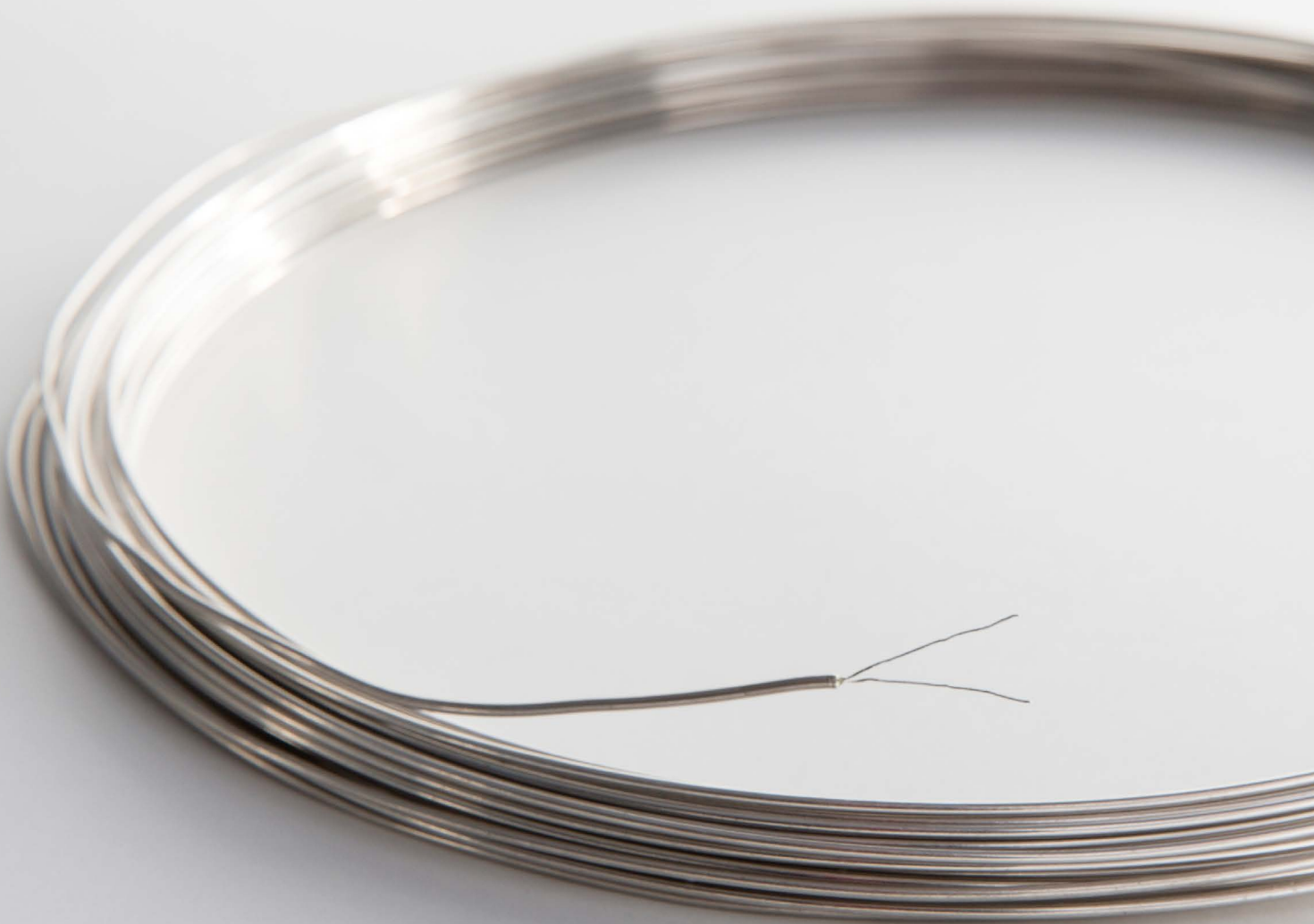




# Mineral insulated metal sheathed thermocouples



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For a number of years we have made superior noble metal mineral insulated metal sheathed (MIMS) thermocouple assemblies and cables.

MIMS thermocouples consist of fine diameter thermocouple wires embedded in high purity magnesia refractory surrounded by a metal sheath. Compared to other methods of temperature measurement, MIMS thermocouples provide exceptional accuracy, extended service life and lower temperature drift. Because of these properties, it is becoming a regulatory requirement to use them in many high performance applications.

MIMS thermocouples offer several benefits compared to bare wire thermocouples, including:

- Flexibility and compactness; they can be bent around small radii (down to four times the MIMS diameter), allowing difficult heat zones to be measured
- A quick response to temperature change; the high conductivity of the sheath reduces the thermal lag in temperature measurement
- Being extremely resistant to mechanical and thermal shock
- Resistance to chemical and atmospheric attack
- Meeting the rigorous demands of AMS 2750 standards
- Availability to ASTM E2181M

They offer an excellent means of measuring very high temperatures, with the low thermal mass giving an extremely quick response to temperature change. Users of vacuum furnaces, whether for melting, casting, heat treatment or brazing, find the impervious metal sheath and small size of MIMS thermocouples offer unequalled advantages compared to any other methods of temperature measurement.

The thermocouple wire we manufacture for our MIMS assemblies and cables is made to international standards; type R and S comply to Class 1 tolerance while type B meets Class 2 tolerance, as detailed in IEC 584-2 (BS EN 60584-1) based on the International Temperature Scale of 1990 (ITS – 90). We test the MIMS in our UKAS accredited calibration laboratory at 1000°C and can supply a certificate detailing emf outputs.

**In response to industry demands to make MIMS thermocouples longer, we have recently developed our process to achieve dramatic increases in single unit lengths while also reducing lead times. We can now manufacture various diameter MIMS thermocouples up to 18m long. For customers using MIMS cable to make finished assemblies, this offers greater flexibility, efficiency and yields, as well as lower scrap.**

**Diameters available:** 1mm – 3.2mm

**Lengths available:** Up to 18m in one continuous length

## Recommended operating temperatures

Type	Sheath material	Thermocouple combination		Maximum recommended operating temperature	
		-ve	+ve	Continuous use	Intermittent use
S	10 % Rh/Pt	Pt	10% Rh/Pt	1300°C	1450°C
R	10 % Rh/Pt	Pt	13% Rh/Pt	1300°C	1450°C
B	10 % Rh/Pt	6% Rh/Pt	30% Rh/Pt	1450°C	1600°C
B	20 % Rh/Pt	6% Rh/Pt	30% Rh/Pt	1450°C	1600°C

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