Thermocouple 2 Wire Isolating Transmitter TCI-2

TempTrans CONVERTERS

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-2 is housed in a polycarbonate plastic enclosure suitable for mounting on DIN rail. The TCI-2 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-2 is equipped with "test" terminals which enable monitoring of the output current by measuring the voltage across an internal 10 ohm resistor without breaking the current loop.

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 1700ºC	650ºC
E	0 to 1000ºC	100ºC
J	0 to 760ºC	100ºC
K	0 to 1350ºC	100ºC
R	0 to 1700ºC	650ºC
S	0 to 1700ºC	650ºC
T	0 to 400ºC	100ºC

Cold Junction Compensation
typically ±0.9ºC for 0 to 60ºC change (±3ºC for R and S)

OUTPUTS:

DC Current
4 to 20mA

Burnout Protection
Upscale

Overload
Current limited to 25mA max

Loading
R_L maximum = $(V_{Supply} - 9.5) / 0.02$

i.e. V_{Supply}	R_L max
12 Volts	125 ohms
15 Volts	275 ohms
24 Volts	725 ohms
30 volts	1025 ohms
36 Volts	1325 ohms

Input/Output Calibration
Three "Zero" DIP switches
Three "Span" DIP switches
and two fine-tuning potentiometers

Test Terminals
40 to 200mV representing
4 to 20mA

Isolation
1500 Volts DC or peak AC

SUPPLY:

Power Supply Voltage
9.5 to 40 Volt DC
Reverse polarity protected

Supply Variation Effect
Less than ±0.03% of span for full change

GENERAL:

Accuracy (including linearity hysteresis and repeatability)
Better than ±0.08% of T/C full span

Temperature Coefficient
Better than ±0.1% of span/⌂ 10ºC

Common Mode Rejection
127dB typical dc to 60Hz

Response Time
160mS (0 to 98%)

Operating Temperature Range
–20 to +70ºC

Options
–30 to +85ºC

Storage Temperature Range
–30 to +85ºC

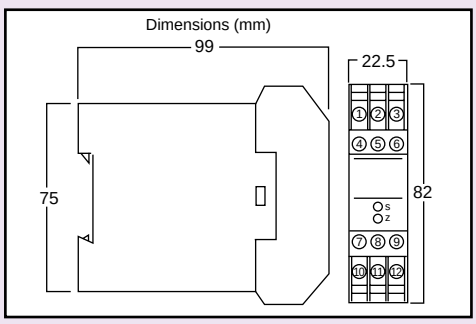
Operating/Storage Humidity Range
5 to 95% RH non-condensing

Mounting
Standard 35mm DIN rail

Protection Level
Box to IP40 Terminals to IP20

Weight
130 gms

MECHANICAL DETAILS



TERMINATION DETAILS

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

ORDERING DETAILS

(a) Give identification code, i.e. TCI-2
(b) Give details of thermocouple type, i.e. type K
(c) Give details of temperature range, i.e. 0 to 1200ºC
(d) Please specify if optional Operating Temperature Range required

LEE-DICKENS LTD
Desborough, Kettering, Northants NN14 2QW U.K.
Tel: (01536) 760156 Fax (01536) 762552