

Thermocouples

Noble Metal

Watlow's noble metal thermocouples offer the advantages of handling higher temperatures and providing greater accuracy than base metal thermocouples. Depending on your temperature and tolerance requirements choose from ASTM E 230 Types S, R or B.

The noble metal thermocouples can be ordered as bare elements, elements with insulators or assemblies. A typical assembly includes a head, alumina insulators and a protecting tube. A variety of hardware choices are available.

Performance Capabilities

- Platinum assemblies can handle temperatures to 1700°C (3100°F)

Applications

- Heat treating and control sensors
- Semiconductor: CVD processing, control spikes
- Glass manufacturing
- Ferrous and non-ferrous metals

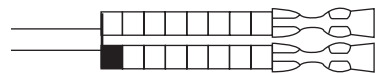


Type S, R, or B 24 AWG

To order, specify:

Part number-calibration-length.

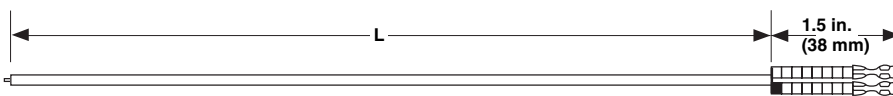
Example: 2114-R-24-MC



Enlarged picture of copper sleeves

For use with standard, general purpose heads; platinum assemblies can be furnished with MC-124 copper sleeves; no additional charge. Add suffix "-MC" to part number.

① Insulation consists of a one-piece two-hole alumina (0.125 diameter) insulator. For lengths over 24 in. (610 mm), a single piece alumina 3/16 inch diameter insulator is used.



Elements with Insulators; Shown with Optional MC-124 Copper Sleeves

Calibration	Length in.	Part Number Bare T/C	Part Number T/C With Alumina Insulator ^①
B	12	2110-B-12	2114-B-12
	18	2110-B-18	2114-B-18
	24	2110-B-24	2114-B-24
	30	2110-B-30	2114-B-30
	36	2110-B-36	2114-B-36
	42	2110-B-42	2114-B-42
R	48	2110-B-48	2114-B-48
	12	2110-R-12	2114-R-12
	18	2110-R-18	2114-R-18
	24	2110-R-24	2114-R-24
	30	2110-R-30	2114-R-30
	36	2110-R-36	2114-R-36
S	42	2110-R-42	2114-R-42
	48	2110-R-48	2114-R-48
	12	2110-S-12	2114-S-12
	18	2110-S-18	2114-S-18
	24	2110-S-24	2114-S-24
	30	2110-S-30	2114-S-30
S	36	2110-S-36	2114-S-36
	42	2110-S-42	2114-S-42
	48	2110-S-48	2114-S-48

Thermocouples

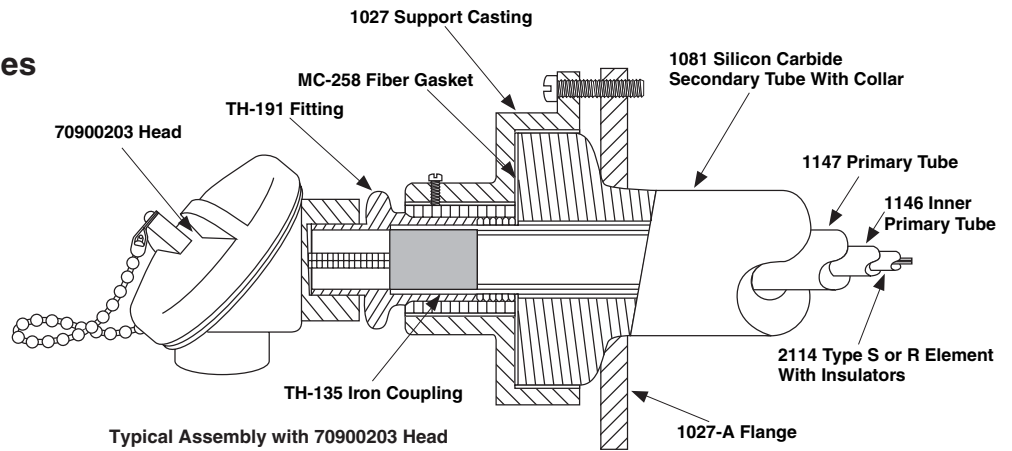
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Thermocouple Assemblies

To order, specify:

Part no.-calibration-length of tube.

Examples: 2144-S-12
2147-R-36

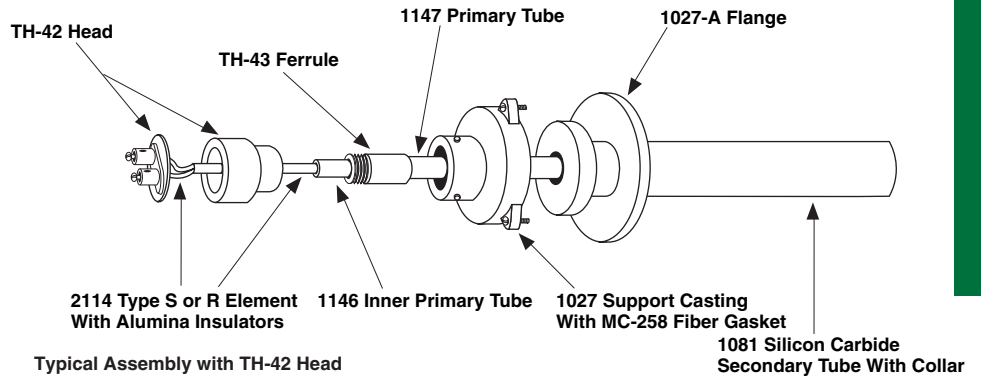


Typical Assembly with 70900203 Head

70900203 Head* and Alumina Ceramics

Code No.*	Calibration	AWG Gauge	Protecting Tubes	Size I.D. x O.D. in.	Length in.
2144	B, R, S	24	1147 Alumina Primary only	$\frac{7}{16} \times \frac{1}{16}$	12, 18, 24 30, 36, 42, 48
2145	B, R, S	24	1147 Primary 1146 Alumina Inner Primary	$\frac{1}{4} \times \frac{1}{16}$	
2147	B, R, S	24	1147 Alumina Primary 1146 Alumina Inner Primary 1081 Secondary	$\frac{1}{4} \times 1 \frac{3}{4}$	

Examples: 2140-B-18
2141-R-24



Typical Assembly with TH-42 Head

TH-42 Head and Alumina Ceramics

Code No.*	Calibration	AWG Gauge	Protecting Tubes	Size I.D. X O.D. in.	Length in.
2140	B, R, S	24	1147 Alumina Primary only	$\frac{7}{16} \times \frac{1}{16}$	12, 18, 24 30, 36, 42, 48
2141	B, R, S	24	1147 Alumina Primary 1146 Alumina Inner Primary	$\frac{1}{4} \times \frac{1}{16}$	

* Specify Type S, R or B by adding -S, -R, or -B after the part number. Types S, R and B thermocouples and the thermoelements are provided in accordance with ITS-90.