

MINERAL INSULATED THERMOCOUPLE

Type XI-TTP-..-WL

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, double and triple TC
- Mineral insulated construction
- With LEMO® connector – Serie S**

Design temperature range

| | | |
|------------------|-------------|----------|
| 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) (Y) |
| | INCONEL®600 (2.4816) (J) |
| | Pyrosil® D (P) |
| Diameter d [mm] | Ø0.5, Ø1, Ø1.5, Ø2, Ø3, Ø4.5, Ø6 |
| Length L [mm] | custom |

LEMO® connector, Serie S**

PCA.0S, PCA.1S, PCA.2S, PCA.3S, FFA.0S, FFA.1S, FFA.2S, FFA.3S

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 |
| 1 x TC | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 2 x TC | X | X | X | ✓ | ✓ | ✓ | ✓ |

Remarks

* other parameters upon request

ATEX Marking:

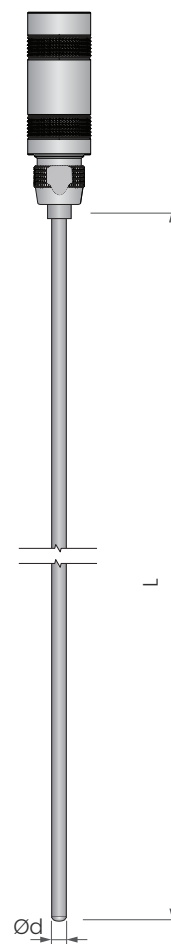
- CE I MI Ex ia I Ma
- CE II 1/2 G Ex ia II C T... Ga
- CE II 1/2 D Ex ia IIIC T... Da

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

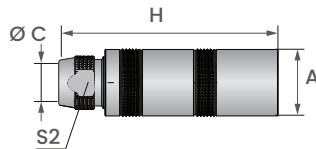
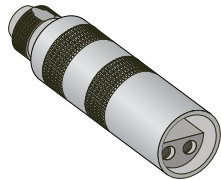


WL with LEMO® connector – Serie S*

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

LEMO® connector, Serie S

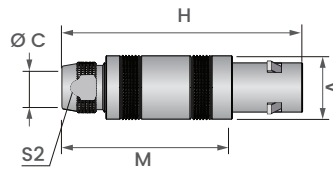
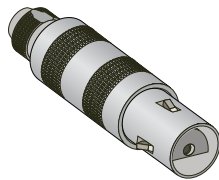
PCA S Series



PCA S Series

| Series | A | H | S2 |
|--------|------|------|------|
| 0S | 8.9 | 33.5 | 6.5 |
| 1S | 11.9 | 40.5 | 8.5 |
| 2S | 14.8 | 50.0 | 11.0 |
| 3S | 17.8 | 59.0 | 14.0 |

FFA S Series

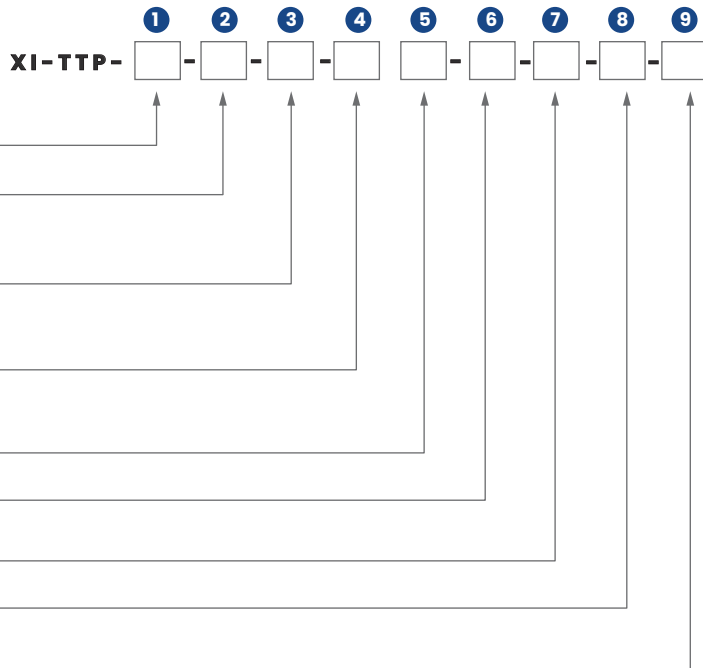


FFA S Series

| Series | A | H | S2 | M |
|--------|------|------|------|------|
| 0S | 9.0 | 34.5 | 6.5 | 24.5 |
| 1S | 12.0 | 42.5 | 8.5 | 31.5 |
| 2S | 14.8 | 52.0 | 11.0 | 40.0 |
| 3S | 17.8 | 61.0 | 14.0 | 46.0 |

ORDERING CODE

| Temperature sensor | | |
|-----------------------|--|----------|
| sensing element: | Type K <input checked="" type="checkbox"/> Type J <input type="checkbox"/> or other <input type="checkbox"/> | 1 |
| version: | WL | 2 |
| multiplicity: | (single) I (double) II (triple) III | 3 |
| sheath material: | (2.4816 - Inconel®600) J (1.4401) Y (Pyrosil®D) P | 4 |
| sheath diameter: | (Ø0.5) 05 (Ø3.0) 30 (Ø1.5) 15 (Ø4.5) 45 (Ø2.0) 20 (Ø6.0) 60 | 5 |
| TC class: | 1, 2 | 6 |
| junction: | (isolated, single TC) SO (isolated, double TC) SOB | 7 |
| length L: | custom <input type="checkbox"/> | 8 |
| LEMO® connector type: | custom <input type="checkbox"/> | 9 |



EXAMPLE: Temperature sensor XI-TTP-K-WL-III-J30-I-SOB-500-PCA.IS

