MINERAL INSULATED THERMOCOUPLE
Type XI-TTP-..-BT

Mineral insulated thermocouples, also referred to as sheathed thermocouples, are made of metal sheathed cable with internal thermocouple wires are insulated from each other and from the outer sheath with magnesium oxide (MgO) powder. This provides the sensor with high vibration resistance, flexibility as well as resistance to temperature and with good electrical insulation.

These sensors are designed for direct temperature measuring in places with difficult access, as well as in all places, where it is required to use flexible sensors of small diameters, high resistance to vibrations and shock, and with short response time to temperature changes. Due to tight pressing of the insulating layer (MgO) and appropriate structure of the inner wires and the sheath, the sensors can be bent with a minimal radius of curvature of three times the outer diameter of the sheath.

TECHNICAL DATA

Description

- Intrinsically safe for mines M1, gas G and dust D atmospheres
- Single and double RTD
- Mineral insulated construction
- Free unisolated thermocouple wires with silicone protection tubes color coded IEC 584-3

Design temperature range

Range	Material	Code
0 .. +1200°C (K)	NiCr-NiAl	K
0 .. +700°C (J)	Fe-CuNi	J
0 .. +1200°C (N)	NiCrSi-NiSi	N
0 .. +800°C (E)	NiCr-CuNi	E
0 .. +350°C (T)	Cu-CuNi	T

Sheath

Material	stainless steel AISI316 (1.4401)
	heat resistant INCONEL®600 (2.4816)
	heat resistant Pyrosil® D
Diameter d [mm]	Ø0.5, Ø1, Ø1.5, Ø2, Ø3, Ø4.5, Ø6, Ø8
Length L [mm]	custom

Multiplicity

Possible combinations:

TC	Sheath diameter [mm]							
	Ø 0.5	Ø 1.0	Ø 1.5	Ø 2.0	Ø 3.0	Ø 4.5	Ø 6.0	Ø 8.0
1 x TC	✓	✓	✓	✓	✓	✓	✓	✓
2 x TC	X	X	X	✓	✓	✓	✓	✓
3 x TC	X	X	X	X	✓	✓	✓	X

Remarks
* other parameters upon request

ATEX Marking:

CE Ⓔ I M1 Ex ia I Ma
CE Ⓔ II 1/2 G Ex ia II C T... Ga
CE Ⓔ II 1/2 D Ex ia IIIC T... Da

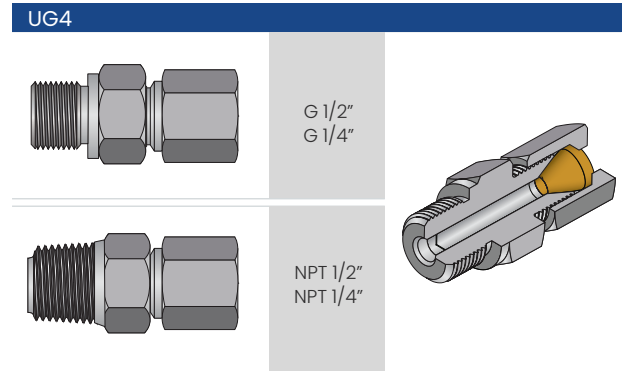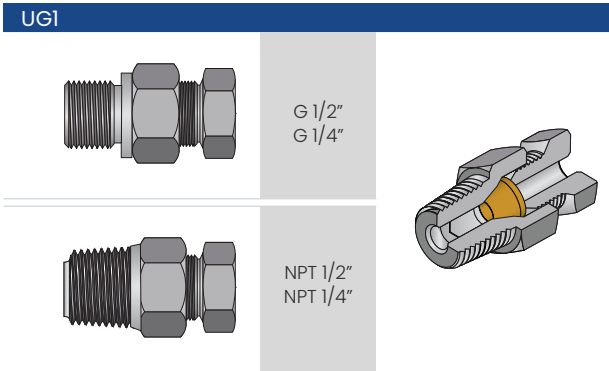| IECEx Marking:	EAC Ex Marking:
Ex ia I Ma	PO Ex ia I Ma X
Ex ia IIC T ...Ga	0Ex ia IIC T..Ga X
Ex ia IIIC T ...Da	0Ex ia IIIC T..Da X
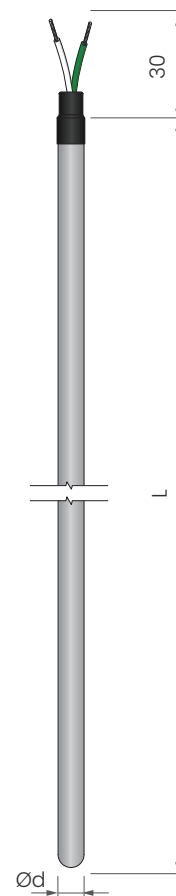
Sheathed thermocouple thermometer without pot seal (sleeve). Suitable for temperature measurement of liquids, gases and solid bodies. Measuring range from –40ºC to +1200ºC.

Compression fitting - Accessorie

UG1			UG4		
	G 1/2" G 1/4"			G 1/2" G 1/4"	
	NPT 1/2" NPT 1/4"			NPT 1/2" NPT 1/4"	
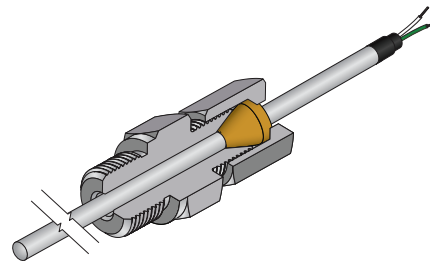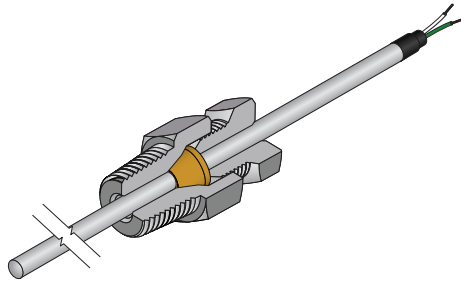
ORDERING CODE

Temperature sensor		
sensing element:	Type K	K
	Type J	J
	or other	☐
version:		BT
multiplicity:	(single)	I
	(double)	II
	(triple)	III
sheath material:	(2.4816 - Inconel®600)	J
	(1.4401)	Y
	(Pyrosil®D)	P
sheath diameter:	(Ø1.0) 10 (Ø3.0) 30	
	(Ø1.5) 15 (Ø4.5) 45	
	(Ø2.0) 20 (Ø6.0) 60	
	(Ø8.0) 80	
TC class:		1, 2
junction:	(isolated, single TC)	SO
	(isolated, double and tripe TC)	SOB
length L:	custom	☐
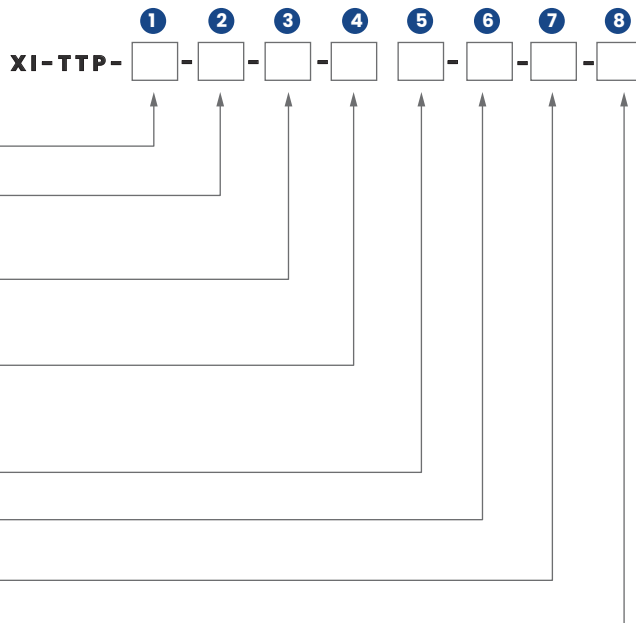
XI-TTP- ① - ② - ③ - ④ ⑤ ⑥ - ⑦ - ⑧

EXAMPLE: Temperature sensor   XI-TTP-K-BT-II-J30-1-SOB-1000
① ② ③④⑤⑥ ⑦ ⑧

Temperature sensor   XI-TTP-K-BT-I-J60-1-SO-500
① ② ③④⑤⑥ ⑦ ⑧