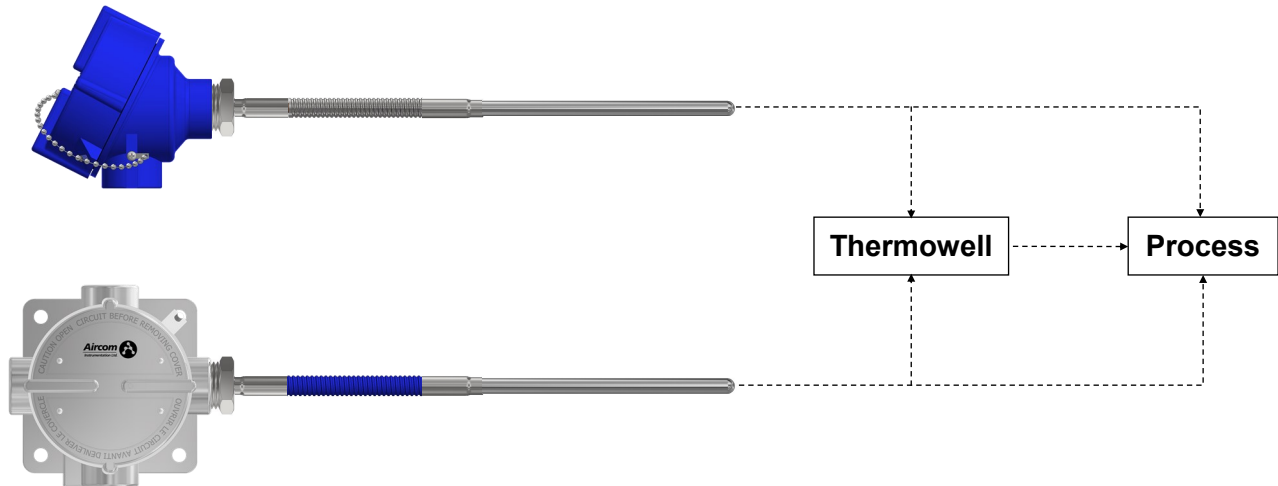


TC11 Flex Armor Thermocouple Assembly

Class I, Division 2, Groups A, B, C, D; Class I, Zone 2, Group IIC (Note 2); T6...T1



Overview

Description:

The TC11 flex armor thermocouple assembly is a thermocouple designed for use in hazardous locations. The TC11 is a customizable product that is model number configured and made to order.

The TC11 consists of a thermocouple sensor probe, complete with a connection head (enclosure) that may be provided with a terminal block, DIN rail, wire splice connectors, or internal transmitter. Flexible armor connects the sensor probe to the connection head and the use of a thermowell is optional.

Features:

- Simple design that is used and accepted across multiple process industries.
- TC11 configuration options allow for many different arrangements to be configured for almost any temperature measurement application.

Application:

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

Specifications

Accuracy TC	Tolerance per ASTM E230
T-Code	T6...T1
Electrical rating	30 Vdc, 1.0 A max
Ambient temperature	-50°C to +50°C (-58°F to +122°F)
Process temperature	-50°C to +450°C (-58°F to +842°F)
CSA Certificate of Compliance	1526478

Note:

1. Specifications will depend on model code variants, and the values shown are the full rated model ranges.
2. Class I, Zone 2, Group IIC is US only.



TC11 Thermocouple Assembly Model Code

TC11 - T1 - T2 - T3 - T4 - T5 - T6 - T7 - T8 - T9

TC11 Thermocouple assembly with connection head and flexible armour

T1	Connection Head	Color	Material	Conduit Connection	Terminal Block	Type Rating
2ALT	Standard style	Blue	Aluminum epoxy coated	1x 3/4" NPT	Bakelite	Type 4X
1ALT	Standard style	Blue	Aluminum epoxy coated	1x 1/2" NPT	Bakelite	Type 4X
2ALTC	Standard style	Blue	Aluminum epoxy coated	1x 3/4" NPT	Ceramic	Type 4X
2ALW	Mounting holes	Grey	Aluminum epoxy coated	1x 3/4" NPT	Bakelite	Type 4X
2ALM	Multi connection	Blue	Aluminum epoxy coated	2x 3/4" NPT	Bakelite	Type 4X
2AL	Standard style	Grey	Aluminum	1x 3/4" NPT	Bakelite	Type 4
2SS	Standard style	Steel	Stainless steel	1x 3/4" NPT	Bakelite	Type 4X
Note	Refer to page 6 for additional options, details and other styles					

T2	Flex-Armor Extension	Lead Wire Ratings
AF	Flex armor over fiberglass lead wire	Fiberglass lead wire +485°C (+905°F)
AT	Flex armor over Teflon lead wire	Teflon lead wire +260°C (+500°F)
PT	Poly jacketed flex armor over Teflon lead wire	Teflon lead wire +260°C (+500°F) / Poly jacket +90°C (+194°C)
TT	Teflon jacketed flex armor over Teflon lead wire	Teflon lead wire / jacket +260°C (+500°F)

T3	Flex-Armor Extension "A" length (inches)	CSA Process Temperature Rating
"inches"	Specify length in inches	-50°C to +450°C (-58°F to +842°F), when "A" length is ≥ 8" length ⁴

T4	Thermocouple Type		
K	Type K	N	Type N
J	Type J	R	Type R
T	Type T	S	Type S
E	Type E	B	Type B

T5	Sensor Sheath Diameter
18	1/8" OD
36	3/16" OD
14	1/4" OD
38	3/8" OD

Continued on page 3



TC11 Thermocouple Assembly Model Code

TC11 - T1 - T2 - T3 - T4 - T5 - T6 - T7 - T8 - T9

Continued from page 2

T6	Thermocouple Junction
G	Grounded
U	Ungrounded
E	Exposed

T7	Thermocouple Junction Quantity
S	Single
D	Dual
T	Triple
Q	Quad

T8	Sensor Sheath Material
304	304/304L stainless steel
316	316/316L stainless steel
310	310 stainless steel
600	Inconel 600
HAC	Hastelloy C-276
Other	Consult factory

T9	Sensor "L" Length (inches)
"inches"	Specify length in inches

NOTES:

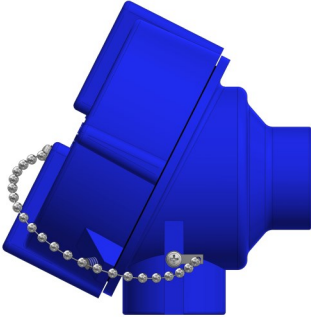
1. Part number example: TC11-2ALT-AT-60-K-14-U-S-316-12
2. Reference page 4 for part outline and 5-6 for part dimensions
3. Bold text indicates most common part selections
4. The sensor temperature rating is based on the length not directly in contact with the process at its maximum temperature



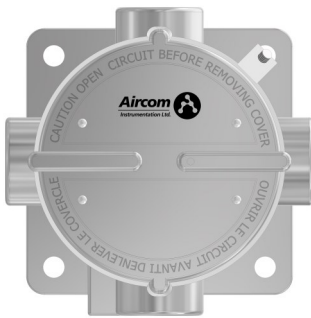
TC11 Thermocouple Assembly Outline

Connection Head

2ALT



2ALW



2ALM



Refer to page 6 for further connection head styles, options, and details

Flex-Armor Extension

AF - AT - TT



PT



Sensor Probe (OD)

18
(0.125")



36
(0.188")



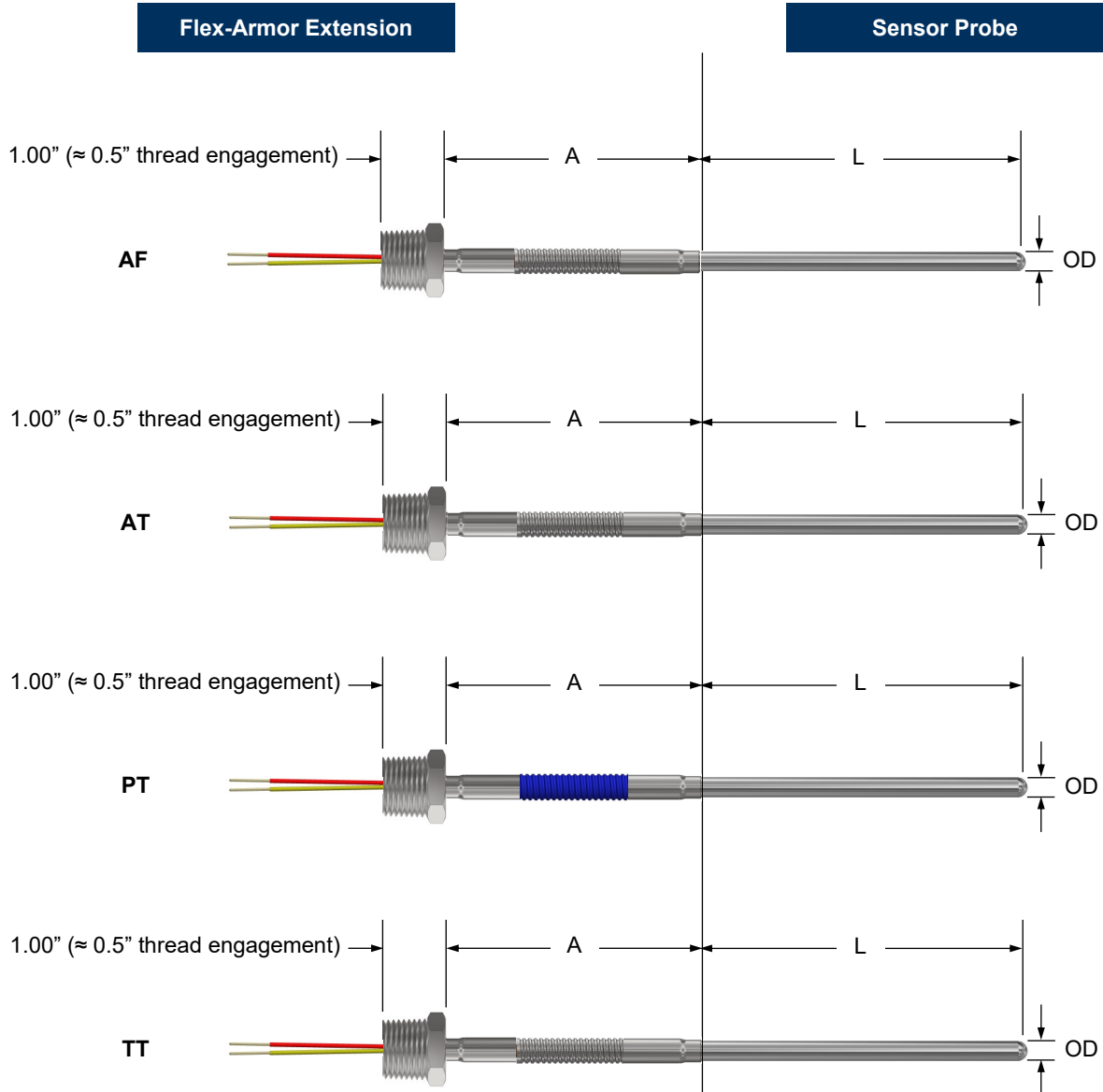
14
(0.250")



38
(0.375")



TC11 Thermocouple Assembly Dimensions



Refer to page 6 for connection head dimensions

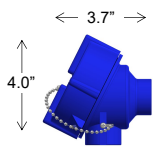
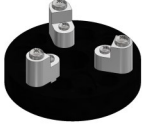
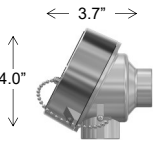

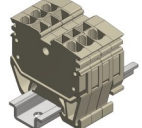
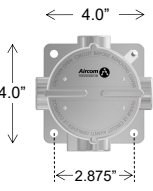

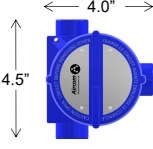
NOTE:

1. Assemblies are supplied with 6" to 8" of lead wire



TC11 Connection Heads

Model, Outline, and Dimensions

Outline & Dimensions	Model	Connection (NPT)		Material & Type	Ambient Temperature	Terminal Block Options
		Instrument	Conduit			
	1ALT	1/2"	1x 1/2" ⁿ²	Cast aluminum epoxy coated Buna O-ring Type 4X		 Bakelite - <u>standard</u> Screw terminals to suit sensor configuration.
	2ALT	1/2"	1x 3/4"			
	3ALT	3/4"	1x 3/4"			
	1SS	1/2"	1x 1/2" ⁿ²	316 stainless steel Buna O-ring Type 4X	-50°C to +85°C (-58°F to +185°F) (+125°C (+257°F) Canada only)	 Ceramic - optional Screw terminals to suit sensor configuration Add suffix "C" to connection head model number.
	2SS	1/2"	1x 3/4"			
	3SS	3/4"	1x 3/4"			
	1AL	1/2"	1x 1/2" ⁿ²	Cast aluminum Buna O-ring Type 4		 Clamp technology - optional DIN mounted clamp technology terminals to suit sensor configuration Add suffix "D" to connection head model number.
	2AL	1/2"	1x 3/4"			
	3AL	3/4"	1x 3/4"			
	1ALW	1/2" ⁿ²	1x 1/2" ⁿ²	Cast aluminum epoxy coated Buna O-ring Type 4X	-40°C to +85°C (-40°F to +185°F)	 Splice technology - optional Wire splicing connectors contained loosely within connection head. Add suffix "S" to connection head model number.
	2ALW	1/2" ⁿ²	1x 3/4"			
	3ALW	3/4"	1x 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. Ambient ratings are of the connection head only, temperature assembly ambient rating is typically -50°C to +50°C (-58°F to +122°F)
2. May be supplied with an approved 3/4" x 1/2" NPT reducer bushing
3. Type ratings are for enclosure component of assembly ONLY and not full assembly