TC-115 Noble Metal Thermocouple With Ceramic Sheath and Connector

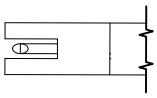
TEMPERATURE SENSOR

TC115- A Noble Metal Miniature Thermocouple with Protection Tube. It is a highly accurate temperature sensor engineered for extreme heat and demanding industrial conditions. It features noble metal thermocouple elements (Types R, S,B, and C) enclosed within a protective tube, providing exceptional durability and longevity in high-temperature applications. These thermocouples are widely used in industries that require precise temperature control, stability, and resistance to oxidation and corrosion.

Key Feature:

- Available in different thermocouple types & Temperature Ranges as below:
- Type R (Platinum-Rhodium 13% / Platinum): Up to 1600°C (2912°F)
- Type S (Platinum-Rhodium 10% / Platinum): Up to 1600°C (2912°F)
- Type B (Platinum-Rhodium 30% / Platinum-Rhodium 6%): Up to 1700°C (3092°F)
- Type C (Tungsten5%Rehnium -Tungston26%Rehnium Alloy) Up to 2315°C (3092°F)
- Noble metal thermocouples provide superior stability and minimal drift over time.
- Available in different protection tube materials like Ceramic (Alumina, , Hafnia)

Thermocouple Junction options for TC115



RECESSED

Recessed Junction: The thermocouple wires are placed end-to-end (butted against each other), and a precise welding process fuses them together. And then Insulated with Ceramic insulator. It protects the junction homogeneity from contamination

BUTT WELD

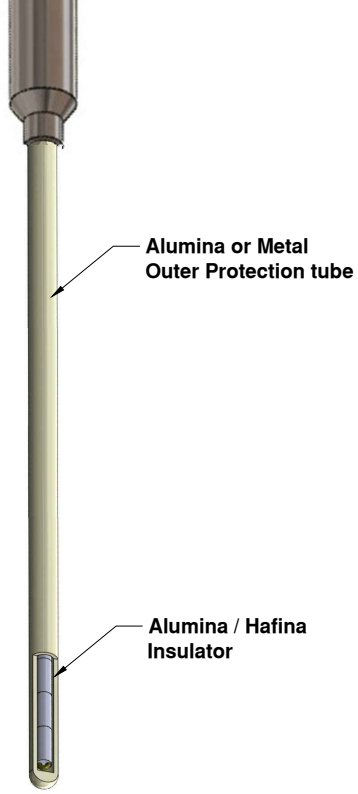
Butt Welded Junction: The thermocouple wires are placed end-to-end (butted against each other), and a precise welding process fuses them together.

Suggested Maximum Temperature Limit

- Type R (Platinum-Rhodium 13% / Platinum): Up to 1600°C (2912°F)
- Type S (Platinum-Rhodium 10% / Platinum): Up to 1600°C (2912°F)
- Type B (Platinum-Rhodium 30% / Platinum-Rhodium 6%): Up to 1700°C (3092°F)
- Type C (Tungsten5%Rehnium -Tungston26%Rehnium Alloy) Up to 2315°C (3092°F)

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.

Continous temperature rating for wire gauge smaller than 26 Awg. is lower due to the less mass. Please check with factory for more information.



Temperature Accuracy & Tolerance

Thermocouple Type	Temperature Range	Accuracy Standard	Accuracy SpecialLimits
R	0°C to 1480°C	The greater of ±1.5 °C or ±0.25 %	The greater of ±0.6 °C or ±0.1 %
S	0°C to 1480°C	The greater of ±1.5 °C or ±0.25 %	The greater of ±0.6 °C or ±0.1 %
B	870°C to 1700°C	±0.50 %	±0.25 %
C	0°C to 2315°C	The greater of ±1.5 °C or ±1 %	NA

Notes:

-All the thermocouples meets the requirement of ASTM E230/E230M

-Calibration is available as per ASTM E220 on request

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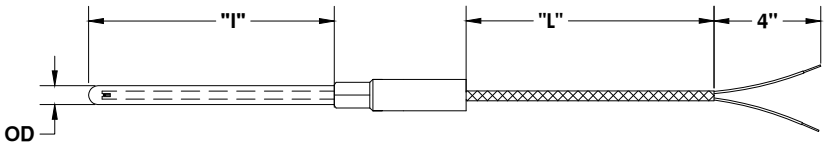
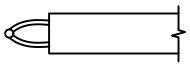
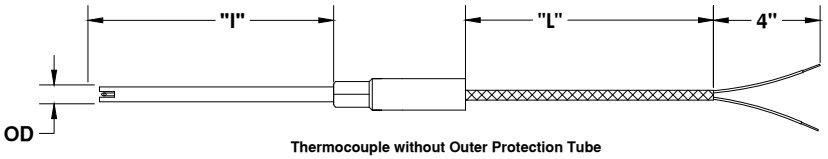


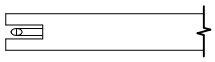
Thermocouple with Outer Protection Tube



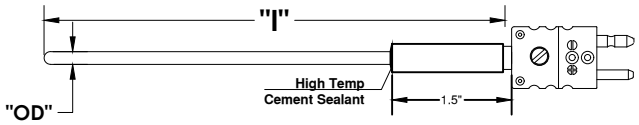
EXPOSED JUNCTION



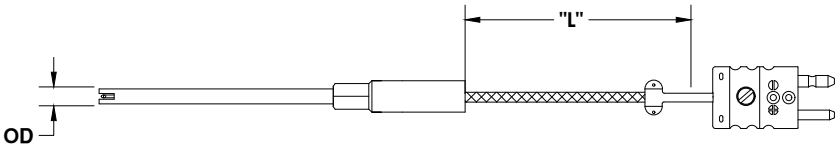
Thermocouple without Outer Protection Tube



RECESSED JUNCTION



Thermocouple With Connector Only



Thermocouple with Connector and Lead Wire

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TC115														

1. THERMOCOUPLE TYPE	
CODE	
R	Platinum 13 % Rhodium (+) Platinum (-)
S	Platinum 10 % Rhodium (+) Platinum (-)
B	Platinum 30 % Rhodium (+) Platinum 6% Rhodium (-)
C	Tungsten5%Rehnium(+) Tungston26%Rehnium Alloy (-)
NOTE:- ADD "S" FOR SPECIAL LIMITS	

2. MEASURING JUCTION	
CODE	
S	Single
D	Duplex

3. JUNCTION TYPE	
CODE	
E	Exposed
R	Recessed

4. ELEMENT SIZE	
CODE	
20	20 Awg
24	24 Awg
26	26 Awg
28	28 Awg
30	30 Awg

5. INSULATOR MATERIAL		
CODE	IMPERIAL SIZE	METRIC SIZE
01	High Purity Alumina 99.5%	
02	Hafnia*	

* Limited Size options

6. INNER INSULATOR (Round) (OD)		
CODE	IMPERIAL SIZE	METRIC SIZE
1	7/64"	2.6 mm
2	1/8"	3.25 mm
3	3/16"	4.76 mm
4	1/4"	6.35 mm

7. INNER INSULATOR (Round) (OD)		
CODE	IMPERIAL SIZE	METRIC SIZE
2	18"	3.25 mm
3	3/16"	4.76 mm
4	1/4"	6.35 mm

8. OUTER PROTECTION TUBE (OD)		
CODE	IMPERIAL SIZE	METRIC SIZE
3	3/16"	4.76 mm
4	1/4"	6.35 mm
6	3/8"	9.5 mm
3M	0.197"	5.0mm
4M	0.236"	6.0 mm
7M	0.394"	10.0 mm

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

10. INSULATOR MATERIAL		
CODE	IMPERIAL SIZE	METRIC SIZE
0	Not Required	
01	High Purity Alumina 99.5%	
03	Inconel 600	
09	Specify other	

11. LEAD WIRE TYPE	
CODE	
0	No Lead Wire Required
2	TEFLON (200° C)
3	FIBRE GLASS (480° C)
4	High Temp Fiberglass (600° C)
NOTE:- Add "O" for no jacketing. Add "X" for SS braiding & "Z" for Armour	

12. LEAD LENGTH ("L")	
0	No Lead Wire Required
Lead length - use "I" for inches and "M" for millimetre	

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

14. CODES FOR TERMINATION (JACK)	
CODE	
Leave blank if not required	
STJ	Standard Jack
MJ	Miniature Jack
HTJ	High Temperature Jack
UTJ	Ultra Temperature Jack
SCJ	Standard Ceramic Jack

15. OPTIONAL ACCESSORY	
CODE	
	Leave blank if not required
WC	Wire clamp
TA	Tube Adapter
Only choose when ordering with connector	