

### CABLE THERMOCOUPLE

#### Type XI-TTE310, XI-TTE311, XI-TTE312

Thermocouple with spring-loaded bayonet cap. Temperature measurement of feed cylinders, extruding presses, injection moulds. Temperature range of the sensor depends on insulation of connection cable.

Thermocouples of this series are designed for screw-fitting directly into a socket, mainly in extruding molds. These thermocouples are suitable for solid media under moderate mechanical load and normal chemical conditions. The sensor consists of thermocouple cable, protection tube, spring and bayonet cap.

Insertion length, process connection, construction type, accuracy, cable insulation can be selected individually for the respective application.

### TECHNICAL DATA

#### Description

- Intrinsically safe for mines MI, gas G and dust D atmospheres
- Single and double TC
- with protection tube dia.  $\varnothing 5$  mm (TT310),  $\varnothing 6$  (TT311),  $\varnothing 8$  mm (TT312)

#### Temperature range

-10.. +105°C	with cable in PVC
-50.. +180°C	with cable in silicone rubber
-50.. +260°C	with cable in teflon® PFA
-50.. +400°C	with cable in fiberglass

#### Sensing element

1x or 2x NiCr-NiAl	<b>K</b>	acc. to EN 60584-2 class 1, 2
1x or 2x NiCrSi-NiSi	<b>N</b>	acc. to EN 60584-2 class 1, 2
1x or 2x Fe-CuNi	<b>J</b>	acc. to EN 60584-2 class 1, 2
1x or 2x NiCr-CuNi	<b>E</b>	acc. to EN 60584-2 class 1, 2
1x or 2x Cu-CuNi	<b>T</b>	acc. to EN 60584-2 class 1, 2

Bayonet cap	Diameter D [mm]
XI-TOPE310	$\varnothing 11$
XI-TOPE311	$\varnothing 12$
XI-TOPE312	$\varnothing 14,5$

Remarks  
\*other parameters upon request

#### ATEX Marking:

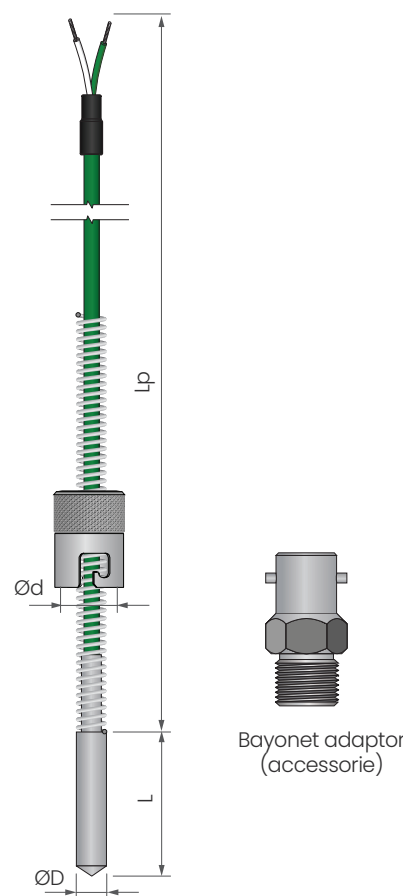
- CE I MI Ex ia I Ma
- CE II 1/2 G Ex ia II C T... Ga/Gb
- CE II 1/2 D Ex ia IIIC T... Da/Db

#### IECEx Marking:

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

#### EAC Ex Marking:

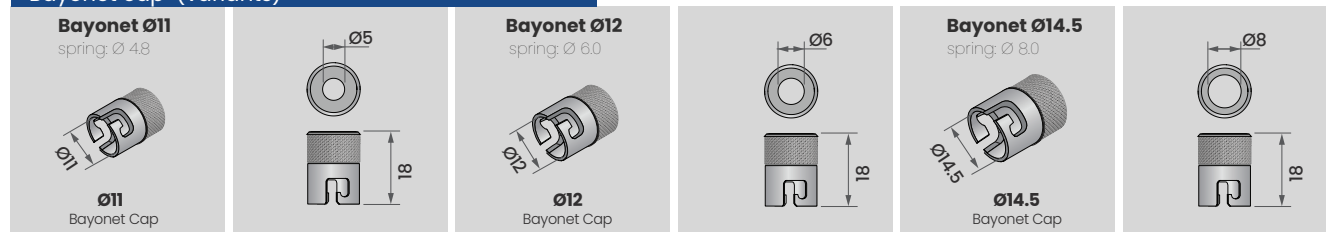
- PO Ex ia I Ma X
- 0Ex ia IIC T...Ga X
- 0Ex ia IIIC T...Da X



#### Protection tube

Material	stainless steel 1.4541*
Diameter D [mm]	$\varnothing 5, \varnothing 6, \varnothing 8$
Length L [mm]	25 mm (standard) or other*

#### Bayonet cap (variants)



Temperature range of the sensor depends on insulation of connection cable.

Connection cable	cross	diameter	code
up to +105°C. PVC / PVC	2 x 0.22 mm <sup>2</sup>	Ø4.0 Ø5.0 Ø5.0 Ø6.0	JJ-2x0.22mm <sup>2</sup> JJ-2x0.44mm <sup>2</sup> JJ-4x0.50mm <sup>2</sup> JJ-2x0.75mm <sup>2</sup>
up to +180°C. silicone / silicone	2 x 0.22 mm <sup>2</sup>	Ø3.4 Ø4.5	TSL-2x0.22mm <sup>2</sup> TSL-2x0.75mm <sup>2</sup>
up to +400°C. fiberglass / fiberglass / steel braid	2 x 0.22 mm <sup>2</sup> 2 x 0.50 mm <sup>2</sup> 2 x 0.50 mm <sup>2</sup>	Ø3.6 3x4 4x5	GLGLP-2x0.22 mm <sup>2</sup> GLGLP-2x0.50 mm <sup>2</sup> GLGLP-2x0.75 mm <sup>2</sup>

Connection cable	cross	diameter	code
up to +260°C. teflon® PFA / teflon® PFA	2 x 0.22 mm <sup>2</sup> 2 x 0.50 mm <sup>2</sup> 2 x 0.75 mm <sup>2</sup>	1.9x2.3 1.7x3.0 2.4x4.2	TT-2x0.22mm <sup>2</sup> TT-2x0.50mm <sup>2</sup> TT-2x0.75mm <sup>2</sup>
up to +205°C. teflon® FEP/Cu braid / teflon® FEP	2 x 0.22 mm <sup>2</sup> 4 x 0.22 mm <sup>2</sup> 2 x 0.50 mm <sup>2</sup> 4 x 0.50 mm <sup>2</sup> 6 x 0.50 mm <sup>2</sup> 4 x 0.75 mm <sup>2</sup> 6 x 0.75 mm <sup>2</sup>	Ø2.9 Ø3.6 Ø3.8 Ø4.6 Ø5.1 Ø5.1 Ø6.3	TCuT-2x0.22 mm <sup>2</sup> TCuT-4x0.22 mm <sup>2</sup> TCuT-2x0.50 mm <sup>2</sup> TCuT-4x0.50 mm <sup>2</sup> TCuT-6x0.50 mm <sup>2</sup> TCuT-4x0.75 mm <sup>2</sup> TCuT-6x0.75 mm <sup>2</sup>

### ORDERING CODE

Temperature sensor	XI - TTE31			1	2	3	4	5	6	7
version/dia. of the protection tube:	(Ø5) (Ø6) (Ø8)	0 1 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sensing element:	Type K Type J Type N Type E Type T	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
length L [mm]:	custom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
cable length L <sub>p</sub> [mm]:	custom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TC class:	1, 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
cable insulation	(see specification)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
bayonet adaptor thread (access orie):	M10x1, M 12x1, M14 x1.5 G1/8, G¼ or other* *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**EXAMPLE:** Temperature sensor XI-TTE311-K-25-2500-1-GLGLP

1 2 3 4 5 6

Temperature sensor XI-TTE312-J-25-1000-2-GLGLP-M14x1.5

1 2 3 4 5 6 7