ConLAB

RTI-2

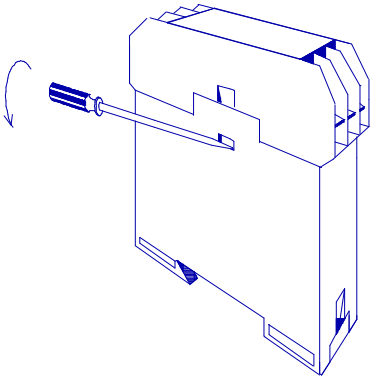
DIN Rail 2-Wire Temperature Transmitter
for RTD Input

Operator's Manual

CONTENTS

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.

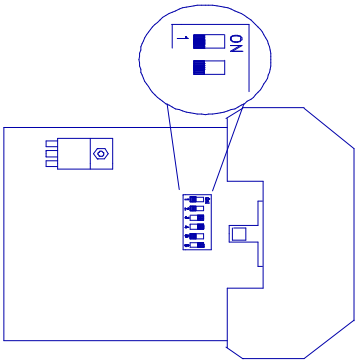


To close the unit, insert the printed circuit board in the proper side guiding slots and push it all the way until the front panel clicks with the body housing.

2. CALIBRATION INSTRUCTIONS

2.1 Switch Setting

Inside the enclosure are located six DIP switches for coarse range, and two multi-turn potentiometers are located on the transmitter panel for fine tuning.



Notes:

- The RTI-2 is ordered for a specific RTD, and can not be altered.
- The following tables indicate coarse ranges. At the outer limits of range it might occur that the desired range can be obtained with the adjacent switch combinations.

* Define the desired range limits:

Tmin - the temperature at which the output current is 4mA.

Tmax - the temperature at which the output current is 20mA.

Tspan - the difference between Tmax and Tmin.

According to the following tables, set switches no. 4 to 6 for the Zero (Tmin), and set switches 1 to 3 for the Span (Tspan).

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

CALIBRATION TABLES

"Span" Table

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

"Zero" Table

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

CALIBRATION INSTRUMENTATION:

1. 24Vdc Power Supply
2. RTD calibrator
3. High accuracy DVM
4. Small screwdriver

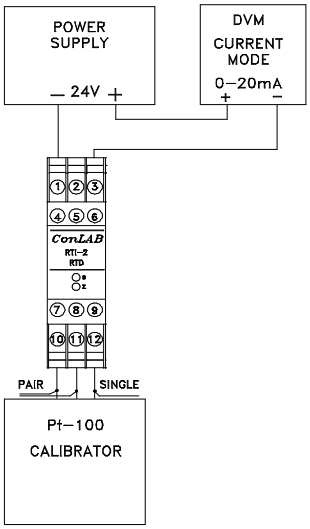
Connect the transmitter to be calibrated according to Fig #3.

a. Set the calibrator to Tmin.

b. Adjust the Zero trimmer to 4mA.

c. Set the calibrator to Tmax.

d. Adjust the Span trimmer to 20mA.



Repeat steps a. to d. until satisfactory results are achieved.

CALIBRATION EXAMPLE:

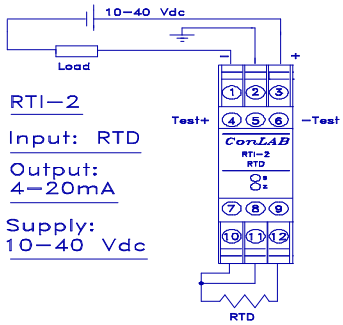
Needed: -50...+50°C

Tmin: -50°C

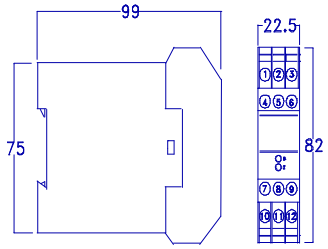
Tspan: 50-(-50) = 100°C

1. Set the DIP switch to: 0,0,1,0,0,0 (sw1..sw6)
2. Set the calibrator for -50°C calibrate "Z" to 4.000mA.
3. Set for +50°C and calibrate "S" to 20.000mA.
4. Repeat steps 2,3 until satisfactory results are obtained.

3. CONNECTION



4. MECHANICAL DIMENSIONS, mm (in)



5. SPECIFICATIONS

INPUT: 3-wire Pt-100 according to BS 1904 and DIN 43760
Option: Pt-50, 500, CU-10, Ni-120

LEADS COMPENSATION ERROR: < 0.1°C/ 20Ω lead resistance

SENSOR EXCITATION: <1mA

OUTPUT: 4 - 20 mA, (25 mA limited)

LOOP RESISTANCE: Rmax(Ω) = (Vsupply-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): 0.1% of span

TEST TERMINALS: 40 to 200 mV represent 4-20 mA

SUPPLY VOLTAGE: 10 - 40 Vdc reverse polarity protected

SUPPLY AND LOAD VARIATION EFFECT: < ±0.03% of span for full change

CMR: 127db typical dc to 60 Hz

TEMPERATURE STABILITY: ±0.01% of span /1°C

OPERATING TEMPERATURE: -20 to +70°C

STORAGE TEMPERATURE: -30 to +85°C

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