



# Rotating Bolt Temperature Sensor

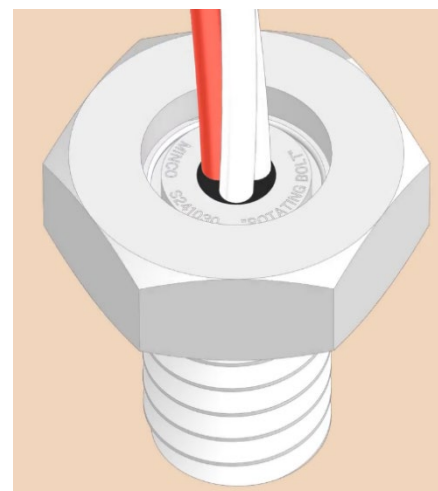
*Bolt-on RTD with Independent Cable Rotation*

## Product Overview

Minco's Rotating Bolt Temperature Sensor combines rugged bolt-on mounting with an innovative swivel design that allows the leadwire assembly to rotate freely during installation. This feature prevents twisting, reduces strain on wiring, and simplifies mounting in tight or dynamic assemblies.

Engineered for demanding applications, the Rotating Bolt Sensor is ideal for monitoring surface temperatures on engines, compressors, generators and industrial machinery. Its vibration-resistant design and robust stainless-steel construction make it well-suited for aerospace, power generation, and medical applications where reliability and ease of installation are critical.

Minco offers these products with optional certification for use in hazardous areas to IECEx (world-wide), ATEX (Europe), CSA (USA/Canada), KCs (Korea), PESO (India), and CCC (China). See page 2 for more information on the certifications available.



[Link to animation of the bolt rotation](#)

## Product Features

**Independent Cable Rotation:** Leadwire is free to rotate within the stainless-steel housing, preventing wire twisting and damage during installation.

**Flexible Configuration:** Available with nickel or platinum RTD sensing elements, multiple leadwire covering options, configurable number of leads, and variable lead length.

**Rugged Construction:** Stainless steel case and optional stainless steel braid provide mechanical protection in demanding industrial or aerospace applications.

**High Insulation Resistance:** Minimum 1,000 MΩ at 500 VDC, ensuring stable and reliable performance.

**Dielectric strength (Ex certified models only):** 600 Volts RMS at 60 Hz for 2 seconds with a maximum leakage of 5mA, leads to case and to stainless steel braid and feedthrough cases when specified

**Optional Feedthrough:** Stainless steel tube potted around the leadwire that prevents oil seepage when coupled with pressure seal fittings.

**Customizable Design:** Available with thermocouple or thermistor elements, custom lead termination methods, or alternate case dimensions.

## Model Number Options

| Model Number | Case Dimensions                             | Ex Certified | Temperature Range <sup>1</sup>       |
|--------------|---------------------------------------------|--------------|--------------------------------------|
| S241030      | 1/4-20 x 3/8" long thread<br>7/16" hex head | No           | -50°C to +260°C<br>(-58°F to +392°F) |
| S241031      | M6 x 1 thread, 10mm long<br>10mm hex        | No           | -50°C to +260°C<br>(-58°F to +392°F) |
| S241032      | 1/4-20 x 3/8" long thread<br>7/16" hex head | Yes          | -50°C to +200°C<br>(-58°F to +392°F) |
| S241033      | M6 x 1 thread, 10mm long<br>10mm hex        | Yes          | -50°C to +200°C<br>(-58°F to +392°F) |

<sup>1</sup> Nickel element reduces maximum temperature to 200°C (392°F). Elastomer filled cable reduces maximum temperature to 125°C (257°F). Feedthrough reduces temperature to -20°C to 149°C (-4°F to 300°F).

## Specification Options

| S241030                                   | Base model number                                                                                                                                                                                                                                                                               |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PD                                        | Sensing element:<br>NB: Nickel 100 Ω +/- 0.22% DIN 43760<br>PD: Platinum 100 Ω +/- 0.12% at 0° C IEC 60751 Class B<br>PE: Platinum 100 Ω +/- 0.36% at 0° C<br>PF: Platinum 1000 Ω +/- 0.12% at 0° C IEC 60751 Class B                                                                           |
| Z                                         | Number of leads:<br>Y: 2 (AWG 24)<br>Z: 3 (AWG 26)<br>X: 4 (AWG 30)                                                                                                                                                                                                                             |
| S                                         | Leadwire insulation/shield:<br>E = FEP over stainless-steel braid with elastomer fill and PTFE insulated leads (max elastomer fill 144")<br>F = FEP over PTFE insulated leads<br>R = FEP over stainless-steel braid and PTFE insulated wires<br>T = PTFE<br>S = Stainless steel braid over PTFE |
| 40                                        | Lead length in inches                                                                                                                                                                                                                                                                           |
| <b>S241030PDZS40 = Sample part number</b> |                                                                                                                                                                                                                                                                                                 |

## Agency Certifications (S241032 and S241033)



IECEx (IEC 60079):  
Ex ia IIC Ga  
Ex eb IIC Gb  
Ex ic ec IIC Gc



ATEX (EN 60079):  
II 1 G Ex ia IIC Ga  
II 2 G Ex eb IIC Gb II 3  
G Ex ic ec IIC Gc



CSA US (NFPA 70 Art 500 & 505):  
Cl I, Zone 0 AEx ia IIC T6...T2 Ga  
Cl I, Zone 1, AEx eb IIC T6...T2 Gb  
Cl I, Zone 2, AEx ic ec IIC T6...T2 Gc  
IS Cl I, Div 1, Grp ABCD T6...T2  
Cl I, Div 2, Grp ABCD T6...T2



CSA Canada (CSA C22.2):  
Ex ia IIC T6...T2 Ga  
Ex eb IIC T6...T2 Gb  
Ex ic ec IIC T6...T2 Gc  
IS Cl I, Div 1, Grp ABCD T6...T2  
Cl I, Div 2, Grp ABCD T6...T2

SIL2

SIL2  
IEC 61508-2:2010



China (GB/T 3836):  
Ex ia IIC Ga  
Ex eb IIC Gb  
Ex ic ec IIC Gc



India (Petroleum Rules 2002):  
Ex ia IIC Ga  
Ex eb IIC Gb  
Ex ic ec IIC Gc



Korea (KOSHA Art. 84/Art. 110):  
Ex ia IIC Ga  
Ex eb IIC Gb  
Ex ic ec IIC Gc