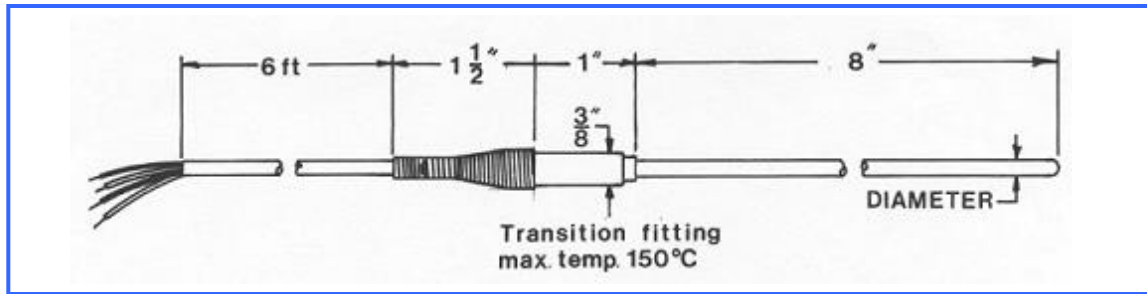


Instrulab Inc. 850 Series Industrial Platinum RTD Sensors



The 850 Series industrial platinum resistance thermometers are extensively tested to insure compliance with the following specifications

Common Specifications

R_0 : 100 \pm 0.20 ohm @ 0°C

Alpha: 0.00392 $\Omega/\Omega/^\circ\text{C}$ (Nominal)

Temperature Range: -200° to +400°C (-330° to 750°F)

Construction: Sheath, 316 stainless; Cable, 6 feet, 4-wire, Teflon on singles, Teflon overall, 24 gauge, stranded

Insulation Resistance: 150 Meg ohm @ 50 VDC @ 25°C

Immersion Depth: 102 mm (4 inches) minimum

Hysteresis: 0.03°C maximum

Hysteresis, measured at 0°C, is the “dead band” exhibited by the sensor when driven alternately from its opposite temperature extremes.

Comparison Guide

Model	Diameter	Length	Response Time ¹ Seconds	Self Heating ²		Stability ³ °C/Year
				°C/mW	Temperature Rise	
851	1/8"	8"	3	0.025	0.0025°C	0.07
852	3/16"	8"	5	0.02	0.002°C	0.07
853	1/4"	8"	7	0.02	0.002°C	0.07

¹ Response Time: Response time is for one time constant measured in water, flowing at 1 meter/second. One time constant is the time required for the sensor to reach 63.2% of a step change in temperature. Approximately five time constants are required for stabilization.

² Self Heating: Specified in still water at 0°C. Temperature rise is based on a 1mA excitation current.

³ Stability: Long term stability is measured at 0°C.

Standard Interchangeability vs. Custom Calibration

Custom Calibration

Refers to the generation of a sensor’s individual R vs T curve. An instrument can then be calibrated to this

Standard Interchangeability

Refers to the sensor accuracy when compared to the standard R vs. T table.

Accuracy (Excitation Current = 1 mA DC)

Celsius	-100°C	0°C	100°C	200°C	300°C	400°C
Standard Interchangeability	\pm 01.00	0.50	1.00	1.50	2.50	3.50
Custom Calibrated (Rn153)	\pm 0.04	0.01	0.02	0.02	0.03	0.08
Fahrenheit	-150°F	32°F	212°F	390°F	575°F	750°F
Standard Interchangeability	\pm 2.00	0.90	1.80	2.70	4.50	6.30
Custom Calibrated (Rn153)	\pm 0.07	0.02	0.04	0.04	0.06	0.16