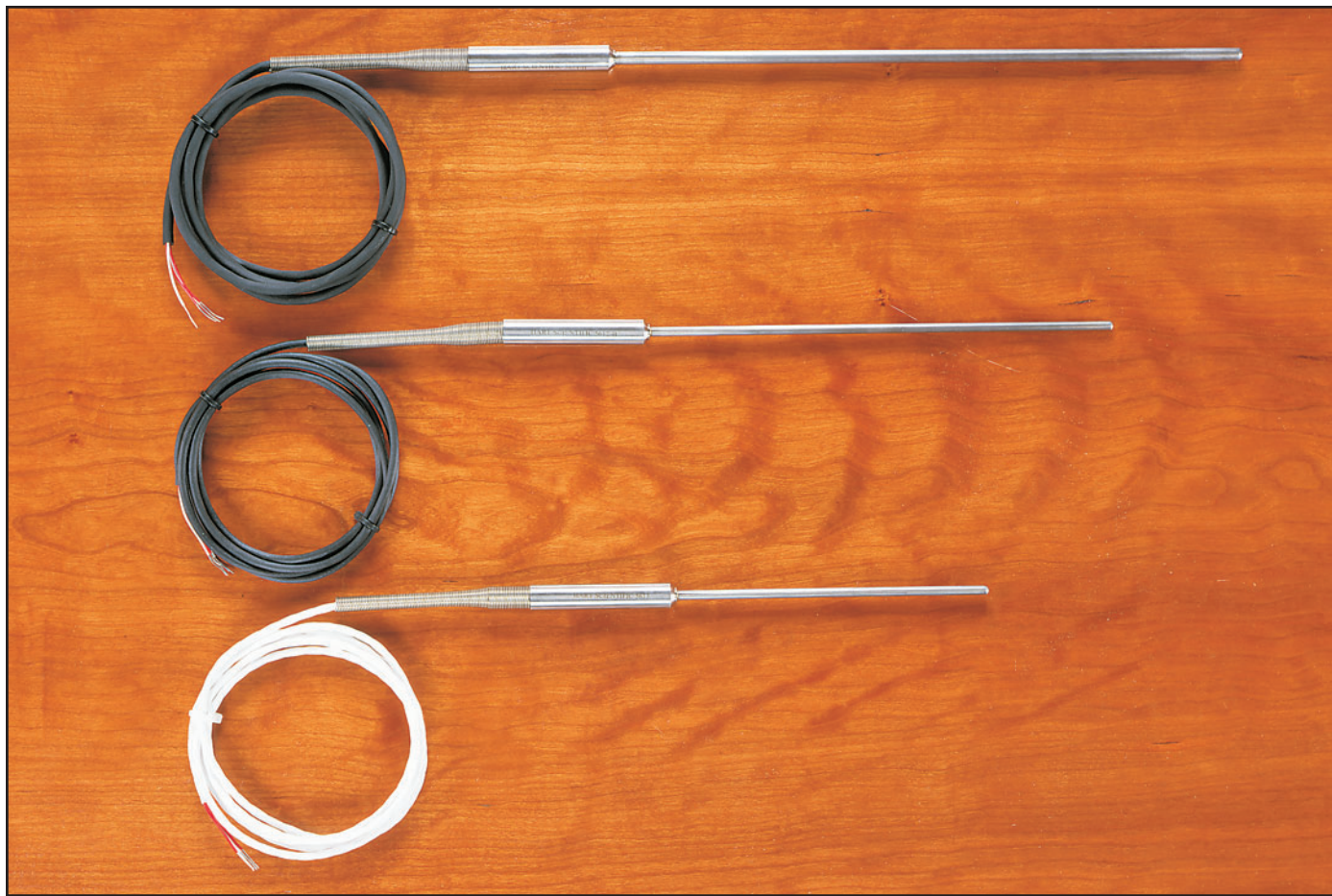


## SECONDARY REFERENCE TEMPERATURE STANDARDS



### Secondary Reference Temperature Standards

### Models 5612, 5613, and 5614

- Affordable wide-range accuracy
- Excellent stability
- Reference-grade platinum sensing element

Need a durable but accurate sensor for use in the factory, field, or lab? The Model 5614 Secondary Temperature Standard is the answer.

The 5614 is a Platinum Resistance Thermometer (PRT) that's 12 inches long with an Inconel 600 sheath and a 1/4" outside diameter. It is designed to be used as a transfer device from the highest laboratory standards to industrial or second-tier lab locations. It has short-term accuracy of  $\pm 0.02^{\circ}\text{C}$  at  $200^{\circ}\text{C}$ .

The element is constructed of reference-grade platinum wire (99.999% pure) for excellent stability. The wire is wound in a coil and placed in a mandrel where it's

uniformly supported in a manner to virtually eliminate hysteresis. The electrical configuration is a four-wire current-potential hookup to eliminate effects of lead-wire resistance.

These Inconel-sheathed probes have a partially supported sensing element, making them more durable than SPRTs. The element is protected in an ultrahigh-purity ceramic case with a hermetic glass seal to improve output stability by locking out moisture and contaminants.

This probe comes calibrated in accordance with ITS-90, which makes it compatible with many excellent readout devices, including Hart's 1529 Chub-E4,

1560 *Black Stack*, and 1502A Tweener. It bridges the gap between a 100-ohm industrial RTD and an SPRT.

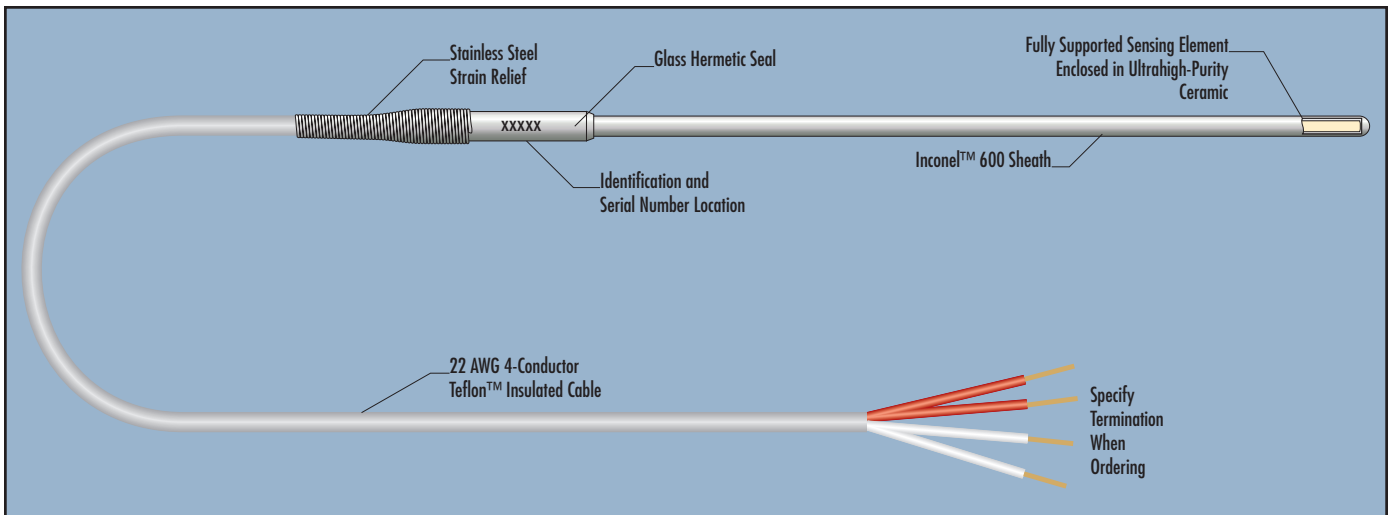
For those needing faster thermal response, or where diameter and immersion depth are problems, order the 6-inch 5613 or the 9-inch 5612. These probes are excellent reference probes for comparison calibrations in a Hart dry-well.

A printout of sensor resistance is provided in  $1^{\circ}\text{C}$  increments for each probe. The 5614 and 5612 are calibrated from  $-196^{\circ}\text{C}$  to  $420^{\circ}\text{C}$ . The 5613 is calibrated to  $300^{\circ}\text{C}$ .

We've tested many of the probes on the market. We've used them in our manufacturing facility and tested them in the lab, and this is an excellent secondary standards PRT. Other instruments on the market are priced much higher, have lower stability, or have lower quality.

Remember, these instruments are inexpensive and have excellent durability. Each

# Models 5612, 5613, and 5614



Terminations are available as spade lugs, mini spade lugs, DIN connectors, banana plugs, INFO-CON, bare wire, or gold pins.

probe is individually calibrated and includes a report of calibration from the manufacturer. Contact Hart for optional calibration in Hart's NVLAP accredited lab.

## Ordering Information

5612-9-X	Secondary Standard PRT, 3/16" x 9", -200 to 420°C
5613-6-X	Secondary Standard PRT, 3/16" x 6", -200 to 300°C
5614-12-X	Secondary Standard PRT, 1/4" x 12", -200 to 420°C
2601	Probe Carrying Case

X = termination. Specify "B" (bare wire), "D" (5-pin DIN for Tweener Thermometers), "G" (gold pins), "I" (INFO-CON for 1521 or 1522 Handheld Thermometers), "J" (banana plugs), "L" (mini spade lugs), "M" (mini banana plugs), or "S" (spade lugs).

## Specifications

<b>Resistance</b>	Nominal 100Ω (±0.1Ω)
<b>Temperature Coefficient</b>	0.003925 ohms/ohm/°C nominal
<b>Temperature Range</b>	-200°C to 420°C (5613 to 300°C; transition and cable temperature 150°C maximum)
<b>Transition Temperature</b>	5°C to 200°C
<b>Drift Rate</b>	±0.01°C at 0°C per year maximum, when used periodically to 400°C
<b>Sheath Material</b>	Inconel™ 600
<b>Leads</b>	Teflon™-insulated, silver-plated stranded copper, 22 AWG
<b>Termination</b>	Specify. See Ordering Information.
<b>Hysteresis</b>	< 0.01°C at 0°C using -196°C and 420°C as the end points
<b>Immersion Effects</b>	Reading will not vary more than 0.005°C when the probe immersion is varied between 4 inches and 10 inches in an ice bath (5614).
<b>Calibration</b>	Includes manufacturer's NIST-traceable calibration and table with R vs. T values in 1°C increments from -183°C to 500°C. The 5614 and 5612 are calibrated to 420°C and the 5613 to 300°C. ITS-90 coefficients included. <i>Optional accredited calibration available from Hart.</i>
<b>Probe Accuracy (includes calibration uncertainty and short-term stability)</b>	±0.018°C at -196°C ±0.018°C at 0°C ±0.019°C at 200°C ±0.023°C at 420°C
<b>Time Constant</b>	Nine seconds typical for 63.2% response to step change in temperature in water flowing at 3 feet per second
<b>Size:</b>	<b>5612</b> 0.187" dia. x 9" <b>5613</b> 0.187" dia. x 6" <b>5614</b> 0.25" dia. x 12"



Read about our accredited calibration services on page 156.