Elster Aichi Pulse Meter Data Sheet

■ DESCRIPTION (For Gas Meter elster, Aichi, Kromschroder,Honeywell)

The Pulse Meter provides dual input(A/B phase) and display with high speed, counting, control and communication (Modbus RTU mode) of Pulse from Gas Meter elster, Aichi, Kromschroder,Honeywell**. There are 3 external control input (DI) in standard and the optional 2 Relay, 1 Analog output(4-20mA,0-10mA), and RS485 port available. The relays are also support N, C, R, E mode and Hi/Lo energized for batch / totalizer and position control.**

■ FEATURE

- **Measuring Pulse 0.01Hz~6KHz,Pulse can be switch on rear of meter**
- **Double figures，can be set to display the Totalizer 、Batch、Batch count**
- **The Pulse Meter Multifunction Counter design of the two groups pulse signal input,execution count(plus / less count), location-based, batch and other displays, control, and remote communication capabilities.**
- **4 relay can be individual programmed for N/R/C/E/do mode with timer function.**
- **3 external control input can be individual programmed for Reset, Gat of totalizer and/or batch**
- **Analogue Output and RS485(Modbus RTU mode) available in option**

■ Application

- **With the** Gas Meter elster, Aichi, Kromschroder, Honeywell**., do the count (plus / less count), length, location, location,,batch etc. displays, control, and remote communication capabilities**.

■ TECHNICAL SPECIFICATION

Input

Input Frequency	Input Mode	Input Level
0.01Hz ~ 50 Hz	Mech. Contact	
Up or Down Mode: 0.01Hz ~ 6 kHz A/B Phase Mode: 0.01Hz ~ 3KHz(each)	Magnet Slotted disk	High Level: over 2/3 of input level Low Level: under 1/3 of input level
Input Mode & Level changeable by dip switch of rear terminal block.		

Input range: **Up or Down Mode:** 0.01Hz~6kHz
A/B Phase Mode: 0.01Hz~3kHz(each channel)
⚠when RS485 communication , limited to 0.01Hz~2kHz(each channel)

Input type: 7 type selectable:
AbP-1: A/B phase with Quadrature x 1
AbP-2 : A/B phase with Quadrature x 2
AbP-4: A/B phase with Quadrature x 4
id v: dual individual input
cmd: Anti-Coincidence Add/Subtract
UP: up counting
down: down counting

Trigger mode:
AU-bU: A and B are low level to high level
AU-bd: A is low level to high level and B is high level to low level
Ad-bU: A is high level to low level and B is low level to high level
Ad-bd: A and B are high level to low level

Display & Functions

LED: **Numeric:**
Up screen: 10 digits, 0.28" red high-bright LED
Down screen: 6 digits, 0.28" green high-bright
Relay output indication: 4 square red LED
RS 485 communication: 1 square orange LED
E.C.I. function indication: 3 square green LED.

Up screen selection: Can be set show Totalizer or Batch count
Down screen Can be set show Batch

Display the multiplier: cnt.F set range: 0.10000~9.99999
Display value=pulse x multiplier(cnt.F)

Decimal Point: Settable: **0 /)0 /)00 /)000/)0000/)00000**

Over Flow indication: Fixed Re-cycle counting
Default start value fun.: Settable 0~999999

CS2-MC

Control Functions(option)

Relay: 4 relay
relay 2 & 3: FORM-C, 5A/230Vac, 10A/115V
relay 1 & 4: FORM-A, 1A/230Vac, 3A/115V

Energized mode: N / R / C / E mode or DO mode

N / R / C / E mode: [r4.ot] Period of Relay on: 0:00.0~9(m):59.9(s)

DO Fun.: Energized by RS485 command of master

Analogue output(option)

Accuracy: ≤ ± 0.1% of F.S.; 16 bits DA converter

Ripple: ≤± 0.1% of F.S.

Response time: ≤100 m-sec. (10~90% of input)

Isolation: AC 2.0 KV between input and output

Output range: Specify either Voltage or Current output in ordering
Voltage: 0~5V / 0~10V / 1~5V programmable
Current: 0~10mA / 0~20mA / 4~20mA

Output capability: Voltage: 0~10V: ≥ 1000Ω;
Current: 4(0)~20mA: ≤ 600Ω max

Functions: [Ro.LS]output range low to versus the value of parameter
Settable range -
199999~999999(Batch) /
-1999999999~9999999999(Total)
[Ro.hS]output range high to versus the value of parameter
Settable range -199999~999999(Batch) /
-1999999999~9999999999(Total)

Digital fine adjust: [zro] Settable range = -32768~32767
[Ro.hS] Settable range = -32768~32767

RS 485 Communication(option)

Protocol: Modbus RTU mode

Baud rate: 1200/2400/4800/9600/19200 programmable

Data bits: 8 bits

Parity: Even、Odd or none

Stop bits: 1 or 2

Address: 1 ~ 255 programmable

Distance: 1200M max

Terminate resistor: 150Ω.

Power

Power supply: AC 85~265V / DC 100~300V

Excitation supply: 12Vdc,30mA; Excitation power is fixed 12Vdc

Power consumption: ≤ 5.0VA

Back up memory: EEPROM

Electrical Safety

Dielectric strength: AC 2.0 KV for 1 min,, Between Power / Input / Output / Case

Insulation resistance: ≥100M ohm at 500Vdc, Between Power / Input / Output / Case

Isolation: Between Power / Input / Output

EMC: EN 55011:2002; EN 61326:2003

Safety (LVD): EN 61010-1:2001

Environmental

Operating temp.: 0~60 ˚C

Operating humidity: 20~95 %RH, Non-condensing

Temp. coefficient: ≤ 100 PPM/˚C

Storage temp.: -10~70 ˚C

Enclosure: Front panel: IEC 549 (IP54); Housing: IP20

Vibration test: 1~800Hz, 3.175g²/Hz

Mechanical

Dimensions: 96mm(W) x 48mm(H) x 120mm(D)

Panel cutout: 92mm(W) x 44mm(H)

Case material: ABS fire-resistance (UL 94V-0)

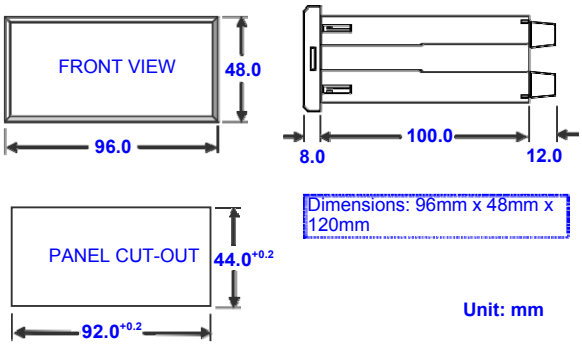
Mounting: Panel flush mounting

Terminal block: Plastic NYLON 66 (UL 94V-0);
10A/300Vac, M2.6, 1.3mm²~3.5mm² (16~12AWG)

weight: 310g

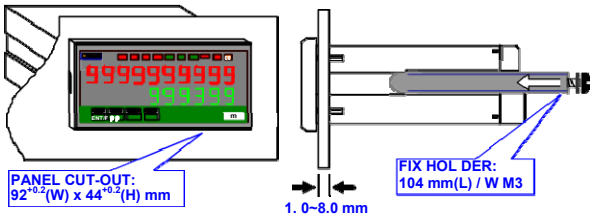
■FRONT PANEL

■DIMENSIONS

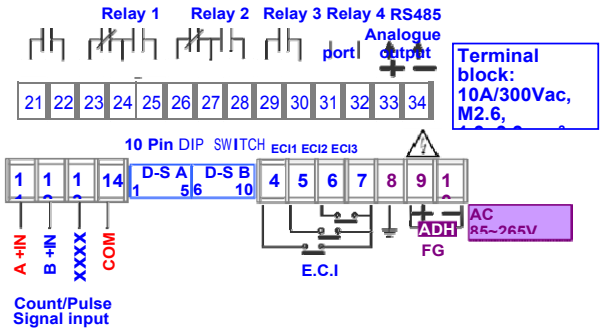


■INSTALLATION

The meter should be installed in a location that does not exceed the maximum operating temperature and provides good air circulation

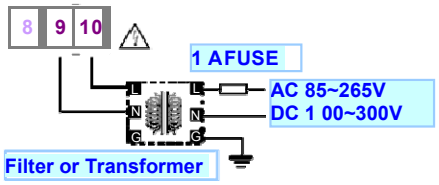


■CONNECTION DIAGRAM

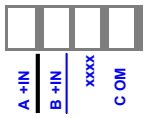


Please check the voltage of power supplied first, and then connect to the specified terminals. It is recommended that power supplied to the meter be protected by a fuse or circuit breaker

Power Supply



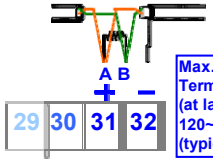
Sensor input connection



Please change the dip-switch on rear of meter to match input the mode and level

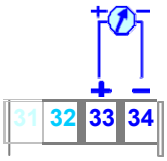
⚠ **Connected to 11 (A + IN), 12 (B + IN) pin signal level required toclear the high and low potential,Do not floating (high impedance).**

RS 485 Communication Port



Max.Distance: 1200M
Terminate Resistor (at latest unit): 120~300ohm/0.25W (typical : 150ohm)

Analog retransmit output



■FUNCTION DESCRIPTION

Display & Functions

Display the multiplier:

Display value=pulse x multiplier((cnt5f)

Shows the multiplier can be set to the range of 0.100000 - 9.99999with a different decimal point position

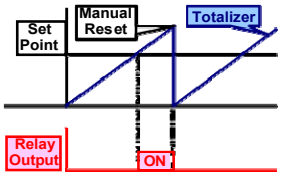
Default start value fun.:

Counter reset after the [inPUt GroUP]] in [oFSEt set the startingvalue (for example: 200),Will be starting from the default value (200) number ofthe startingproduct.

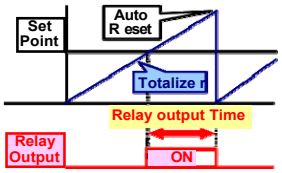
Control Functions

Relay energized mode:

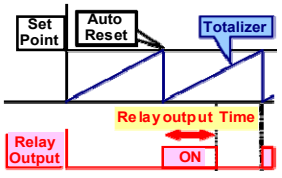
This table provides four relay output options, you can choose the corresponding control volume and mass execution N / R / C / E four control output



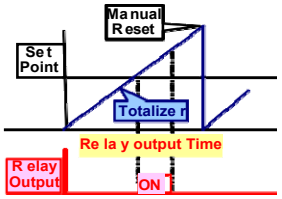
N MODE:
When the condition of **Set Point** is met.
1. the relay will be energized;
2. The totalizer will run as same as usual; until manual reset by front key or by rear terminal, the totalizer will be reseted to "0" and the relay will be de-energized.



R MODE:
When the condition of **Set Point** is met:
1. The relay will be energized; until the time is over Relay output time **(r Y.1**(or 2).**ot)**.
2. The totalizer will run as same as usual; until the time is over Relay output time **(r Y.1**(or 2).**ot)**,The totalizer will be reseted to "**0**



C MODE:
When the condition of **Set Point** is met:
1. The relay will be energized; until the time is over Relay output time **(rY.1**(or 2).**o t)**.
2. The totalizer will be reseted to "**0**", then counts-up from "0".



E MODE:
When the count reaches the set value:
1. relay output, until r ot (Relay output time) to set time has elapsed,the relay will revert to the (de-energized)
2. count the number will continue to plot, until the button manual reset by the panel reverted by the ECI terminal short circuit.Count value from "0" to re-plot.

DO(Digital Output):

Energized by RS485 command of master. The function was designed to get remote control by RS485 command of master. The typical application is to control a switch in field from computer center as like as digital output(DO) ofPLC.

External Control Inputs (ECI):

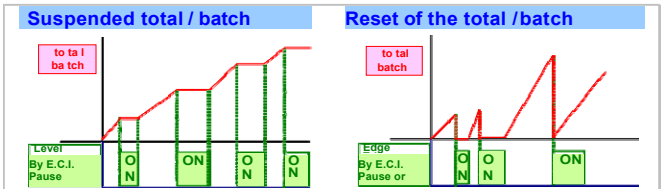
The three external control inputs are individually programmable to perform specific meter control or display functions. All E.C.I. have been designed in level trigger actions. Please pay attention, the ECI1 or ECI2 input will be disable while UP or Down Key has been set to be "YES".

Input mode: 2 ECI points, Contact Implementation can be set individually and the total volume-related functions

Power or batch power reset:

Total suspended and / or batch several the plot reset of the total and / or batch to "0"

Suspended total / batch **Reset of the total /batch**



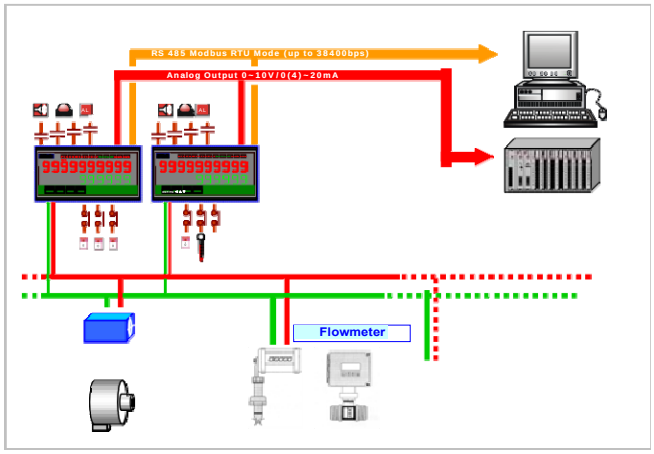
Enter the confirm time: This function is mainly to avoid the scene of the disturbance caused by the malfunction surge; Please note, thistime setting is every 16 milliseconds (16msecond) for Units please refer to the following example

[dEbnc] set to be 5, it means
5 x 16 msecond = 80 msecond

That, contact input must be greater than 80 msecond, the instrument Will identify the correct input, otherwise ignore this input.

RS 485 communication(option)

The RS485's protocol is Modbus RTU mode, and baud rate up to 38400 bps. It's not only convenience to remote monitoring, display for reading and ECI status, but also for remote control in the case that doesn't have any DIO device in the field.



Analogue output(option)

Please specify the output type either 4(0)~20mA , The programmable output low and high scaling can be based on various display values. Reverse slope output is possible by reversing point positions.

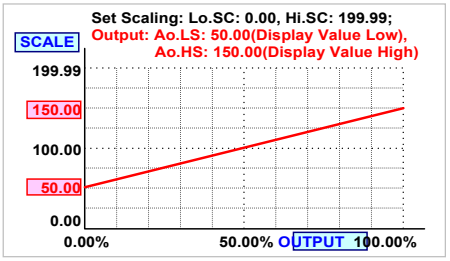
Output range:

Current: 0~10mA / 0~20mA / 4~20mA programmable

Fun.: **Ao.HS**: To setting the Display value High to versus output range High(as like as 20mA in 4~20)

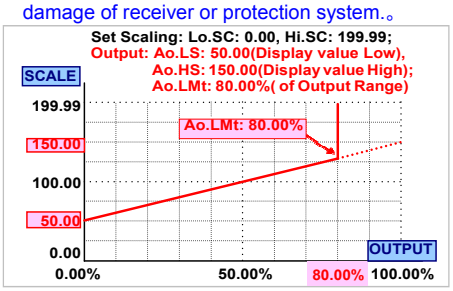
Ao.LS: To setting the Display value Low to versus output range Low(as like as 4mA in 4~20)

Pulse Meter

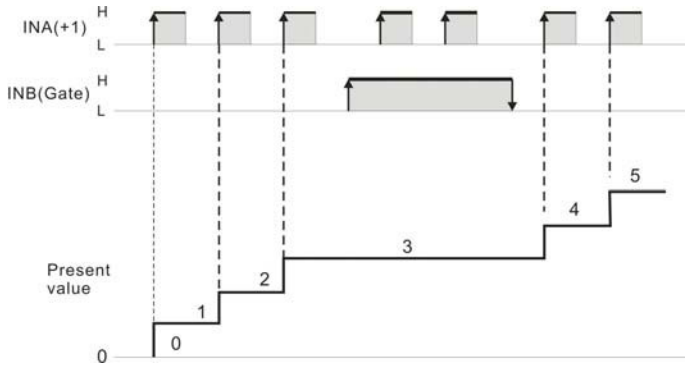


*The range between **Ao.HS** and **Ao.LS** should be over 20% of span at least; otherwise, it will be got less resolution of analogue output.*

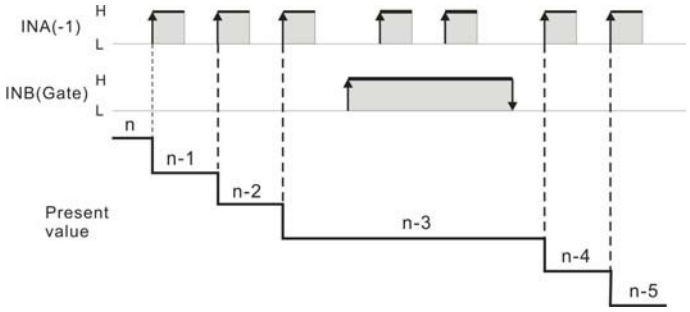
Ao.LMt(**Output High Limit**): can be set range0.00~110.00%；User can set the high limit of output to avoid a damage of receiver or protection system.。



UP mode:



DOWM mode:

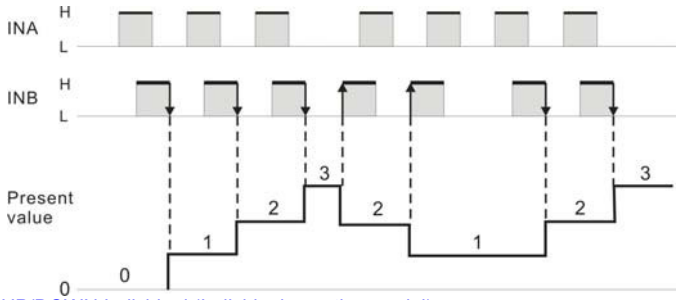


Fine zero & span adjustment:

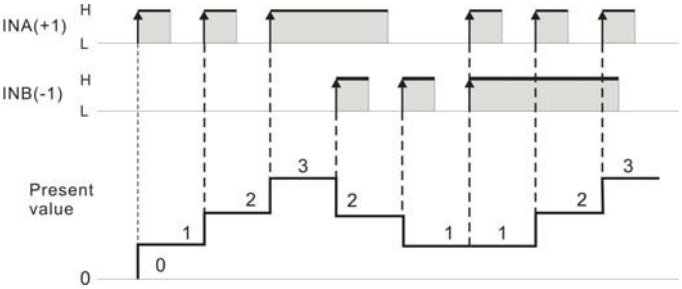
Users can get Fine Adjustment of analogue output by front key of the meter. Please connect standard meter to the terminal of analogue output. To press the front key(up or down key) of meter to adjust and check the output.

Counting

AB-PHASE:



UP/DOWN Individual (Individual counting model):



UP/DOWN Command(Command model)):