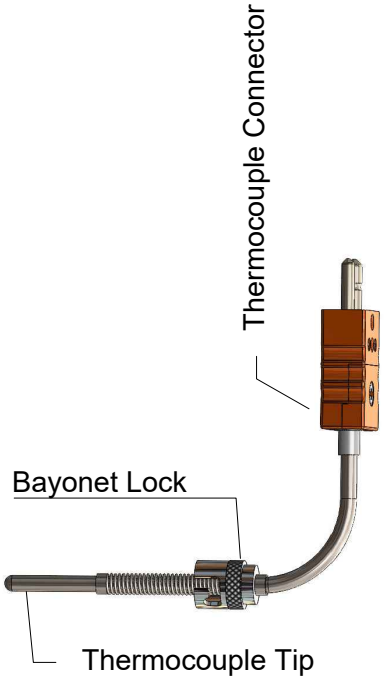
TC42- Rigid Probe Bayonet Style Thermocouple With Connector

TEMPERATURE SENSOR

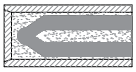
TC42 Bayonet thermocouples are flexible temperature sensors that offer easy installation and secure mounting, making them perfect for applications requiring reliable and consistent surface contact. They are equipped with a spring-loaded bayonet cap that maintains constant pressure against the measurement surface, ensuring accurate and stable temperature readings.

Key Feature:

- Available in type J, K, T .
- Adjustable depth bayonet twist lock with spring compression.
- A wide selection of sheath material to suit application requirement, 304ss, 316ss etc.
- Sheath diameter is available from 0.125″ to 0.250".
- Grounded, Ungrounded junction to suite application requirement.
- Available with low temp and high temp connectors.
- Available in IEC 60584 & ANSI MC 96.1 standard tolerances.



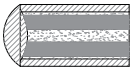
Thermocouple Junction options for TC42



Ungrounded Junction: Junction is similar to grounded junction except wire are fuse welded, which is then insulated with Mgo powder and formed cap by welding without incorporating thermocouple wires. Thus, the junction is called the ungrounded junction.

Key Benefits :

· Wires are protected from any mechanical damage
· Offers rugged construction, the same as the grounded junction.
· Strain due to differential expansion between wire and sheath is minimized with insulated wires.



Grounded Junction: In grounded junction thermocouple wires and sheath of the mineral insulated cable is welded together to form a junction. Thermocouple wires and sheath becomes an integral part of the junction. Thus, the wire is grounded to the sheath.

Key Benefits:

- Slower response than Exposed junction, but offers rugged construction.
- Can hold higher pressure than exposed junction and Ungrounded junction.

Suggested Maximum Temperature Limit

Thermocouple Type	°C (F)	°C (F)	°C (F)
Probe OD	1/8″	3/16″	1/4″
T	315 (600)	370 (700)	370 (700)
J	520 (970)	620(1150)	720 (1330)
K	520 (970)	1150 (2100)	1150 (2100)

The suggested maximum temperature limit is based on information available in the ASTM standard and test performed in our facility. The maximum temperature limit may change based on the type of process and material/ liquid it is going to be used in. These limits apply to protected thermocouples.

Response Time

Thermocouple OD	Junction		
	Exposed	Grounded	Ungrounded
1/25”	0.005	0.1	0.3
1/16”	0.02	0.2	0.5
1/8”	0.03	0.7	1.3
3/16”	0.07	1.1	2.2
1/4”	0.1	2.2	4.5
3/8”	0.9	2.7	7.5

Response time is measured in liquid by inserting thermocouple into the temperature-controlled circulating bath. Time taken to reach 63.2% of a step temperature change is noted as the response time of thermocouple. For a fast response, the exposed tip is recommended, but the exposed junction is not as rugged as ungrounded and grounded junctions for industrial use.

Temperature Accuracy As per ASTM E608/608M/ IEC 60584 & ANSI MC 96.1 standard tolerances

Type	Temperature	Standard Limit	Special Limit
T	-200 °C to 0 °C	± 1 °C or 1.5% Whichever is greater	N/A
	0 °C to 350 °C	± 1 °C or .75% Whichever is greater	± 0.5 °C or 0.4% Whichever is greater
J	0 °C to 750 °C	± 2.2 °C or .75% Whichever is greater	± 1.1 °C or 0.4% Whichever is greater
E	-200 °C to 0 °C	± 1.7 °C or 1.0% Whichever is greater	N/A
	0 °C to 900 °C	± 1.7 °C or .5% Whichever is greater	± 1 °C or 0.4% Whichever is greater
KORN	-200 °C to 0 °C	± 2.2 °C or 2.0 % Whichever is greater	N/A
	0 °C to 1250 °C	± 2.2 °C or .75% Whichever is greater	± 1.0 °C or 0.4% Whichever is greater

Notes:
-All the thermocouples are manufactured as ASTM E608/608M
-Calibration is available as per ASTM E220 on request

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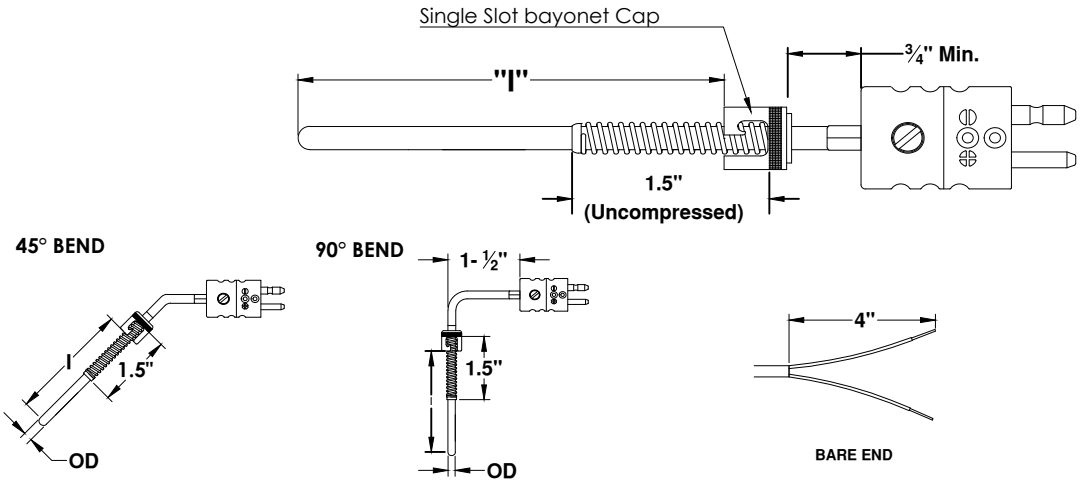


Notes:
1. Maximum Compresssion 1".

	1	2	3	4	5	6	7	8	9
TC42									

For Example- TC42-K-G-0-TW-3-8-12i-STP

1. THERMOCOUPLE TYPE	
CODE	
J	Iron(+) vs Constantan(-)
K	Chromel(+) vs Alumel(-)
T	Copper(+) vs Constantan(-)
Use "S" for Special limit of Error	

2. MEASURING JUNCTION	
CODE	
G	Simplex / Grounded Junction
UG	Simplex / Un- Grounded Junction
DG	Duplex / Grounded
DUG	Duplex / Un-Grounded

3. PROBE ANGLE	
CODE	
0	Straight
45	45° ANGLE
90	90° ANGLE

4. PROBE CONSTRUCTION	
CODE	
MGO	Magnesium Oxide
TW	Tube and wire

5.SHEATH OD		
CODE	IMPERIAL SIZE	METRIC SIZE
2	⅛"	3.2 mm
3	3⁄16"	4.76 mm
4	¼"	6.35 mm
6	⅜"	9.5 mm
7	0.215"	5.46 mm
4M	0.236"	6.0 mm
6M	0.354"	9.0 mm

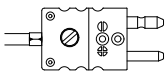
6. SHEATH MAT.	
CODE	
8	SS 316
4	SS 310
9	SS 304
6	SS 321
3	INCONEL 600

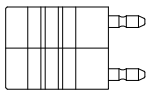
7. IMMERSION LENGTH (I)
Immersion length - use "I" for inches and "M" for millimetre

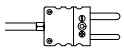
8. CODES FOR TERMINATION	
CODE	
Z	Bare ends
STP	Standard Plug
MP	Miniature Plug
HTP	High Temperature Plug
UTP	Ultra Temperature Plug

9. CODES FOR TERMINATION (JACK)	
CODE	
0	Not required
STJ	Standard Jack
MJ	Miniature Jack
HTJ	High Temperature Jack
UTJ	Ultra Temperature Jack

Termination Options-


Standard Connector


Standard Duplex Connector


Mini Connector


Mini Duplex Connector