










TEMPERATURE SENSOR TYPE

TP-Exi-461, TP-Exi-462, TP-Exi-463

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- Temperature measurement in mining plants, gas and dust hazardous areas
- ATEX designation
 -   I M1 Ex ia I Ma
 -   II 2G Ex ia IIC T6-T1 Gb
 -   II 1D Ex ia IIIC T85°C Da
- Temperature range -200°C...+550°C
- Option - temperature transmitter

Sensor type	Atmosphere type	Temperature range	ATEX designation
TP-Exi-46X-XPX	mines	-20 ÷ 150°C	 I M1 Ex ia I Ma
	gases	-200 ÷ 550°C	 II 2G Ex ia IIC T6-T1 Gb
	dusts	-200 ÷ 550°C	 II 1D Ex ia IIIC T85 ÷ 550°C Da

These temperature sensors are recommended for temperature measurements in mines (sensor category M1) in explosive gases (sensor category 2 G) and dusts (sensor category 1 D).

The sensing element of the sensor is a Pt100 resistor placed in a flexible sheathed cable made of stainless steel 1.4541. Sheathed cable is made of copper-zirconium alloy (CuZr) wires insulated with highly compacted mineral powder (99% MgO) and metal sheath (casing) providing mechanical and chemical protection of wires and the Pt100 resistor.

This design allows for high flexibility, high mechanical resistance and short reaction time.

Note: rigid end of the probe is 40 mm in length.

An ATEX certified temperature transmitter which converts the measured values to a 4-20mA, 0-20mA or 0-10V (option) signal can be mounted in the connection head.

For each sensor an Instruction Manual, Warranty Card and Declaration of Conformity are supplied.

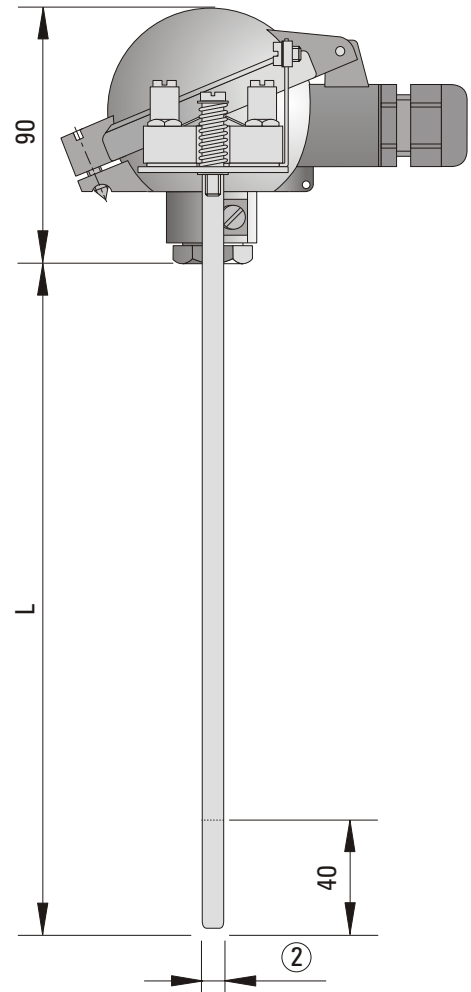
A free of charge Quality Certificate specifying the class of the sensor or payable Calibration Certificate for the specified temperature values is supplied on request.

TECHNICAL DATA

Process connection	without or compression gland, stainless steel 1.4541 (option)
Protection sheath	Ø3, Ø5, Ø6mm, stainless steel 1.4541
Sensing element	Pt100, EN 60751 class B
Connection head and cable gland	head type XE-DANA, IP65, ATEX II 2GD cable gland ATEX II 2GD, IP65, for cable of outer diameter Ø6 ÷ Ø8mm head type XE-BE, IP65, ATEX I M2, operating temperature up to 100°C cable gland ATEX I M2, IP65, for cable of outer diameter Ø6 ÷ Ø12mm
Ambient temperature (Tamb)	-40°C +75°C
Response time	t ₉₀ ca.10s (in water 0,2 m/s for Ø3mm), t ₉₀ ca.40s (in water 0,2 m/s for Ø6mm)
Maximum operating pressure	0,1MPa
Temperature transmitter (option)	ATEX certified

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(1) Basic version

TP-Exi

(2) Protection sheath

461	Ø3mm
462	Ø5mm
463	Ø6mm

(3) Sensing element

1P2	1xPt100 2-wires
1P3	1xPt100 3-wires
1P4	1xPt100 4-wires
2P2	2xPt100 2-wires
2P3	2xPt100 3-wires

(4) Length in mm (100 < L < 5000)

100	100 mm
150	150 mm
...	other length (by 50 mm)

(5) ATEX designation

mines	I M1 Ex ia I Ma
gases	II 2G Ex ia IIC T6 Gb
dusts	II 1D Ex ia IIIC T85°C Da

(6) Additional accessories (option)

0	without
KP	compression gland (type acc. to catalogue page)
T	ATEX certified temperature transmitter (parameters acc. to catalogue page)
class A	sensor class (other than basic)

Ordering code:

(1)	(2)	(3)	(4)	(5)	(6)

Example:

TP-Exi — 461 — 1P2 — 1200 — IM1ExialMa — 0

Additional accessories please specify at the end, for example KPM10x1-3, class A

The designer of the installation will be responsible for selecting a type of sensor and method of its implementation such that after installation, during extreme operating conditions, the temperature of the sensor's hottest surface is lower than the temperature class for a given substance (gas, mist, vapor).

The designer of the installation will be responsible for selecting a type of sensor and method of its implementation such that after installation, during extreme operating conditions, the temperature of the sensor's hottest surface is lower than 2/3 of the ignition temperature of dust cloud T_{ci} or ignition temperature of a 5-millimeter layer of dust T_{5mm} reduced by 75K.