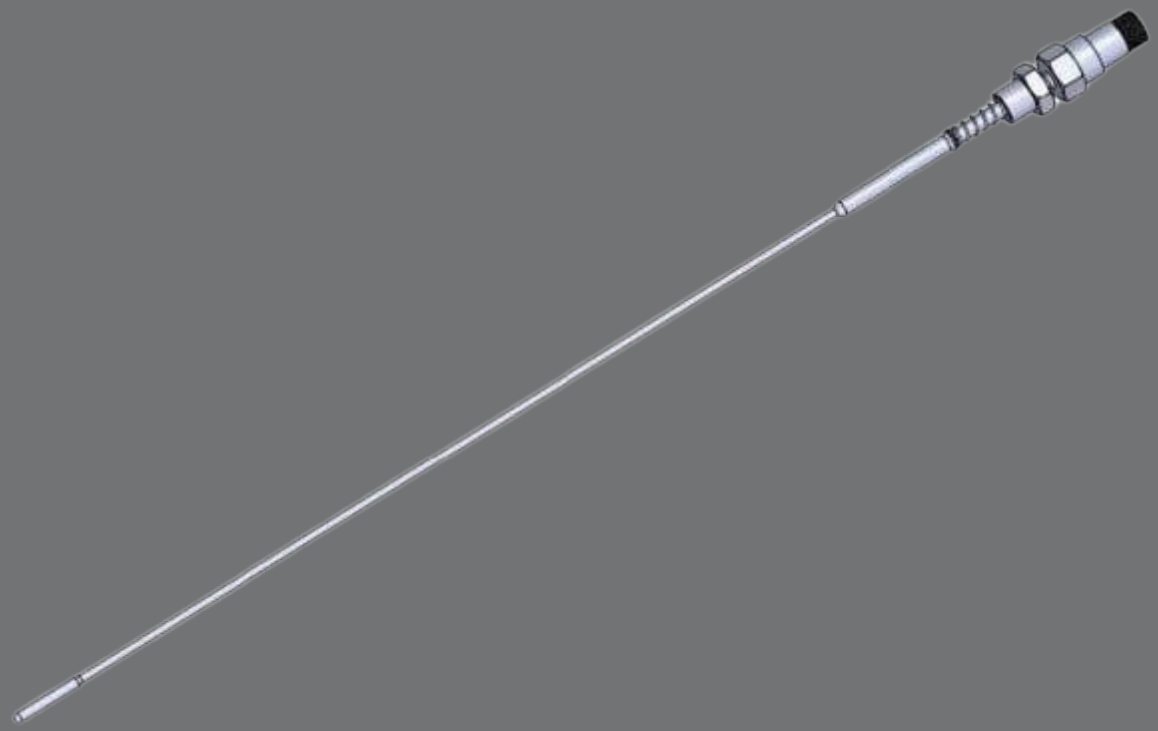
# N9339 rigid RTD assembly



## Key applications

- Feeder tube temperature monitoring for CANDU reactors
- Hydrogen recombiner temperature measurement
- Emergency diesel generator coolant temperature measurement
- Bearing temperature measurement
- Inlet and outlet service temperature measurement

## Overview

The model N9339 flexible RTD is specifically designed and qualified for use in CANDU powerplants for installation into a guide tube interfaced with a thermowell or thermal block. 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.

# Technical specification

| Feature | 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). Other calibration points are also avaialble. |
| 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. |
| Response time | The response time for the bare sensor is less 3 seconds when tested in accordance with ASTM E644 for 63.2% of a step change from room temperature air to water flowing transverse to the assembly at 1m/s (~3 ft/s) and at 76°C (169°F). Response time with a thermowell will vary depending upon actual thermowell design, but is normally about 20 seconds. |
| 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. |

# Technical specification

| Feature | 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 Curtiss-Wright 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 or silver core nickel-clad, as required |
| Mounting connections | Spring-loaded male bayonet connector for mounting to guide tube assembly. Consult the factory if custom mounting connections are required. |
| Shipping weight | Approximately 0.75 lbs. Actual weight will depend upon final configuration/length supplied. |
| Identification tags | A SS identification tag is attached to the RTD using SS wire rope and crimpsleeves. Custom configured tagging is available upon request. |
| Storage requirements | RTDs to be stored in accordance with ANSI N45.2 Level B or better. |

# Technical specification

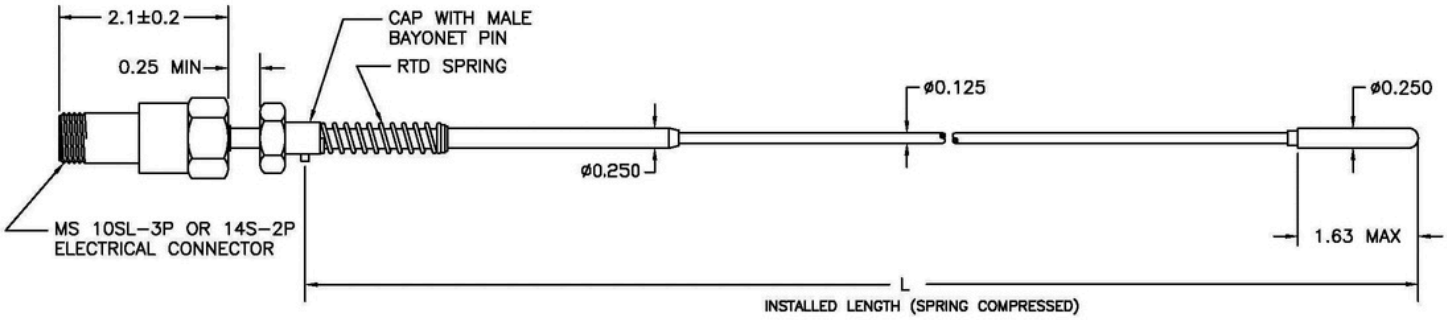
**Model number configurator**

| N9339 | Model N9339 Flexible RTD Assembly | | | |
|---|---|---|---|---|
| **Code** | **Element Style** | | | |
| S | Single Platinum Element, 3 or 4 Wire Configuration | | | |
| X | Other | | | |
| **Code** | **Resistance at 0°C (32°F)** | | | |
| 1 | 100 Ohms | | | |
| 2 | 200 Ohms | | | |
| **Code** | **Temperature Coefficient (Ohms/Ohm/°C)** | | | |
| A | 0.003902 | | | |
| B | 0.00385055 | | | |
| C | 0.003916 | | | |
| X | Other, Consult Factory | | | |
| **Code** | **Length "L", inches** | | | |
| 20.50 | 20.50 in. | 2' 8 1/4" | 514.4 mm | |
| 36.00 | 36.00 in. | 3' 0" | 914.4 mm | |
| 58.75 | 58.75 in. | 4' 10 3/4" | 1492.3 mm | |
| 68.00 | 68.00 in. | 5' 8" | 1727.2 mm | |
| 81.91 | 81.91 in. | 6' 9 29/32" | 2080.4 mm | |
| 114.41 | 114.41 in. | 9' 6 13/32" | 2905.9 mm | |
| 123.00 | 123.00 in. | 10' 3" | 3124.2 mm | |
| 125.20 | 125.20 in. | 10' 5 1/5" | 3180.1 mm | |
| XXX.XX | Other, Consult Factory | | | |

| N9339 | S | - | 1 | A | - | 58.75 |
|---|---|---|---|---|---|---|

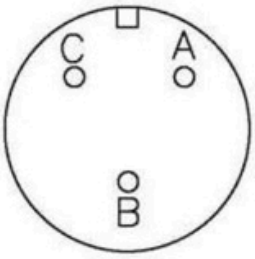
# Technical specification

**Dimensional drawing**



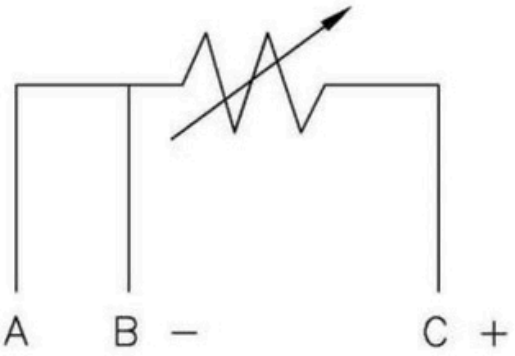

**Wiring diagram**

MS 10SL-3P PIN DIAGRAM

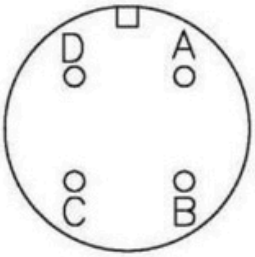



PIN SIDE

RTD WIRING DIAGRAM

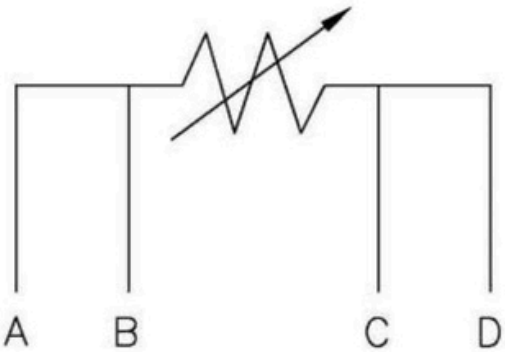



MS 14S-2P PIN DIAGRAM




PIN SIDE

RTD WIRING DIAGRAM



# FAQs and accessories

**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 N9339 RTD be ordered to meet special accuracy needs?**

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

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
- 304L S.S. adapter tube end fitting with J-Hook connection - 0885-101-0353T

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