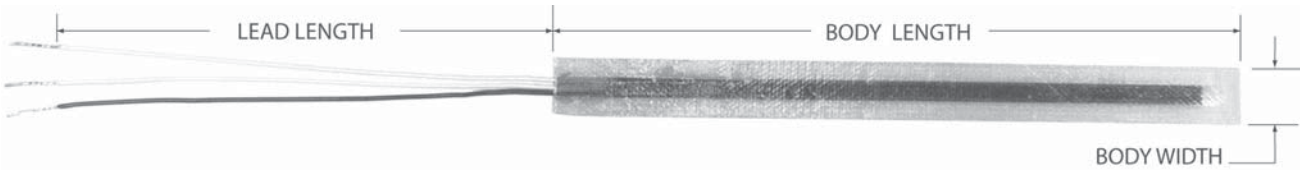
Single Element Stator Winding RTDs



Overview

Flat, laminated "stick" RTDs fit in slots between stator windings to monitor temperature rise and prevent overheating. The National Electrical Manufacturers Association (NEMA) recognizes embedded detectors as a standard protection for motor and generator insulation. Unlike on-off devices, RTDs provide continuous sensing for earlier warning without unnecessary tripouts.

The sensing elements of stator RTDs extend through most of the body length to provide an average temperature reading. This eliminates the danger of a point-type sensor missing a localized hot spot. Six sensors are recommended for each motor, two per phase. Locate sensors near the hottest point of the windings for best performance.

Minco stator RTDs meet the specifications of ANSI C50.10-1990, general requirements for synchronous motors.

Custom designs

Minco designs and builds custom models for many applications. We offer unmatched capabilities because we control all steps of the production from element to finished product. Examples of special options include:

- Thermocouple elements
- Thermistor elements (PTC or NTC)
- Dual sensors with different elements (for example, one copper and one platinum element)
- Ex rated sensors for equipment in hazardous areas. See page 7-2 for more information.
- Electrically conductive coating
- Special leadwire or cable

Specifications

Temperature limit:
Class F: 155°C (311°F)
Class H: 180°C (356°F).

Body material:
Class F: Epoxy glass
Class H: High temperature epoxy glass.

Standard sizes (others available):

Thickness inches (mm)	0.030 (.76)	0.050 (1.3)	0.078 (2.0)	0.125 (3.2)
Length inches (mm)	6.0 (152)	10.0 (254)	11.0 (279)	12.0 (305)
Standard body width inches (mm)	0.219 (5.6) 0.344 (8.7) 0.563 (14) 1.000 (25)	0.260 (6.6) 0.406 (10) 0.656 (17)	0.305 (7.7) 0.455 (12) 0.750 (19)	0.315 (8.0) 0.500 (13) 0.875 (22)

Note: Order any width from 0.219" (5.6mm) to 2.500" (64mm)

Leadwires: 2, 3, or 4, stranded copper with PTFE or polyimide insulation. Other leadwire coverings available.

0.125" thick: AWG 18.
0.078" thick: AWG 22.
0.050" thick: AWG 26.
0.030" thick: AWG 30 (no lead bulge);
AWG 18 (0.110" lead bulge);
Cable (0.110" lead bulge).

Dielectric strength: 3200 VRMS at 60 Hz, tested between the leads and external flat body surface for 1 to 5 seconds.

▼= STANDARD OPTIONS
Specifications subject to change

Class H (180°C) RTDs

Element	Model thickness:			
	0.030" (.76mm)	0.050" (1.3mm)	0.078" (2.0mm)	0.125" (3.2mm)
Platinum (0.00392 TCR) 100 Ω ±0.5% at 0°C	▼S1420PA[1]	▼S7401PA	▼S13PA	S8016PA
Platinum (0.00385 TCR) 100 Ω ±0.12% at 0°C (Meets EN60751, Class B)	▼S8010PD[1] ▼S100305PD[2] S100415PD[3]	▼S8014PD	▼S11016PD	S8016PD
Platinum (0.00385 TCR) 100 Ω ±0.5% at 0°C	S8010PE[1]	S8014PE	S8012PE	S8016PE
Copper (0.00427 TCR) 10 Ω ±0.2% at 25°C	▼S1220CA[1]	▼S7401CA	▼S18CA	S8016CA
Nickel (0.00672 TCR) 120 Ω ±0.5% at 0°C	▼S1240NA[1]	▼S7401NA	▼S15NA	S8016NA

Notes:
[1] Leadwires: AWG 30; lead bulge: 0.045" thick, extending into the body a maximum of 0.62".
[2] Leadwires: AWG 18; lead bulge: 0.110" thick, extending into the body a maximum of 1.75".
[3] Leadwires: AWG 30 with PTFE jacket overall; lead bulge: 0.110" thick, extending into the body a maximum of 1.75".

Specification and order options

S13PA	Model number from table
110	Body length: Specify in 0.1" increments (Example: 110 = 11.0 inches) ▼: 20, 60, 110
T	Leadwire insulation: ▼T = PTFE
344	Body width: Specify in 0.001" increments (Example: 344 = 0.344 inches) Minimum body widths: S8015, 2 or 3-lead: 320 S8015, 4-lead: 420 S8016, 2 or 3-lead: 320 S8016, 4-lead: 420 S100305: 310 S100415: 310 All other 2 or 3-lead models: 219 All other 4-lead models: 320 ▼: 219, 260, 305, 344
Z	Number of leads: Y = 2 leads (PA, PE, NA only) ▼Z = 3 leads X = 4 leads
36	Lead length in inches ▼: 36, 120, 240
S13PA110T344Z36 = Sample part number	

▼= *STANDARD OPTIONS*
Specifications subject to change