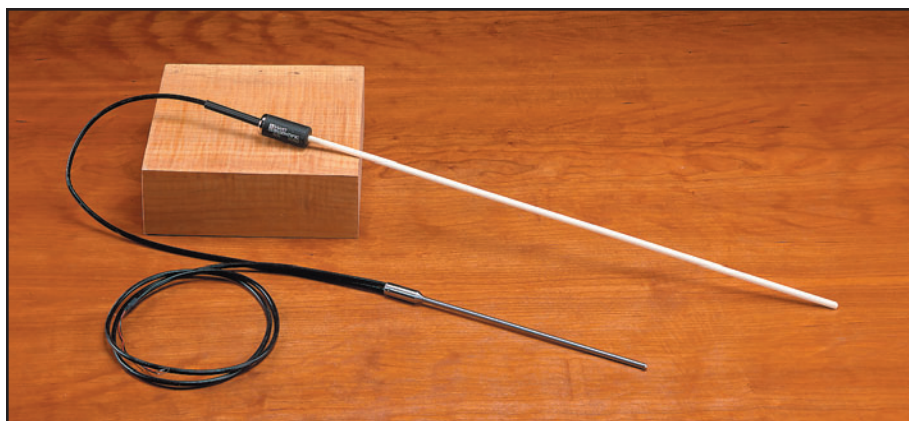


TYPE S THERMOCOUPLE STANDARDS

Model 5650



Type S Thermocouple Standards

Model 5650

- Designed by Hart's primary standards design team
- Two sizes available, each with or without reference junction
- Calibration uncertainty of $\pm 0.5^\circ\text{C}$ to 1100°C , $\pm 3^\circ\text{C}$ to 1450°C

Probes

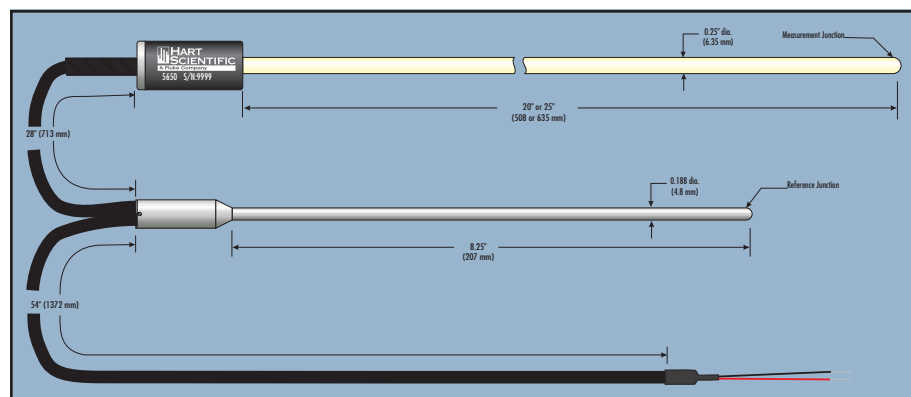
Made from the finest platinum and platinum-rhodium alloy, the 5650 Type S covers 0°C to 1450°C with uncertainties less than 0.5°C over most of that range. With four different models to choose from, we have a type S thermocouple to fit your application.

The measuring junction of the 5650 is encased in a 0.25-inch (6.35 mm) alumina sheath that can be ordered in lengths of 20 or 25 inches (50.8 or 63.5 cm) to fit the specific requirements of your application. A reference, or "cold," junction may also be ordered. The reference junction uses a stainless steel sheath and is 8.25 inches long (21 cm) by 0.188 inches in diameter (4.8 mm). The thin diameter minimizes the immersion depth needed, but the extra

length ensures you can get all the immersion you like.

Special tin-plated, solid-copper connecting wires with ultra-low EMF properties are used to help retain the integrity of your measurement junction as the probe attaches to your micro voltmeter or Hart *Black Stack*.

Each 5650 comes from a spool of wire that has been sample tested using fixed-point standards to ensure uncertainties less than 0.5°C up to 1100°C . From 1100°C to 1450°C , the uncertainty increases linearly to 3.0°C . If you need greater accuracy, order an individual calibration with fixed-point standards to reduce uncertainties to $\pm 0.15^\circ\text{C}$ below 962°C and increasing linearly to $\pm 2.0^\circ\text{C}$ at 1450°C .



The probe assembly can be easily disassembled for performing your own bare-wire calibrations.

Specifications

Range	0°C to 1450°C
Type	Platinum/10% rhodium vs. platinum (type S)
Calibration	Wire spool sampling method by fixed point (optionally available by fixed point for individual thermocouples)
Calibration Uncertainty	$\pm 0.5^\circ\text{C}$ to 1100°C $\pm 3.0^\circ\text{C}$ to 1450°C
Hot Junction Sheath Dimensions	0.25" (6.35 mm) diameter; see Ordering Information for lengths
Reference Junction Sheath Dimensions	0.188" diameter x 8.25" length (4.8 x 210 mm)
Long-Term Stability	$\pm 0.5^\circ\text{C}$ to 1100°C $\pm 2.0^\circ\text{C}$ to 1450°C (over one year depending on usage)
Short-Term Stabilities	$\pm 0.2^\circ\text{C}$ to 1100°C $\pm 0.6^\circ\text{C}$ to 1450°C
Immersion	At least 6" recommended
Copper/Copper Wires to Readout	60" L, tin-plated, Teflon-insulated, low EMF solid copper
Protective Case	Model 2602 case included
Weight	2 lb. (1 kg)

Ordering Information

- 5650-20-X Type S TC, 20" x 1/4"
- 5650-20XC Type S TC, 20" x 1/4", with reference junction
- 5650-25-X Type S TC, 25" x 1/4"
- 5650-25XC Type S TC, 25" x 1/4", with reference junction

X = termination. Specify "B" (bare wire), "W" (generic copper-to-copper TC connector), or "R" (standard Type R/S TC connector). Models with reference junctions should not specify "R" and models without reference junctions should not specify "W".

1918-B Four-point calibration by fixed point (Sn, Zn, Al, Ag). Extrapolated to 1450°C .

Note: Calibration uncertainty for individually calibrated 5650s by fixed point is $\pm 0.25^\circ\text{C}$ below 1100°C and $\pm 2.0^\circ\text{C}$ above 1100°C . 2602 case included with new models.

2602 Spare Case



Read about our calibration training courses on page 153.