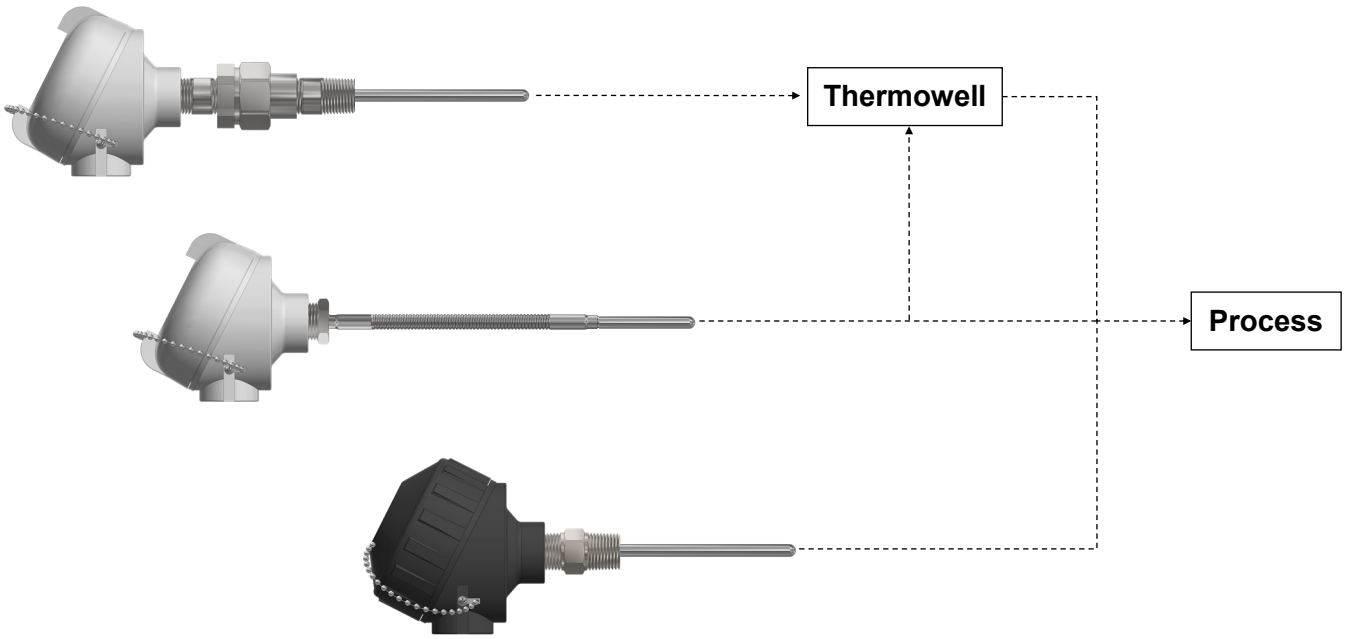
RT1 RTD Assembly

General Purpose



Overview

Description:

The RT1 RTD assembly is a resistance temperature detector designed for use general purpose non-hazardous locations. The RT1 is a customizable product that is model number configured and made to order.

The RT1 consists of a stainless steel RTD sensor, complete with a connection head (enclosure) that may or may not contain an internal temperature transmitter module. Connection extension fittings will spring load the sensor into a thermowell or a fixed fitting can be used without a thermowell.

Features:

- Simple design that is used and accepted across multiple process industries.
- RT1 configuration options allow for many different patterns to be configured for almost any temperature measurement application.

Application:

- Industrial temperature measurement
- Process control
- Outdoor / indoor use

Configuration Considerations

When configuring the RT1 model to suit your application it is important to consider the following:

- Site specific standards
- Connection head type
- Extension length
- RTD element (tolerance)
- RTD construction style
- Number of RTD elements
- Minimum and maximum temperature of the process
- Maximum pressure
- Process conditions and their effects on the assembly
- Sensor probe length (to align with what it is going into)

If using a RT1 with a thermowell, consider:

- Thermowell length alignment with RT1 sensor probe
- Spring loaded RT1 “L” length = Thermowell stem
- Fixed fitting RT1 “L” length = Thermowell stem - 0.5”

Aircom Instrumentation Ltd.
9328 - 37 Avenue NW
Edmonton, AB T6E 5K3
Ph: (780) 434-6916
Sales@AircomInstrumentation.com
www.AircomInstrumentation.com

RT1 RTD Assembly Model Code

RT1 - T1 - T2 - T3 - T4 - T5 - T6 - T7 - T8 - T9

RT1	RTD Assembly

T1	Connection Head
0AL	**Aluminum, 1x 3/4" conduit, Bakelite terminal block**
2CI	**Cast iron, 1x 3/4" conduit, Bakelite terminal block**
0PY	Polypropylene, 1x 3/4" conduit, Bakelite terminal block
X	Not required
Other	Refer to page 5 for details, styles and options

T2	Flex-Armor/Connection Extension
N	Nipple[4] 1/2" NPT (galvanized)
SN	Nipple 1/2" NPT (stainless steel)
NUN	**Nipple-union-nipple[4] 1/2" NPT (galvanized)**
SNUN	Nipple-union-nipple[4] 1/2" NPT (stainless steel)
FS	Fixed bushing 1/2"x1/2" NPT
FX	Fixed hex instrument fitting 1/2" NPT
OS	Spring loaded bushing with oil seal 1/2"x1/2" NPT
AF	Fixed hex instrument fitting - flex armor over fiberglass
AT	Fixed hex instrument fitting - flex armor over Teflon
PT	Fixed hex fitting - Poly jacketed flex armor over Teflon
TX	Spring loaded fitting (transmitter bushing) 1/2"x1/2" NPT
TXUN	**Spring loaded fitting-union-nipple (galvanized)**
STXUN	Spring loaded fitting-union-nipple (stainless)

T3	Connection Extension "A" length (inches)[3]
X	Fixed length for T2 options FS, FX, OS, TX
3.5	**3" installed length**
4.5	4" installed length
"inches"	Specify AF, AT, PT length in inches
Other	Specify (inches)

T4	Element Type
A	**100Ω Pt. 385 Class A[4]**
B	100Ω Pt. 385 1/10 Class B
C	100Ω Platinum 392
D	120Ω Nickel 627 0.806Ω/ºC
E	10Ω Copper 427 0.039Ω/ ºC
F	1000Ω Pt. 385 Class A

T5	Number of Elements
S	**Single element**
D	Dual element

T6	Lead Wire Configuration
2	2 Wire
3	**3 Wire**
4	**4 Wire**

T7	Sensor Probe Construction
LT	**Low temperature (-50 to +260ºC) (-58°F to +500°F)**
HT	High temperature[4] (-50 to 482ºC) (-58°F to +899°F)
ET	Extreme temperature[4] (-50 to 850°C) (-58°F to +1562°F)
VT	Vibration construction[4] (-50 to 482ºC) (-58°F to +899°F)
CT	Cryogenic temperature (-200 to +260°C) (-328°F to +500°F)

T8	Sensor "L" Length (inches)[3]
"inches"	Specify length in inches

T9	Sensor Sheath Diameter
18	1/8" (0.125")
36	3/16" (0.188")
14	1/4" (0.250")
38	3/8" (0.375")

NOTES:
1. Part number example: RT1-0AL-NUN-3.5-A-S-3-LT-12-14
2. Connection head enclosure connection extension (T2) options NUN requires a connection head and terminal block for spring loading
3. Reference page 3 for outline and page 4 for dimensions
4. Class A tolerance will only be applicable for temperatures under +300°C (+572°F), Class B tolerance typically applies to over +300°C (+572°F)
5. Bold text indicates most common part selections

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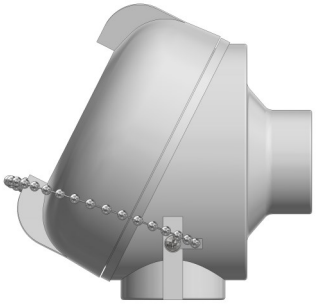
RT1 RTD Assembly Outline

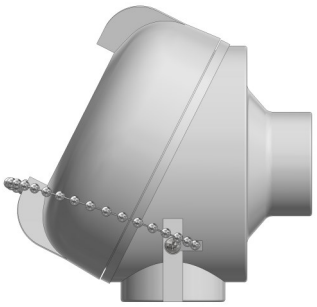
Connection Head

0AL



2CI

0PY

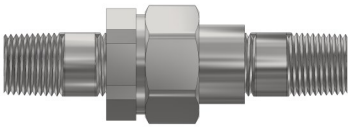


Refer to page 5 for further connection head styles, options, and details

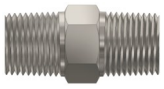
Flex-Armor/Connection Extension

N & SN

NUN & SNUN

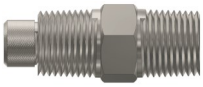


FS

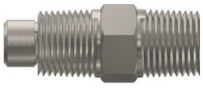


FX

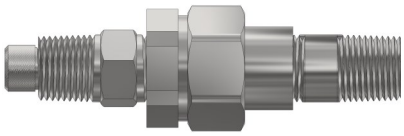
OS



TX

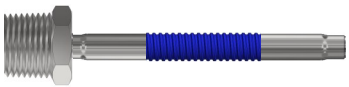


TXUN & STXUN



AF - AT

PT



Sensor Probe (OD)

18
(0.125”)

36
(0.188”)

14
(0.250”)

38
(0.375”)

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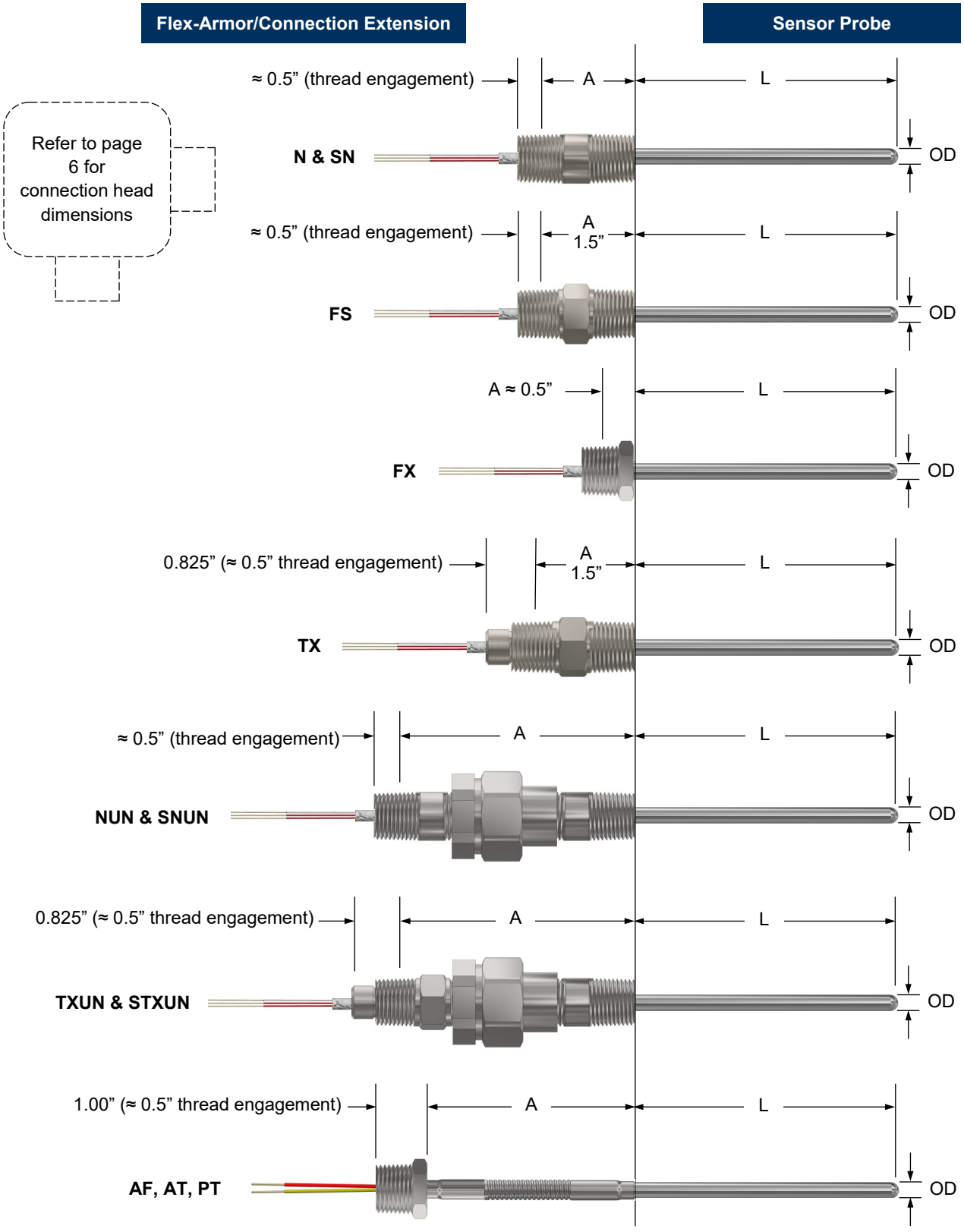
RT1 RTD Assembly Dimensions



NOTE:
1. Assemblies are supplied with 6” to 8” of lead wire

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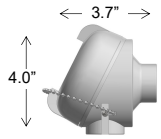
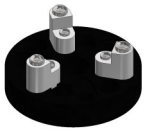
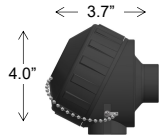
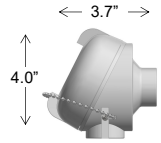
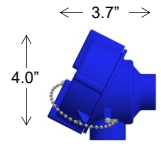
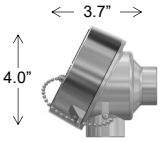
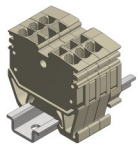
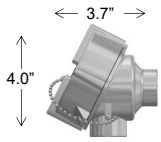
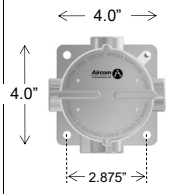
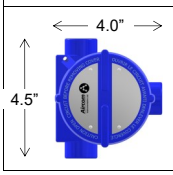
Model, Outline, and Dimensions

Outline & Dimensions	Model	Connection (NPT)		Material & Type	Max. Temperature Rating	Terminal Block Options
		Instrument	Conduit			
	4AL	1/2"	1/2"[2]	Cast aluminum Buna O-ring General Purpose	+440°C (+825°F)	 Bakelite - standard Screw terminals to suit sensor configuration
	0AL	1/2"	3/4"			
	1CI	1/2"	1/2"[2]	Iron alloy General Purpose	+440°C (+825°F)	
	2CI	1/2"	3/4"			
	3CI	3/4"	3/4"			
	0PY	1/2"	3/4"	Polypropylene General Purpose	+121°C (+250°F)	 Ceramic - optional Screw terminals to suit sensor configuration Add suffix "C" to connection head model number
	1ALT	1/2"	1/2"[2]	Cast aluminum epoxy coated Buna O-ring Hazardous[1] Type 4X	+85°C[2] (+185°F)	
	2ALT	1/2"	3/4"			
	3ALT	3/4"	3/4"			
	1SS	1/2"	1/2"[2]	316 stainless Hazardous[1] Type 4X		 Clamp technology - optional DIN mounted clamp technology terminals to suit sensor configuration Add suffix "D" to connection head model number.
	2SS	1/2"	3/4"			
	3SS	3/4"	3/4"			
	1AL	1/2"	1/2"[2]	Cast aluminum Buna O-ring Hazardous[1] Type 4X		
	2AL	1/2"	3/4"			
	3AL	3/4"	3/4"			
	1ALW	1/2"[2]	1/2"[2]	Cast aluminum epoxy coated Buna O-ring Hazardous[1] Type 4X	+85°C[3] (+185°F)	 Splice technology - optional Wire splicing connectors contained loosely within connection head. Add suffix "S" to connection head model number.
	2ALW	1/2"[2]	3/4"			
	3ALW	3/4"	3/4"			
	4ALW	3/4"	2x 3/4"			
	1ALM	1/2"	2x 1/2"			
	2ALM	1/2"	2x 3/4"			
	3ALM	3/4"	2x 3/4"			

NOTES:
1. Hazardous location rating is for connection head ONLY and not the complete temperature sensor assembly
2. Ambient temperature rating -50°C to +85°C (-58°F to +185°F); maximum temperature rating +125°C (+257°F) Canada only
3. Ambient temperature rating -40°C to +85°C (-40°F to +185°F)
4. May be supplied with an approved reducer bushing

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