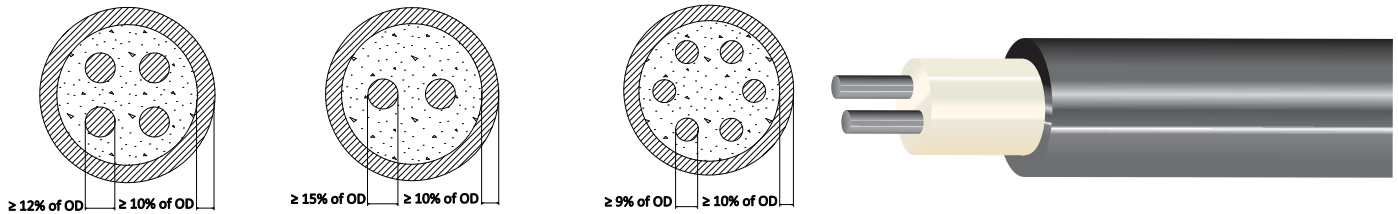


MINERAL INSULATED THERMOCOUPLE CABLE

Mineral Insulated Thermocouple cables have inner conductors of Thermocouple base material as per standard ASTM E 585/585M and ASTM E 839.



Number of Pair	Sheath Diameter (mm)	Nominal Wall Thickness (mm)	Element Diameter (mm)	Insulation Thickness (mm)	Insulation Resistance (MΩ)	Sheath Material	Conductor Type	Insulation	Calibration Accuracy
Simplex	1.50	≥ 0.15	≥ 0.23	≥ 0.11	≥ 1000 MΩ	SS316L SS321 SS310 SS446 SS304 Inconel 600 Inconel 601 and others	K Type J Type E Type N Type R Type S Type	MgO (Standard Purity ≥ 97%) MgO (High Purity ≥ 99.4%)	Class 1 / Class 2 Accuracy as per IEC 584-2 / ANSI MC 96.1 / ASTM E 230
	2.00	≥ 0.20	≥ 0.30	≥ 0.14					
	2.50	≥ 0.25	≥ 0.38	≥ 0.18					
	3.00	≥ 0.30	≥ 0.45	≥ 0.21					
	4.50	≥ 0.45	≥ 0.68	≥ 0.32					
	6.00	≥ 0.60	≥ 0.90	≥ 0.42					
	6.40	≥ 0.64	≥ 0.96	≥ 0.45					
	8.00	≥ 0.80	≥ 1.20	≥ 0.56					
	9.50	≥ 0.95	≥ 1.43	≥ 0.67					
	10.00	≥ 1.00	≥ 1.50	≥ 0.70					
Duplex	12.70	≥ 1.27	≥ 1.91	≥ 0.89	≥ 1000 MΩ	SS316L SS321 SS310 SS446 SS304 Inconel 600 Inconel 601 and others	K Type J Type E Type N Type R Type S Type	MgO (Standard Purity ≥ 97%) MgO (High Purity ≥ 99.4%)	Class 1 / Class 2 Accuracy as per IEC 584-2 / ANSI MC 96.1 / ASTM E 230
	1.50	≥ 0.15	≥ 0.18	≥ 0.08					
	2.00	≥ 0.20	≥ 0.24	≥ 0.11					
	2.50	≥ 0.25	≥ 0.30	≥ 0.14					
	3.00	≥ 0.30	≥ 0.36	≥ 0.17					
	4.50	≥ 0.45	≥ 0.54	≥ 0.25					
	6.00	≥ 0.60	≥ 0.72	≥ 0.33					
	6.40	≥ 0.64	≥ 0.77	≥ 0.35					
	8.00	≥ 0.80	≥ 0.96	≥ 0.44					
	9.50	≥ 0.95	≥ 1.14	≥ 0.52					
Triplex	10.00	≥ 1.00	≥ 1.20	≥ 0.55	≥ 1000 MΩ	SS316L SS321 SS310 SS446 SS304 Inconel 600 Inconel 601 and others	K Type J Type E Type N Type R Type S Type	MgO (Standard Purity ≥ 97%) MgO (High Purity ≥ 99.4%)	Class 1 / Class 2 Accuracy as per IEC 584-2 / ANSI MC 96.1 / ASTM E 230
	12.70	≥ 1.27	≥ 1.52	≥ 0.70					
	3.00	≥ 0.30	≥ 0.27	≥ 0.12					
	4.50	≥ 0.45	≥ 0.41	≥ 0.18					
	6.00	≥ 0.60	≥ 0.54	≥ 0.24					
	6.40	≥ 0.64	≥ 0.58	≥ 0.26					
	8.00	≥ 0.80	≥ 0.72	≥ 0.32					
	9.50	≥ 0.95	≥ 0.86	≥ 0.38					
	10.00	≥ 1.00	≥ 0.90	≥ 0.40					
	12.70	≥ 1.27	≥ 1.14	≥ 0.51					

Ordering Example

60K600 : 6.0 mm OD, K Type, Simplex, Inconel 600 Sheath with high purity of MgO Insulation and accuracy class 1 as per specification IEC 584

64NN316 : 6.4 mm OD, N Type, Duplex, SS316L Sheath with high purity of MgO Insulation and accuracy class 1 as per specification IEC 584

MINERAL INSULATED THERMOCOUPLE CABLE

Standard Deviation of Mineral Insulated Thermocouple Cable as per IEC 584-2

Type	Temperature Range	Tolerance for Class 1 Accuracy	Tolerance for Class 2 Accuracy
K/N	-40°C to +1100°C	+/- 1.5°C or +/-0.004(t)	+/- 2.5°C or +/-0.0075(t)
J	-40°C to +750°C	+/- 1.5°C or +/-0.004(t)	+/- 2.5°C or +/-0.0075(t)
T	-40°C to +350°C	+/- 0.5°C or +/-0.004(t)	+/- 1.0°C or +/-0.0075(t)
E	-40°C to +800°C	+/- 1.5°C or +/-0.004(t)	+/- 2.5°C or +/-0.0075(t)
R/S	0°C to +1600°C	+/-1°C or +/-[1+0.003(t-1100)]	+/- 1.5°C or +/-0.0025(t)

Mineral Insulated Thermocouple Cables with Precious Thermocouple:

Precious metal thermocouples are exceptionally suitable for high-temperature applications under oxidizing conditions. They are used in chemical plants when absolute resistance to all kinds of acids is required.

Resistance of Precious Metal Mineral Insulated Thermocouples in Different Atmosphere								
Sheath Material	Thermocouple	Max. Operating Temperature	Oxygen	Nitrogen	Hydrogen	Carbon	Chlorine	Sulphur
Inconel 600 2.4816	S Type	1100°C	Good	Good	Good	Good	Good	Conditional
	R Type	1100°C	Good	Good	Good	Good	Good	Conditional
	B Type	1100°C	Good	Good	Good	Good	Good	Conditional
pt10%Rh	S Type	1300°C	Good	Good	Conditional	Conditional	Conditional	Conditional
	R Type	1300°C	Good	Good	Conditional	Conditional	Conditional	Conditional
	B Type	1300°C	Good	Good	Conditional	Conditional	Conditional	Conditional

MINERAL INSULATED COMPENSATING CABLE

Mineral Insulated Compensating Cables have inner conductors of R/S Type (Cu- CuNi) and B Type (Cu-Cu), Compensating conductor with copper sheath.

Conductor	No. of Pair	Sheath Material	Operating Temperature	Testing
R/S Type Compensating Wire (Cu-CuNi)	1	Copper Sheath	200°C	(0.645 +/- 0.057) mV as per ANSI MC 96.1
R/S Type Compensating Wire (Cu-CuNi)	2		200°C	(0.645 +/- 0.057) mV as per ANSI MC 96.1

Ordering Example

60 R SC : 6.0 mm OD, R Type compensating Conductor, Simplex, and Copper Sheath

60 SS SC : 6.0 mm OD, S Type compensating Conductor, Duplex, and Copper Sheath