M-3637

User's Guide

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DRA-RTT-2
Temperature Two-Wire Transmitter
Operator's Manual

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DRA-RTT-2

Contents

1. PROCEDURE TO OPEN THE ENCLOSURE

Carefully insert a proper screwdriver tip into the side slot. By pressing inward and rotate the plastic locker will release. Gently pull out the unit's back cover.

2. CALIBRATION INSTRUCTIONS

2.1 Switch Setting

Six DIP switches are located inside the enclosure for coarse range, and two multi-turn potentiometers are located on the front panel for fine tuning.

* 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.1 to 3 for the Zero (Tmin), and set switches 4 to 6 for the Span (Tspan).

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

2.2 Calibration Tables

"Zero" Table

Tmin°C	SW1	SW2	SW3
-55 ~ 25	1	1	1
-25 ~ 7	0	1	1
7 ~ 40	1	0	1
40 ~ 73	0	0	1
73 ~ 105	1	1	0
105 ~ 138	0	1	0
138 ~ 170	1	0	0
170 ~ 202	0	0	0

"Span" Table

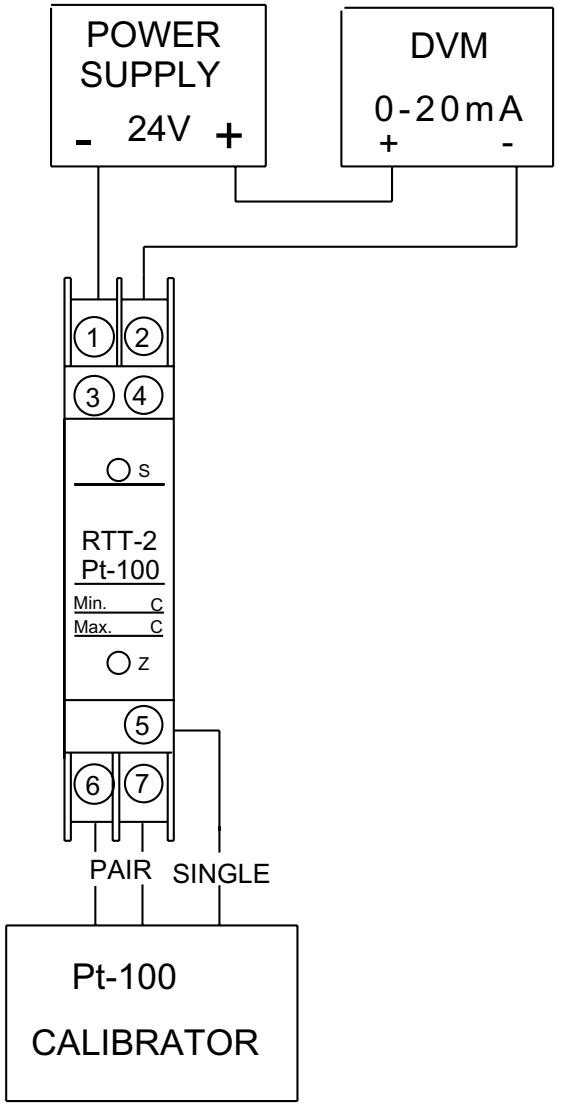
Tspan°C	SW4	SW5	SW6
30 ~ 55	1	1	1
50 ~ 90	1	0	0
90 ~ 185	0	1	0
185 ~ 380	0	0	1
380 ~ 810	0	0	0

2.3 Calibration Example:

Needed: -50 ~ +50˚C

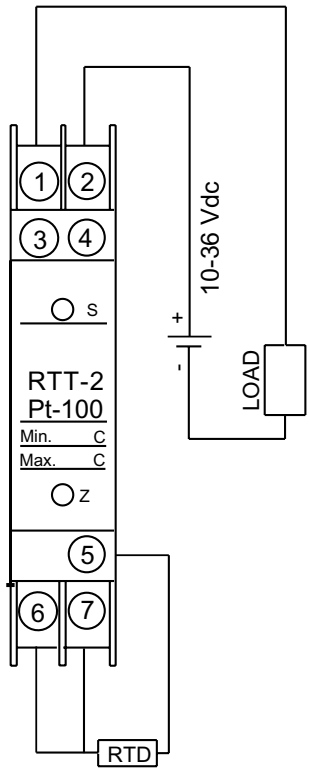
Tmin: -50˚C

Tspan: 50-(-50)=100˚C



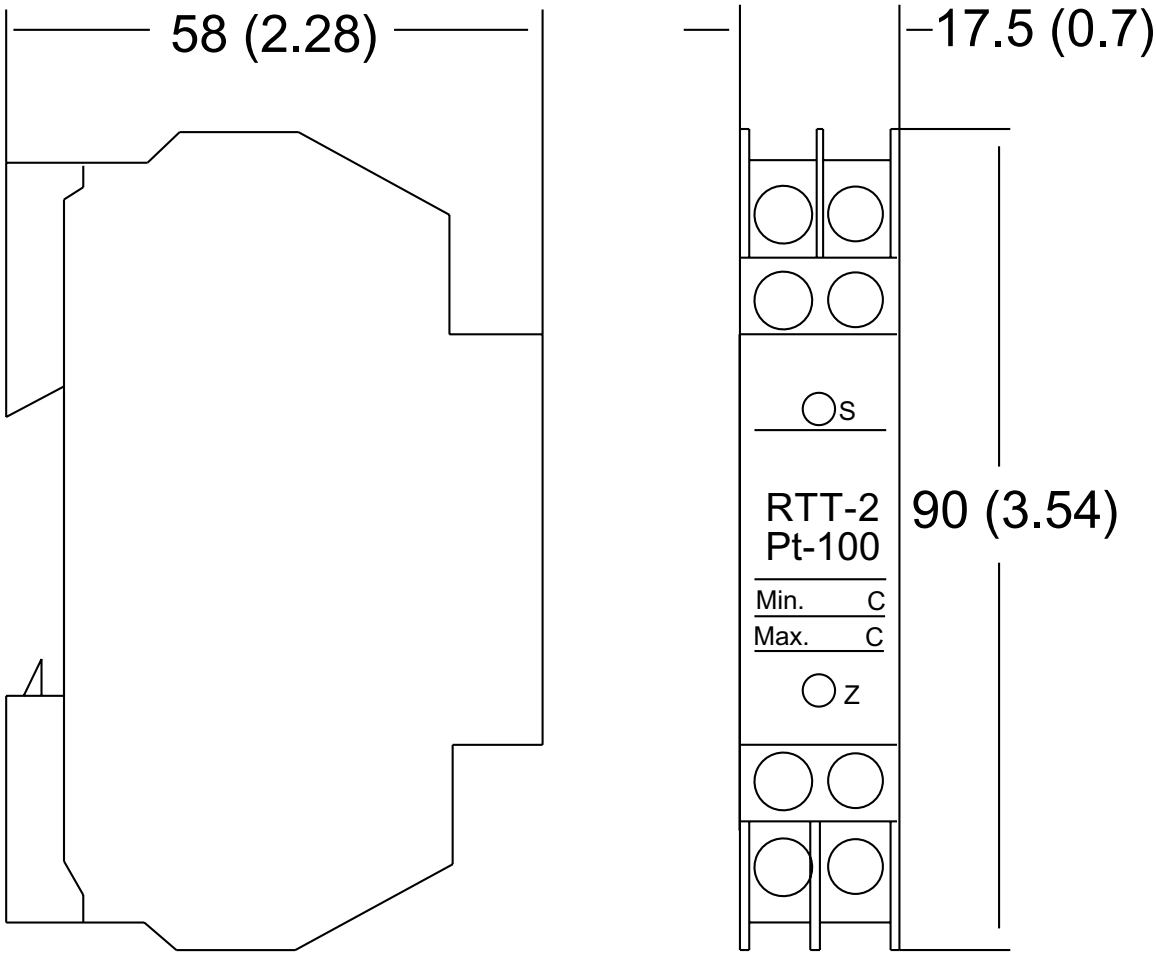
a. Set the DIP switches to: 1,1,1,0,1,0 (sw1..sw6)
b. Set the calibrator for -50° and calibrate "Z" to 4.000mA.
c. Set the calibrator for +50° and calibrate "S" to 20.000mA.
d. Repeat steps a~c until satisfactory results are obtain.

3. CONNECTION DIAGRAM



4. MECHANICAL DIMENSIONS

Dimensions in mm (inch)



5. SPECIFICATIONS

- INPUT: 3-wire Pt-100 according to BS 1904 and DIN 43760 characteristics, $\alpha = 0.00385$
- INPUT SPAN CHANGE: 30 to 810˚C
  Span Calibration: Three DIP switches and "Span" potentiometer
- INPUT ZERO CHANGE: -55 to +202˚C
  Zero Calibration: Three DIP switches and "Zero" potentiometer
- LEADS COMPENSATION ERROR:
  < ±0.05˚C / 10 Ω leads resistance
- SENSOR LEAD RESISTANCE:
  < 50Ω (two ways)
- SENSOR EXCITATION: < 1mA
- OUTPUT: 4 - 20mA, (28mA limited)
- LOOP RESISTANCE:
  Rmax(Ω) = (Vsupply-10) / .02

- ACCURACY (linearity, hysteresis and repeatability):
  < ± 0.1% of span
- TEST TERMINALS: 40 to 200 mV represent 4-20 mA
- SUPPLY VOLTAGE: 10 - 36 Vdc reverse
  polarity protected
- SUPPLY AND LOAD VARIATION EFFECT:
  < ±0.03% of span for full change
- TEMPERATURE STABILITY: ±0.015% of span / 1˚C
- OPERATING TEMPERATURE: -4 to 158˚F (-20 to +70˚C)
- STORAGE TEMPERATURE: -22 to 185˚F (-40 to +90˚C)
- HUMIDITY: 5 - 95% relative humidity, non-condensing
- ENCLOSURE: Plastic polycarbonate
- PROTECTION LEVEL: enclosure: According to IP-40
  Terminals: According to IP-20
- MOUNTING: Standard 35 mm DIN rail
- WEIGHT: 2.5 oz (70 grams)

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

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Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence. The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR NON-WARRANTY REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. P.O. number to cover the COST of the repair,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

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