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 1521 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 1521, 1522, 1502A, 1529, or 1560 thermometer readouts.

Ordering Information

5618B-12-X	305 mm (12 in) Small Diameter Probe
5618B-9-X	229 mm (9 in) Small Diameter Probe
5618B-6-X	152 mm (6 in) Small Diameter Probe
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

Resistance	Nominal 100Ω at 0 °C
Temperature Coefficient	0.003923Ω/Ω/ °C nominal
Temperature Range	–200 °C to 500 °C (–200 °C to 300 °C for 5618B-6-X)
Drift Rate	±0.1 °C when used periodically to 500 °C
Sheath Material	316 SST
Leads	22 AWG Teflon, 6'
Termination	Specify
Hysteresis	Less than 0.01 °C at 0 °C when using –196 °C and 420 °C as the end points.
Time Constant	9 seconds max for 63.2 %
Thermal EMF	Less than 25 mV at 420 °C
Calibration	Includes manufacturer's NVLAP-accredited calibration w/ITS-90 coefficients, R vs. T values in 1 °C increments, lab code 200706-0
Size	**5618B-12:** 305 mm L x 3.2 mm dia. (12 x 1/8 in) **5618B-9:** 229 mm L x 3.2 mm dia. (9 x 1/8 in) **5618B-6:** 152 mm L x 3.2 mm dia. (6 x 1/8 in)
Probe Accuracy† (includes calibration uncertainty and short-term stability)	±0.05 °C over entire range

†"Accuracy" is a difficult term when used to describe a resistance thermometer. The simplest way to derive "accuracy" is to combine the probe drift specification and calibration uncertainty with readout accuracy at a given temperature.

NVLAP† 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‡	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.
†Lab code 200706-0
‡300 °C for 5618B-6