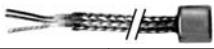





Embedment RTDs

| Element | TCR $\Omega/\Omega/^{\circ}\text{C}$ | Case style A | | Case style B | | Case style C | | Case style D | |
|--|---|---|-----------|---|-----------|---|-----------|---|------|
| | | Case L: 0.250" (6.4 mm) Case \varnothing : 0.275" (7.0 mm) | | Case L: 0.250" (6.4 mm) Case \varnothing : 0.188" (4.8 mm) Flange \varnothing : 0.250" (6.4 mm) | | Case L: 0.300" (7.6 mm) Case \varnothing : 0.125" (3.2 mm) | | Case L: 0.300" (7.6 mm) Case \varnothing : 0.080" (2.0 mm) | |
| | |  | |  | |  | |  | |
| | | Single | Dual | Single | Dual | Single | Dual | Single | Dual |
| Platinum, 100 Ω $\pm 0.36\%$ at 0°C | .00392 | S325PA, S11636PA* | S4026PA | S331PA | S7792PA | S341PA | S14320PA | S12414PA | |
| Platinum, 100 Ω $\pm 0.12\%$ at 0°C (Meets EN60751, Class B) | .00385 | S304PD | S309PD | S306PD | S14405PD | S308PD | S14455PD | S13282PD | |
| Platinum, 100 Ω $\pm 0.36\%$ at 0°C | .00385 | S7304PE | S305PE | S7746PE | S307PE | S7908PE | S14456PE | S13282PE | |
| Platinum, 1000 Ω $\pm 0.12\%$ at 0°C | .00385 | S101907PF | S101911PF | S101908PF | S101912PF | S101909PF | S101913PF | S101910PF | |
| Copper, 10 Ω $\pm 0.2\%$ at 25°C | .00427 | S324CA | S4026CA | S332CA | | S342CA | | | |
| Nickel, 120 Ω $\pm 0.5\%$ 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.

Specifications subject to change

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!



STOCKED PARTS AVAILABLE

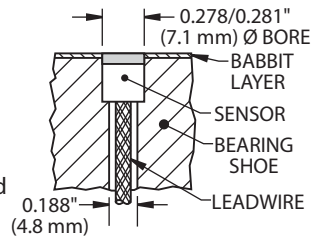
Specification and order options

| | |
|---|---|
| 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 240") S11636 Covering options only: K = Polyimide insulated leads. S = Stainless steel overbraid with polyimide 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 | |

Installation and Accessories

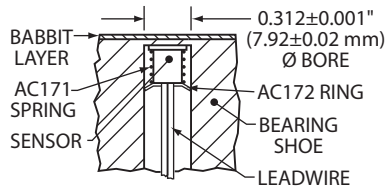
Case style A

Install case style A sensor just below the babbitt layer, then puddle the babbitt metal over the sensor tip and smooth. Read [Engineering Instruction #164](#) and [Engineering Instruction #167](#) for complete details.



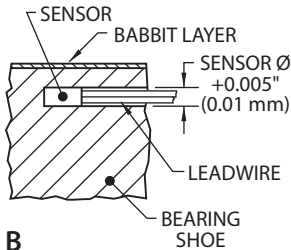
Case style B

The “top hat” flange shape allows spring loading with the AC171 spring and AC172 or AC915 retaining ring (order separately). Choose the economical AC172 style for lowest cost. The AC915 style 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. Read [Engineering Instruction #180](#) and [Engineering Instruction #181](#).



Case styles C and D

Pot with epoxy inside small bearing shoes. Locate near the babbitt face for best readings. Read [Engineering Instruction #184](#).



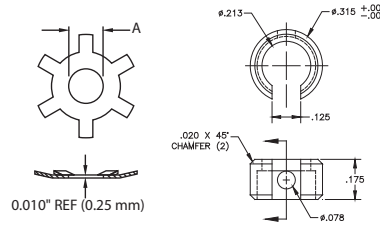
AC171 spring for case style B

Stainless steel. Outside diameter 0.240" (6.1 mm). Compressed length 0.22" (5.6 mm). To be used in conjunction with AC172 or AC915 for spring loading case style B

Feedthroughs

Feedthroughs provide an oil tight seal where a cable exits a machine housing. The stainless steel tube is epoxy filled and each wire is sealed to the individual conductor. This prevents wicking of oil inside the wires as well as leakage around the wire insulation. Pressure rating to 25 psi (1.7 bar). See page 4-12 for more information.

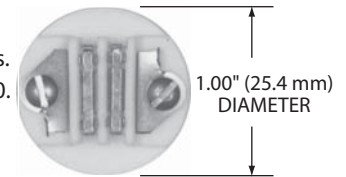
AC172 and AC915 retaining ring for case style B



| Model | "A" diameter | Hole I.D. |
|---------|------------------------|------------------|
| AC172 | sized to fit leadwires | 0.312" (7.92 mm) |
| AC172-3 | 0.175" (4.45 mm) | 0.375" (9.53 mm) |
| AC915-1 | 0.213" (5.4 mm) | 0.312" (7.92 mm) |

AC190 terminal block

Two tin-plated brass terminals. PTFE body. Meets MIL-T-17600. For instructions, read [Installation Instruction #107](#).



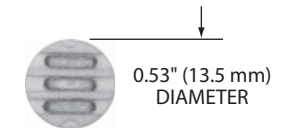
AC191 terminal block

Two tin-plated brass terminals. PTFE body. Meets MIL-T-17600. Read [Installation Instruction #121](#) for instructions.



AC192 terminal block

Three tin-plated brass terminals. Glass-filled PTFE body.



AC195 terminal block

Same as AC192 except polyamide-imide body for radiation resistance to 10⁹ rads.

AC197 terminal block

Three tin-plated brass terminals. Glass-filled PTFE body.



AC196 terminal block

Same as AC197 except polyamide-imide body for radiation resistance to 10⁹ rads.

Specifications subject to change