

### MINERAL INSULATED THERMOCOUPLE

#### Type XI-TTP-..-BTW

Mineral insulated thermocouples, also referred to as sheathed thermocouples, are made of metal sheathed cable with internal thermocouple wires 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

- Intrinsicly safe for mines MI, gas G and dust D atmospheres
- Single and double TC
- Mineral insulated construction
- With miniature size plug

#### Design temperature range

0 .. +1200°C (K)	NiCr-NiAl	<b>K</b>
0 .. +700°C (J)	Fe-CuNi	<b>J</b>
0 .. +1200°C (N)	NiCrSi-NiSi	<b>N</b>

#### Sheath

Material	stainless steel AISI316 (1.4401) (Y)
	INCONEL®600 (2.4816) (J)
	Pyrosil® D (P)
Diameter d [mm]	Ø0.5, Ø1, Ø1.5, Ø2, Ø3
Length L [mm]	custom

#### Connector

<b>S-010-..-W</b>	(miniature size plug)		
Calibration Type	<b>J</b>	<b>K</b>	<b>N</b>
Conductors	Fe/Con	NiCr/NiAl	NiCrSi/NiSi
IEC 60584.3			

#### Multiplicity

Possible combinations:

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

#### Remarks

\* other parameters upon request

#### ATEX Marking:

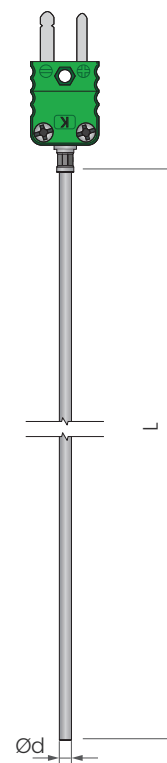
- CE Ⓜ I MI Ex ia I Ma
- CE Ⓜ II 1/2 G Ex ia II C T... Ga
- CE Ⓜ II 1/2 D Ex ia III C T... Da

#### IECEx Marking:

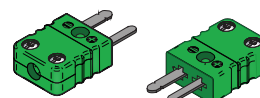
- Ex ia I Ma
- Ex ia IIC T ...Ga
- Ex ia IIIC T ...Da

#### EAC Ex Marking:

- PO Ex ia I Ma X
- 0Ex ia IIC T...Ga X
- 0Ex ia IIIC T...Da X



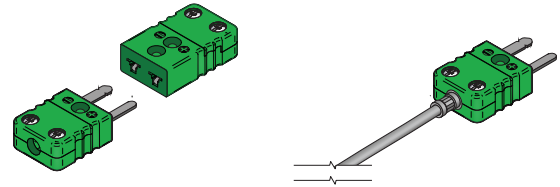
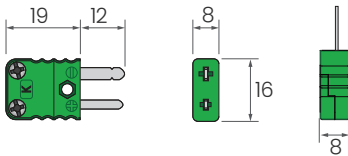
(miniature size plug)



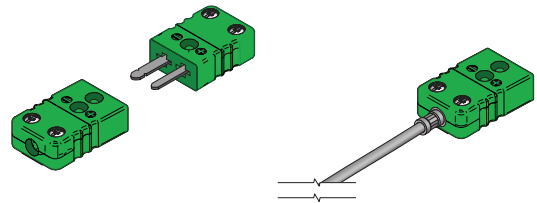
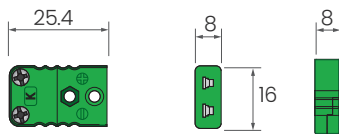
Sheathed thermocouple with miniature size plug. Suitable for temperature measurement of liquids, gases and solid bodies. Measuring range from -40°C to +1200°C.

## Connector

(miniature size plug, 2-pole)



(miniature size socket, 2-pole)



## ORDERING CODE

Temperature sensor		XI-TTP- [1] - [2] - [3] - [4] [5] - [6] - [7] - [8]							
sensing element:	Type K <input checked="" type="checkbox"/> Type J <input type="checkbox"/> or other <input type="checkbox"/>	1	2	3	4	5	6	7	8
version:	BTW								
multiplicity:	(single) I (double) II								
sheath material:	(2.4816 - Inconel®600) J (1.4401) Y (Pyrosil®D) P								
sheath diameter:	(Ø1.0) 10 (Ø1.5) 15 (Ø2.0) 20 (Ø3.0) 30								
TC class:	1, 2								
junction:	(isolated, single TC) SO (isolated, double and tripe TC) SOB								
length L:	custom <input type="checkbox"/>								

**EXAMPLE:** Temperature sensor XI-TTP-K-BTW-I-J30-1-SO-500

1 2 3 4 5 6 7 8

Temperature sensor XI-TTP-K-BTW-i-J20-1-SO-I50

1 2 3 4 5 6 7 8