



▶ SECTION 7: MINIATURE SENSORS

- Embedment sensors install in bearings for over-temperature protection
- Small, rugged RTDs and thermocouples withstand rough handling and harsh environments
- Certified non-sparking sensors for hazardous areas
- Bolt-on designs for easy installation

Embedment RTDs

Element	TCR Ω/Ω/°C	Case style A		Case style B		Case style C		Case style D	
		Single	Dual	Single	Dual	Single	Dual	Single	Dual
Platinum, 100 Ω ±0.36% at 0°C	.00392	S325PA, S11636PA*	S4026PA	S331PA	S7792PA	S341PA	S14320PA	S12414PA	
Platinum, 100 Ω ±0.12% at 0°C (Meets EN60751, Class B)	.00385	S304PD	S309PD	S306PD	S14405PD	S308PD	S14455PD	S13282PD	
Platinum, 100 Ω ±0.36% at 0°C	.00385	S7304PE	S305PE	S7746PE	S307PE	S7908PE	S14456PE	S13282PE	
Platinum, 1000 Ω ±0.12% at 0°C	.00385	S101907PF	S101911PF	S101908PF	S101912PF	S101909PF	S101913PF	S101910PF	
Copper, 10 Ω ±0.2% at 25°C	.00427	S324CA	S4026CA	S332CA		S342CA			
Nickel, 120 Ω ±0.5% at 0°C	.00672	S326NA, S11636NA*	S4026NA	S330NA	S7792NA	S340NA			

*MIL-T-24388C qualified models

Overview

Install miniature sensors in or beneath the babbitt layer of bearing shoes. They monitor metal temperature — the most reliable indicator of bearing condition — to give early warning of oil film breakdown. Machines can then be shut down and the problem corrected before catastrophic failure occurs.

While no larger than many bare ceramic elements, these RTDs have metal cases and insulated leads to withstand rough handling and harsh environments. They are easy to install in drilled holes for general purpose sensing.

Specifications

Temperature range: -50 to 260°C (-58 to 500°F).

Case: Tin plated copper alloy. Models S12414, S13282 and S101910: Stainless steel.

Babbitt tip: Factory applied babbitt tip, available on case style A or B, reduces the danger of overheating the sensor when installed in babbitt layer.

Leads: Stranded copper with PTFE insulation; stainless steel overbraid optional (one sleeve covers all leads). Polyimide insulation available on selected models (See specification and order options).

Time constant: 3.0 seconds (case style A) to 1.5 seconds (case style D), typical value in moving water.

Insulation resistance:
10 megohms min. at
100 VDC, leads to case.

***MIL-T-24388C qualified models:**
PRT-EM-E2: Order S11636PA3K36B1.
NRT-EM-E1: Order S11636NA3K36B1.

Leadwire size (AWG):

Case style	Number of leads			
	2	3	4	6
A	24	24	24	24
B	24	24	28	28
C	24	26	30	30
D	30	30	34	



STOP OIL SEEPAGE!

Specification and order options

S331PA	Model number from table
3	Number of leads per sensing element (2, 3, or 4): CA or PD elements not available with 2 leads. 4 leads available on single elements and S14405 only.
S	Covering over leadwires: T = PTFE insulated leads only S = Stainless steel overbraid with PTFE insulated leads F = FEP over PTFE insulated leads R = FEP over stainless steel braid and PTFE insulated leads. E = FEP over stainless steel braid, with elastomer fill and PTFE insulated leads. (max fill length 144") S11636 Covering options only: K = Polyimide insulated leads. S = Stainless steel overbraid with PTFE insulated leads.
36	Lead length in inches
(Stop here for case style C or D; no installation variable)	
AC1	Optional Installation/Accessory option: B0 = No babbitt metal or accessories B1 = Babbitt metal applied AC1 = Supplied with AC171 spring and AC172 series ring (case style B only) AC2 = Supplied with AC171 spring and AC1038 ring (case style B only) AC3 = Supplied with AC171 spring and AC915-1 ring (case style B only)
S331PA3S36AC1 = Sample part number	

Specifications subject to change



STOCKED PARTS

Case Style	Sensing Element	Single or Dual Elements	TCR ($\Omega/\Omega/^{\circ}\text{C}$)	# of Leads	Lead Size (AWG)	Lead Covering	Lead Length	Optional Babbitt tip	Stock Part #
A	NA	Single	0.00672	3	24	Polyimide	36	Yes	S11636NA3K36B1
A	PA	Single	0.00392	3	24	Polyimide	36	Yes	S11636PA3K36B1
A	PA	Single	0.00392	3	24	Stainless Steel Overbraid	36	No	S325PA3S36B0
A	PA	Single	0.00392	3	24	PTFE	36	No	S325PA3T36B0
A	PA	Single	0.00392	3	24	Stainless Steel Overbraid	72	No	S325PA3S72B0
A	PA	Single	0.00392	3	24	PTFE	72	No	S325PA3T72B0
A	PA	Single	0.00392	3	24	Stainless Steel Overbraid	144	No	S325PA3S144B0
A	PA	Single	0.00392	3	24	PTFE	144	No	S325PA3T144B0
A	PD	Single	0.00385	3	24	Stainless Steel Overbraid	36	No	S304PD3S36B0
A	PD	Single	0.00385	3	24	PTFE	36	No	S304PD3T36B0
A	PD	Single	0.00385	3	24	Stainless Steel Overbraid	72	No	S304PD3S72B0
A	PD	Single	0.00385	3	24	PTFE	72	No	S304PD3T72B0
A	PD	Single	0.00385	3	24	Stainless Steel Overbraid	144	No	S304PD3S144B0
A	PD	Single	0.00385	3	24	PTFE	144	No	S304PD3T144B0
A	PD	Dual	0.00385	3	24	Stainless Steel Overbraid	36	No	S309PD3S36B0
A	PD	Dual	0.00385	3	24	Stainless Steel Overbraid	72	No	S309PD3S72B0
A	PD	Dual	0.00385	3	24	Stainless Steel Overbraid	144	No	S309PD3S144B0
B	PA	Single	0.00392	3	24	PTFE	36	No	S331PA3T36B0
B	PA	Single	0.00392	3	24	Stainless Steel Overbraid	36	No	S331PA3S36B0
B	PA	Single	0.00392	3	24	Stainless Steel Overbraid	72	No	S331PA3S72B0
B	PA	Single	0.00392	3	24	PTFE	72	No	S331PA3T72B0
B	PA	Single	0.00392	3	24	PTFE	144	No	S331PA3T144B0
B	PA	Single	0.00392	3	24	Stainless Steel Overbraid	144	No	S331PA3S144B0
B	PD	Single	0.00385	3	24	Stainless Steel Overbraid	36	No	S306PD3S36B0
B	PD	Single	0.00385	3	24	PTFE	36	No	S306PD3T36B0
B	PD	Single	0.00385	3	24	Stainless Steel Overbraid	72	No	S306PD3S72B0
B	PD	Single	0.00385	3	24	PTFE	72	No	S306PD3T72B0
B	PD	Single	0.00385	3	24	Stainless Steel Overbraid	144	No	S306PD3S144B0
B	PD	Single	0.00385	3	24	PTFE	144	No	S306PD3T144B0
B	PD	Dual	0.00385	3	28	Stainless Steel Overbraid	36	No	S14405PD3S36B0
B	PD	Dual	0.00385	3	28	Stainless Steel Overbraid	72	No	S14405PD3S72B0
B	PD	Dual	0.00385	3	28	Stainless Steel Overbraid	144	No	S14405PD3S144B0
C	PA	Single	0.00392	3	26	PTFE	36	n/a	S341PA3T36
C	PA	Single	0.00392	3	26	Stainless Steel Overbraid	36	n/a	S341PA3S36
C	PA	Single	0.00392	3	26	Stainless Steel Overbraid	72	n/a	S341PA3S72
C	PA	Single	0.00392	3	26	PTFE	72	n/a	S341PA3T72
C	PA	Single	0.00392	3	26	Stainless Steel Overbraid	144	n/a	S341PA3S144
C	PA	Single	0.00392	3	26	PTFE	144	n/a	S341PA3T144
C	PD	Single	0.00385	3	26	PTFE	36	n/a	S308PD3T36
C	PD	Single	0.00385	3	26	Stainless Steel Overbraid	36	n/a	S308PD3S36
C	PD	Single	0.00385	3	26	Stainless Steel Overbraid	72	n/a	S308PD3S72
C	PD	Single	0.00385	3	26	PTFE	72	n/a	S308PD3T72
C	PD	Single	0.00385	3	26	Stainless Steel Overbraid	144	n/a	S308PD3S144
C	PD	Single	0.00385	3	26	PTFE	144	n/a	S308PD3T144
C	PD	Dual	0.00385	3	30	Stainless Steel Overbraid	36	n/a	S14455PD3S36
C	PD	Dual	0.00385	3	30	Stainless Steel Overbraid	72	n/a	S14455PD3S72
C	PD	Dual	0.00385	3	30	Stainless Steel Overbraid	144	n/a	S14455PD3S144
D	PA	Single	0.00392	3	30	PTFE	36	n/a	S12414PA3T36
D	PA	Single	0.00392	3	30	Stainless Steel Overbraid	36	n/a	S12414PA3S36
D	PA	Single	0.00392	3	30	Stainless Steel Overbraid	72	n/a	S12414PA3S72
D	PA	Single	0.00392	3	30	PTFE	72	n/a	S12414PA3T72
D	PA	Single	0.00392	3	30	Stainless Steel Overbraid	144	n/a	S12414PA3S144
D	PA	Single	0.00392	3	30	PTFE	144	n/a	S12414PA3T144
D	PD	Single	0.00385	3	30	PTFE	36	n/a	S13282PD3T36
D	PD	Single	0.00385	3	30	Stainless Steel Overbraid	36	n/a	S13282PD3S36
D	PD	Single	0.00385	3	30	PTFE	72	n/a	S13282PD3T72
D	PD	Single	0.00385	3	30	Stainless Steel Overbraid	72	n/a	S13282PD3S72
D	PD	Single	0.00385	3	30	PTFE	144	n/a	S13282PD3T144
D	PD	Single	0.00385	3	30	Stainless Steel Overbraid	144	n/a	S13282PD3S144

Note: Available up to 10 pieces or contact Minco Customer Service

Specifications subject to change

