

RTD 3 Wire Isolating Transmitter RTT-3

Function: Isolating multi-range 3 wire temperature transmitter which will convert any 2 or 3 wire RTD input into a 4 to 20mA current. The RTT-3 is housed in a polycarbonate plastic enclosure suitable for mounting on DIN rail. The RTT-3 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. PT100 linearisation conforms to BS1904 characteristics. Calibration is performed by means of three internal coarse range resistors and two potentiometers (Span and Zero) brought out to the front panel for fine tuning. The RTT-3 three wire configuration allows a loop load of 300 ohms at a supply voltage of just 10 Volts and 1000 ohms at a supply voltage of 24 Volts. Options on the RTT-3 include: 2 x 2 wire RTD inputs to give an output proportional to the temperature differential.

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:

Resistance Thermometer

3 wire PT100 to BS1904 and DIN43760 characteristics
100 ohms at 0°C

Options:

PT50, PT500, CU10, NI120

Minimum Temperature Span

10°C

Lead Compensation Error

Less than $\pm 0.05^\circ\text{C}$ / 10 ohms lead resistance

OUTPUTS:

DC Current

4 to 20mA

Overload

Current limited to 25mA max

Loading

$$R_L \text{ maximum} = (V_{\text{Supply}} - 4) / 0.02$$

i.e.	V_{Supply}	$R_L \text{ max}$
	10 Volts	300 ohms
	12 Volts	400 ohms
	15 Volts	550 ohms
	24 Volts	1000 ohms
	30 volts	1300 ohms
	32 Volts	1400 ohms

Input/Output Calibration

Three coarse range resistors and two fine-tuning potentiometers

Adjustability

Zero: $\pm 35\%$ of span minimum
Span: $\pm 30\%$ of span minimum

Isolation

600 Volts DC or peak AC

SUPPLY:

Power Supply Voltage

10 to 32 Volt DC
Reverse polarity protected

Supply and Load Variation Effect

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

Sensor Excitation

Less than 1mA

Current Consumption

15mA typical (@ $I_o = 0$)

GENERAL:

Accuracy (including linearity hysteresis and repeatability)

Better than $\pm 0.1\%$ of span

Temperature Coefficient

Better than $\pm 0.1\%$ of span/ $\triangle 10^\circ\text{C}$

Common Mode Rejection

132dB typical dc to 60Hz,
127dB minimum

Response Time

160mS (0 to 98%)

Operating Temperature Range

-20 to $+70^\circ\text{C}$

Option:

-30 to $+85^\circ\text{C}$

Storage Temperature Range

-40 to $+90^\circ\text{C}$

Operating/Storage Humidity Range

5 to 95% RH non-condensing

Mounting

Standard 35mm DIN rail

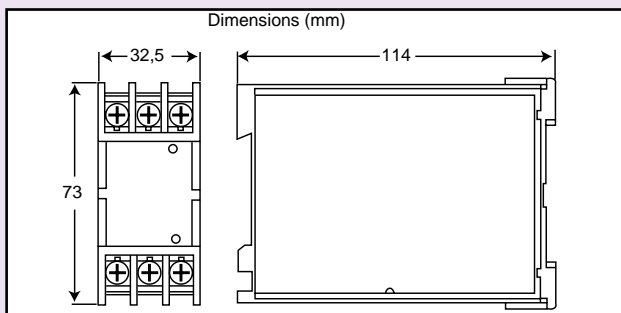
Protection Level

Box to IP50 Terminals to IP10

Weight

150 gms

MECHANICAL DETAILS



TERMINATION DETAILS

Terminal

- 1 Power Supply +ve
- 2 R_{Load} to Power Supply -ve
- 3 Power Supply -ve

Terminal

- 4
- 5
- 6

ORDERING DETAILS

- (a) Give identification code, i.e. RTT-3
- (b) Give details of sensor type, i.e. PT100
- (c) Give details of temperature range, i.e. 0 to 200°C
- (d) Please specify if optional Operating Temperature Range required