

Thermocouple 2 Wire Isolating Transmitter with Integral Display TCI-2D

Function: Isolating multi-range 2 wire temperature transmitter which will convert a thermocouple input into a linearised, load independent 4 to 20mA current. The TCI-2D is housed in a polycarbonate plastic enclosure suitable for mounting on DIN rail. The TCI-2D has exceptional input to output high common mode rejection ratio and a high degree of filtering to eliminate false output signals, providing a low ripple output current. Linearisation is carried out by eight segment piece-wise linearisation circuitry. Calibration is performed by means of an internal DIP switch array for coarse settings and two potentiometers brought out to the front panel for fine tuning. The TCI-2D is equipped with "Monitor" terminals which enable monitoring of the output current by measuring the voltage across an internal 10 ohm resistor without breaking the current loop.



TempTrans CONVERTERS

SPECIFICATIONS

Please note that the following are typical standard ranges. We will manufacture instruments to cater for other ranges too, within certain limitations. Please contact our internal sales department for further clarification.

INPUTS:

Thermocouples

Types B, E, J, K, R, S & T

Input Span

Minimum span 4mV

Ranges

Type	Cal Range	Min Span
B	0 to 1700°C	650°C
E	0 to 1000°C	100°C
J	0 to 760°C	100°C
K	0 to 1350°C	100°C
R	0 to 1700°C	650°C
S	0 to 1700°C	650°C
T	0 to 400°C	100°C

Cold Junction Compensation

typically $\pm 0.9^\circ\text{C}$ for 0 to 60°C change ($\pm 3^\circ\text{C}$ for R and S)

OUTPUTS:

DC Current

4 to 20mA

Burnout Protection

Upscale

Overload

Current limited to 25mA max

Loading

R_L maximum = $(V_{\text{Supply}} - 12) / 0.02$

i.e. V_{Supply} R_L max

12 Volts	0 ohms
15 Volts	100 ohms
24 Volts	600 ohms
30 Volts	900 ohms
36 Volts	1200 ohms

Input/Output Calibration

Three "Zero" DIP switches
Three "Span" DIP switches
and two fine-tuning potentiometers

Monitor Terminals

40 to 200mV representing
4 to 20mA

Isolation

1500 Volts DC or peak AC

SUPPLY:

Power Supply Voltage

12 to 40 Volt DC
Reverse polarity protected

Option:

12 to 60 Volt DC

Supply Variation Effect

Less than $\pm 0.03\%$ of span for full change

DISPLAY:

Type

0.3" high 3 1/2 digit
back-illuminated LCD

Range

-1999 to +1999
Negative readout range is limited to 25% of total span

Calibration

Internal Span and Zero
potentiometers

GENERAL:

Accuracy (including linearity hysteresis and repeatability)

Better than $\pm 0.1\%$ of T/C full span

Temperature Coefficient

Better than $\pm 0.1\%$ of span/ $^\circ\text{C}$

Common Mode Rejection

127dB typical dc to 60Hz

Response Time

160mS (0 to 98%)

Operating Temperature Range

-20 to +70°C

Option:

-40 to +85°C

Storage Temperature Range

-40 to +85°C

Operating/Storage Humidity Range

5 to 95% RH non-condensing

Mounting

Standard 35mm DIN rail

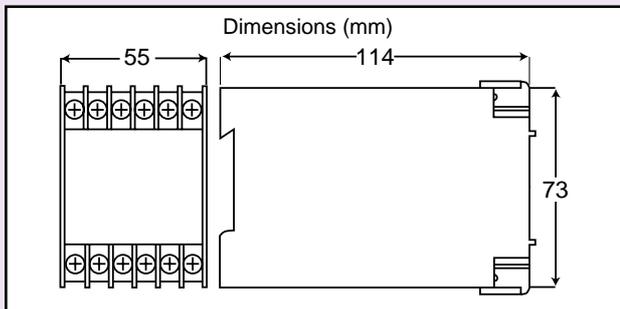
Protection Level

Box to IP40 Terminals to IP10

Weight

200 gms

MECHANICAL DETAILS



TERMINATION DETAILS

Terminal		Terminal	
1	Unused	7	Unused
2	+	8	Unused
3	-	9	Monitor +ve
4	Unused	10	Monitor -ve
5	Unused	11	R_{Load} to Power Supply -ve
6	Power Supply Screen	12	Power Supply +ve

ORDERING DETAILS

- Give identification code, i.e. TCI-2D
- Give details of thermocouple type, i.e. type K
- Give details of temperature range, i.e. 0 to 1200°C
- Please specify if optional Operating Temperature Range or optional Power Supply required



LEE-DICKENS LTD

Desborough, Kettering, Northants NN14 2QW U.K.

Tel: (01536) 760156 Fax (01536) 762552