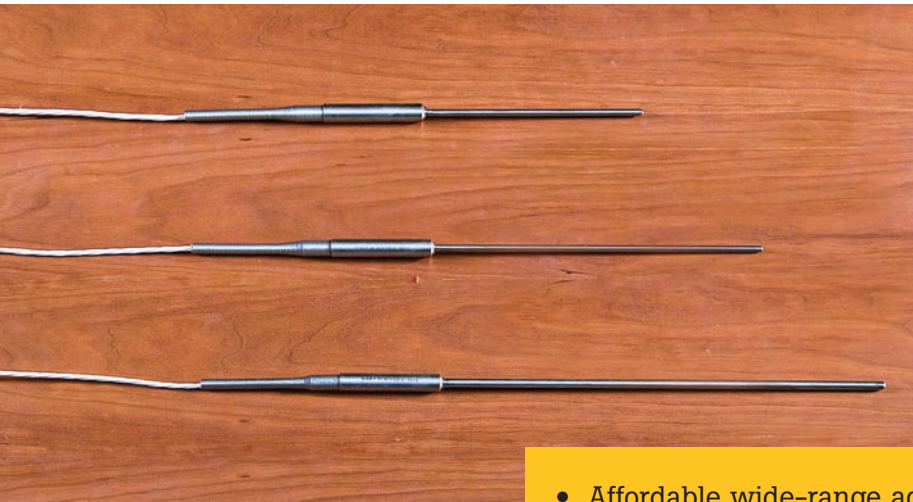


Secondary Reference Temperature Standards

Technical Data



For years, you've relied on our 5612, 5613, and 5614 Secondary Reference Probes. These field-durable, lab-accurate PRTs have been replaced by the 5615, which comes with a NVLAP accredited calibration.

The 5615-12 is a Platinum Resistance Thermometer (PRT) with an Inconel™ 600 sheath that's 305 mm (12 in) long and 6.35 mm (0.250 in) in diameter. It is a secondary reference temperature standard designed to bridge the gap between the highest laboratory standards and industrial or second-tier lab locations. It has short-term accuracy of ± 0.013 °C at 0.01 °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 that virtually eliminates hysteresis. The electrical configuration is a four-wire current-potential hookup that eliminates the effects of lead-wire resistance.

These Inconel™-sheathed probes have a fully supported sensing element, making them

- Affordable wide-range accuracy
- Excellent stability
- Reference-grade platinum sensing element
- NVLAP accredited calibration included

more durable than SPRTs. The element is protected in an ultra-high-purity ceramic case with a hermetic glass seal to improve output stability by locking out moisture and contaminants.

This probe comes calibrated with ITS-90 coefficients, making 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 5615-9 or 5615-6. These probes are excellent reference probes for comparison calibrations in a Hart dry-well. The sheaths of the 5615-6 and 5615-9 are 4.76 mm (0.188 in) in diameter.

A printout of sensor resistance is provided in 1 °C increments for each probe.

The 5615-9 and 5615-12 are calibrated from -196 °C to 420 °C. The 5615-6 is calibrated to 300 °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 are of lower quality.

Remember, these are reliable instruments and each probe comes with its own individual NVLAP accredited calibration.

Specifications

Parameter	Value
Temperature range	5615-9 and 5615-12: -200 °C to 420 °C
	5615-6: -200 °C to 300 °C
Nominal resistance	100 Ω ± 0.10 Ω @ 0 °C
Alpha	0.0039250 ohms/ohm/ °C nominal
Short-term resistance stability @ TPW (no less than three thermal cycles)	0.013 °C
Self heating (°C/mW @ 0 °C Bath)	0.02
Length of sensor	28 mm (1.1 in)
Location of sensor	6.9 mm from tip ± 3.3 mm (0.27 in ± 0.13 in)
Length of sheath	152 mm, 229 mm, 305 mm (6.0, 9.0, 12.0 in)
Diameter of sheath	5615-6: 4.76 mm ± 0.127 mm (0.188 in ± 0.005 in)
	5615-9: 4.76 mm ± 0.127 mm (0.188 in ± 0.005 in)
	5615-12: 6.35 mm ± 0.127 mm (0.250 in ± 0.005 in)
Sheath material	Inconel™ 600
Minimum insulation resistance (room temperature)	1000 megohms†
Transition junction temperature range	-50 °C to 200 °C†
Length transition junction	71 mm (2.8 in)
Diameter of transition junction	13 mm (0.5 in)
Response time (63.2 %)	9 seconds typical in water at 3 fps
Lead wire cable type	Teflon™ insulated with Teflon™ jacket (22 AWG)
Lead wire length	183 cm (72 in)
Lead wire temperature range	-50 °C to 200 °C

†For best performance, transition junction temperature should be kept below 70 °C.

Fluke. Keeping your world up and running.®

Ordering Information

- 5615-6-X** Secondary Standard PRT, 4.76 mm x 152 mm (0.188 x 6.0 in), -200 to 300 °C
- 5615-9-X** Secondary Standard PRT, 4.76 mm x 229 mm (0.188 x 9.0 in), -200 to 420 °C
- 5615-12-X** Secondary Standard PRT, 6.35 mm x 305 mm (0.250 x 12.0 in), -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).

Fluke Corporation Hart Scientific Division

799 E Utah Valley Drive
American Fork, UT 84003

Tel: 801.763.1600
Fax: 801.763.1010
E-Mail: info@hartscientific.com
www.hartscientific.com

Fluke Europe B. V., Hart Scientific Division

PO Box 1186, 5602 BD Eindhoven
The Netherlands

Tel: +31 (0)40 2675 403
Fax: +31 (0)40 2675 404
E-mail: Hart.Logistics@Fluke.NL

All other countries:
Tel: +1 801.763.1600
Fax: +1 801.763.1010