ST-T TEMPERATURE CONDITIONER WITH RS485, A/O & RELAY

FEATURES

- Measures RTD: Pt100Ω; Thermocouple: K, J, E, T, R, S, B
- Accuracy: RTD: ± 0.1%; Thermocouple: ± 0.2%
- User friendly, easily programmable via the top panel
- 1 Analogue output, 1 RS 485 port and 3 Relay output available for multi-cross selection 3 outputs at most.
- CE Approved

ORDERING INFORMATION

ST-T – Input Signal – Relay Output (OPTION 1) – Analogue output (OPTION 2) – RS 485 Port (OPTION 3) – Axu. Power

3 outputs can be specified at most for Analogue, RS485 & 3 Relay
For Example: Specify 2 Relay and 1 RS485 output (3 outputs)
The ordering code: ST-T-xx-R2-N-8-xx

CODE	INPUT RANGE
P1	Pt100Ω -50.00~199.99 °C
P2	Pt100Ω -150.0~800.0 °C

CODE	INPUT RANGE
K1	Type K 0.0~1200.0 °C
J1	Type J 0.0~750.0 °C
E1	Type E 0.0~1000.0 °C
T1	Type T 0.0~400.0 °C
R1	T/C type R 400~1600 °C
S1	T/C type S 400~1600 °C
B1	T/C type B 400~1800 °C

CODE	RELAY O/P
N	None
R1	1 Relay
R2	2 Relay
R3	3 Relay

CODE	ANALOG O/P
N	None
V	0(1) ~ 5 V 0 ~ 10 V
I	0 ~ 10 mA 0(4)~20 mA

CODE	RS485 PORT
N	None
8	RS 485

CODE	AXU. POWER
A1	AC 115 V
A2	AC 230 V
OPTION 4	
D25	DC 20~56 V

TECHNICAL SPECIFICATION

Input

Measuring Range		Input Impedance	Excitation Supply
P1	Pt100Ω -50.00~199.99 °C	≥ 1M ohm	Sensing Current:
P2	Pt100Ω -150.0~800.0 °C	≥ 1M ohm	1.6mA
K1	Type K 0.0~1200.0 °C	≥ 1M ohm	
J1	Type J 0.0~750.0 °C	≥ 1M ohm	
E1	Type E 0.0~1000.0 °C	≥ 1M ohm	
T1	Type T 0.0~400.0 °C	≥ 1M ohm	
R1	T/C type R 400~1600 °C	≥ 1M ohm	
S1	T/C type S 400~1600 °C	≥ 1M ohm	
B1	T/C type B 400~1800 °C	≥ 1M ohm	

Calibration: Digital calibration by front key
A/D converter: **16 bits resolution**
Accuracy: Pt100Ω: ≤ ± 0.1% of FS ± 1C;
Thermocouple: ≤ ± 0.2% of FS ± 1C;
Cold junction in T/C: 25 ± 20°C, error ≤ 0.5°C
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 &

LED: **Numeric:** 5 digits, 0.28"H red high-brightness LED
Relay output indication: 1 square red LED
RS 485 communication: 1 square orange LED
Max/Mini Hold indication: 2 square orange LED
Display range: -19999~29999;
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 **ovFL**, when input is over 120% of input range Hi
Under range **-ovFL**, when input is under -20% of input range Lo
Max / Mini recording: Maximum and Minimum value storage during power on.
Display ***PV / Max(Mini) Hold / RS 485 Programmable***
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*
Digital fine adjust: **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

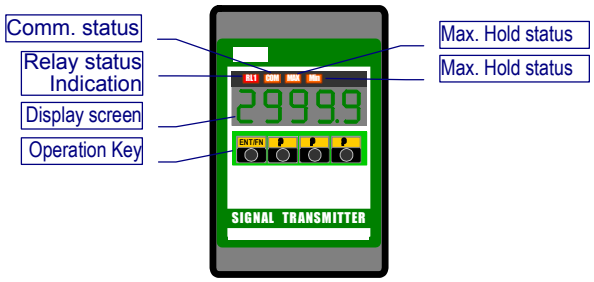
Mechanical

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)

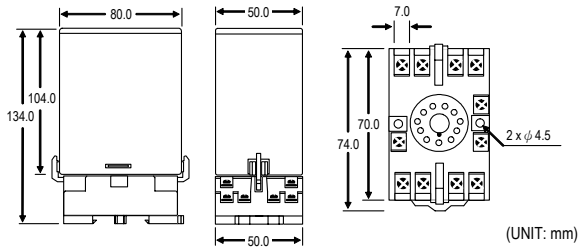
Power

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

■ FRONT PANEL

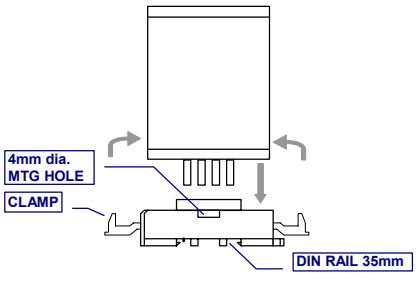


■ DIMENSIONS

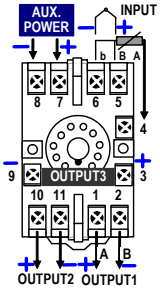


■ INSTALLATION

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



■ CONNECTION DIAGRAM(11 PIN)



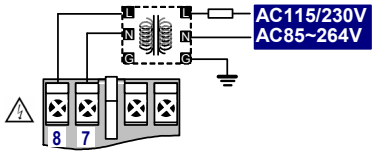
Remark: ST series has been designed in multi-output with limited terminals. Please check the output functions and specify terminals as label on product before wiring.

	OUTPUT 1 TERMINAL 1+ & 2-	OUTPUT 2 TERMINAL 10+ & 11-	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.

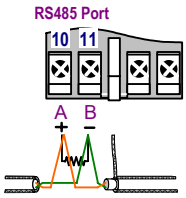
Power Supply

Filter or Transformer **1A Fuse**



Due to the limited terminals for three outputs(Analogue, RS485, Relay), 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-T