P44-TTC1-T
Temperature Controller (Thermocouple)
incl Re-Transmit (4-20mA / 0-10V)

Operating instructions and Guarantee Certificate

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Description:

This device interfaces directly with Type J,K,R,S,N & T thermocouples.
It offers 1 relay output with individual set point and hysteresis settings.
The relay may be configured for heating or cooling applications.
The re-transmit offset and span parameters are fully programmable, allowing the user to re-transmit any portion of the temperature range.
By default the output 4-20mA corresponds to temperature range of the selected probe type. from -400-920°C (Type J), -50-1320°C (Type K), etc.
The maximum and minimum allowable temperatures may also be pre-set.
The menu can be reduced and the parameters locked with an access code to protect programmed values. (see menu configuration).

Operation:

The temperature measured is re-transmit as a 4-20mA signal according to the "rt.OS" and "rt.SP" parameters.

Heating mode:

Temperature must rise to set point value before relay de-energizes, then it must drop by the hysteresis amount before being re-energized.

Cooling mode:

Temperature must drop to set point value before relay de-energizes, then it must rise by the hysteresis amount before being re-energized.

Menu functionality:

Press the menu "↺" button repeatedly until the desired setting is reached.
The "▲" and "▼" buttons are used to change the value. "↺" will display the next menu item. To exit the menu hold "↺" button for 3 seconds.

Adjustable parameters:

1. Pre-set temperature "°C " (default value: 25)
   When the probe temperature reaches this value, the relay changes state.
2. Hysteresis value "HYSt" (default value: 2, range 0-200 °C)
   Once the pre-set temperature is reached, it must change (in the opposite direction) by this amount before the relay resumes it's original state.
3. Offset "OFSt" (default value: 0, range -100 to +100 °C)
   This value is added (or subtracted if negative) to the current emperature.
6. Maximum "Hi" user setting (default value:selected probe's max temp.)
   This is the maximum value obtainable via setting number 1 ("°C").
7. Minimum "LO" user setting (default value:selected probe's min temp)
   This is the minimum value obtainable via setting number 1 ("°C").
8. Function "FUNC" (default: Heating)
   The device may be configured for :
   - Heating "HEAt"
     Both relays are energised when the temperature is BELOW their individual pre-set temperatures.
   - Cooling "COOL"
     Both relays are energised when the temperature is ABOVE their individual pre-set temperatures
9. Probe type "Prob" (default value: type J)
   Set this value to correspond to the type of sensor being used
   Type J : "tYP.J", Type K: "tYP.H", Type R: "tYP.r",
   Type S: "tYP.S", Type N: "tYP.n", Type T: "tYP.t"
10. Ambient temperature "°C A" (not adjustable)
    Selecting this setting displays the ambient temperature of the device. (Cold junction temperature)
11. Re-transmit Offset "rt.OS" (default value: 0)
    When the temperature displayed reaches this value, 4mA is transmitted.

12. Re-transmit Span "rt.SP" (default value: type J: 950,type K: 1350)

When the temperature displayed reaches this value plus the offset value (rt.OS), 20mA is transmitted. The span is the difference between the temperature at which 20mA is transmitted, and the temperature at which 4mA is transmitted.

13. Reset "RESt"

By selecting this setting, the device is reset to the factory defaults.

Menu options:

Exit the menu before making the following adjustments.

1. Lock / unlock parameters: (default: unlocked)

Press "BACK"(▼), **then** "ENTER"(↺) and hold the 2 buttons until the desired option is displayed. The display cycles between "Loc" (no changes allowed) & "u.Loc" (parameters may be adjusted)

2. Full / reduced menu (default: Full)

Press "SELECT" (▲), **then** "ENTER" (↺) and hold the 2 buttons until the desired option is displayed. The display cycles between "rEdu" (limited menu) & "Full" (all parameters are accessible)

3. Access Code: (default: no code)

Once options 1 & 2 are set as required, Press "BACK" (▼) and "SELECT" (▲) simultaneously until "CODE" is displayed. Now use the "+" (▲) & "-" (▼) to enter a code.

(1-9999) Once a code is entered, access to options 1 & 2 is not permitted. To clear the code, re-enter the same code again. If the code is forgotten. Press and hold "+" (▲) & "-" (▼) until "CODE" is displayed while re-applying power to the device. To exit without setting a code, press "Enter" while "CodE" or "diSA" is displayed.

Programming example: Set setpoint to 30.0°C:

Press "↺" to display "°C "

Use "▲" and "▼" to change the value to "30.0".

Press "↺" for 3 seconds to exit the menu.

Notes:

- If the temperature being read is outside the device's temperature range, the message "t Lo" or "t Hi" is displayed.
- If the probe is faulty, or not connected, "P.Err" is displayed.
- If the input voltage is below the minimum operating voltage, the relay may not energize. Even though the device's display is on.

Specifications:

Temperature range:	Type J: -40 to 920 °C	Type K: -50 to 1320 °C
	Type R: -50 to 1760 °C	Type S: -50 to 1760 °C
	Type N: -80 to 1300 °C	Type T: -50 to 400°C
Accuracy:	± 0.3% of full scale	
Re-transmit Accuracy :	± 0.3% @ 25°C (% of full scale)	
Input voltage:	±15% of rated input	
Resolution:	1 °C	

12 Month guarantee:

Our product is guaranteed for a 12 (twelve) month period from date of purchase. This guarantee is valid for defects arising from failure during specified conditions. This guarantee does not cover damage due to abuse, tampering or improper installation. Our company does not accept liability for any consequential damage or loss arising from product malfunction. Should this product prove to be defective, kindly return it for inspection or repair. For further information contact your nearest distributor.

Relay specifications:

Contact rating:	10A 250 VAC 2500VA (Resistive)
Mechanical life:	30 million operations
Electrical life:	250 000 operations (at maximum load)