High Temperature Thermocouples / Extension Cables for 500°C

Type K and E with Ceramic Insulation KD500 *(No stock item)*

1 Conductor
2 Ceramic Insulation

No stock item

These thermocouples and extension cables are made of two ceramic coated wires.

The outstanding advantages are:

- Resistance to extreme temperatures
- Miniature size
- Weighing far less

Application

These wires find their use in many high-tech applications and research projects in aerospace, nuclear technology and sensor technology, where temperatures must be measured in a closed environment and in extreme heat.

Properties

Thermal:	Continuous operating temperature from -90°C up to +500°C 800°C during 240h minimum, peak temperature 1000°C Nickel migration: At temperature >315°C after extended use, KD500 wires can experience migration of the nickel that may cause its maximum resistivity to increase.
Chemical:	Excellent resistance to chemical environments (inert to usual and organic solvents). Poor resistance on humidity (hydrophilic).
Electrical:	Test voltage (1 min) 150V AC / 212V DC
Radiation resistance:	Withstand prolonged exposure to neutrons and gamma rays without altering mechanical properties of the insulation.
Flammability: cannot	Totally non-combustible at temperatures >1000°C. KD500 may melt but burn.
Colour:	Grey
Outgassing:	Low
Halogen free:	Yes

Construction

Type	Number x Wire Diameter	AWG	Nominal Diameter	Linear Weight g/km	Length m/kg
Type K	2 x 0.20 mm	2 x AWG 32	0.44 mm	286	3500
Type K	2 x 0.32 mm	2 x AWG28	0.68 mm	637	1570
Type K	2 x 0.50 mm	2 x AWG 24	1.04 mm	1754	570
Type E	2 x 0.20 mm	2 x AWG 32	0.44 mm	286	3500
Type E	2 x 0.30 mm	2 x AWG 28	0.68 mm	637	1570

Please contact us for other couples.

EMF Type K

Temperature	EMF	Tolerance	
		Class 1 (KX1)	Class 2 (KX2)
0°C	0 µV	±60 µV	±100 µV
100°C	4.095 µV	±60 µV	±100 µV
200°C	8.137 µV	±60 µV	±100 µV
400°C	16.395 µV	±60 µV	±100 µV

EMF Type E

Temperature	EMF	Tolerance	
		Class 1 (KX1)	Class 2 (KX2)
0°C	0 µV	±120 µV	±200 µV
100°C	6.319 µV	±120 µV	±200 µV
200°C	13.421 µV	±120 µV	±200 µV
400°C	28.946 µV	±120 µV	±200 µV

Processing instructions

Ceramic greatly differentiates itself from normal wire insulation. It is very hard and sensitive to humidity. Thus, it requires special care during processing.

- The wires have to be stored and implemented in a dry place.
- The wires must not be exposed to blows or impacts.
- Under no circumstances must the wires be kinked. Visual inspection: In general, a bend radius that is too tight or kinking of the wire can be detected by cracks in the ceramic insulation that is detected as bleaching on the surface.

Termination

The layer of insulation is very thin and adherent to the conductor. Standard stripping tools therefore cannot be used.
Stripping can be done by the use of sandpaper with very fine grain.