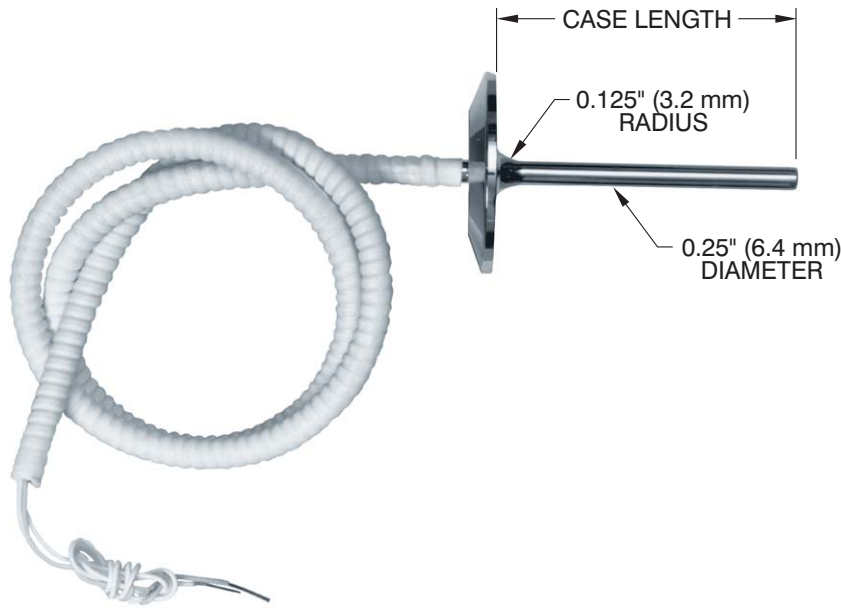


Section 6: Sanitary Sensors

- 3-A certified for sanitary clean-in-place applications
- Food, beverage, pharmaceutical processing
- Fast response design
- 100 Ω platinum elements, single or dual
- Three styles: Probe, connection head assembly, thermowell assembly

Probes	6-2
Assemblies	6-3
Installation guidelines and accessories	6-4



Sanitary RTD Probes

Install directly into process lines for fast response. Cases, made of polished 316 stainless steel, are free of cracks and crevices that might shelter bacteria. External cables will withstand washdown; optional stainless steel armor prevents abrasion wear.

Tri-clamp caps are standard. Contact Minco for other styles. Note that clamp and O-ring are not part of the assembly.

Specifications

Sensing element: Platinum RTD, 100 $\Omega \pm 0.1\%$ at 0°C, TCR = 0.00385 $\Omega/\Omega/^\circ\text{C}$ (Meets EN60751, Class B).

Temperature range:
Probe: -100 to 200°C (-148 to 392°F).
External leadwires: -100 to 121°C (-148 to 250°F).

Material: 316 stainless steel.

Finish:
Standard: #4 finish per 3-A standard 09-08, 32 microinches max.

Pharmaceutical (optional): Polished to mirror finish and passivated. 10 microinches typical.

Pressure rating: 500 psi (34.5 bar).

Leadwires: AWG 22, polyimide insulation; optional stainless steel armor. Polyolefin shrink tubing wrap standard over either option.

Time constant: 2 seconds.

Self-heating: 50 mW/°C typical in moving water.

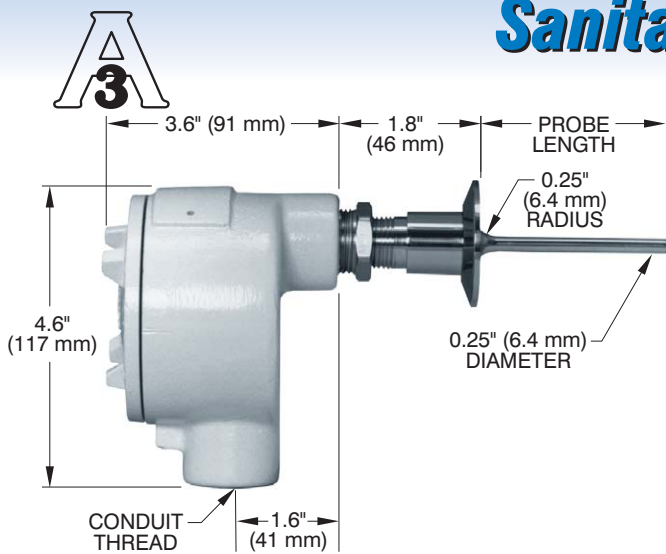
Insulation resistance:
Single element probes: 1000 megohms min. at 500 VDC, leads to case.

Dual element probes: 100 megohms min. at 100 VDC, between elements and leads to case.

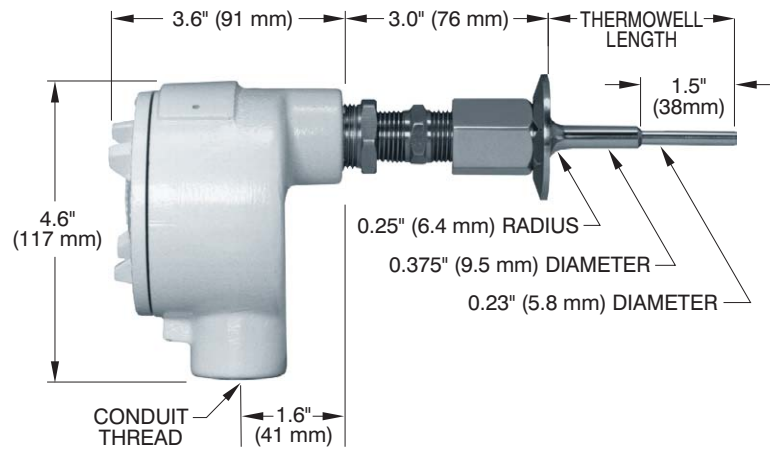
How to order

S5020PD	Model number: S5020PD: Single element S5022PD: Dual element
Z	Number of leads per sensing element: Y = 2 leads Z = 3 leads
30	Case length in 0.1" increments: Standard lengths: 30 = 3.0" 40 = 4.0" 50 = 5.0"
A	Lead covering: T = Tubing A = Armor
60	Lead length in inches
TC	Sanitary cap style: TC = Tri-Clamp
20	Pipe diameter: 10 = 1.0" 15 = 1.5" 20 = 2.0"
P	Case finish: S = Standard finish P = Pharmaceutical finish
S5020PDZ30A60TC20P ← Sample P/N	

Sanitary Sensors



PROBE ASSEMBLY



THERMOWELL ASSEMBLY

CH328 EPOXY-COATED ALUMINUM HEAD SHOWN. SEE PAGES 4-2, 4-3, 5-14 FOR OTHER MODELS.
 CAST IRON: MODEL CH103; POLYPROPYLENE: MODEL CH366; STAINLESS STEEL: MODEL CH306, CH335, CH360

Sanitary RTD Assemblies

These assemblies include a connection head for terminating RTD leads to external wiring. The fast-response thermowell assembly lets you remove the RTD probe without breaking into process lines. Cases and thermowells, made of polished 316 stainless steel, are free of cracks and crevices that might shelter bacteria.

Connection head options include 304 stainless steel, cast iron, FDA approved white polypropylene, and aluminum with FDA approved epoxy coating.

Tri-Clamp caps are standard. Contact Minco for other styles.

Note that clamp and O-ring are not part of the assembly.

Transmitters

Minco's Temptran™ transmitters provide a 4 to 20 mA signal that can be sent over long distances with a simple 2-wire system. Add any Minco model transmitter (except electrically isolated models). See Section 5 for complete details and ordering information.



TT211, TT711
miniature transmitter



TT176, TT676
standard transmitter

Specifications

Sensing element: Platinum RTD, 100 Ω ±0.1% at 0°C, TCR = 0.00385 Ω/Ω/°C (Meets EN60751, Class B).

Temperature range: -100 to 200°C (-148 to 392°F).

Material: Probe: 316 stainless steel.

Spring-loaded holder on thermowell version: 300 series stainless steel.

Finish: Standard: #4 finish per 3-A standard 09-08, 32 microinches max.

Pharmaceutical (optional): Polished to mirror finish and passivated. 10 microinches typical.

Pressure rating: 500 psi (34.5 bar).

Leadwires: Polyimide insulated leads, 4" (102 mm) long.

Time constant: Probe assembly: 2 seconds.

Thermowell assembly: 4 seconds.

Self-heating: Typical value in moving water.

Probe assembly: 50 mW/°C

Thermowell assembly: 25 mW/°C.

Insulation resistance:

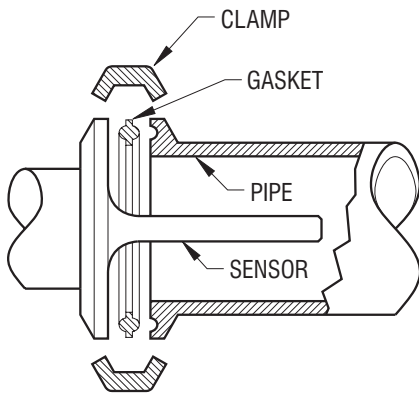
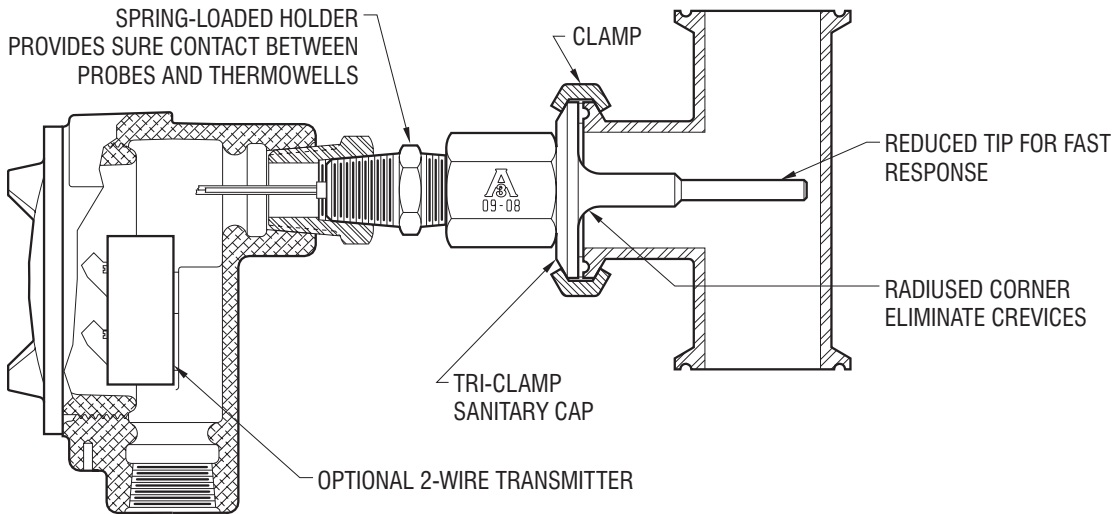
Single element probes: 1000 megohms min. at 500 VDC, leads to case.

Dual element probes: 100 megohms min. at 100 VDC, between elements and leads to case.

How to order

AS5000PD	Model number: Probe assembly: AS5010PD: Single element AS5012PD: Dual element Thermowell assembly: AS5000PD: Single element AS5002PD: Dual element
Z	Number of leads per element: Y = 2 leads Z = 3 leads
50	Probe or thermowell length in 0.1" increments: Standard lengths: 30 (3.0"), 40 (4.0"), 50 (5.0")
TC	Sanitary cap style: TC = Tri-Clamp
15	Pipe diameter: 10 = 1.0" 15 = 1.5" 20 = 2.0"
E	Connection head: C = Cast iron E = Epoxy coated alum. N = White polypropylene S = Stainless steel (CH335) SL = Stainless steel (CH306) SS = Stainless steel (CH360)
3	Conduit thread: 3 = ½ - 14 NPT 4 = ¾ - 14 NPT (N/A with N or S connection heads)
S	Case finish: S = Standard finish P = Pharmaceutical finish
AS5000PDZ50TC15E3S ← Sample P/N	

Installation



Accessories

Tri-Clamp fittings, manufactured by Tri-Clover, consist of two identical pipe faces with a gasket between them. A hinged clamp holds the two flanges together.

3-A has established standard probe lengths for installation in Tri-Clamp tee fittings. These lengths are for reference only; you can order Minco RTDs in any case length desired.

Pipe diameter	Standard case length	Clamp part #
1.5"	3.0"	AC101656
2.0"	4.0"	AC101657



CLAMP FOR SANITARY FITTING