



EMPOWERING PROCESS MANAGEMENT



MINERAL INSULATED THERMOCOUPLE



Thermocouples with magnesium oxide insulation are recommended where the thermocouple is immersed in liquids, high moisture, corrosive gases, or high pressure. The thermocouple can be formed to reach otherwise inaccessible areas. The magnesium oxide has a high dielectric strength, responds quickly to temperature changes, and is very durable.

APPLICATIONS

- Immersion in liquids
- High Moistures Applications
- Corrosive Gases, Oils & Petrochemical Industries
- Power, Steel & Sponge Iron
- Temperature Measurement in Chemical Reactors
- General Industrial Applications

PRODUCT FEATURES

- Wider Temperature Range up to 1100 °C
- Can be easily bent, flattened or twisted
- SS Sheathing coupled with tightened magnesia ensure longer life
- High Die Electric Strength
- Thermal Accuracy as per ANSI MC 96.1 & ASTM E230
- Faster Response

PRODUCT TECHNICAL SPECIFICATIONS

Element	J (Fe / Const) 0 °C – 760 °C K (Chromel / Alumel) -200 °C – 1260 °C T (Copper / Const) -250 °C – 350 °C E (Chromel / Const) -200 °C – 900 °C N (Nicrosil / Nisil) -270 °C – 1300 °C
No. of Element	Simplex / Duplex
Junction	Grounded / Ungrounded
Insulation	Tightly Packed Magnesia (MgO) powder in Metal Tubes
Sheath OD	1.5 / 3 / 4.5 / 6 / 8 mm or other on request
Sheath Length	Up to 20000 mm
Sheath Material	SS 316 / 310 / INCONEL 600 and some other on specific request
Mounting	Fixed Threaded, Adj. Ferrule fittings, Flanged, Nipple Union Nipple etc.
Termination	Seal Pot with flying leads Seal Pot with Male Female Connectors Ceramic Terminal Block with SS Base Plate Ceramic Terminal Block with Nickel Plated Brass Terminal & Optional spring loaded Terminal SS Base Plate with flying leads for Temperature Transmitter
Enclosure	Weatherproof & Explosion Proof Head with Double Entry & Single Entry Cable Entry of Alu. Die Cast & Stainless Steel
Optional Accessories	Thermo well for external sensor protection, Head mounted transmitter etc. & Extension Wire

Thermocouple can be custom configured & designed depending upon its environmental conditions & its demanding applications within the above TECHNICAL CONSTRUCTIONAL SPECIFICATIONS



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THERMOCOUPLE with CONNECTION HEAD ORDERING CODE

# 1	TC
J	Iron - Constantan 0 °C – 760 °C
K	Chromel - Alumel -200 °C – 1260 °C
T	Copper – Constantan -200 °C – 350 °C
E	Nicrosil - Nisil -200 °C – 1300 °C
N	Chromel - Constantan -200 °C – 900 °C
# 2	ELEMENT (No. of wire)
Si	Simplex
Du	Duplex
#3	Type of Insulation
--	As per manufacturing standards, High Temperature Ceramic Insulation above 8 mm
MI	Mineral Insulation available up to 8mm
# 4	Sheath Material
304	SS 304 Up to 900 °C, Good resistance to corrosion & oxidation
310	SS 310 Up to 1100 °C, Good scaling resistance & use in reducing atmosphere
316	SS 316 Up to 925 °C, Superior corrosion resistance & withstands acidic compounds
446	HRS 446 Up to 1100 °C, Good High Temp. Oxidation resistance
IN 600	INCONEL 600 Up to 1150 °C, High corrosion resistance at elevated temp.
X	Others pl. specify, Refer Table on Page 1
# 4	Sheath Diameter
X	OD – 1.5 mm to 25 (in mm), other pl. specify
# 5	Sheath Length – Insertion length below Process Connection
Y	55 to 20000 mm, please specify
# 6	Process Connection
--	None
B1	¼" BSP
B2	½" BSP
N1	¼" NPT
N2	½" NPT
Z	Flanged or any others, please specify in details
# 7	Type of Process Connection
F	Fixed
A	Adjustable
N	Nipple
NU	Nipple Union
# 8	Enclosure
E1	Weather Proof Die Cast Alu. Head IP 65 / 67
E2	Flame Proof Die Cast Alu. Head
E3	Explosion Proof
# 9	Optional Accessories
---	None
Tx	Head Mount Temperature Transmitter
XM	X is wire length in meters
TW	Thermo well (Separate details)

TC	K	Si	--	310	25	600	B1	A	E1	Tx - 3M
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TC K Si 310 25 x 600 B1 A E1 T – 3M

Thermocouple K Type Duplex, Sheath : SS 310, OD: 8 mm, Legth: 2000 mm, ½ " BSP Adjustable Connection, Weatherproof Enclosure with Head Mount Temperature Transmitter & 3 Meter wire length

- For Simplex Thermocouple, standard enclosure offered is single cable entry Alu. Die Cast Head
- For Duplex Thermocouple, standard enclosure offered is double cable entry Alu. Die Cast Head
- Other enclosure with different colors, size & types are available on request



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THERMOCOUPLE with MALE FEMALE CONNECTOR ORDERING CODE

# 1	TC									
J	Iron - Constantan	0 °C – 760 °C								
K	Chromel - Alumel	-200 °C – 1260 °C								
T	Copper – Constantan	-200 °C – 350 °C								
E	Nicrosil - Nisil	-200 °C – 1300 °C								
N	Chromel - Constantan	-200 °C – 900 °C								
# 2	ELEMENT (No. of wire)									
Si	Simplex									
Du	Duplex									
#3	Type of Insulation									
--	As per manufacturing standards, Ceramic above 8 mm									
MI	Mineral Insulation available up to 8mm									
# 4	Sheath Material									
310	SS 310 Up to 1100 °C, Good scaling resistance & use in reducing atmosphere									
316	SS 316 Up to 925 °C, Superior corrosion resistance & withstands acidic compounds									
IN 600	INCONEL 600 Up to 1150 °C, High corrosion resistance at elevated temp.									
X	Others pl. specify, Refer Table on Page 1									
# 4	Sheath Diameter (in. mm)									
X	OD – 1.5 mm to 8 , other pl. specify									
# 5	Sheath Length – Insertion length below Process Connection									
IL	55 to 20000 mm, please specify									
# 6	Process Connection									
--	None									
B1	¼" BSP									
B2	½" BSP									
N1	¼" NPT									
N2	½" NPT									
Y	Flanged or any others, please specify in details									
# 7	Type of Process Connection									
F	Fixed									
A	Adjustable									
N	Nipple									
NU	Nipple Union									
# 8	Connector									
M	Male Connector miniature up to 4.5 OD & standard size above it									
F	Female Connector miniature up to 4.5 OD & standard size above it									
MF	Male – Female Connector miniature up to 4.5 OD & standard size above it									
# 9	Optional Accessories									
---	None									
XM	X is wire length in meters									
TW	Thermo well (Separate details)									
TC	K	Du	MI	310	8	2000	B1	A	M	3M

TC K Du MI 310 8 x 1000 B1 A M T – 3M

Thermocouple K Type Duplex, Sheath : SS 310, OD: 8 mm, Legth: 2000 mm, ¼ " BSP Adjustable Connection, with Male Connector with 3 meter wire

- Upto 4.5 mm OD sensor, connector offered is miniature size i.e. jack & plug with flat pin, temp. Up to 180 °C
- Above 4.5mm OD sensor, connector offered is standard size i.e. jack & plug with round pin temp. Up to 180 °C
- Connector offered as per ANSI MC 96.1 color code unless and other wise specified for any other standards
- High Temperature Ceramic Connector up to 650 °C are available on request.
- Any speical type connector like flanged, round etc. are also avaiable on request



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