

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

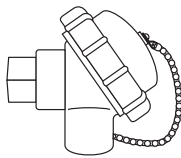
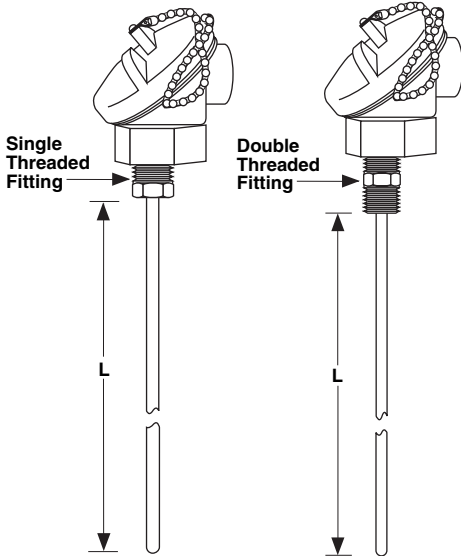
Applications

- 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

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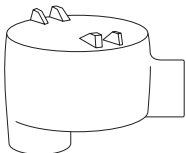
Connection Head Style AR



Type C (Polypropylene)



Type D (Small Cast Iron) or E (Small Aluminum)



Type H (Explosion Proof)

Rapid Ship Sensors

Rapid Ship sensors come double threaded ½ inch NPT mounting fitting, ungrounded junction, 0.250 inch sheath diameter and small aluminum (E) connection head.

Calibration	Sheath Material	Sheath Length in. (mm)		
		6 (152)	12 (305)	18 (457)
J	316 SS	ARJEF0F060UJ000	ARJEF0F120UJ000	ARJEF0F180UJ000
K	Alloy 600	ARJEF0Q060UK000	ARJEF0Q120UK000	ARJEF0Q180UK000

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	R				0							0	0	

3. Sheath O.D. (inch)
 E = 0.063 **J = 0.250**
 G = 0.125 L = 0.375
 H = 0.188 M = 0.500

4. Connection Head
 C = Polypropylene
 D = Small cast iron
E = Small aluminum
 H = Explosion proof

5. Head Mounting Fittings
0 = Single threaded 303 SS
F = Double threaded 303 SS ½" NPT
 *H = Spring loaded double threaded 316 SS ½" NPT

6. Enter "0"

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

8-9. Sheath Length "L" (whole inches)
03, 06, 12, 18, 24
 Available lengths: 01 to 99, over 99 consult factory

10. Sheath Length "L" (fractional inch)
0 = 0 2 = ¼ 4 = ½ 6 = ¾
 1 = ⅙ 3 = ⅓ 5 = ⅕ 7 = ⅞

11. Junction

	Grounded	Ungrounded	Exposed
Single	G	U	E
Dual	H	W (isolated)	D (isolated)

12. Calibration

	E	J	K	N	T
Standard limits	E	J	K	N	T
Special limits	2	3	4	—	8

13-14. Enter "00"

15. Special Requirements
0 = None
 X = Special requirements, consult factory

*0.250 inch diameter only.

Metric sizes available for made-to-order units. Consult factory.