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Product Data Sheet
N9356 – Rigid RTD Assembly

The model N9356 Rigid RTD is specifically designed and qualified for use in CANDU power plants for installation into an adapter fitting interfaced with a thermowell or direct installation on a bracket. The RTD is qualified per IEEE 323-1974/1983 and IEEE 344-1975/1987 for use in Class 1E harsh environments, but can also be used for non-safety applications.

Typical Applications Include:

- Inlet & outlet service temperature measurement
- Hydrogen recombiner temperature measurement
- Emergency diesel generator coolant temperature
- Bearing temperature measurement
- Air temperature monitoring (non-thermowell mount)
- Direct replacement for obsolete Rosemount Model 104ACF

Specifications

NAME	DESCRIPTION
Maximum Operating Temperature	32°F to 608°F (0°C to 320°C)
Element Type	Platinum (Wire-Wound)
Accuracy/Interchangeability	IEC 60751 Class B is standard. IEC 60751 Class A is available upon request. Each RTD can be supplied with a specific temperature versus resistance calibration table for the applicable range and customer specified interval. Other special accuracies are also available.
Calibration Points	Standard calibration points are 0°, 100° and 316°C (32°, 212° and 600.8°F).
Drift/Stability	RTD drift will remain within 0.5°C (0.9°F) over a 40 year period exclusive of process-induced drift. Drift per year will not exceed 0.05°C (0.09°F).
Insulation Resistance	At room temperature and dry external surfaces, the insulation resistance between any wire and the sensor case will be at least 1000 MΩ with 100 VDC applied for a minimum of 30 seconds prior to measurement. With the sensing portion of the RTD stabilized at 312°C (593.6°F), the RTD insulation resistance is greater than 50 MΩ with 100 VDC applied for a minimum of 30 seconds prior to measurement.
Operating Current	Standard operating current is 1 to 8.5 mA continuous. A continuous current of 20 mA (RMS) or less will not damage the sensor. A short duration or pulsed current of 40 mA maximum will not damage the sensor.

NAME	DESCRIPTION
Self-Heating Error	The RTD is capable of dissapating 10 mW without causing the indicated temperature to rise more than 0.2°C [0.36°F] when testing is performed with the sensor, mounted in it thermowell, is placed in water flowing at 1 m/s (~3 ft/s) flowing transverse to the sensor at 76°C [168.8°F].
Qualification	RTD assemblies are qualified to Class 1E requirements of IEEE 323-1974/1983 and IEEE 344-1975/1987.
Quality Standards	RTD assemblies are supplied in accordance with Ultra Electronics Energy QA/QC Quality Assurance & Control Manual 100-1 which meets the requirements of CSA Z299.1, 10 CFR 50 Appendix B, 10 CFR Part 21, ISO 9001, ASME NQA-1 and ANSI N45.2.
Sheath Material	Stainless Steel
Electrical Connector	Hermetically Sealed MS 10SL-3P, 3-Pin or MS 14S-2P, 4-Pin Connector
Sheath internal insulation	MgO
Internal Leadwire Material	Solid Constantan
Mounting Connections	Spring-loaded female bayonet connector for mounting with an adapter assembly into a thermowell. Threaded or swaged fitting connection for direct mounting. Consult the factory if custom mounting connections are required.
Shipping Weight	Approximately 0.75 lbs. Actual weight will depend upon final configuration/length supplied.

NAME	DESCRIPTION
Identification Tags	A S.S. identification tag is attached to the RTD using S.S. wire rope and crimp sleeves. Custom configured tagging is available upon request.
Storage Requirements	RTDs are to be stored in accordance with ANSI N45.2 Level B requirements or better.

FAQs

Can I specify my own required calibration points?

Yes. Calibration at ice point (32°F/0°C) and boiling point (212°F/100°C) are required to determine the appropriate Alpha temperature coefficient. Up to 4 additional calibration points at higher temperatures can be specified. Data from only 3 of the actual calibration points (32°F/0°C, 212°F/100°C and a select third point) will be used to generate a custom temperature versus resistance table using the Callendar-Van Dusen equation.

Can the N9356 RTD be ordered to meet special accuracy needs?

Yes. Please contact Nuclear Sales with the specific requirements so we may determine if we can meet your needs.

Documents

NAME	VIEW / DOWNLOAD
N9356 Model Number Configurator	View / Download
N9356 Wiring Diagram	View / Download
N9356 Qualification Report (Note: Report Requires Additional Specific Similarity Analysis)	View / Download

Accessories

304L S.S. Hex Nut with 1-14UNS Threads for Adapter Tube Assemblies	0885-101-0350T
304L S.S. Adapter Tube Retainer Fitting for 1/2" Diameter Tube	0885-101-0352T