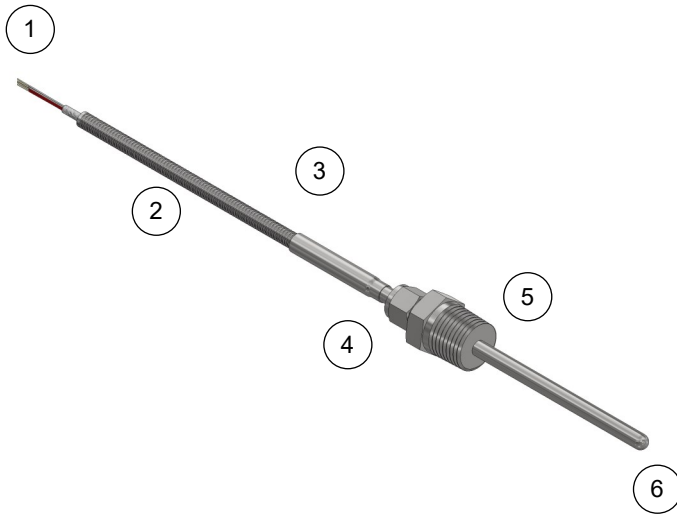


RT Series Sensor Probes

Overview



The RT series RTD sensor probes come in various styles unique to different applications. Each style consists of a RTD element protected by a sheath with a termination option.

Features:

- Styles are customizable to almost any application.
- Manufactured from high quality raw materials that meet industry recognized standards.
- Fast lead time on styles that utilize standard Aircom materials.

Application:

RTD sensor probes are used widely across almost any and every commercial and industrial temperature process control application.

1. Lead Wire Termination is how the sensor will connect and terminate to the instrument or electrical interface.

2. Lead Wire Insulation Type and length are selected to suit each application. The temperature rating varies depending on the material of lead wire used.

3. Transition is where the sensing probe is transitioned to lead wires. This piece is crimped or brazed onto the probe and potted with an epoxy rated to 150°C. For high temperature, and low moisture applications, a ceramic cement potting material is available on special request.

4. Fitting options are available to fasten the sensor into the process or optional thermowell.

5. Sensor length, outer diameter, and material are very important variables when designing a RTD sensor probe. The sheath is commonly constructed from tubing or mineral insulated cable (MI cable). 316/L stainless steel is the standard alloy Aircom uses to construct RTD sensors. Other alloys are available on special request. Material compatibility is always the end users responsibility.

6. RTD element is located in the tip of the sensor. This is where the temperature sensing takes place. RTD elements may be a thin-film or wire-wound style depending on RTD construction options.

Temperature Limiting Factors of RTD sensor probes will depend on the RTD construction option of the model code in addition to the rating of each component used in the sensors construction. Continuous temperature ratings of the components are listed in the model number selection.

Configuration Considerations

When configuring the RT series RTD sensor probe models to suit your application it is important to consider the following:

- Hazardous location approval rating
- Sensor probe construction options
- Number of RTD elements
- Sheath OD
- Sheath material (316/L stainless steel standard)
- Sensor probe length
- Lead wire length
- Lead wire type
- Lead wire termination
- Process fitting options
- Process fitting size
- Minimum and maximum temperature of the process
- Process conditions and effect on the sensor probe
- Maximum pressure (if any)

RT4 RTD Sensor Probe Model Code

RT4 - T1 - T2 - T3 - T4 - T5 - T6 - T7 - T8 - T9 - T10 - T11 - T12

RT4 RTD Sensor Probe

T1 Probe Style²

GP	General purpose
EI	Electrically isolated ⁴
TS	Tip sensitive ⁴
BP	Bayonet style
TE	Tip sensitive & electrically isolated ⁴
BT	Bayonet style & tip sensitive ⁴

T2 Element Type

A	100Ω Pt. 385 Class A³
B	100Ω Pt. 385 1/10 Class B
C	100Ω Platinum 392
D	120Ω Nickel 627 0.806Ω/°C
E	10Ω Copper 427 0.039Ω/°C
F	1000Ω Pt. 385 Class A ³

T3 Number of Elements

S	Single element	D	Dual element
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T3 Lead Wire Configuration

2	2 Wire	3	3 Wire
4	4 Wire	Other	Consult factory

T5 Sensor Probe Diameter

18	0.125" (1/8") ⁴
36	0.188" (3/16")
21	0.215"
14	0.250" (1/4")
38	0.375" (3/8")
Other	Consult factory

T6 Sensor Probe "L" Length (inches)²

"inches"	Specify length in inches for straight probe length
N" inches"	Specify "N" and length in inches for 90° bend

T7 Lead Wire Type⁵

TE	Teflon (260°C)
ST	Teflon with SS over braid (260°C)
AT	Flex armor over Teflon (260°C)
PT	Poly jacketed flex armor over Teflon (102°C)
TT	Teflon flex armor over Teflon (260°C)
AF	Flex armor over fiberglass (482°C)
Other	Consult factory

NOTES:

1. Part number example: RT4-GP-A-S-3-14-6-AT-36-BE-X-X-LT or RT4-GP-A-S-3-14-N9-TE-48-CF-12-LT
2. Reference page 3 for further detail on probe style, 4 for part outline, and 5 for part dimensions
3. Class A tolerance definitions will only be applicable for temperatures under 300°C, Class B tolerance will apply to over 300°C
4. Only available for sensor probe construction (T12) LT option
5. Temperature values given are for maximum continuous rating for specific component of the configuration
6. Bold text indicates most common part selections

T8 Lead Wire "A" Length (inches)²

"inches"	Specify length in inches
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T9 Lead Wire Termination⁵

BE	Bare ended lead wire
SC	Standard male connector (205°C)
MC	Miniature male connector (205°C)
SL	Spade lugs
RL	Ring lugs
PI	Pins
CG	1/2" NPT cord grip electrical fitting
Other	Consult factory

T10 Fitting Options

X	No fitting required
CF	Compression fitting - SS ferrule
CT	Compression fitting - Teflon ferrule
FX	Fixed hex instrument plug 1/2" NPT
FS	Fixed bushing 1/2"x1/2" NPT
TX	Spring loaded bushing 1/2"x1/2" NPT
OS	Oil seal spring loaded 1/2"x1/2" NPT
SG	Self gripping spring
Other	Consult factory

T11 Fitting Size

X	No fitting
18	1/8" NPT
14	1/4" NPT
38	3/8" NPT
12	1/2" NPT
Other	Consult factory

T12 Sensor Probe Construction⁵

LT	Low temperature (-50 to 260°C)
HT	High temperature ³ (-50 to 482°C)
ET	Extreme temperature ³ (-50 to 850°C)
VT	Vibration construction ³ (-50 to 482°C)
CT	Cryogenic temperature (-200 to 260°C)

Sensor Probe Sheath Material

Standard default material is 316/316L stainless steel. Other



RT4 RTD Sensor Probe Style

Probe Style

GP



General Purpose - Standard RTD sensor probe construction.

EI



Electrically Isolated - Sensor sheath is isolated 2.5" back from tip. Typically used on electric motor bearings.

TS



Tip Sensitive - Copper sensor probe tip is silver soldered on to probe for enhanced thermal conductivity. Typically used on electric motors.

BP



Bayonet Style - Spring loaded construction by means of standard bayonet cap. Designed to install into bayonet adapter fitting. Spring length is 1.625".

TE



Tip Sensitive & Electrically Isolated - Combination of both sensor styles noted above.



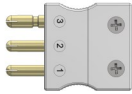


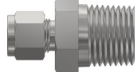







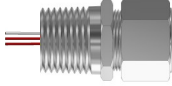

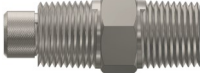
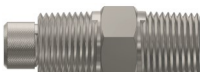
BT



Bayonet Style & Tip Sensitive - Combination of both sensor styles noted above.

Sheath Materials - Standard Aircom RTD sensor probes are manufactured with 316/316L stainless steel. Other materials are available upon request.

RT4 RTD Sensor Probe Outline

Termination	Lead Wire Type	Transition	Fittings	Sensor Sheath (OD)
BE 	TE 		X (None)	18 (0.125")
SC 	ST 	Standard Transition 	CF 	36
MC 	AT 	Small Transition 	FX 	21 (0.215")
SL 	PT 	X (None)	FS 	14 (0.250")
CG 	TT 		TX 	38
			OS 	

RT4 RTD Sensor Probe Dimensions

