

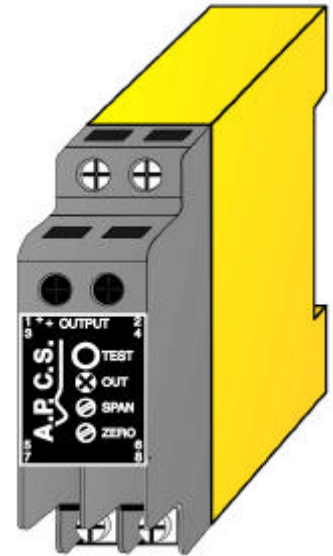
THERMOCOUPLE TRANSMITTER (v3) TCT226

DESCRIPTION

The THERMOCOUPLE TRANSMITTER TCT226 is a loop powered isolating transmitter that offers an economical solution combining compactness with accuracy and flexibility. Due to its total width of only 22.5mm and the 35mm DIN-Rail mounting arrangement the TCT226 is ideal for "nestmounting" in 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. The reference for 3-wire connection is the negative supply. 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.

Change of type of thermocouple or range change can be carried out in the field by card-exchange or replacement of two metal film resistors on the card. The TCT226 is factory configured for applications requiring reverse acting operation. As the TCT226 cannot linearise various thermocouple curves, the unit can be factory "curve optimised" on request by moving calibration points close to actual operation range. Final calibration is trimmed using the front accessible zero and span 15-turn trim adjustments. A front mounted L.E.D. and a test socket verify module function and assist in calibration checks without disconnection of output wires. (IN-PROCESS OUTPUT MONITORING).

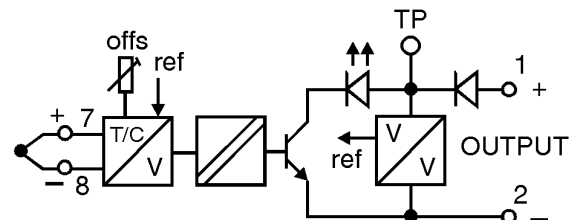


General Specifications

Size:	22.5W x 68H x 109D (mm)
Mounting:	Clip for 35mm DIN-Rail.
Housing material:	Polycarbonate.
Connection:	Screw terminals.
Weight:	0.100 kg.
Protection class:	IP40.
Cal. Accuracy:	<0.5% of range.
Repeatability:	<0.5% all ranges.
Ambient operating temperature range:	-10...+65°C.
Cold junction compensation:	0.02% per °C C/J change.
Supply voltage loop powered:	8 - 40V continuous (50V 30 seconds).
Load for 4 - 20mA output:	$RL_{max} = \frac{\text{Supply Voltage} - 8V}{0.02A} [\Omega]$
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 ₉₀ .
Input offset adjustment (Zero suppression) :	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 Ω.
Input/output isolation:	> 2kV r.m.s.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)

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

Block Diagram



Output:

- | | | | |
|------------------|-----------|------------------------------------|-----------|
| 1 = 4 - 20mA. | } 2-wire. | *) 6 = 0 - 1V. | } 3-wire |
| 2 = 10 - 50mA. | | | |
| *) 3 = 0 - 1mA. | } 3-wire | *) 7 = 0 - 5V, min supply 10.5Vdc. | } 0V Ref. |
| *) 4 = 0 - 10mA. | | | |
| *) 5 = 0 - 20mA. | | | |

Input:

- | | | |
|-------------------------|--------|---|
| 1 = Thermocouple | Type J | (FeCon: 80°C up to 1200°C range). |
| 2 = Thermocouple | Type T | (CuCon: 100°C up to 400°C range). |
| 3 = Thermocouple | Type K | (NiCr/Ni: 100°C up to 1300°C range). |
| 4 = Thermocouple | Type R | (Pt13%Rh/Pt: 450°C up to 1700°C range). |
| 5 = Thermocouple | Type N | (Nicrosil/Nisil: 150°C up to 1300°C range). |
| 6 = Thermocouple | Type S | (Pt10%Rh/Pt: 450°C up to 1700°C range). |
| 7 = Thermocouple | Type E | (ChrCon: 65°C up to 1000°C range). |
| *) 9 = Other (Specify). | | |

Action:

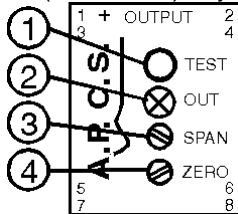
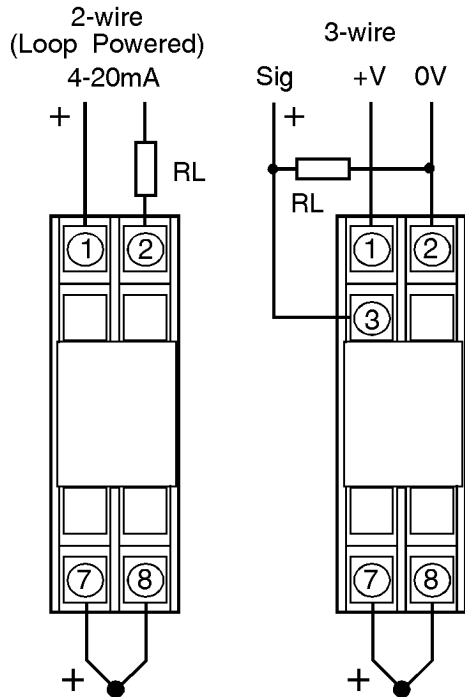
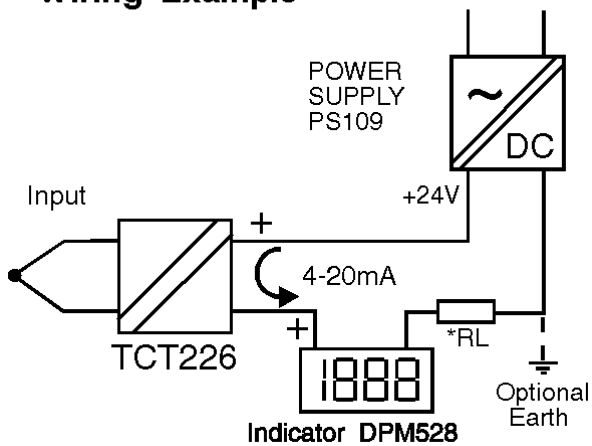
- 1 = Direct. 2 = Reverse.

Options:

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

Front Control Explanation

1. Test socket - output signal access with reference to terminal (1) loop integrity is maintained when digital multimeter Rin < 30 Ω 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.

**Connection Diagrams****Wiring Example**

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

*) Price Extra.

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