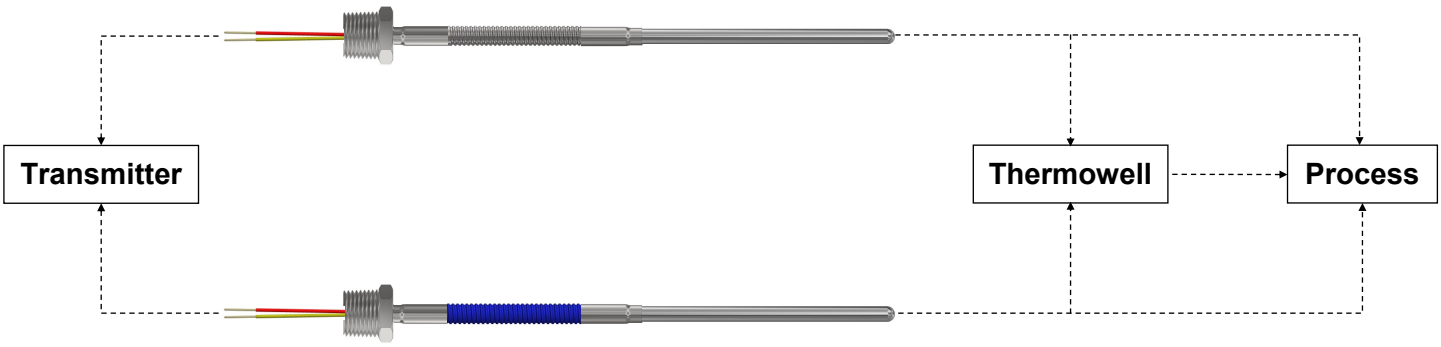
TC15 Direct Mount Thermocouple Assembly

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



Overview

Description:

The TC15 direct mount thermocouple assembly is a thermocouple designed for use in hazardous locations. The TC15 is a customizable product that is model number configured and made to order.

The TC15 consists of a thermocouple sensor probe, complete with a flexible armor that connects to a 1/2” NPT fitting that can be connected to a direct mount temperature transmitter. Connection to a thermowell is optional for the TC15.

Features:

- Simple design that is used and accepted across multiple process industries.
- TC15 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 or indoor use (as per connection head & thermowell ratings)

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.

C US

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TC15 Thermocouple Assembly Model Code

TC15 - T1 - T2 - T3 - T4 - T5 - T6 - T7 - T8 - T9 - T10 - T11

TC15	Direct mount thermocouple assembly with flexible armor

T1	Direct Mount Transmitter
X	**Without termination (standard 8” flying leads (W))**
”inches”	Not required - Specify flying leads length (W) in inches
75G	Head transmitter with display (PR 7501A3A2A12GY)
CST	Customer supplied transmitter (Check with Aircom)
Other	Consult Factory

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°C)

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

NOTES:
1. Bold text indicates most common part selections.
2. The sensor temperature rating is based on the length not directly in contact with the process at its maximum temperature.

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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**
“LA”N“LB”	Length(s) with bend; LA = above bend (leave blank for standard supply); N = 90° Bend; LB = below bend; *e.g. N12 or 4N8*

T10	Fitting Options
X	**No fitting required**
CF	**Compression Fitting**
SL0	Spring loaded fitting (1/2” NPT Only)
Other	Consult factory

T11	Fitting Size
X	**No fitting required (size not applicable)**
18	1/8” NPT
14	1/4” NPT
12	**1/2” NPT**
34	3/4” NPT
Other	Consult factory

NOTES:
1. Part number example: TC15-X-AT-36-K-14-U-S-316-16-12.
2. Reference page 4 for part outline and page 5 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.

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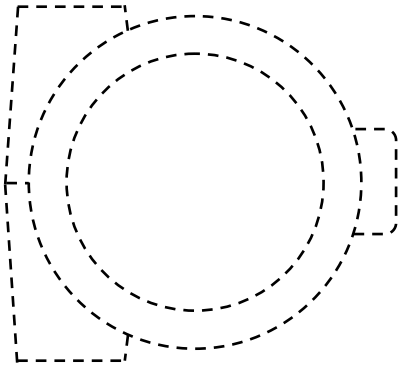
TC15 Thermocouple Assembly Outline

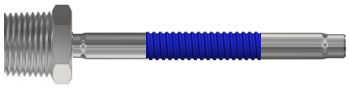
Direct Mount Transmitter



Flex-Armor Extension

AF - AT- TT

PT



Sensor Probe (OD)

18
(0.125”)

36
(0.188”)

14
(0.250”)

38
(0.375”)

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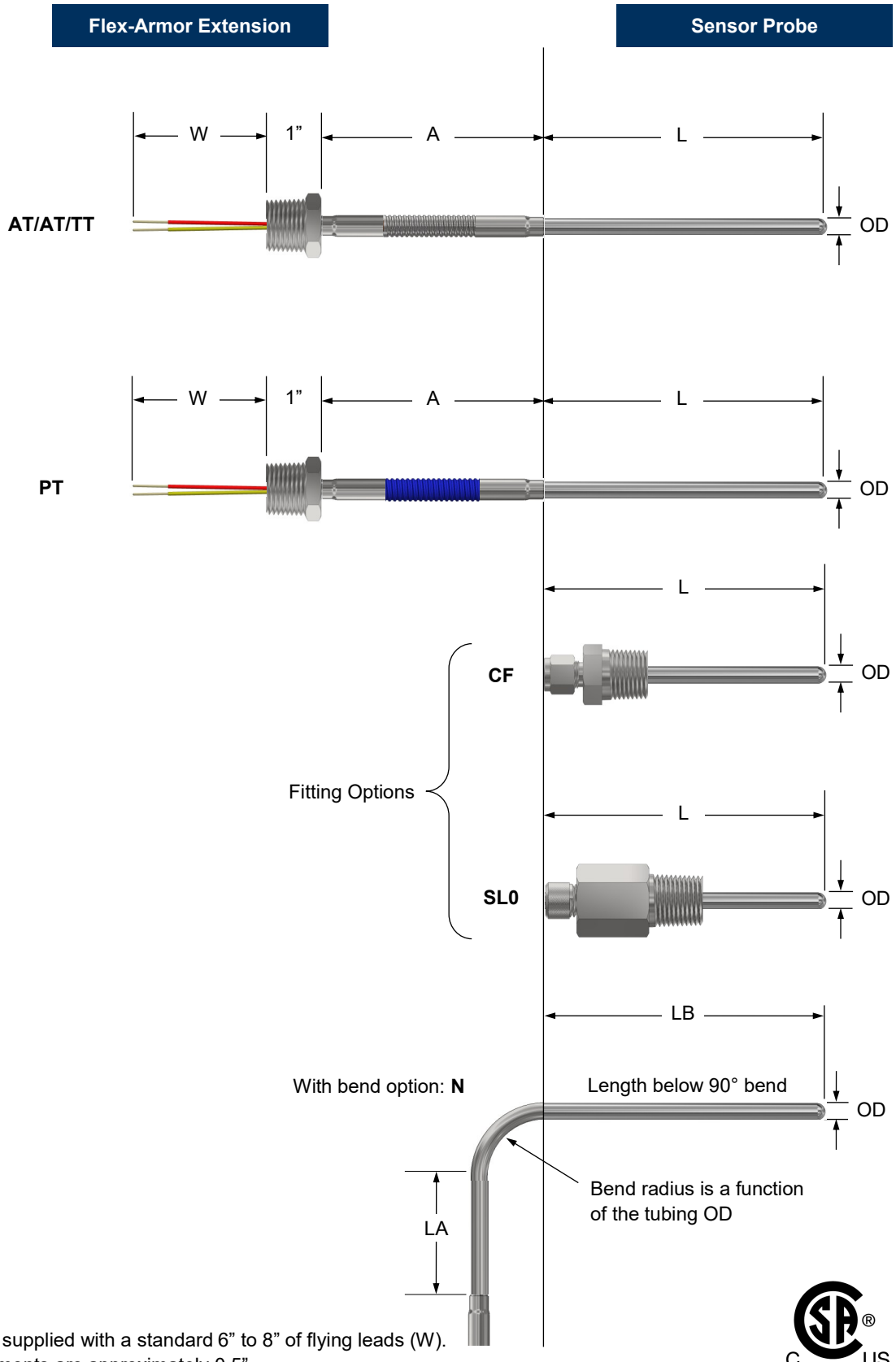
TC15 Thermocouple Assembly Dimensions



NOTES:

1. Assemblies are supplied with a standard 6” to 8” of flying leads (W).
2. Thread engagements are approximately 0.5”.

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Transmitter Options for T1

Image	Code	Model	Specifications
	**75G**[1]	7501A3A2A12GY PR Order PN RTD, TC, Ohm, and bipolar mV input and analog output High definition local operator interface (LOI) 3 optical buttons Selectable red or white backlight Ex d explosion proof / flame proof HART 7 functionality with HART 5 compatibility	Operating Temperature: -40°C to +85°C (with silicone O-ring) Storage Temperature: -40°C to +85°C Protection Degree: IP54 / IP66 / IP68 / Type 4X Dimensions: Ø 110 mm Dimensions (HxWxD): 109.3 x 145 x 126 mm Weight: 1.3 kg Display Resolution: 96 x 64 pixels Backlight: Selectable ON/OFF, Color: White or Red Supply Voltage: 10 (12 with backlight)…30 VDC (Ex ia) / 10…35 VDC (Other) Isolation Voltage: 1.5 kVAC (test) / 50 VAC (working) Accuracy: Better than 0.05% of selected range Response Time (Programmable): 1…60 s Long-Term Stability: ±0.1% of span per year Programming: HART Approvals: ATEX, IECEx, FM, CSA, INMETRO, SIL Refer to PR Electronics for full details
Image Not Applicable	Other	Consult Aircom for other available options	

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