

OVERVIEW

Standard Platinum Resistance Thermometers (SPRTs) are commonly used to interpolate temperature in the range from $-189.3442^{\circ}\text{C}$ to 660.323°C on the International Temperature Scale of 1990 (ITS-90). They are widely used as standard or reference thermometers to calibrate other thermometers and to measure temperature precisely in primary and secondary laboratories. It's taken decades of our scientific expertise and original craftsmanship to create these world class SPRTs.

Both the AM1860 and the AM1850 SPRTs feature a very low drift rate. To improve the durability of these SPRTs, Inconel™ 600 is used in place of quartz glass for the sheath material of the thermometer. A special capsule is adopted to protect the platinum sensor wire from contamination introduced by a metal sheath at high temperatures. All parts used in the thermometer are thoroughly cleaned and treated at high temperature before assembly. The gas mixture filling the thermometer is well-controlled to reduce the oxidation effect as much as possible. These world class probes fully meet the ITS-90 criteria of standard thermometers at a very competitive price. They are widely used as reference thermometers for drywell block calibrators and temperature baths.



FEATURES

Competitive Pricing

Inconel™ sheath provides durability

AM1860 Temperature range: -200°C to 670°C

AM1850 Temperature range: -200°C to 500°C

$W(\text{Ga}) \geq 1.11807$

$W(\text{Hg}) \leq 0.844235$

Fully meets the ITS-90 criteria for standard thermometers

MULTIPLE OPTIONS AVAILABLE

Model	Sheath Length	OD	Temp Range	Inconel™
1860	500mm	6.35mm	-200°C to 670°C	✓
1850	480mm	6.35mm	-200°C to 500°C	✓

AM1860/1850 Metal-Sheath SPRTs



SPECIFICATIONS

	1860	1850
Temperature Range	-200°C to 670°C	-200°C to 500°C
Nominal Resistance at 0°C	25.5 Ω or 100 Ω	
Resistance Ratio	W(Ga) ≥ 1.11807 W(Hg) ≤ 0.844235	
Repeatability	<0.0015°C	
Long Term Drift at 0.01°C*	<0.003°C at TPW after 100 hours at 661°C, <0.01°C/year typical	<0.002°C at TPW after 100 hours at 500°C, <0.008°C/year typical
Thermal Shock	<0.0015°C after 10 thermal cycles from minimum to maximum temperatures	
Self-heating	0.0015°C at 1 mA current	
Response Time**	9 seconds	
Measurement Current	1 mA	
Sensor Length	42 mm	
Insulation Resistance	>1000 MΩ at room temperature	
Sheath Material	Inconel™	
Sheath Dimensions	6.35mm (OD) x 500mm (L)	6.35mm (OD) x 480mm (L)
External Leads	Teflon™ insulated copper wire, 4 leads, 2.5 meters	
Termination	Gold-plated spade	
Handle Dimension	21mm (OD) x 80mm (L)	

*Long-term drift rate is for reference only. It could be affected by such facts as handling, application, and maintenance, etc.

**for 63% response to step change in water moving at 3 feet per second

ORDERING OPTIONS

Model	Description
9002	Wooden carrying case for 20" probe (included)
5033	ISO 17025 accredited calibration for AM1860 probes
5034	ISO 17025 accredited calibration for AM1850 probes

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