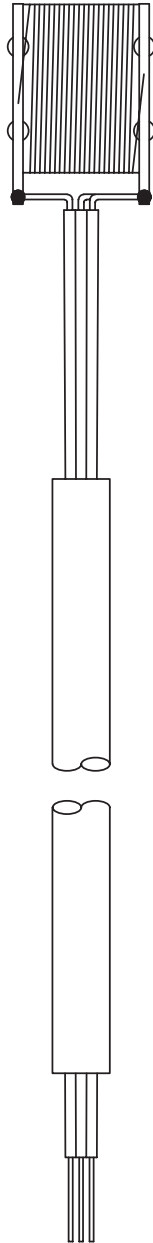




Ω OMEGA™ **User's Guide**



SRTD-1 & SRTD-2 **Surface Mount RTD Temperature** **Sensors**

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1. Dimension Drawing (Inches)

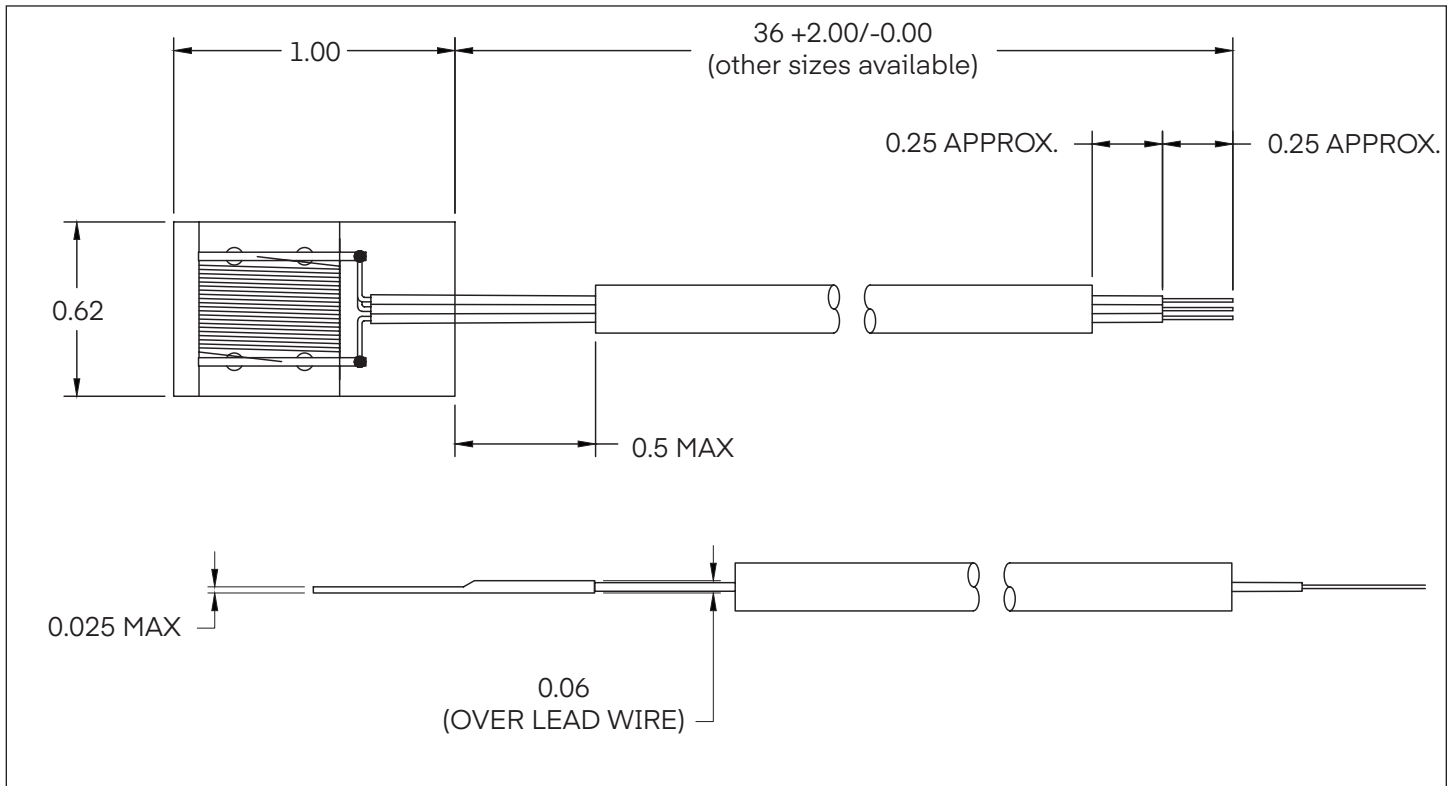


Figure 1: NEW SRTD Dimension Drawing.eps

2. General Description

OMEGA's SRTD-1 and SRTD-2 are polyimide insulated surface mount RTD temperature sensors designed to provide a practical method for measuring surface temperature. These sensors are small, flexible, and their low mass has minimal thermal effect on the material being measured. They are ideally suited for applications where the sensor can be mounted to the surface being measured using adhesives or other mechanical mounting methods.

3. Unpacking

Remove the packing list and verify that all equipment has been received. If there are any questions about the shipment, please call OMEGA Customer Service Department at: 1-800-622-2378 or 203-359-1660

We can also be reached on the Internet at omega.com e-mail: info@omega.com

Upon receipt of the shipment, inspect the container and equipment for any signs of damage. Take particular note of any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

4. Mounting Considerations

The SRTD-1 and SRTD-2 "surface mount" RTD's can be bonded to most surfaces with OMEGABOND® Epoxy Adhesives #100, #101 and #200. Each epoxy has different temperature ratings, cure characteristics, and thermal conductivity factors. Information on OMEGABOND Epoxies can be found in the OMEGA Temperature Measurement Handbook and Encyclopedia®.

Note

When using epoxies, it is important that the surfaces to be bonded are clean. Use an appropriate solvent or detergent for cleaning.

5. Specifications

Operating Temperature Range

Minimum Temperature: -320°F (-200°C)

Maximum Temperature: 500°F (260°C) continuous
550°F (288°C) short term
(less than 1500 hours)

Sensing Element: 100 ohm wire wound platinum,
 $\alpha = 0.00385 \text{ ohm/ohm/}^{\circ}\text{C}$ (DIN 43760)

Accuracy: SRTD-1: ± 0.50 ohms
 $\pm 0.50\%$ of temperature

Tolerance: Reading SRTD-2: ± 0.22 ohms
 $\pm 0.25\%$ of temperature reading

Stability: $< 0.2^{\circ}\text{C}$ drift per year at rated service temperature with proper mounting

Response Time: 70 ms to reach 63.2% of a step change in temperature in water flowing at 3 ft/sec transverse to the sensor (ASTM-E-644)

Self-Heating Effect: The bare sensor will rise less than 1°C while dissipating an I2R power of 3 milliwatts in still air (ASTM-E-644)

Insulation Resistance: The insulation resistance between outer sensor insulation clamped between two metal plates and the common lead wire is 50 megohms minimum with 50 volts dc applied to a dry sensor at room temperature (ASTM-E-644)

Minimum Bend RADII for Mounting: $3/8"$ transverse to element winding,
 $1-1/2"$ longitudinal to winding

Lead Wire: 36" leads, 26 AWG stranded nickel-plated copper, PVA insulated, 3-wire configuration (refer to schematic diagram)

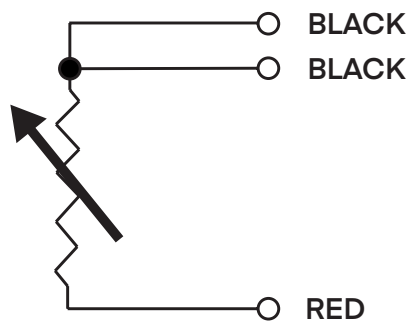


Figure 2: 3-wire SRTD-2 Wiring for 72-inch length

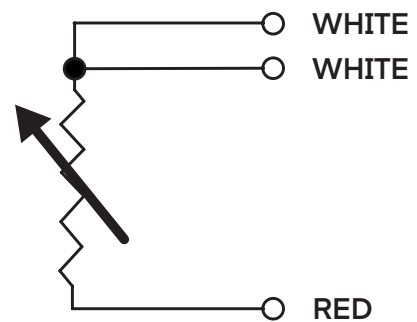


Figure 3: 3-wire SRTD Wiring for all other lengths

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's 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 malfunctions, 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 having been 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 in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS/INQUIRIES

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

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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