

## Noble Metal Thermocouples Offer High Temperature and High Accuracy Capabilities



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.

### Type S, R or B 24 AWG Thermocouple Assemblies

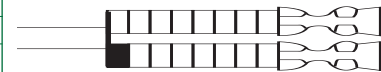
Calibration	Length in.	Part Number Bare T/C	Part Number T/C With Alumina Insulator <sup>①</sup>
B	12	2110-B-12	2114-B-12
	18	2110-B-18	2114-B-18
	24	2110-B-24	2114-B-24
	30	2110-B-30	2114-B-30
	36	2110-B-36	2114-B-36
	42	2110-B-42	2114-B-42
	48	2110-B-48	2114-B-48
R	12	2110-R-12	2114-R-12
	18	2110-R-18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

### 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



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.

<sup>①</sup> 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



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RIC-NOM-0305

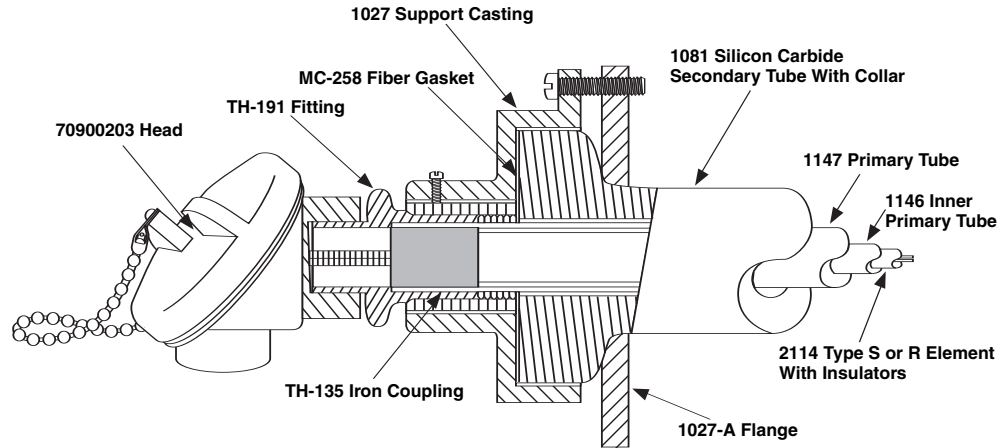
ISO 9001 : 2000



# Thermocouple Assemblies

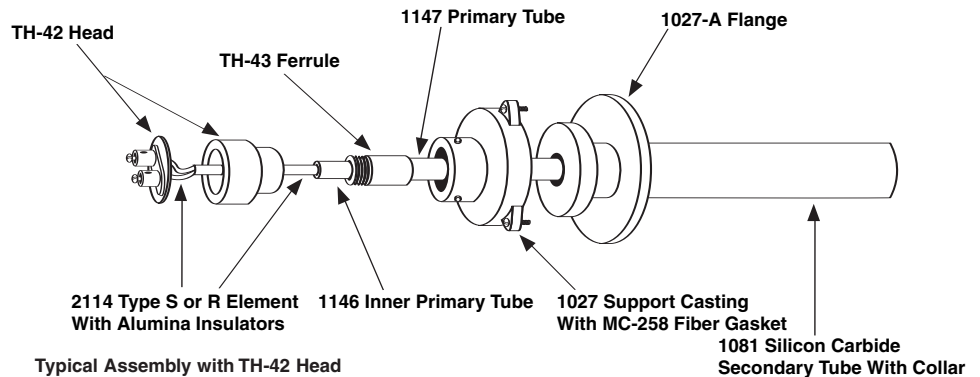
**To order, specify:**  
Part no.-calibration-length  
of tube.

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



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



### 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
2141	B, R, S	24	1147 Alumina Primary 1146 Alumina Inner Primary	$\frac{1}{4} \times \frac{1}{16}$	30, 36, 42, 48

\* 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.

To be automatically connected to the nearest North American Technical and Sales Office call:

# 1-800-WATLOW2

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