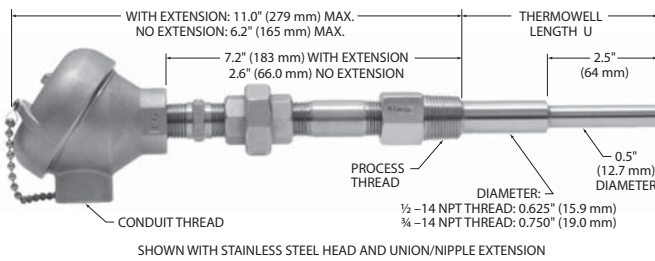


Tip-sensitive RTDs with Thermowells



Overview

Thermowells protect sensors from the effects of fluid flow and pressure. These assemblies are spring-loaded for positive probe contact against the bottom of the thermowell. The probe's copper alloy tip provides superior time response and reduces error from stem conduction.

- 316 stainless steel thermowell
- Tip-sensitive RTD probe for use to 260°C (500°F)
- Spring-loaded probe
- Cast iron, stainless steel, or aluminum connection head

Specifications

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

Material:

Probe: Stainless steel with copper alloy tip.
 Connection head: Cast iron, aluminum, or stainless steel.
 Thermowell: 316 stainless steel.
 Extension: Stainless steel.

Pressure rating: 7000 psi (483 bar) at 21°C, reducing to 6300 psi (433 bar) at 260°C.

Standard U dimensions: 2.5, 4.5, 6.0, 7.5, 8.0, 10.5, 13.5, 16.5, and 22.5".

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

Connection: Terminal block for wires to AWG 14.

Time constant: 17 seconds typical in moving water.

Sensing elements

Element		Code
Platinum (0.00392 TCR)	100 Ω ±0.5% at 0°C	PA
Platinum (0.00385 TCR) (Meets EN60751, Class B)	100 Ω ±0.1% at 0°C	▼PD
Platinum (0.00385 TCR)	100 Ω ±0.5% at 0°C	PE
Copper (0.00427 TCR)	10 Ω ±0.2% at 25°C	CA
(dual)	10 Ω ±0.5% at 25°C	CC
Nickel (0.00672 TCR)	120 Ω ±0.5% at 0°C	NA

Temperature Transmitters

Minco's Tempran™ RTD transmitters provide a 4 to 20 mA signal or HART® Protocol that can be sent over long distances with a simple 2-wire system. See Section 4 for complete temperature transmitter specifications.

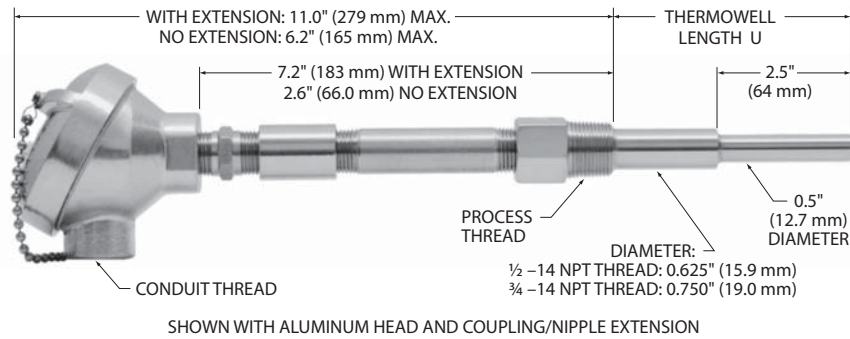
Special high-accuracy calibration: For high system accuracy, specify transmitters with matched calibration. Calibration data traceable to NIST will also be provided. Get more information on page 4-22.

Specification and order options

AS5140	Assembly number ▼AS5140: Single element RTD ▼AS5141: Dual element RTD
CA	Sensing element from table
60	Thermowell length U: Specify in 0.1" increments (Ex: 60 = 6.0 inches) ▼:15, 20, 25, 30, 40, 45, 60, 75, 90, 100, 105, 120, 150
Z	Leads per sensing element: Y = 2 leads ▼Z = 3 leads (required for CA and CC elements) X = 4 leads (PD elements only)
1	Conduit thread: ▼1 = 1/2 - 14 NPT 2 = 3/4 - 14 NPT
A	Connection head: C = Cast iron ▼A = Aluminum S = Stainless steel
1	Thermowell process thread: ▼1 = 1/2 - 14 NPT 2 = 3/4 - 14 NPT
U	Extension option: P = Coupling/nipple extension ▼N = No extension ▼U = Union/Nipple extension
To order sensor assembly, stop here. To order with transmitters (single platinum element only) add:	
508	Tempran™ transmitter model: 211 = TT211: Fixed Range (2-lead RTDs) 508 = TT508: Programmable (2 & 3-lead RTDs) 511 = TT511: HART® Programmable (2, 3, & 4-lead RTDs)
A	Temperature range codes starting on page 4-20 or at www.minco.com
1	Calibration: 1 = Nominal calibration 2 = Match calibrated, 0.75% total system accuracy. For other calibration options, contact Minco
AS5140CA60Z21A1U508A1 = Sample part number	

▼ = STANDARD OPTIONS
 Specifications subject to change

Tip-sensitive Thermocouples with Thermowells



Overview

Thermowells protect sensors from the effects of fluid flow and pressure. These assemblies are spring-loaded for positive probe contact against the bottom of the thermowell. The probe's copper alloy tip provides superior time response and reduces error from stem conduction.

- 316 stainless steel thermowell
- Tip-sensitive thermocouple for use to 260°C (500°F)
- Spring-loaded probe
- Cast iron, stainless steel, or aluminum connection head

Specifications

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

Material:

Probe: Stainless steel with copper alloy tip.
Connection head: Cast iron, aluminum, or stainless steel.
Thermowell: 316 stainless steel.
Extension: Stainless steel.

Pressure rating: 7000 psi (483 bar) at 21°C, reducing to 6300 psi (433 bar) at 260°C.

Standard U dimensions: 2.5, 4.5, 6.0, 7.5, 8.0, 10.5, 13.5, 16.5, and 22.5".

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

Connection: Terminal block for wires to AWG 14.

Time constant: Typical value in moving water.
Grounded junction: 17 seconds.
Ungrounded junction: 22 seconds.

Temperature Transmitters

Minco's Temptran™ thermocouple transmitters provide a 4 to 20 mA signal or HART® Protocol that can be sent over long distances with a simple 2-wire system. See Section 4 for complete temperature transmitter specifications.

Specification and order options

AS5145	Assembly number AS5145: Single junction TC AS5146: Dual junction TC
E	Junction type: E = Chromel-Constantan J = Iron-Constantan K = Chromel-Alumel T = Copper-Constantan
U	Junction Grounding: G = Grounded U = Ungrounded
135	Thermowell length U: Specify in 0.1" increments (Ex: 135 = 13.5 inches)
P	
1	Conduit thread: 1 = 1/2 - 14 NPT 2 = 3/4 - 14 NPT
C	Connection head: C = Cast iron A = Aluminum S = Stainless steel
1	Thermowell process thread: 1 = 1/2 - 14 NPT 2 = 3/4 - 14 NPT
U	Extension option: P = Coupling/nipple extension N = No extension U = Union/Nipple extension
To order sensor assembly, stop here. To order with transmitter, add:	
509	Temptran™ transmitter model: 205 = TT205: Fixed Range, Miniature 509 = TT509: Programmable, Hockey Puck 511 = TT511: HART® Programmable, Hockey Puck
A	Temperature range codes starting on page 4-20 or at www.minco.com
AS5145EU135P1C1U509A = Sample part number	

▼ = STANDARD OPTIONS
Specifications subject to change