

Thermocouples

Mineral Insulated

Watlow's mineral insulated thermocouples are fast-responding, durable, and capable of handling high temperatures.

These thermocouples are manufactured with best-in-class XACTPAK®, Watlow's trademark for metal sheathed, mineral insulated (MI) thermocouple material. XACTPAK responds fast because the protective metal outer sheath allows the use of smaller diameter thermocouple conductors. The rock hard compacted MgO insulation further enhances the sensor's ability to "read" temperature by transferring heat quickly to the measuring junction.

The XACTPAK protecting sheath and compacted insulation outperforms bare wire thermocouples in most applications.

Performance Capabilities

- Easily handles temperatures up to 1200°C (2200°F)
- Meets or exceeds initial calibration tolerances per ASTM E 230

Features and Benefits

Special mineral insulation

- Protects thermocouple from moisture and thermal shock
- Permits operation in high temperature, high pressure environments

Diameters as small as 0.010 in. (0.25 mm)

- Ideal when physical space or extremely fast response are critical

Flexibility of the XACTPAK material

- Allows you to form and bend the thermocouple, without risk of cracking, to meet your design requirements



Outer sheath

- Protects the wires from oxidation and hostile environments

Wide range of sheath materials, diameters, and calibrations

- Meet specific requirements

In-house manufacturing of XACTPAK material

- Rigid quality control procedures
- Assures high standards are met
- Single source reliability

Custom capabilities

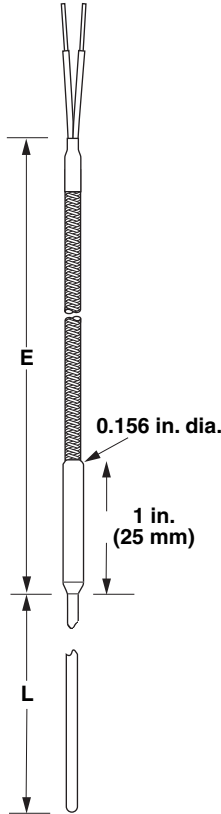
- Include options such as special lead lengths, lead wires and terminations

Applications

- Heat treating
- Furnaces/kilns
- Turbines
- Bearing temperature
- Power stations
- Steam generators
- Diesel engines
- Nuclear reactors
- Atomic research
- Jet engines and test cells
- Rocket engines
- Semiconductor manufacturing
- Refineries/oil processing
- Catalytic reformers
- Food processing

Thermocouples

Mineral Insulated Miniature Transitions Style AQ



Note: 149°C (300°F) potting standard.

Rapid Ship Sensors

Rapid Ship sensors come with three feet FEP insulated flexible extension, split lead termination, ungrounded junction. See page 166 to order additional connector hardware.

Calibration	Sheath Material	Sheath Diameter in. (mm)	Sheath Length in. (mm)	
			3 (76)	6 (152)
J	316 SS	0.040 (1.0)	AQDC0TF030UJ030	AQDC0TF060UJ030
		0.063 (1.6)	AQEC0TF030UJ030	AQEC0TF060UJ030
K	Alloy 600	0.040 (1.0)	AQDC0TQ030UK030	AQDC0TQ060UK030
		0.063 (0.9)	AQEC0TQ030UK030	AQEC0TQ060UK030

Custom Ordering Information—Items in **Bolded Green Type** are preferred with shorter lead times.

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

A Q 0

2. Style
Q = Miniature metal transition with 149°C (300°F) potting

3. Sheath O.D. (inch)
B = 0.020 **D = 0.040**
C = 0.032 **E = 0.063**

4. Lead Wire Construction
Standard
Fiberglass Solid **A**
FEP Solid **C**

5. Enter "0"

6. Lead Wire Termination
A = Standard male plug
B = Standard female jack
C = Standard plug with mating connector
F = Miniature male plug
G = Miniature female jack
H = Miniature plug with mating connector
T = Standard, 1 ½ inch split leads
U = 1 ½ inch split leads with spade lugs

7. Sheath Material
A = 304 SS
F = 316 SS
Q = Alloy 600 (Type K)

8-9. Sheath Length "L" (whole inches)
03, 06, 12
Available lengths: 01 to 99, over 99 consult factory

10. Sheath Length "L" (fractional inch)
0 = 0 3 = ¾ 6 = ¾
1 = ¼ 4 = ½ 7 = ¾
2 = ¼ 5 = ¾

11. Junction
Grounded Ungrounded
Single **G U**

12. Calibration
J K
Standard limits **J K**
Special limits 3 4

13-14. Lead Wire Length "E" (whole feet)
03, 06
Available lengths: 01 to 30

15. Special Requirements
0 = None
M = 260°C (500°F) potting
X = Special requirements, consult factory