

Resistance Temperature Detector (RTD)

Standard Assemblies

ACROLAB RTD Assemblies utilize wire wound platinum elements with a reference resistance of 100 Ohms at 0°C and a temperature coefficient of 0.00385 Ohms/Ohm/°C. ALL ACROLAB RTD probes are of the "filled tube" or "MGO" construction, providing long operating life in high vibration and/or temperature applications.

Specifications of platinum elements

| Temperature | Tolerance | |
|-------------|-----------|-------|
| | °C | ±Ohms |
| -200 | ±0.55 | ±0.24 |
| -100 | ±0.35 | ±0.14 |
| 0 | ±0.15 | ±0.06 |
| 100 | ±0.35 | ±0.13 |
| 200 | ±0.55 | ±0.20 |
| 300 | ±0.75 | ±0.27 |
| 400 | ±0.95 | ±0.33 |
| 500 | ±1.15 | ±0.38 |
| 600 | ±1.35 | ±0.43 |
| 650 | ±1.45 | ±0.46 |

Element types :

Single platinum elements of 100 Ohms at 0°C and duplex elements of two 100-Ohm elements inside the same sheath are both available as standard. Elements of other resistive materials such as copper and nickel are available upon request.

Self Heating :

Self heating is the rise in the measured temperature caused by the power dissipated in the element. Self heating error is affected by the thermal conductivity and velocity of the process being measured and is negligible for most applications. "The self heating effect @25°C in water flowing at 3 ft./sec. on a 3/16" OD SS sheath diameter RTD is 50 MW/°C typical."

Standard :

Excitation current and voltage 2 mA @24 VDC.

Time Constant :

The time required to sense 63% of a step temperature change from 25°C to 80°C in water flowing at 3 ft./sec. "The time constant for a 3/16" OD SS sheath diameter is 2.0 seconds typical."

Temperature Range :

The standard temperature range is -100°C to 260°C (-148°F to 500°F). Higher ranges available (up to 550°C) on request.

Element Leads :

Leadwire is stranded, silver plated copper with teflon insulation for low range units, and stranded, silver plated copper with fiberglass insulation for high range units. Three lead wires are recommended to compensate for lead wire resistance in industrial applications.

Leadwire Insulation :

Maximum temperature rating: 260°C (500°F) teflon
550°C (1022°F) fiberglass

Element Connections :

