

## Higher Temperature and Greater Accuracy Thermocouples

Watlow's noble metal thermocouples tolerate higher temperatures and provide greater accuracy than base metal thermocouples. Choose from ASTM E230 Types B, R or S, depending on temperature and tolerance requirements.

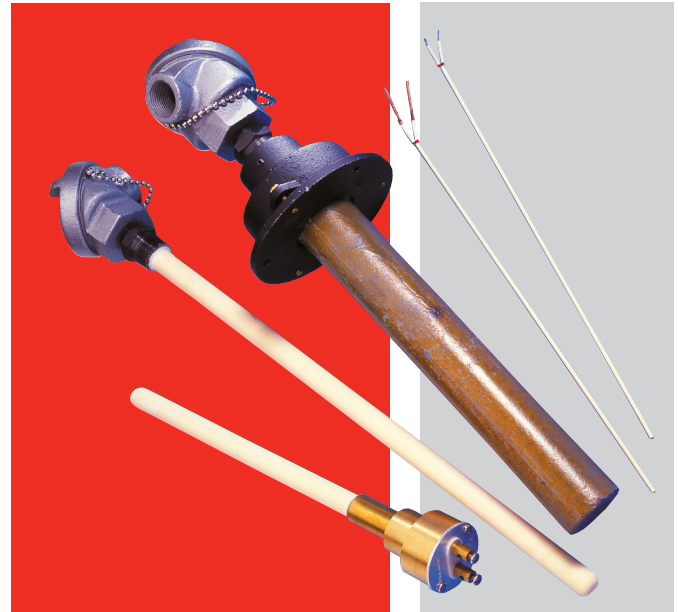
Thermocouples can be ordered as bare elements, elements with insulators or as assemblies. A typical assembly includes a head, alumina insulators and a protecting tube. A variety of hardware choices are available.

### Performance Capabilities

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

### Typical Applications

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



### Features and Benefits

#### Noble metal material construction

- Tolerates greater temperatures
- Provides higher temperature accuracy than base metal

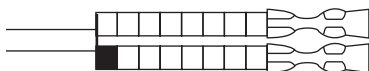
#### Choice of ASTM E230 types B, R or S

- Correct thermocouple can be chosen to meet temperature and tolerance requirements for application

## Type B, R or S, 24 AWG

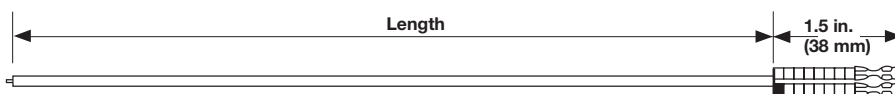
**To order, specify:** Part number-calibration-length

**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 at no additional charge. Add the suffix “-MC” to part number.



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*
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

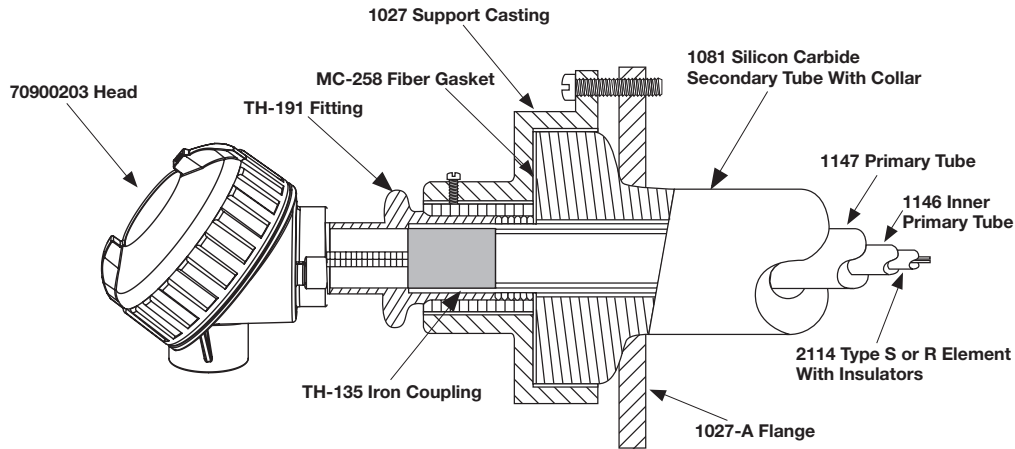
\*Insulation consists of a one-piece two-hole alumina (0.125 diameter) insulator. For lengths over 24 in. (610 mm), a single piece alumina <sup>3</sup>/<sub>16</sub> inch diameter insulator is used.

## Thermocouple Assemblies

To order, specify: Part number-calibration-length of tube

Example: 2144-S-24

2147-R-36



Typical Assembly with 70900203 Head

### 70900203 Head\* and Alumina Ceramics

Part Number*	Calibration	AWG Gauge	Protecting Tubes	Size I.D. x O.D. in.	Length in.
2144	B, R, S	24	1147 Alumina Primary only	$7/16 \times 11/16$	12, 18, 24, 30, 36, 42, 48
2145	B, R, S	24	1147 Primary only 1146 Alumina Inner Primary	$1/4 \times 11/16$	
2147	B, R, S	24	1147 Alumina Primary 1146 Alumina Inner Primary 1081 Secondary	$1/4 \times 13/4$	

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

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

**1-800-WATLOW2 • [www.watlow.com](http://www.watlow.com) • [inquiry@watlow.com](mailto:inquiry@watlow.com)**

International Technical Sales Offices: Australia, +61 3 9335 6449 • China, +86 21 3532 8532 • France, +33 1 41 32 79 70  
Germany, +49 (0) 72 53 / 94 00-0 • India, +91 40 6661 2700 • Italy, +39 024588841 • Japan, +81 3 3518 6630 • Korea, +82 2 2628 5770  
Malaysia, +60 3 8076 8745 • Mexico, +52 442 217 6235 • Singapore, +65 6773 9488 • Spain, +34 91 675 12 92  
Taiwan, +886 7 288 5168 • United Kingdom, +44 (0) 115 964 0777