

TECHNICAL DATA

5698-25 Working Standard SPRT



Key features

- Conform to ITS-90 SPRT guidelines and have a typical drift rate of 0.003 °C.
- Calibration options by fixed point.
- 485-mm quartz sheath, this 25-ohm SPRT covers a temperature range from -200 °C to 670 °C.
- Long-term drift is less than 6 mK—typically less than 3 mK.

Product overview: 5698-25 Working Standard SPRT

True Standard Platinum Resistance Thermometer for Reliable Laboratory Performance

Accurate, Trusted, and Fully Specified for Your Lab

The Fluke 5698-25 Working Standard Standard Platinum Resistance Thermometer (SPRT) is designed for those who demand uncompromising accuracy, stability, and transparency in their laboratory temperature standards. Fully compliant with ITS-90 requirements and meticulously engineered for long-term reliability, the 5698-25 is the ideal choice for transferring standards from calibration labs to working labs and for supporting critical measurement processes.

Key Features and Benefits

- **True ITS-90 Standard** – Meets the full resistance ratio requirements for SPRTs under the International Temperature

Scale of 1990 (ITS-90), ensuring the highest level of traceability and measurement confidence.

- **Wide Measurement Range** – With a temperature range from –200 °C to 670 °C, the 5698-25 covers most laboratory, industrial, and research calibration needs.
- **Exceptional Stability and Low Drift** – Typical long-term drift is less than 3 mK (and guaranteed below 6 mK) at the triple point of water after 100 hours at 670 °C—ensuring reliable performance over time.
- **Strain-Free Platinum Sensor** – The sensing element is made from high-purity platinum wire, wound in a completely strain-free configuration on a fused silica cross frame, then annealed and tested for optimum stability.
- **Robust, Sealed Construction** – Features a 485-mm fused silica sheath, pressure sealed with a special argon/oxygen gas mix, convection prevention discs to reduce stem errors, and a terminal box handle with strain relief. Wires are terminated with gold-plated spade lugs for secure connections.
- **Easy Compatibility** – Works seamlessly with Fluke 1594A/1595A Super-Thermometer, 1560 Black Stack, or 1529 Chub-E4 Thermometer readouts, thanks to its standard 25-ohm resistance and 1 mA excitation current requirement.
- **Flexible Calibration Options** – Available with or without calibration. Calibrations are performed in Fluke's accredited lab using fixed-point or comparison methods, providing full ITS-90 traceability and maximum value for your investment.

Designed as a Working Standard

- **What is a Working Standard?** – A working standard is used to transfer the ITS-90 from a national or standards laboratory to your facility. The 5698-25 is carefully calibrated against intrinsic references, making it the backbone of your lab's traceability chain.
- **Application Flexibility** – Suited for both standards transfer and daily calibration tasks, with robust construction to withstand routine use in busy calibration environments.

Transparent, Reliable, and Supported

- **Full Performance Specifications Provided** – Unlike some manufacturers, Fluke publishes complete specifications for the 5698-25, so you know exactly what you're getting before you buy.
- **Comprehensive Support** – Benefit from Fluke Calibration's renowned post-purchase support and calibration service options, ensuring your working standard maintains the best possible performance for years to come.

Specifications: 5698-25 Working Standard SPRT

Specifications	
Temperature Range	–200 °C to 670 °C
Nominal R_{TPW}	25.5 Ω ($\pm$ 0.5 Ω)
Current	1.0 mA
Resistance Ratios	$W(234.315\text{ K}) \leq 0.844235$ $W(302.9146\text{ K}) \geq 1.11807$
Sensitivity	0.1 Ω /°C
Drift Rate	< 0.006 °C/100 hours at max temperature (typically < 0.003 °C)
Self-heating at TPW	< 0.002 °C under 1 mA current
Reproducibility	$\pm$ 0.0015 °C or better
R_{TPW} Drift After Thermal Cycling	< 0.001 °C
Diameter of Pt Sensor Wire	0.07 mm (0.003 in)



Protective Sheath	Quartz Glass Diameter: 7 mm (0.28 in) Length: 485 mm (19.1 in)
Lead Wires	Four sensor wires

Ordering information



5698-25

25 Ω Working Standard SPRT with maple carrying case.

Calibration not included. Contact your Fluke Calibration representative for additional calibration options.

Part#: 0

1912-4-7

PRT Calibration, $-200\text{ }^{\circ}\text{C}$ to $660\text{ }^{\circ}\text{C}$, Accredited

Part#: 3796284

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