

# Small diameter industrial PRT



- Small diameter sheath, 3.2mm (0.125 in)
- Excellent stability
- Includes ITS-90 coefficients
- NVLAP-accredited calibration from -200 °C to 500 °C, lab code 200706-0

For secondary level performance with full ITS-90 calibration, Hart's 5618B series PRTs are an excellent choice for critical temperature measurements. Featuring a 3.2 mm diameter (1/8 in) sheath, these industrial standards probes have reduced response time without compromising precision. This small diameter 5618B probe works well in many applications where immersion depth is limited. Larger diameter probes give more measurement error in short immersion depth applications because they conduct more heat between ambient and the sensor.

With each probe you will receive a full NVLAP-accredited calibration report, lab code 200706-0. On the report you'll get the test data and the ITS-90 calibration coefficients that you can easily input into your Hart thermometer. If you are using a Handheld Thermometer readout, we'll program the coefficients directly into your INFO-CON connector.

The 5618B is also a great probe to use for calibrating your Hart 9132 or 9133 infrared calibrators. In fact, these IR black

body heat sources were designed to be calibrated with this type of probe. Now you can calibrate these targets in your own lab!

For use from -200 °C to 500 °C (the six-inch model goes to 300 °C), you won't find a better industrial standard in this configuration than our 5618B. We recommend using the 5618B PRTs with the 1523, 1524, 1502A, 1529, or 1560 thermometer readouts.

## Ordering Information

<b>5618B-12-X</b>	305 mm (12 in) Small Diameter Probe
<b>5618B-9-X</b>	229 mm (9 in) Small Diameter Probe
<b>5618B-6-X</b>	152 mm (6 in) Small Diameter Probe
<b>2601</b>	Probe Carrying Case

*X = termination. Specify "A" (INFO-CON for 914X), "B" (bare wire), "D" (5-pin DIN for Tweener Thermometers), "G" (gold pins), "T" (INFO-CON for 1521 or 1522), "J" (banana plugs), "L" (mini spade lugs), "M" (mini banana plugs), "P" (INFO-CON for 1523 or 1524), or "S" (spade lugs).*

## Specifications

<b>Resistance</b>	Nominal 100 Ω at 0 °C
<b>Temperature Coefficient</b>	0.003923 Ω/Ω/ °C nominal
<b>Temperature Range</b>	-200 °C to 500 °C (-200 °C to 300 °C for 5618B-6-X)
<b>Drift Rate</b>	± 0.1 °C when used periodically to 500 °C
<b>Sheath Material</b>	316 SST
<b>Leads</b>	22 AWG Teflon, 6'
<b>Termination</b>	Specify
<b>Hysteresis</b>	Less than 0.01 °C at 0 °C when using -196 °C and 420 °C as the end points.
<b>Time Constant</b>	Four seconds maximum for 63.2 % response to step change in water moving at 3 fps.
<b>Thermal EMF</b>	Less than 25 mV at 420 °C
<b>Calibration</b>	Includes manufacturer's NVLAP-accredited calibration w/ITS-90 coefficients, R vs. T values in 1 °C increments, lab code 200706-0
<b>Size</b>	<b>5618B-12:</b> 305 mm L x 3.2 mm dia. (12 x 1/8 in) <b>5618B-9:</b> 229 mm L x 3.2 mm dia. (9 x 1/8 in) <b>5618B-6:</b> 152 mm L x 3.2 mm dia. (6 x 1/8 in)
<b>Calibrated Accuracy<sup>†</sup> (k=2)</b>	± 0.026 °C at -200 °C ± 0.066 °C at 0 °C ± 0.219 °C at 500 °C

<sup>†</sup>Includes calibration uncertainty and drift specification.

## NVLAP<sup>†</sup> Calibration Uncertainty

Temperature	Expanded Uncertainty (k=2)
-196 °C	0.024 °C
-38 °C	0.011 °C
0 °C	0.010 °C
200 °C	0.018 °C
420 °C <sup>‡</sup>	0.029 °C

**Note:** Calibration uncertainties depend on the uncertainties of the lab performing the calibration. Subsequent calibrations of this probe performed with different processes, at different facilities, or with changed uncertainty statements may state different uncertainties.

<sup>†</sup>Lab code 200706-0

<sup>‡</sup>300 °C for 5618B-6