

#### Thermocouple Transmitter v4 **TCT226**

### DESCRIPTION

The TCT226 is a loop powered isolating transmitter that offers an economical solution combining compactness with accuracy and flexibility.

The TCT226 is ideal for field enclosures or as a space saver in larger control cabinets. Standard output is 4-20mA with a minimum supply voltage of 8V. This enables the TCT226 to be used in 12V battery supply systems or in automotive applications.

Other factory set output configurations are 10-50mA loop powered and various 3-wire outputs.

Double surge protection is standard with all Series 200 loop powered transmitters to prevent failure due to spikes induced by DC switched inductive loads. The TCT226 can accept any type of thermocouple input. The thermocouple conditioning features:

- ⇒ Automatic cold junction compensation.
- ⇒ Front-end zero suppression via 15 turn potentiometer.
- ⇒ Configurable upscale or downscale burnout.

Final calibration is trimmed using the front accessible zero and span 15-turn trim adjustments. A front mounted LED, and a test socket verify module function and assist in calibration checks without disconnection of output wires.

# **General Specifications**

Size: 23.5W x 71.5H x 109D (mm). Mounting: Clip for 35mm DIN-Rail.

Housing material: abs.

Screw terminals. Connection:

Weight: 0.100 kg. Protection class: IP40.

Cal. Accuracy: <0.5% of range. Repeatability: <0.5% all ranges. Operating temperature range: -10...+65°C.

Cold junction compensation: 0.02% per °C C/J change.

8 - 40V continuous (50V 30 seconds). Loop supply voltage:

 $RLmax = \frac{SupplyVoltage - 8V}{\Omega}$ Load for 4 - 20mA output: 0.02A

Supply voltage 3-Wire: 12 - 40V continuous (50V 30 seconds).

Load change effect: 0.1% up to RL max. Response time: 0.2 sec for T<sub>90</sub> Input offset adjustment: 200% of range. Front zero adjustment: +20% / -10% typical.

Front span adjustment: ±25% typical.

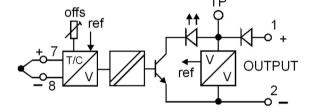
Internal Offset Adjust: ±50%.

Input range: 4mV up to 80mV.

Input impedance:  $> 1M\Omega$ . Input/output isolation: > 2kV rms.

Electromagnetic compatibility: Complies with AS/NZS 4251.1 (EN 50081.1)

OUT SPAN



**Block Diagram** 

For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

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# **TCT226 - X X X X**

#### TYPE NO. DESIGNATION

Output. ———	
	•
	1 = 4 - 20 mA.
	2 = 10 - 50 m/s
*)	3 = 0 - 1mA.
*)	4 = 0 - 10mA.

\*) 6 = 0 - 1V. 2-wire.

7 = 0 - 5V, min supply 10.5Vdc. 8 = 0 - 10V, min supply 15.5Vdc. 3-wire

\*) 5 = 0 - 20mA.

3-wire

\*) 9 = Other (Specify).

## Input: -

A...

1 = Thermocouple Type J (FeCon: 80°C up to 1200°C range). (CuCon: 2 = Thermocouple Type T 100°C up to 400°C range).

Type K 100°C up to 1300°C range). 3 = Thermocouple (NiCr/Ni: Always specify 450°C up to 1700°C range). 4 = Thermocouple Type R (Pt13%Rh/Pt: calibration when 150°C up to 1300°C range). 5 = Thermocouple Type N (Nicrosil/Nisil: ordering

450°C up to 1700°C range). (Pt10%Rh/Pt: 6 = Thermocouple Type S 7 = Thermocouple 65°C up to 1000°C range). Type E (ChrCon:

\*) 8 = Linearised thermocouple (Specify type K, J, T, N, R or S and calibration)

\*) 9 = Other (Specify).

### Action: -

1 = Direct.

2 = Reverse.

### Options: -

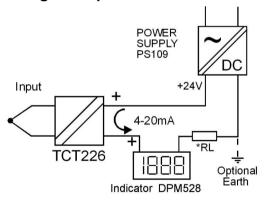
- 0 = None.
- 1 = Upscale burnout.
- 2 = Downscale burnout.

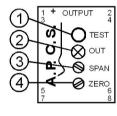
\*) = Price Extra.

## Front Control Explanation

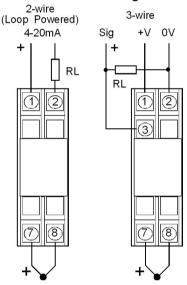
- 1. Test socket output signal access with reference to terminal (1) loop integrity is maintained when digital multi-meter Rin <  $30\Omega$  is used.
- 2. Loop indicator dim at 4mA, bright at 20mA.
- 3. SPAN (full scale) adjust 15 turn.
- 4. ZERO (start scale) adjust 15 turn.

# Wiring Example





#### **Connection Diagrams**



Note: RL is input load of PLC, VDS, or other process instruments

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