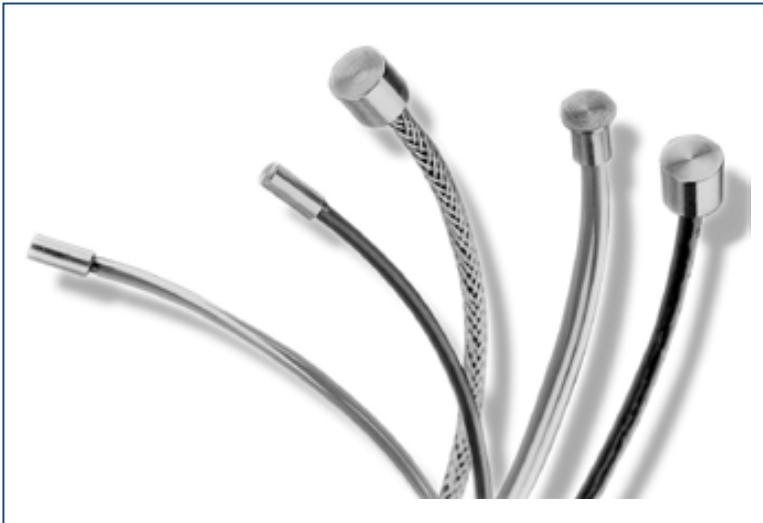


MINIATURE BEARING TEMPERATURE SENSORS-IS 50



FEATURES

- FOR EMBEDDED APPLICATIONS IN ROTATING MACHINES
- RTD'S - PT100-IEC751
- THERMOCOUPLES TYPES J, K, T & E
- SINGLE AND DUPLEX SENSORS
- VARIOUS STYLES AND SIZES
- OPERATING TEMPERATURE:
TO +250°F (+120°C)






The range of Miniature Bearing Temperature Sensors is designed for use in embedded applications where temperature monitoring of bearings is critical to machine performance and reliability.

The bearings of industrial rotating equipment operate under arduous conditions - often for considerable periods of time. The most reliable indicator of bearing condition is the temperature of the metal beneath the bearing shoe.

Recognition of rising temperature can provide a warning of the breakdown of the lubricating oil film; thus allowing machine shutdown and maintenance to take place - avoiding the probable catastrophic failure of the bearing and possible damage to its mounting. Pyrosales Miniature Bearing Sensors provide a simple and cost-effective method of monitoring bearing temperatures.

Typical applications for Miniature Bearing Sensors include motors, turbines, generators, pumps and other rotating machinery.

Embedment RTD's & Thermocouples Maximum Number of Conductors and Wire Gauge (AWG)

Sensor Tyoe	Case Style A		Case Style B		Case Style C		Case Style D		Case Style E	
										
	Case L: 0.250" (6.4 mm) Case Ø: 0.275" (7.0 mm)		Case L: 0.250" (6.4 mm) Case Ø: 0.188" (4.8 mm) Flange Ø: 0.250" (6.4 mm)		Case L: 0.300" (7.6 mm) Case Ø: 0.125" (3.2 mm)		Case L: 0.300" (7.6 mm) Case Ø: 0.080" (2.0 mm)		Case L: 0.250 (6.4 mm) Case Ø: 0.250 (6.4 mm)	
	Single ¹	Dual ¹	Single ¹	Dual ¹	Single ¹	Dual ¹	Single ¹	Dual ¹	Single ¹	Dual ¹
Pt100-EN60751	3 wire 24 AWG	6 wire 24 AWG	3 wire 24 AWG	6 wire 24 AWG	3 wire 26 AWG	NA	3 wire 30 AWG	NA	3 wire 24 AWG	6 wire 24 AWG
TC(E,J,K,T)	2 wire 24 AWG	4 wire 24 AWG	2 wire 24 AWG	4 wire 24 AWG	2 wire 26 AWG	NA	2 wire 28 AWG	NA	2 wire 24 AWG	4 wire 24 AWG

¹Smaller wire available - Contact Factory

²Also meets ± .36%Tolerance Band

³Thermocouple (E,J,K,T) - Standard Limits of Error, Special Limits of Error Available - Consult Factory

Specifications

Temperature Range: -40 to 230°C (-40 to 446°F)

Case Materials: 316 SS; Copper; Nickel Plated Copper; Tin Plated Copper, Brass.


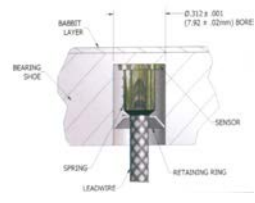
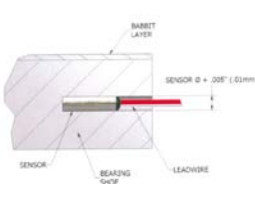
Lead Wires: Stranded silver plated copper conductors with PTFE insulation and optional stainless steel overbraid.

Time Constant: 3.0 sec. (Style A) to 1.5 sec. (Style D), Typical value in moving water (3ft/sec).

Insulation Resistance: 10 Mega ohms Min. at 100 VDC, leads to case (RTD).

10 Mega ohms Min. at 100 VDC, Ungrounded only (T/C)

Installation & Accessories

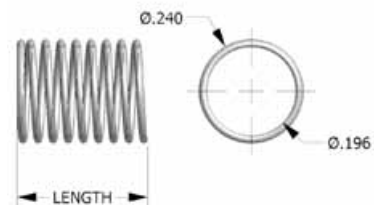
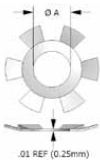
Case Style	Installation Instruction	Dimensions
A & E	Install Case Style A sensor just below the babbitt layer, then puddle the babbitt metal over the sensor tip and smooth. Case E is bonded with epoxy near the babbitt face for best readings.	
B	The Spring Steel style retaining ring allows spring loading with the spring and retaining ring (order separately). The Beryllium Copper style retaining ring allows removal and reinstallation. Slide the spring and ring over the leads, insert the sensor tip into a milled hole, and push down on the retaining ring to compress the spring and secure the sensor.	
C & D	Bond with epoxy inside small bearing shoes. Locate near the babbitt face for best readings.	

Retaining Rings		
Style	Ordering P/N	"A" Diameter
1	48-0054-001	0.156" (3.96 mm)
1	48-0054-002	0.136" (3.45 mm)
2	48-0111-001	0.213" (5.4 mm)
To be ordered in conjunction with Case Style B		

Springs		
Ordering P/N	Length (in.)	Load (lbs.)
6961-37	0.44"	2.75
6961-24	0.50"	2.71
48-0048-003	1.25"	2.02
48-0048-005	1.75"	2.02
48-0048-004	2.00"	2.02
48-0048-001	3.00"	2.02
To be ordered in conjunction with Case Style B		

(1) Spring Steel

(2) Beryllium Copper



Miniature Bearing Temperature Sensors

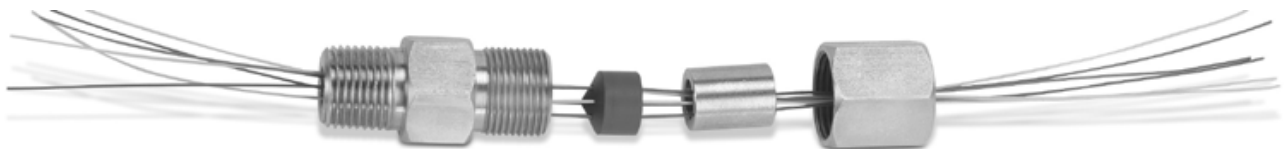
How To Order

Case Type	Case Material	Sensor Type	Junction Type	Sensor Configuration	Leadwire Type	Leadwire Length
A Ø = 0.275" L = 0.250"	S316-316SS	P1.2 = RTD 2 wire (± 0.12% at 0°C)	X = RTD	1 = Single Detector	24TE = 24AWG, Teflon insulated leads, Teflon jacket.	Length x (in.) / Length y (in) x = Overall length (36.0" standard) y = Length of exposed wire, including 1/2" exposed leads (1.0" total standard)
B Ø = 0.188" L = 0.250"	CUTEP-Copper	P1.3 = RTD 3 wire (± 0.12% at 0°C)	U = Ungrounded	2 = Duplex Detector	24ST = 24AWG, Teflon insulated leads, SST overbraid, with overall Teflon jacket.	
C Ø = 0.125" L = 0.300"	CUTEP/NI-Copper ,Nickel Plated	P1.4 = RTD 4 wire (± 0.12% at 0°C)	G = Grounded		26ST = 26AWG, Teflon insulated leads, SST overbraid, with overall Teflon jacket	
D Ø = 0.080" L = 0.300"	CUTEP/SN-Copp er,Tin Plated	TCE = T/C Type E			30ST = 30 AWG Teflon Insulated leads, SST overbraid, with overall Teflon jacket.	
E Ø = 0.250" L = 0.250"	BR = Brass	TCJ = T/C Type J				
		TCK = T/C Type K				
		TCT = T/C Type T				

SP = Special Requirements, (specify).

Example: MBS-B-BR-P1.3-X-1-24TE-36.0/1.0

Bearing Sensor Wire Seals (PYWS) - To Prevent Oil Leakage



Pyrosales Technologies PYWS assemblies were originally designed for use with embedment bearing temperature sensors to prevent oil migrating along the sensor leads. They seal on the individual insulated leads exiting an oilfilled bearing house. They may also be used to seal all types of insulated instrumentation leadwire. These sealing assemblies can be found in large motors, generators, turbines, pumps, compressors and journal bearing pedestals.

Construction consists of 303SST for metallic parts and a sealant made from 'Viton'. Standard assemblies seal 2 to 14 wires in a variety of wire gauges. Please consult Pyrosales Technologies for custom needs.

- Temperature Range: Ambient to +100° F (+37.8° C)
- Pressure Range: to 50 psig (3.4 bar)

The replaceable sealant permits repeated use of the same fitting. Elements can be easily assembled or replaced in the field. To replace the sealant or elements, simply loosen the cap, replace the necessary items, relubricate and retorqued the cap. See page 68 of our Catalog 5001C for more information on our PYWS model.

To order a Replacement Sealant, order

RS – (Gland) – (Element Size) – (Number of Holes) – V

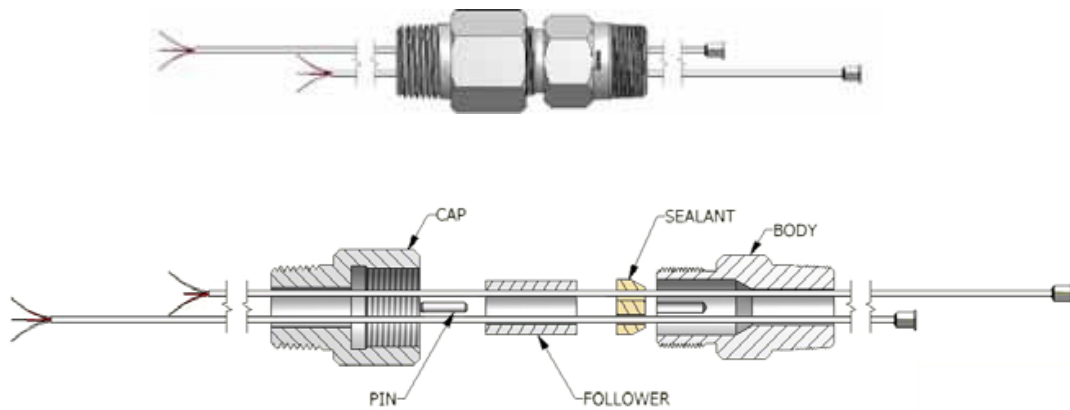
Example: RS-PYWS4-20-2-V

How To Order (PYWS)

Catalog Numbering System

Gland Style	Element Size	Cap Style	Number of Gland Style Element	Sealant
PYWS4 - 1/2 NPT	20 - 0.044-0.059" dia. over insulation 22 - 0.037-0.051" dia. over insulation	A- has mounting thread only B- has both ends threaded	2 to 14	V - Viton (Other Sealants available upon request)
PYWS5 - 3/4 NPT	24 - 0.032-0.045" dia. over insulation 26 - 0.028-0.041" dia. over insulation 120 - 0.115-0.130" dia. over insulation 125 - 0.123-0.127" dia. over insulation			

Example: PYWS4-20-A3-V



P/N	Number of Wires	Diameter Over Insulation		Thread NPT	Length "A"		Length "B"		Hex Size				Pressure Rating Viton	
		IN	MM		IN	MM	IN	MM	Body	Cap	Body	Cap	PSIG	BAR
PYWS4-20	2-8	0.044-0.059	1.1-1.5	1/2	2.50	63.5	3.25	82.6	1.000	1.000	25.4	25.4	50	3
PYWS4-22	2-8	0.037-0.051	0.9-1.3	1/2	2.50	63.5	3.25	82.6	1.000	1.000	25.4	25.4	50	3
PYWS4-24	2-8	0.032-0.045	0.8-1.1	1/2	2.50	63.5	3.25	82.6	1.000	1.000	25.4	25.4	50	3
PYWS4-26	2-8	0.028-0.041	0.7-1.0	1/2	2.50	63.5	3.25	82.6	1.000	1.000	25.4	25.4	50	3
PYWS5-20	2-14	0.044-0.059	1.1-1.5	3/4	2.88	73.0	3.63	92.1	1.250	1.500	31.8	38.1	50	3
PYWS5-22	2-14	0.037-0.051	0.9-1.3	3/4	2.88	73.0	3.63	92.1	1.250	1.500	31.8	38.1	50	3
PYWS5-24	2-14	0.032-0.045	0.8-1.1	3/4	2.88	73.0	3.63	92.1	1.250	1.500	31.8	38.1	50	3
PYWS5-26	2-14	0.028-0.041	0.7-1.0	3/4	2.88	73.0	3.63	92.1	1.250	1.500	31.8	38.1	50	3
PYWS5-120	2-4	0.115-0.130	2.9-3.3	3/4	2.88	73.0	3.63	92.1	1.250	1.500	31.8	38.1	50	3
PYWS5-125	2-4	0.123-0.127	3.1-3.2	3/4	2.88	73.0	3.63	92.1	1.250	1.500	31.8	38.1	50	3

PYWS assemblies may be purchased with SAE/MS thread mount, weld neck or flange style mounts. Consult factory for details.

All pressure and torque ratings were determined at 68° F (20° C) using stainless steel rod as the element. Pressure ratings may degrade at higher temperatures.

Pressure rating guide values are provided for glands with elements restrained by the compressed sealant. Higher pressure may be attained with additional element restraints.

For proper assembly of these sealing glands, see the Assembly Instructions provided in Catalog 5001C.