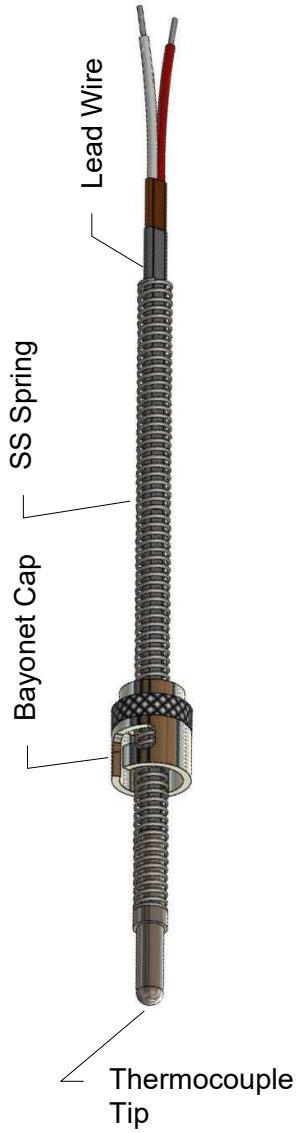
TC43- Flexible Spring Bayonet Style Thermocouple

TEMPERATURE SENSOR

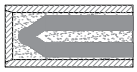
TC43 A flexible spring bayonet-style thermocouple is a versatile temperature sensor designed for precise and reliable temperature measurement in industrial applications. It incorporates a spring-loaded bayonet cap that maintains secure contact with the measurement surface, enhancing accuracy and response time.

Key Feature:

- Spring loaded bayonet cap ensures constant contact with the surface for accurate temperature readings.
- Locking mechanism between bayonet cap & adaptor allows easy mounting on direct surface temperature measurement.
- Available in multiple calibrations like Type K, J, T or E to meet different application requirements.
- Resistant to vibrations, mechanical stress, and harsh environmental conditions.
- Available in different lengths, diameters, and adapter sizes.

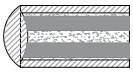


Thermocouple Junction options for TC43



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

Wire Insulation	Maximum Rating
Teflon	205ºC
Fiberglass	510ºC
Hightemp Fiberglass	704ºC

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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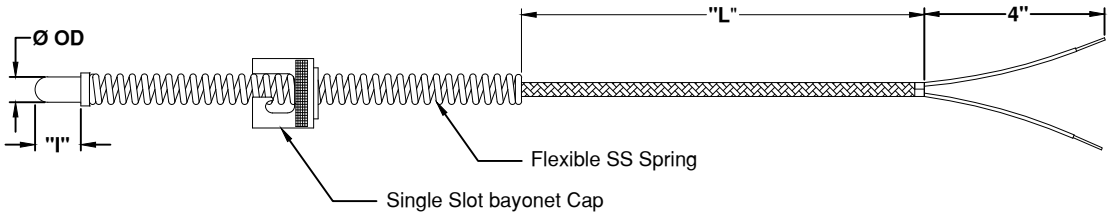


Notes:
1. Standard Spring length 12".

	1	2	3	4	5	6	7	8	9	10
TC43										

For Example- TC43-J-G-3-8-05i-72i-2X-Z-0-0

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

3. TIP OD		
CODE	IMPERIAL SIZE	METRIC SIZE
3	3/16"	4.76 mm
4	1/4"	6.35 mm
2M	0.079	3.0mm
3M	0.197"	5.0mm
4M	0.236"	6.0 mm
5M	0.315"	8.0mm

4. SHEATH MAT.	
CODE	
8	SS 316

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

6. LEAD LENGTH (L)
Lead length - use "I" for inches and "M" for millimetre

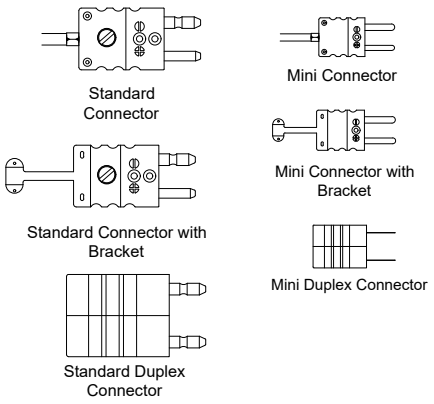
7. WIRE TYPE	
CODE	
1	PVC (105° C)
2	TEFLON (205° C)
6	TEFLON (260° C)
3	FIBRE GLASS (510° C)
4	High Temp Fiberglass (704° C)
NOTE:- Add "O" for no jacketing. Add "X" for SS braiding	

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

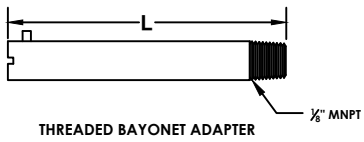
9. CODES FOR TERMINATION (JACK)	
CODE	
0	Not required
STJ	Standard Jack
MJ	Miniature Jack
HTJ	High Temperature Jack
UTJ	Ultra Temperature Jack

10. OPTIONAL ACCESSORY	
CODE	
0	Not required
WC	Wire clamp(Choose only with connector)
EL	Cord End Lugs
SL	Spade (Fork) Lugs

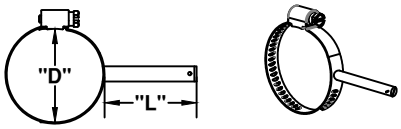
Termination Options-



ACCESSORIES



THREADED BAYONET ADAPTER



HOSE CLAMP ADAPTER

NOTE : SEE ACCESSORIES PAGE TO ORDER