

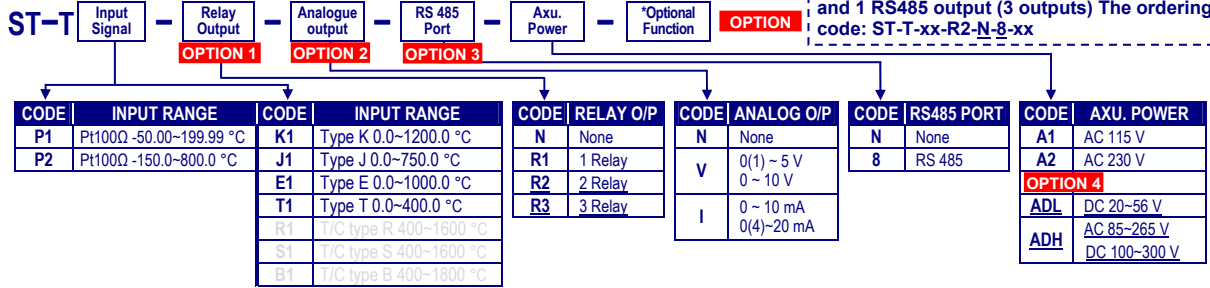
# ST-T TEMPERATURE CONDITIONER WITH RS485, A/O & RELAY

## FEATURE

- Measuring RTD: Pt100Ω; Thermocouple: K, J, E, T, R, S, B
- Accuracy: RTD: ± 0.1%; Thermocouple: ± 0.2%
- User function, 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



## TECHNICAL SPECIFICATION

Input	Measuring Range	Input Impedance	Excitation Supply
P1	Pt100Ω -50.00~199.99 °C	≥ 1M ohm	Sensing Current: 1.6mA
P2	Pt100Ω -150.0~800.0 °C	≥ 1M ohm	
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 400~1800 °C	≥ 1M ohm	
S1	T/C type S 400~1800 °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:  $\pm 0.1\%$  of FS  $\pm 1C$ ;  
 Thermocouple:  $\pm 0.2\%$  of FS  $\pm 1C$ ;  
**Cold junction in T/C:** 25  $\pm$  20°C, error  $\leq 0.5^\circ C$   
**Sampling rate:** 15 cycles/sec  
**Response time:**  $\leq 100$  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 green high-brightness LED  
**Relay output indication:** 1 square red LED  
**RS 485 communication:** 1 square red LED  
**Max/Mini Hold indication:** 2 square red LED  
 -19999~29999;  
**Display range:** Lo.SC: Low Scale; Settable range: -19999~+29999  
 Hi.SC: High Scale; Settable range: -19999~+29999  
**Scaling function:** Programmable from 0 / 0.0 / 0.00 / 0.000 / 0.0000  
 ovFL, when input is over 120% of input range Hi  
 -ovFL, when input is under -120% of input range Lo  
**Decimal point:** Maximum and Minimum value storage during power on.  
**Over range:** PV / Max(Mini) Hold / RS 485 Programmable  
**Under range:** Display  
**Max / Mini recording:** Settable range: -19999~29999 counts  
**Display:** Pv.Zro: Settable range: -19999~+29999  
**Low cut:** Pv.SPn: Settable range: -19999~+29999  
**Digital fine adjust:**

**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:**  $\pm 0.1\%$  of F.S.; 16 bits DA converter  
**Ripple:**  $\leq \pm 0.1\%$  of F.S.  
**Response time:**  $\leq 100$  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 / 1~20mA programmable  
**Output capability:** Voltage: 0~10V;  $\geq 1000\Omega$ ;  
 Current: 4(0)~20mA;  $\leq 600\Omega$  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:**  $\geq 100M$  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

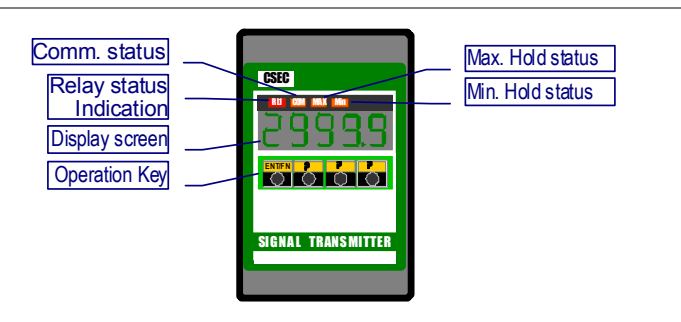
**Mechanical**

**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)

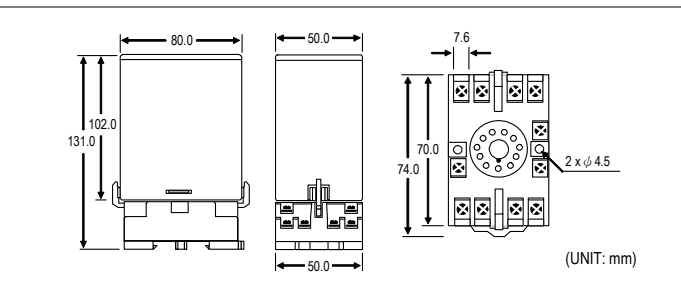
**Power**

**Power supply:** AC 115 or 230V ± 15%, 50/60Hz;  
 Optional **ADL: DC20~56V, ADH: AC 85~265V,DC 100~300V**  
**Power consumption:** 5.0VA maximum  
**Back up memory:** By EEPROM

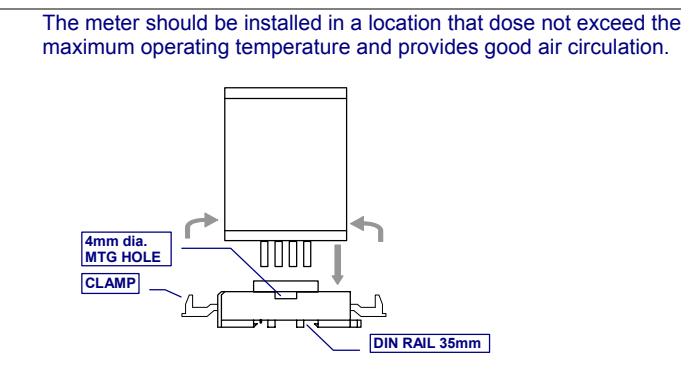
**FRONT PANEL**



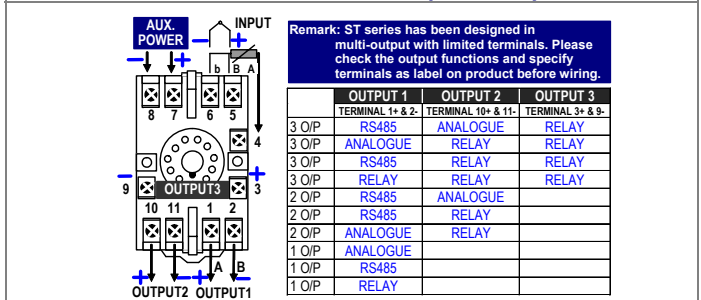
**DIMENSIONS**



**INSTALLATION**



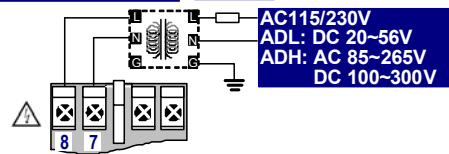
**CONNECTION DIAGRAM(11 PIN)**



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**

