

# 5627A Precision Thermometer, RTD Temperature Probe

## Highlights

### Durable PRTs with temperature range to 420 °C and accuracy to 0.025 °C

- Vibration and shock resistant
- NVLAP-accredited calibration included, lab code 200706-0

When buying a PRT or RTD temperature probe, performance isn't the only criterion you need to look at. The real issues are price-to-accuracy and price-to-durability ratios.

5627A probes have a temperature range up to 420 °C and an accuracy as good as  $\pm 0.025$  °C. They come in three different lengths. (Both six- and nine-inch models cover  $-200$  °C to 300 °C.) Each precision thermometer is shipped with its ITS-90 coefficients and a calibration table in 1 °C increments.

## Description

One of the best features of this sensor is that it conforms to the standard 385 curve, letting you use your DIN/IEC RTD meters fully. Why use a precision thermometer or RTD temperature probe that's less accurate than your meter?

The 5627A is manufactured using a coil suspension element design for increased shock and vibration resistance. It has a mineral-insulated sheath with a minimum bend radius of 19 mm (3/4-inch) for flexibility and durability. (Bend, if any, should be specified at time of order.)

Six- and nine-inch 5627A precision thermometers are calibrated at  $-196$  °C,  $-38$  °C, 0 °C, 200 °C, and 300 °C. For 12-inch versions of these precision thermometers, the point at 300 °C is replaced by a calibration point at 420 °C.

Each probe is individually calibrated and includes a NVLAP-accredited report of calibration from the manufacturer, lab code 200706-0.

This RTD temperature probe is an excellent value for a precision thermometer. It has the price-to-accuracy and price-to-durability ratios you should demand in all of the precision thermometers you buy!

## Specifications

Specifications	
<b>Resistance</b>	Nominal 100 $\Omega$
<b>Temperature Coefficient</b>	0.00385 $\Omega/\Omega/^\circ\text{C}$ nominal
<b>Temperature Range</b>	$-200$ °C to 420 °C (5627A-6 and 5627A-9 to 300 °C; transition and cable temperature: 0 °C to 150 °C)
<b>Drift Rate (k=2)</b>	$\pm 0.04$ °C at 0 °C after 100 hours at 420 °C
<b>Sheath Material</b>	316 Stainless Steel
<b>Leads</b>	PTFE-insulated, nickel-plated stranded copper, 22 AWG
<b>Termination</b>	Specify. See Ordering Information.
<b>Time Constant</b>	Four seconds maximum for 63.2 % response to step change in water moving at 3 fps.
<b>Bending Radius</b>	Sheath may be ordered with a bend on a minimum radius of 19 mm (3/4 in) except for 50 mm (2 in) area of sheath near tip. (Fluke lab requires 20 cm [8 in] of unbent sheath to re-calibrate.)
<b>Calibration</b>	Includes manufacturer's NVLAP-accredited (lab code 200706-0) calibration and table with R vs. T values in 1 °C increments from $-196$ °C to 500 °C (to 300 °C for 5627A-6 and 5627A-9).

	ITS-90 coefficients included.
<b>Immersion</b>	At least 100 mm (4 in) recommended
<b>Calibrated Accuracy† (k=2)</b>	± 0.026 °C at -196 °C ± 0.046 °C at 0 °C ± 0.077 °C at 200 °C ± 0.124 °C at 420 °C
<b>Size</b>	<b>5627A-12:</b> 305 mm x 6.35 mm (12 in x 1/4 in) <b>5627A-9:</b> 229 mm x 4.7 mm (9 in x 3/16 in) <b>5627A-6:</b> 152 mm x 4.7 mm (6 in x 3/16 in)
†Includes calibration uncertainty and 100 hr drift.	

## Models and Accessories

Model Name	Description
5627A-6-X	Secondary PRT, 152 mm x 4.7 mm (6 x 3/16 in), -200 °C to 300 °C  (17025 accredited calibration included. Traceable to NIST standards.)  X = termination. Specify "A" (INFO-CON for 914X), "B" (bare wire), "D" (5-pin DIN for Tweener Thermometers), "G" (gold pins), "I" (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).
5627A-9-X	Secondary PRT, 229 mm x 4.7 mm (9 x 3/16 in), -200 °C to 300 °C  (17025 accredited calibration included. Traceable to NIST standards.)  X = termination. Specify "A" (INFO-CON for 914X), "B" (bare wire), "D" (5-pin DIN for Tweener Thermometers), "G" (gold pins), "I" (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).
5627A-12-X	Secondary PRT, 305 mm x 6.35 mm (12 x 1/4 in), -200 °C to 420 °C  (17025 accredited calibration included. Traceable to NIST standards.)  X = termination. Specify "A" (INFO-CON for 914X), "B" (bare wire), "D" (5-pin DIN for Tweener Thermometers), "G" (gold pins), "I" (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).

## Accessories common to all models:

Accessory	Description
<a href="#">2601</a>	Probe Carrying Case, Plastic
<a href="#">2609</a>	Probe Carrying Case, Plastic (for probes 635 mm [25 in] in length)





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