



User's Guide



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DRA-RTI-2
2 Wire RTD Temperature Transmitter



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WARNING: These products are not designed for use in, and should not be used for, patient connected applications.

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1. Procedure to open the housing

Carefully insert a proper screwdriver tip into the side slots. By pressing inward and rotating, the plastic locker will release. Gently pull out the unit's front panel.

To close the unit, insert the printed circuit board in the proper side guiding slots and push it all the way until the front panel clicks with the body box.

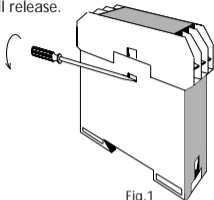


Fig.1

2. Calibration instructions

2.1 Switch Setting

Inside the enclosure are located six DIP switches for coarse range, and two multiturn trimmers are located on the transmitter panel for fine tuning.

a. Define the desired range limits:

T_{min} - the temperature at which the output current is 4mA.

T_{max} - the temperature at which the output current is 20mA.

T_{span} - the difference between T_{max} and T_{min} .

b. Open the transmitter according to para. #1.

c. According to the following tables, set switches no. 4 to 6 for the Zero (T_{min}), and set switches 1 to 3 for the Span (T_{span}).

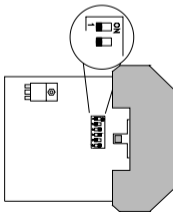


Fig.2

② Note: "1" represent the switch "ON" state.

2.2 Calibrations tables

"Span" Table

Tspan	SW1	SW2	SW3
26.....45°C	0	0	0
45.....75°C	1	1	1
75...130°C	0	0	1
130...196°C	1	0	1
196...392°C	0	1	1
392...810°C	1	1	1

"Zero" Table

Tmin	SW4	SW5	SW6
-62.....25°C	0	0	0
-25.....12°C	0	0	1
12.....48°C	0	1	0
48.....85°C	0	1	1
85...122°C	1	0	0
122...159°C	1	0	1
159...195°C	1	1	0
195...232°C	1	1	1

2.3 Calibration instrumentation:

1. 24Vdc Power Supply
2. Pt-100 3-wire calibrator
3. High accuracy DVM
4. Small screwdriver

Connect the transmitter to be calibrated according to Fig #3.

- a. Set the Pt-100 calibrator to T_{min} .
- b. Adjust with the Zero trimmer to obtain an output current of 4.000mA.
- c. Set the Pt-100 calibrator to T_{max} .
- d. Adjust the Span trimmer to obtain an output current of 20.000mA.
- e. Repeat steps a. to d. until satisfactory results are achieved.

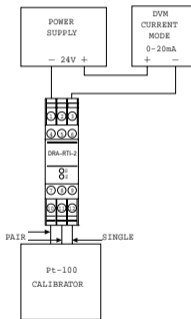


Fig.3

* The Pt-100 calibrator should be set to fit the transmitter linearity curve. The default setting is according to DIN 43760 Pt-100 table ($\alpha=0.00385$).

Calibration example:

Needed: $-50..+50^{\circ}\text{C}$

Tmin: -50°C

Tspan: $+50-(-50)=100^{\circ}\text{C}$

1. Set the DIP switch to: 0,0,1,0,0,0 (SW1..SW6)
2. Set the tune for -50°C calibrate "Z" to 4.000mA.
3. Set the tune for $+50^{\circ}\text{C}$ and calibrate "S" to 20.000mA.
4. Repeat steps 1..3 until satisfactory results are obtained.

3. Connection Diagram

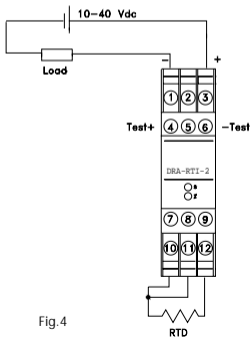
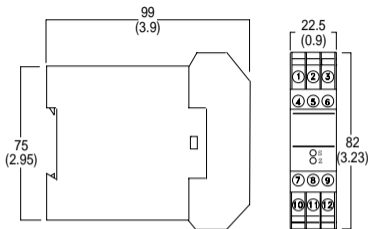


Fig.4

4. Mechanical Dimensions



Dimensions are in mm (in)

Fig.5

5. Specifications

Input: 3wire Pt100 according to BS 1904 and DIN 43760 characteristics,
($\alpha = 0.00385$)

Leads compensation error: $< 0.1^{\circ}\text{C} / 20\Omega$ leads resistance

Sensor excitation: < 1 mA

Output: 4...20 mA, (25 mA limited)

Loop resistance: $R_{\text{max}}(\Omega) = (V_{\text{supply}} - 10) / .02$

Isolation: 1500 Vdc or peak ac

Response time: 160 msec (0 - 98%)

Input span change: 26 to 810°C

Span Calibration: Three DIP switches and "Span" potentiometer
Input zero change: -62 to +232°C
Zero Calibration: Three DIP switches and "Zero" potentiometer
Accuracy (linearity, hysteresis and repeatability): $< \pm 0.1\%$ of span (typical)
Test terminals: 40 to 200 mV represent 4-20 mA
Supply voltage: 10 - 40 Vdc reverse polarity protected
Supply and load variation effect: $< \pm 0.03\%$ of span for full change
CMR: 127db typical, dc to 60 Hz
Temperature stability: $\pm 0.01\%$ of span / 1°C
Operating temperature: -20 to +70°C (-4 to 158°F)
Storing temperature: -30 to +85°C (-22 to 185°F)
Humidity: 5 - 95% relative humidity, non-condensing
Housing: Plastic polycarbonate
Protection level:
 Housing: According to IP-40
 Terminals: According to IP-20
Mounting: Standard 35 mm DIN rail
Weight: 130 grams (4.6 oz)

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