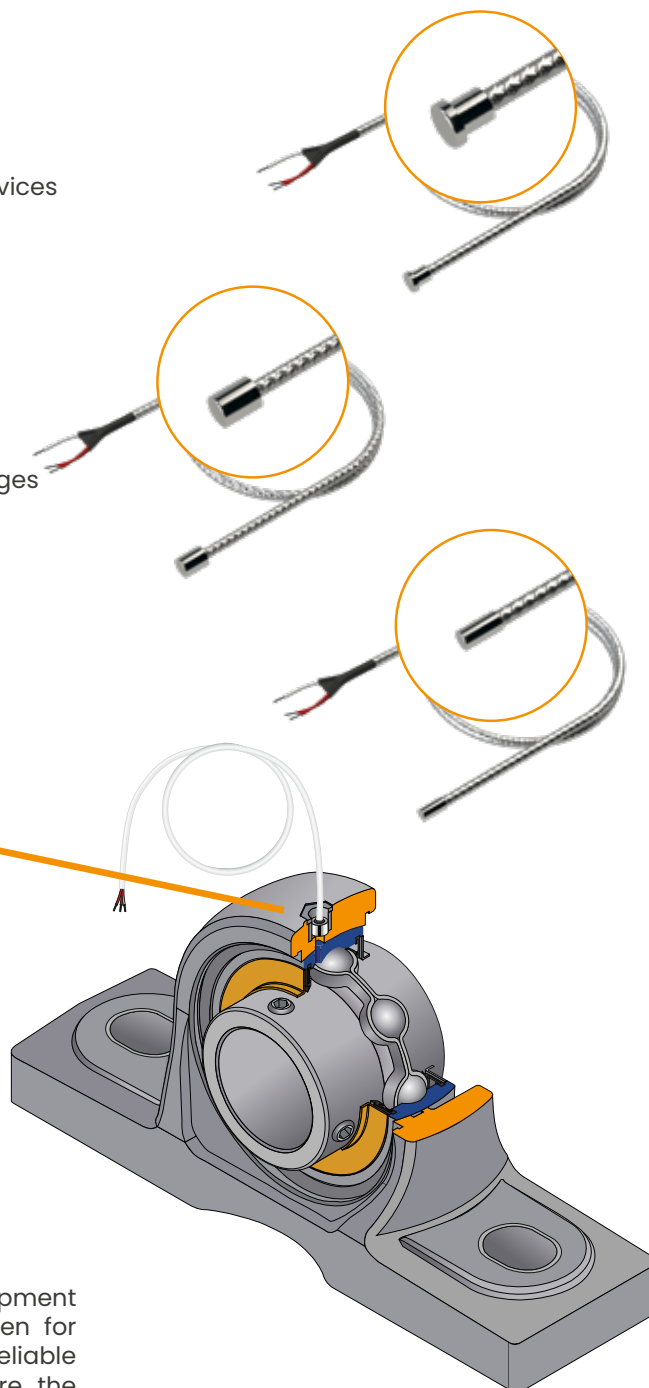
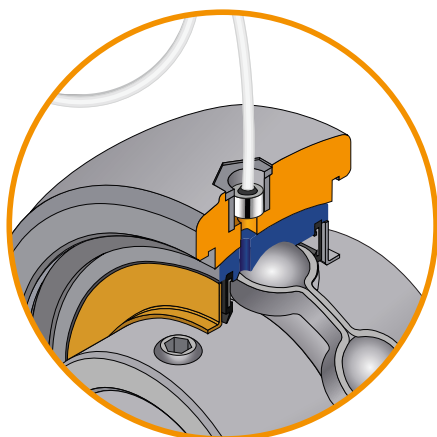


Application

- Measuring range: -50 .. +260 °C
- General construction of machines and devices
- Bearing temperature measurement
- All industries

Technical properties

- Small dimensions (from Ø 2.0 mm)
- Short response time to temperature changes
- Teflon® PFA insulated wires



Description

Bearings mounted in industrial rotating equipment operate in extremely difficult conditions, often for very long periods of time. The best and most reliable indicator of bearing condition is to measure the temperature of the metal above the bearing plate.

The detection of an increase in temperature can be a warning that the lubricating oil film has been broken, allowing the machine to be stopped and then perform maintenance. This will prevent serious damage to the bearing and damage to its mounting.

Miniature bearing temperature sensors from TERMOAPARATURA WROCŁAW are a simple and cheap solution for bearing temperature monitoring.

Other versions

This data sheet contains only a small part of our program of supply of RTDs for bearing temperature measurement.

Other versions can be supplied on request.

CABLE RESISTANCE THERMOMETER

TYPE TOPE325

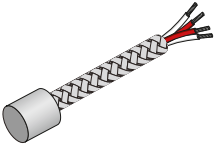
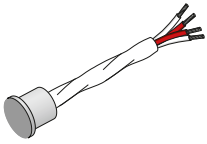
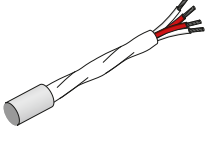
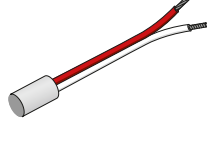


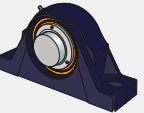


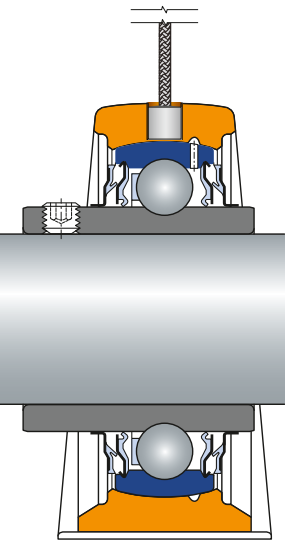
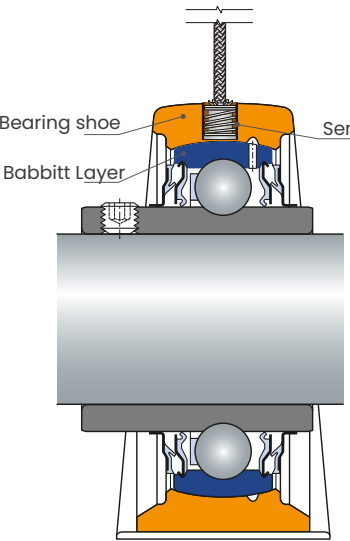
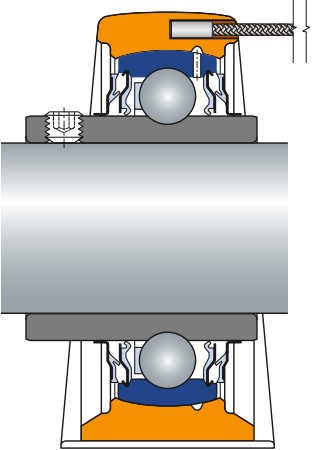
Data sheet TOPE325 | Edition 2023

Easy installation

Standard assemblies are easy to install into drilled holes for general temperature sensing applications, while cylinder spring assemblies are inserted into a milled hole with a retaining clip to compress the spring and hold the sensor to the surface being monitored.

Designs


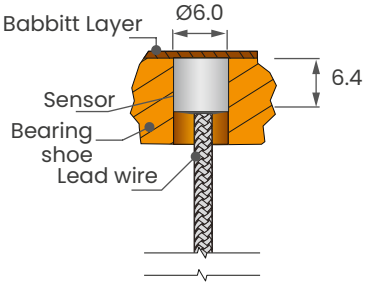

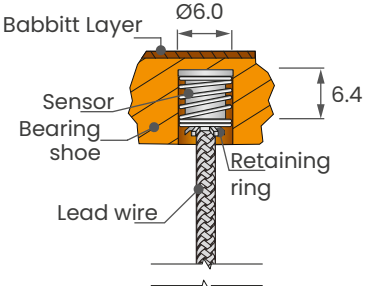

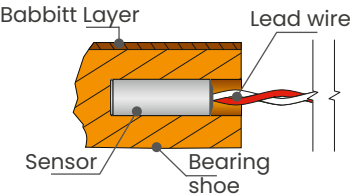
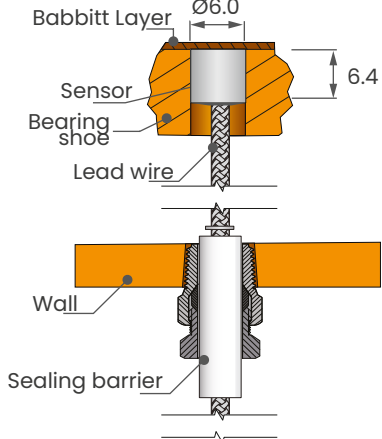
Parameter	Tip styles, standard lengths and materials			
	Version A	Version B	Version C	
Length / Diameter				
	Housing L: 6.4mm Housing Ø: 6.0 mm	Housing L: 6.4mm Housing Ø: 4.5mm Flange Ø: 6.0mm	Housing L: 7.0mm Housing Ø: 3.2mm	Housing L: 7.0mm Housing Ø: 2.0mm
Connection line	2-, 3-, 4-wire	2-, 3-, 4-wire	2-, 3-, 4-wire	2-, 3-, 4-wire
Cable cross section	0.22 mm ²	0.22 mm ²	0.22 mm ²	0.14 mm ²
Sensor type	Pt100 (IEC751, α=0.00385)	Pt100 (IEC751, α=0.00385)	Pt100 (IEC751, α=0.00385)	Pt100 (IEC751, α=0.00385)
Tolerance class	Class A, B	Class A, B	Class A, B	Class A, B

Designs	Version A	Version B	Version C
  			

TERMOAPARATURA's bearing temperature sensors can be configured to best suit your application.

Case Styles: Three basic case configurations (A, B and C/D) allow for different mounting methods, but all are designed to minimize the distance between the bearing surface and sensing element for optimum response and temperature measurement accuracy.

Applications

Case Style	Installation Instructions	Dimensions
	<p>Mounting method</p> <p>Install sensor Style A just below the babbitt layer, then puddle the babbitt metal over the sensor tip and make it smooth.</p> <p>Fill in the remaining space with epoxy resin for final bonding.</p> <p>Detailed assembly instructions in DTR M-1111.</p>	 <p>case style A</p>
<p>Version A</p> 	<p>Mounting method</p> <p>The star plate together with the spring provide the pressure of the sensor to the bottom of the hole and prevent it protrusion.</p> <p>The sensor can also be equipped with a locking sleeve instead of a star plate. Locking sleeve (beryllium copper) enables removing the sensor and reinstalling it.</p> <p>Detailed assembly instructions in Instruction M-1111.</p>	 <p>case style B</p>
<p>Version B</p> 	<p>Mounting method</p> <p>Apply a small amount of thermal paste on sensor tip and place the sensor as close as possible underneath a layer of babbitt.</p> <p>Fill in the remaining space with epoxy resin for final bonding.</p> <p>Detailed assembly instructions in Instruction M-1111.</p>	 <p>case style C / D</p>
<p>Version C/D</p>	<p>Mounting method</p> <p>Optionally for applications where is oil leakage/penetration along cable and through an access hole we recommend to use Oil Seal Barrier (Sleeve).</p> <p>All above versions of RTDs can be supplied with a pressure tested oil seal barrier to prevent leakage.</p>	
<p>Oil Seal Barrier</p>		

CABLE RESISTANCE THERMOMETER

TYPE TOPE325


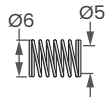



Data sheet TOPE325 | Edition 2023

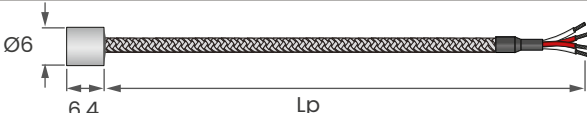
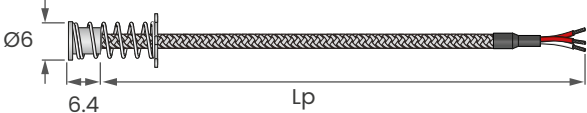
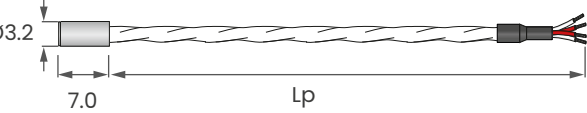
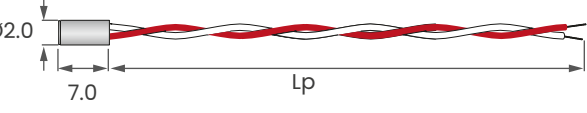
Specification

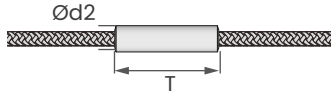
Temperature range	-50 to +260°C
Housing material	stainless steel AISI 304
Connection cable	stranded nickel-plated copper conductors with teflon® PFA insulation
Response time	3.0 sec (version A) up to 1.5 sec. (version D), typical value in mixed water (1 m/sec)
Insulation resistance	10 MΩ min. at 100 VDC (cable to housing)

Accessories

	Self-locking retaining ring Model AC172
	Compression spring Model AC171
	Locking sleeve Model AC915-1

Designs

Example	
Version A	
Version B	
Version C	
Version D	

Oil Seal Barrier - Diameters	
	
Standard sizes	
Oil seal Diameter (d2)	Internal Diameter
Ø3.2mm (1/8")	Ø2.7mm
Ø4.76mm (3/16")	Ø3.33mm
Ø6.0mm	Ø4.0mm
Ø6.4mm (1/4")	Ø4.93mm

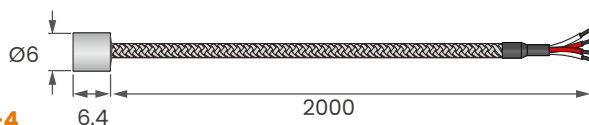
Order code

TOPE325 - - - - - -

Order	Description	Code	<input checked="" type="checkbox"/>	Remarks
1	Case Style	A	<input type="checkbox"/>	Case style A
		B	<input type="checkbox"/>	Case style B
		C	<input type="checkbox"/>	Case style C
		D	<input type="checkbox"/>	Case style D
2	Cable length Lp	500	<input type="checkbox"/>	500 mm
		1000	<input type="checkbox"/>	1000 mm
		xxx	<input type="checkbox"/>	Other, please specify
3	Tolerance class	A	<input type="checkbox"/>	Class A according to PN-EN 60751
		B	<input type="checkbox"/>	Class B according to PN-EN 60751
4	Connection line	2	<input type="checkbox"/>	2-wire
		3	<input type="checkbox"/>	3-wire
		4	<input type="checkbox"/>	4-wire
5	Cable insulation	TW	<input type="checkbox"/>	Teflon® PFA
		TT	<input type="checkbox"/>	Teflon® PFA / teflon® PFA (up to +260°C)
		TP	<input type="checkbox"/>	Teflon® PFA / steel braid (up to +260°C)
6	Optional oil seal barrier	d2 x T (mm)	<input type="checkbox"/>	3.2 x 50 mm; 4.76 x 50 mm; 6.0 x 50 mm; 6.4 x 50 mm

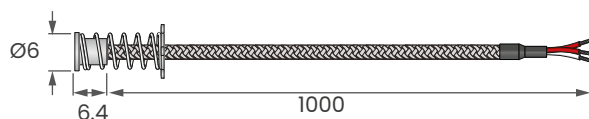
Sample configured products

Examples



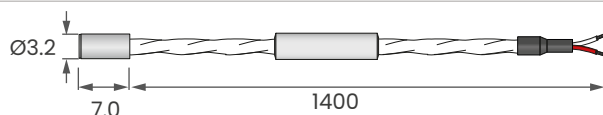
TOPE325-A-2000-A-4

Temperature sensor 1xPt100, sheath $\text{\O}6 \times 6.4$ mm, teflon insulated connection cable with steel braid, length 2000 mm, class A according to PN-EN 60751, 4-wire circuit.



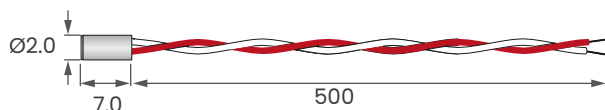
TOPE325-B-1000-A-4

Temperature sensor 1xPt100, sheath with flange $\text{\O}6 \times 6.4$ mm, connecting cable in teflon insulation, length 1000 mm, class A according to PN-EN 60751, 4-wire circuit.



TOPE325-C-1400-B-2-3.2x50

Temperature sensor 1xPt100, sheath $\text{\O}3.2 \times 7$ mm, connecting cable in teflon insulation, length 1400 mm, class B according to PN-EN 60751, 2-wire circuit.



TOPE325-D-500-B-2

Temperature sensor 1xPt100, sheath $\text{\O}2 \times 7$ mm, connecting cable in teflon insulation, length 500 mm, class B according to PN-EN 60751, 2-wire circuit.