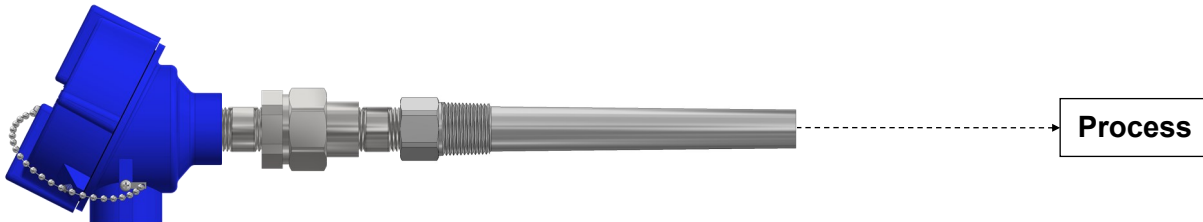


TC8 Thermocouple Assembly

Class I, Division 1, Groups B, C, D; Class II, Division 1, Groups E, F, G; Class III; T6...T1

Class I, Zone 1, Groups IIB plus hydrogen, IIB; Zone 20; T6...T1



Overview

Description:

The TC8 thermocouple assembly is a thermocouple designed for use in hazardous locations. The TC8 is a customizable product that is model number configured and made to order.

The TC8 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. Connection extension fittings will spring load the sensor into a tapered threaded thermowell.

Features:

- Simple design that is used and accepted across multiple process industries.
- TC8 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 +230°C (-58°F to +446°F)
Process Pressure (Thermowell, P _{external})	Thermowell CRN rating up to a CSA max. of 48.26 MPa @ +20°C (7000 PSI @ +68°F)
CSA Certificate of Compliance	1526478
Thermowell CRN	0F01298.2

Note: Specifications will depend on model code variants, and the values shown are the full rated model ranges.



TC8 Thermocouple Assembly Model Code

TC8 - T1 - T2 - T3 - T4 - T5 - T6 - T7 - T8 - T9

TC8 Thermocouple assembly with connection head, connection extension fittings, and standard tapered thermowell

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	Connection Extension "A" length (inches)	Connection Extension (T2) Options	CSA Rating
3	3" installed length	NUN	-50°C to +230°C, T3C (-58°F to +446°F)
4	4" installed length		
"inches"	Installed "A" length already includes thread engagement.		

T3	Thermocouple Type
K	Type K
J	Type J
T	Type T
E	Type E
N	Type N

T4	Thermocouple Junction
G	Grounded
U	Ungrounded

T5	Thermocouple Junction Quantity
S	Single
D	Dual
T	Triple
Q	Quad

Continued on page 3



TC8 Thermocouple Assembly Model Code

TC8 - T1 - T2 - T3 - T4 - T5 - T6 - T7 - T8 - T9

Continued from page 2

T6	Thermowell "H" Length (inches)²
"inches"	Specify length in inches - standard minimum 1.75"

T7	Thermowell "U" Length (inches)²
"inches"	Specify length in inches

T8	Threaded Thermowell Material
304	304/304L stainless steel
316	316/316L stainless steel
310	310 stainless steel
600	Inconel 600
HAC	Hastelloy C276
Other	Consult factory

T9	Thermowell Process Connection
12	1/2" NPT
34	3/4" NPT
1	1" NPT

NOTES:

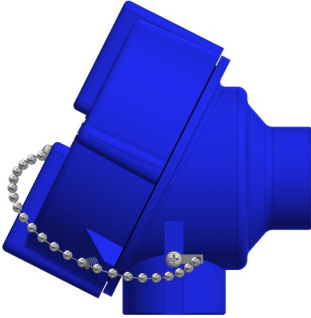
1. Part number example: TC8-2ALT-3-K-U-S-1.75-10-316-34
2. Thermocouple probe sheath material is 316/316L stainless steel unless otherwise specified
3. Reference page 4 for part overview and 5 for dimensions
4. Bold text indicates most common part selections



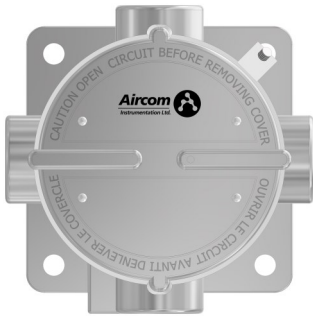
TC8 Thermocouple Assembly Outline

Connection Head

2ALT



2ALW

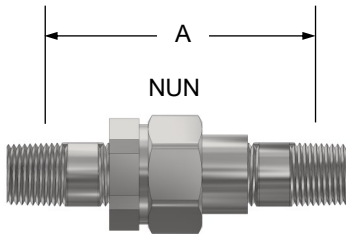


2ALM

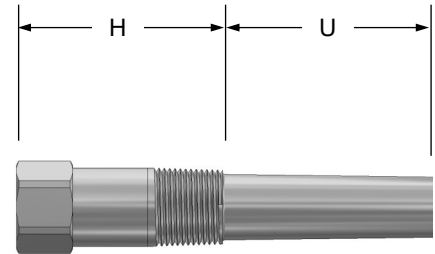
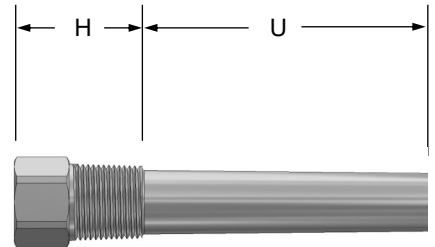


Refer to page 6 for further connection head styles, options, and details

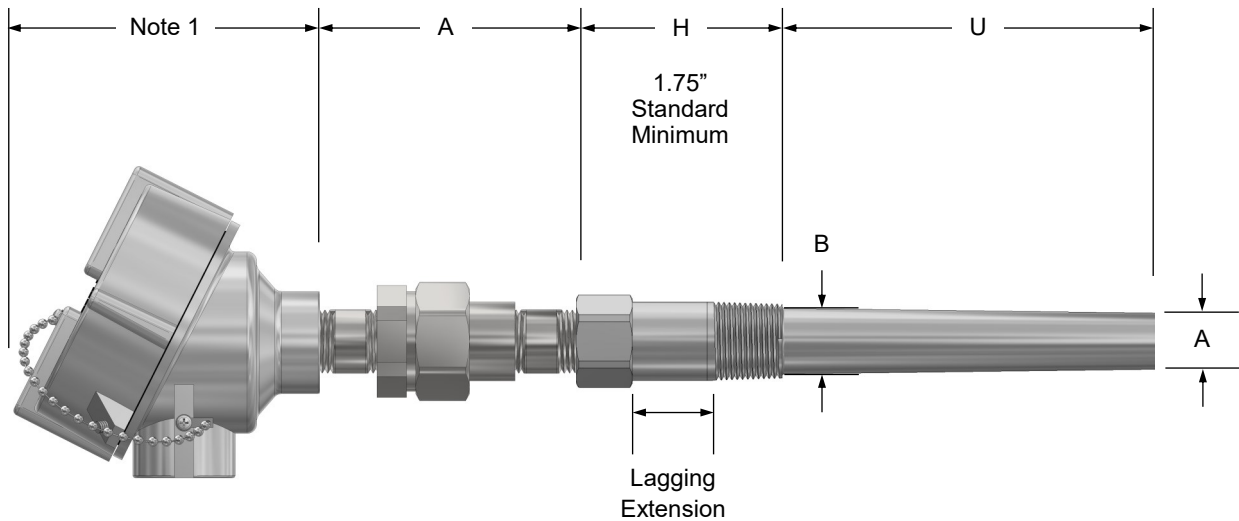
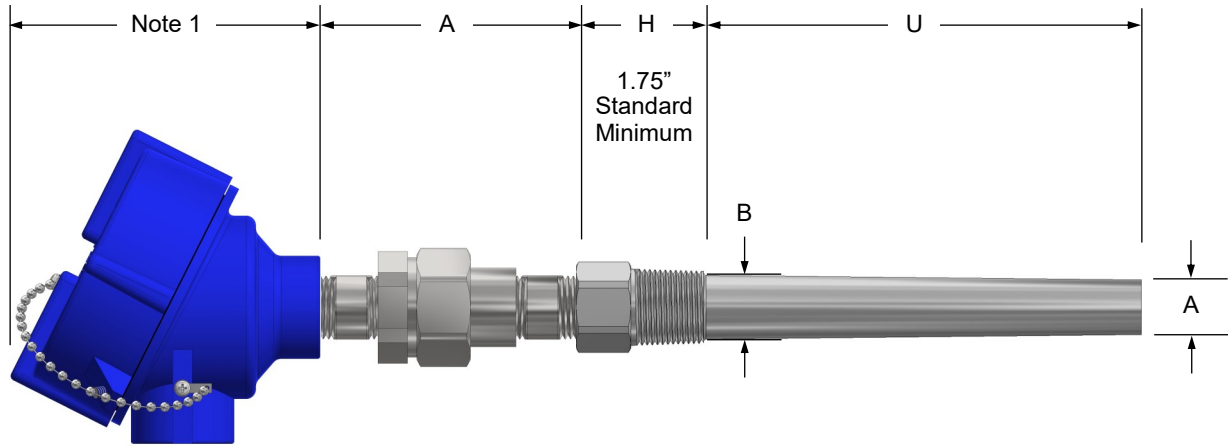
Connection Extension



Threaded Thermowell



TC8 Thermocouple Assembly Dimensions



NPT	"A" (Root OD)	"B" (Tip OD)
1/2"	0.625"	0.500"
3/4"	0.875"	0.750"
1"	1.063"	0.750"

NOTES:
1. Connection head dimensions on page 6

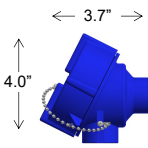
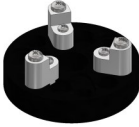
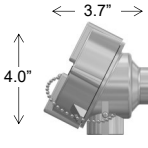
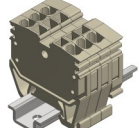
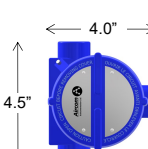

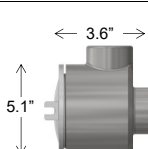


Section: Thermocouple Sensor Probes & Assemblies
File: Thermocouple-Assembly-TC8-5

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TC8 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" ²	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" ²	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" ²	Cast aluminum Buna O-ring Type 4		Ceramic - optional Screw terminals to suit sensor configuration Add suffix "C" to connection head model number.
	2AL	1/2"	1x 3/4"			
	3AL	3/4"	1x 3/4"			
	1ALW	1/2" ²	1x 1/2" ²	Cast aluminum epoxy coated Buna O-ring Type 4X	-40°C to +85°C (-40°F to +185°F)	 Clamp technology - optional DIN mounted clamp technology terminals to suit sensor configuration Add suffix "D" to connection head model number.
	2ALW	1/2" ²	1x 3/4"			
	3ALW	3/4"	1x 3/4"			
	4ALW	3/4"	2x 3/4"			
	1ALM	1/2"	2x 1/2"			Clamp technology - optional DIN mounted clamp technology terminals to suit sensor configuration Add suffix "D" to connection head model number.
	2ALM	1/2"	2x 3/4"			
	3ALM	3/4"	2x 3/4"			
	1CAL ³	1/2" ²	1x 1/2" ²			 Splice technology - optional Wire splicing connectors contained loosely within connection head. Add suffix "S" to connection head model number.
	2CAL ³	3/4"	1x 3/4"			
	4CAL ³	1/2"	2x 1/2"	Cast aluminum Buna O-ring Type 4	-20°C to +40°C (-4°F to +104°F)	Splice technology - optional Wire splicing connectors contained loosely within connection head. Add suffix "S" to connection head model number.
	3CAL ³	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

