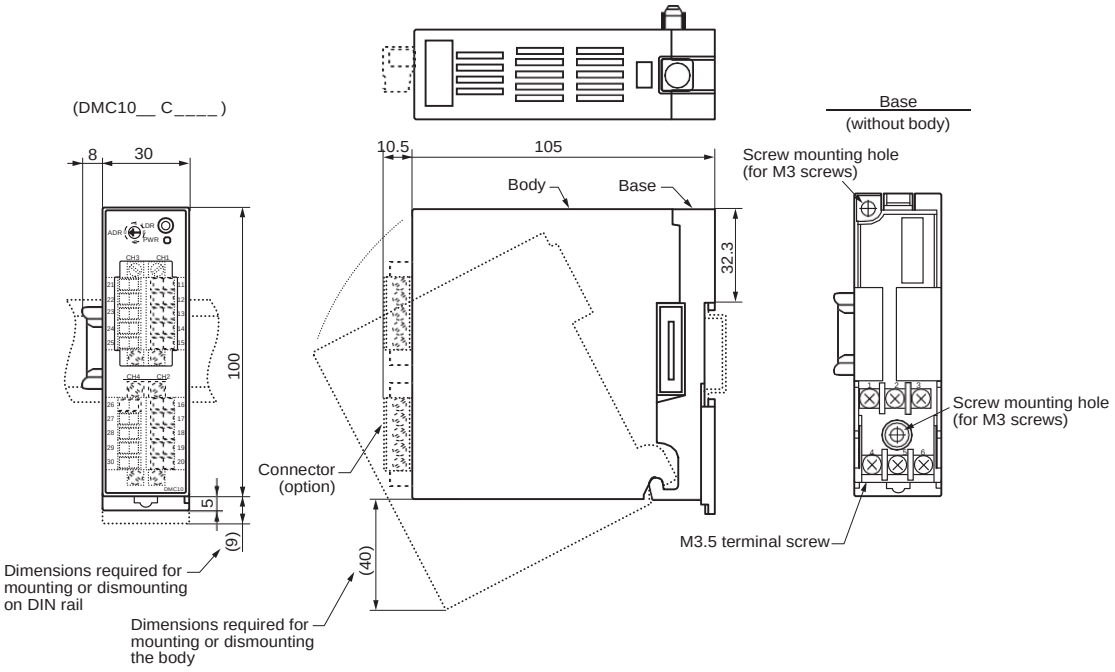
Dimensions

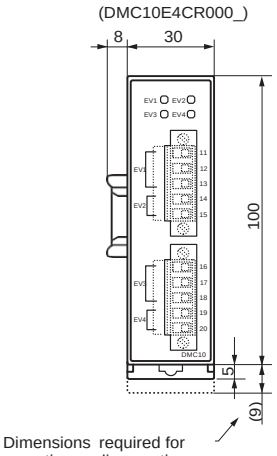
● **DMC10_2T____**

(Unit: mm)



● **DMC10__C____, DMC10E (Event output module)**





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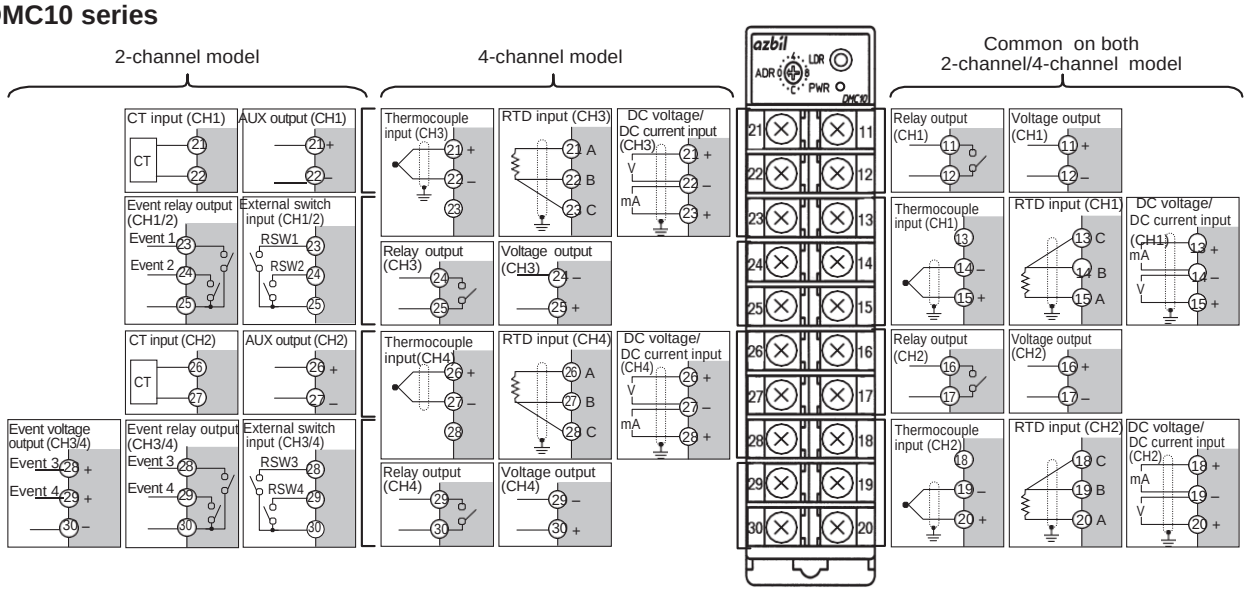
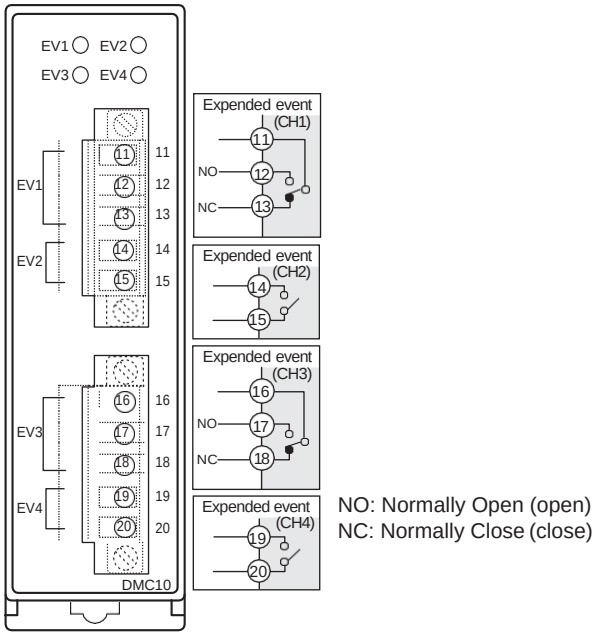
Wiring

● DMC10 series



* The terminal numbers are the same on the connector model.

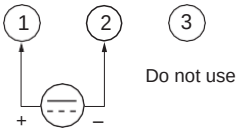
● DMC10 Event output module



NO: Normally Open (open)
NC: Normally Close (close)

■ Connecting power

Connect the power terminals, as shown below

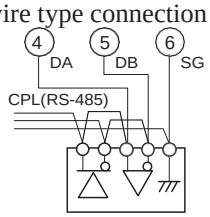


! Handling Precautions

- Power is jointly connected between linked modules
- Apply power to any of the connected modules
- Select power which can fully support the total power consumption for all modules

■ Connecting CPL communications

3-wire type connection of CPL communications (RS-485)



Example: Method to connect with a 5-wire type instrument

! Handling Precautions

Do not externally connect a terminating resistor, as a resistance equivalent is already provided.

■ Wiring precautions

- Before wiring, confirm the model No. and terminal numbers on the attached label (side-face)
- Be sure to use crimp-style terminals adaptive to M3.5 terminal screws.
- Ensure that the crimp-style terminals do not contact the adjacent terminals.
- Maintain a distance of at least 50 cm between the I/O signal leads and the power lead. Also, do not pass these leads through the same piping or wiring duct.
- When connecting in parallel with other instruments, be sure to check the conditions of the peripheral products before installation.
- Pass the heater-current leads through the current trans-former. Do not use the heater-current in excess of the allowable current specified in the specification table. In doing so, this device may malfunction.
- This device is designed so as not to function for a maximum of 10 seconds after application, for safety purposes. The device status then moves to operation, before a warm-up period of more than 30 minutes in order to comply with the specified accuracy.
- After wiring is completed, be sure to inspect and check the wiring state before supplying power, to ensure that there is no wiring error.

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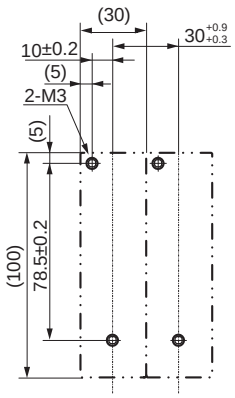
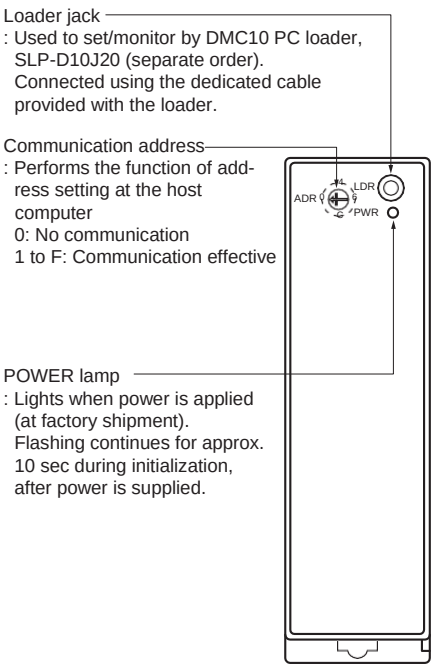
Dimensions for mounting with screws

(Unit: mm)

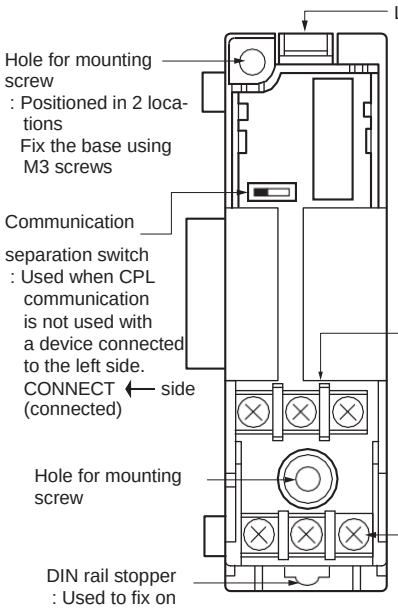


Name of each unit and function

■ Body



■ Base



No.	Signal name
1	24 Vdc (+)
2	24 Vdc (–)
3	Do not use

No.	Signal name
4	DA
5	DB
6	SG

■ Connecting module

This device can be connected to other modules, using connectors provided on both the left and right sides. Be sure to connect the module before mounting on DIN rail or by screws. Power and CPL communications are jointly connected between lined modules, saving wiring. CPL communication can be separated by a communication separation switch at the base.

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Precautions on installation

■ Location for installation

Mount the instrument at a location that satisfies the following conditions:

- Mount the instrument in location: Not subject to high or low temperatures, or high or low humidity.
- Free of corrosive gas (sulfide gas, etc.)
- Free of dust particles, soot, or the like.
- Not exposed to direct sunlight, rain or wind.
- Free of mechanical vibrations and shock.
- Do not mount the instrument near a high-voltage line, a welder, or electrical noise generating sources.
- Make sure the instrument is within 15 m from a boiler or other high-voltage ignition devices.
- The location should not be subject to a strong magnetic field.
- Where flammable liquid or steam does not exist.

■ Isolated areas

Solid line ——— indicates isolated area.
Broken line - - - - - - indicates areas that are not isolated.

PV CH1	Power	OUT CH1 *1
PV CH2		OUT CH2 *1
PV CH3		OUT CH3 *1
PV CH4		OUT CH4 *1
RSW CH1		EVENT CH1
RSW CH2		EVENT CH2
RSW CH3		EVENT CH3
RSW CH4		EVENT CH4
CT CH1	Logic	CPL communication
CT CH2		
Loader communication		

*1 Voltage output type is not isolated with power

Please, read 'Terms and Conditions' from following URL before the order and use.
http://www.azbil.com/products/bi/order.html

Specifications are subject to change without notice.

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