

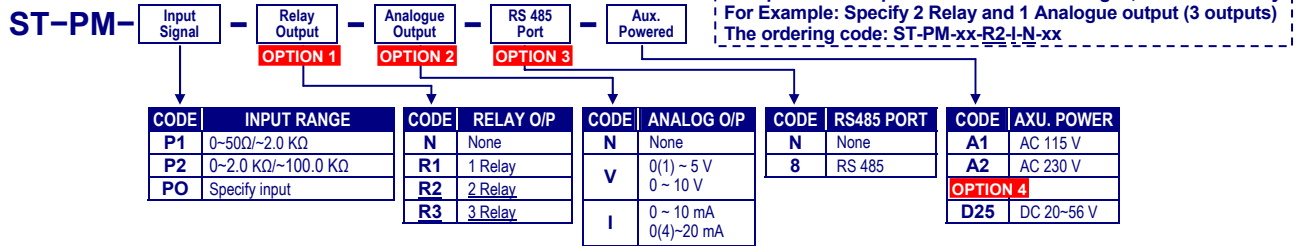
ST-PM POTENTIOMETER CONDITIONER WITH RS485, A/O & RELAY

FEATURE

- Measuring potentiometer from 0~50Ω/~2.0KΩ; 0~2.0KΩ/~100.0KΩ (3 wire)
- Accuracy: ± 0.04%; Display range: -19999~29999
- User function, Easily programmable via the front panel
- Field calibration with potentiometer to meet the system requirement**
- 1 Analogue output, 1 RS 485 port and 3 Relay output available for multi-cross selection 3 outputs at most.
- CE Approved



ORDERING INFORMATION



TECHNICAL SPECIFICATION

Input	Measuring Range	Input Impedance	Excitation Voltage
	0~50Ω/~ 2.0KΩ (3 wire)	≥ 1M ohm	About 0.2V
	0~2.0 KΩ/~ 100.0KΩ (3 wire)		About 0.8V

Calibration: Digital calibration by front key
Field calibration: **Calibration with sensor input high & low to meet system structure. And field calibration reset is not change the accuracy & linear of factory calibration.**

A/D converter: 16 bits resolution
Accuracy: ≤± 0.04% of FS ± 1C;
Sampling rate: 15 cycles/sec
Response time: ≤100 msec.(when the AvG = "1") in standard
Input range: Input High and Low programmable
 Ai.Hi: Settable range: 0.00~100.00% of input range
 Ai.Lo: Settable range: 0.00~100.00% of input range

Display & Functions
LED: Numeric: 5 digits, 0.28"H red high-brightness LED
 Relay output indication: 4 square red LED
 RS 485 communication: 1 square orange LED
 Max/Mini Hold indication: 2 square orange LED

Scaling function: Lo.SC: Low Scale; Settable range: -19999~+29999
 Hi.SC: High Scale; Settable range: -19999~+29999

Decimal point: Programmable from 0 / 0.0 / 0.00 / 0.000 / 0.0000
Over range indication: ovFL, when input is over 120% of input range Hi
Under range indication: -ovFL, when input is under -20% of input range Lo
Max / Mini recording: Maximum and Minimum value storage during power on.
Display functions: PV / Max(Mini) Hold / RS 485 Programmable
Front key functions: Up and down key can be set to be a function as ECI.
Low cut: Settable range: -19999~29999 counts
Digital fine adjust: Pv.Zro: Settable range: -19999~+29999
 Pv.SPn: Settable range: -19999~+29999

Reading Stable Function
Average: Settable range: 1~99 times
Moving average: Settable range: 1(None)~10 times
Digital filter: Settable range: 0(None)/1~99 times

Control Functions(option)

Set-points: Three set-points
Control relay: Three relays(Maximum); FORM-A, 1A/230Vac, 3A/115V
Relay energized mode: Energized levels compare with set-points:
 Hi / Lo / Hi.HLD / Lo.HLD programmable
DO function: Energized by RS485 command of master.
Energizing functions: Start delay / Energized & De-energized delay / Hysteresis
 Energized Latch
Start band(Minimum level for Energizing): 0~9999counts
Start delay time: 0:00.0~9(Minutes):59.9(Second)
Energized delay time: 0:00.0~9(Minutes):59.9(Second)
De-energized delay time: 0:00.0~9(Minutes):59.9(Second)
 Hysteresis: 0~5000 counts

Analogue output(option)

Accuracy: ≤± 0.1% of F.S.; 16 bits DA converter
Ripple: ≤± 0.1% of F.S.
Response time: ≤100 msec. (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 programmable
Output capability: **Voltage: 0~10V: ≥ 1000Ω;**
Current: 4(0)~20mA: ≤ 600Ω max
Functions: **Ao.HS(output range high):** Settable range: -19999~29999
Ao.LS(output range Low): Settable range: -19999~29999
Ao.LMt(output High Limit): 0.00~110.00% of output High
Ao.Zro: Settable range: -38011~+27524
Ao.SPn: Settable range: -38011~+27524

RS 485 Communication(option)

Protocol: Modbus RTU mode
Baud rate: 1200/2400/4800/9600/19200/38400 programmable
Data bits: 8 bits
Parity: Even, odd or none (with 1 or 2 stop bit) programmable
Address: 1 ~ 255 programmable
Remote display: to show the value from RS485 command of master
Distance: 1200M

Terminate resistor: 150Ω at last unit.

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
Isolation: Between Power / Input / Relay / Analogue / RS485
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

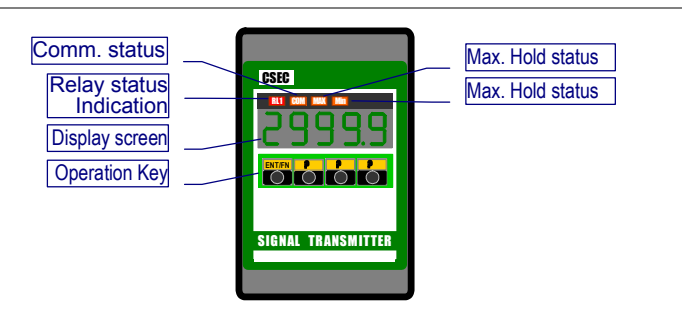
Mechanical

Dimensions: 50mm(W) x 134mm(H) x 80mm(D) with socket
Case materiel: ABS fire-resistance (UL 94V-0)
Mounting: DIN rail mounting (35mm standard)
Terminal block: 11 pin Socket, 10A/500Vac, M2.6, 16~22AWG
Weight: Under 480g(without socket)

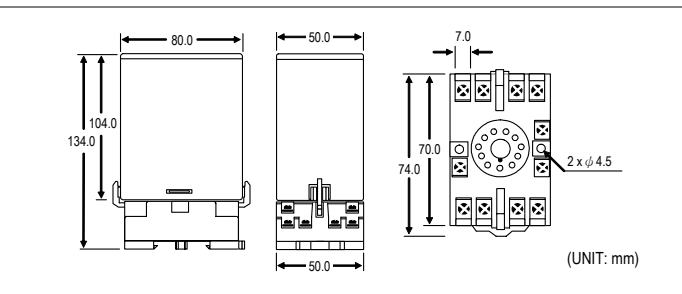
Power

Power supply: AC 115 or 230V ± 15%, 50/60Hz; **Optional DC20~56V**
Power consumption: 5.0VA maximum
Back up memory: By EEPROM

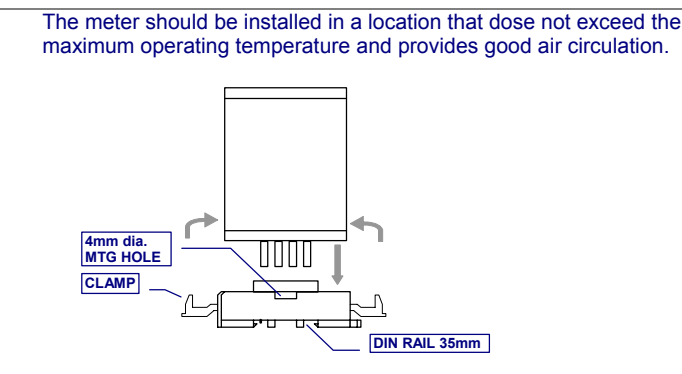
FRONT PANEL



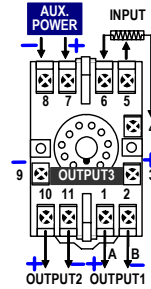
DIMENSIONS



INSTALLATION



CONNECTION DIAGRAM(11 PIN)



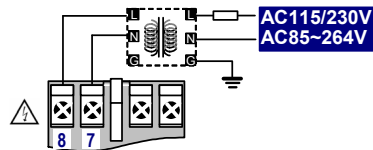
Remark: ST series has been designed in multi-output with limited terminals. Please check the output functions and specify terminals as label on product before wiring.

	OUTPUT 1 TERMINAL 1+ & 2-	OUTPUT 2 TERMINAL 11+ & 10-	OUTPUT 3 TERMINAL 3+ & 9-
3 O/P	RS485	ANALOGUE	RELAY
3 O/P	ANALOGUE	RELAY	RELAY
3 O/P	RS485	RELAY	RELAY
3 O/P	RELAY	RELAY	RELAY
2 O/P	RS485	ANALOGUE	
2 O/P	RS485	RELAY	
2 O/P	ANALOGUE	RELAY	
1 O/P	ANALOGUE		
1 O/P	RS485		
1 O/P	RELAY		

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.

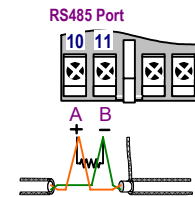
Power Supply

Filter or Transformer 1A Fuse



Due to the limited terminals for four outputs (Analogue, RS485, Relay, Excitation Supply), the outputs will be assigned as label on the product and above table. Please check it out before wiring.

RS485 Communication Port



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

ST-PM