













TEMPERATURE SENSOR TYPE

TP-Exi-601, TP-Exi-602, TP-Exi-603, TP-Exi-604, TP-Exi-605

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- Temperature measurement in mines, gas and dust hazardous areas
- ATEX designation **CE**  I M1 Ex ia I Ma
CE  II 2G Ex ia IIC T6-T1 Gb
CE  II 1D Ex ia IIIC T85°C Da
- Temperature range -200°C...+550°C (Pt100)
-40°C...+700°C (J)
-40°C...+900°C (K)
- Option - temperature transmitter

Sensor type	Atmosphere type	Temperature range	ATEX designation
TP-Exi-60X-XPX	mines	-20 ÷ 150°C	 I M1 Ex ia I Ma
	gases	-40 ÷ 450°C	 II 2G Ex ia IIC T6-T1 Gb
	dusts	-200 ÷ 550°C	 II 1D Ex ia IIIC T85 ÷ 550°C Da
TP-Exi-60X-XJ	mines	-20 ÷ 150°C	 I M1 Ex ia I Ma
	gases	-40 ÷ 450°C	 II 2G Ex ia IIC T6-T1 Gb
	dusts	-40 ÷ 700°C	 II 1D Ex ia IIIC T85 ÷ 700°C Da
TP-Exi-60X-XK	mines	-20 ÷ 150°C	 I M1 Ex ia I Ma
	gases	-40 ÷ 450°C	 II 2G Ex ia IIC T6-T1 Gb
	dusts	-40 ÷ 900°C	 II 1D Ex ia IIIC T85 ÷ 900°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).

These temperature sensors have a protection tube inside of which is located a replaceable measuring insert.

This insert, in standard version, is a single or dual Pt100 resistor or one or two thermocouples J or K, placed in a tube made of stainless steel 1.4541 with a diameter $\varnothing 6\text{mm}$ or $\varnothing 8\text{mm}$.

On request measuring inserts are made of sheathed mineral insulated cable.

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

TECHNICAL DATA

Process connection	without or compression gland, stainless steel 1.4541 (option) or clamping plate, cast steel (option)
Protection sheath	$\varnothing 9 \times 1$, $\varnothing 10 \times 1,5$, $\varnothing 11 \times 2\text{mm}$, stainless steel 14541, measuring insert $\varnothing 6\text{mm}$ $\varnothing 12 \times 1,5$, $\varnothing 15 \times 3\text{mm}$, stainless steel 14541, measuring insert $\varnothing 8\text{mm}$
Sensing element	Pt100 EN 60751 class B J (Fe-CuNi) insulated EN 60584 class 2 K (NiCr-NiAl) insulated EN 60584 class 2
Connection head and cable gland	head type XE-DANA, IP65, ATEX II 2GD cable gland ATEX II 2GD, IP65, for cable of outer diameter $\varnothing 6 \div \varnothing 8\text{mm}$ 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 $\varnothing 6 \div \varnothing 12\text{mm}$
Ambient temperature (T_{amb})	-40°C +75°C
Response time	t_{95} ca.95s (in water 0,2 m/s for $\varnothing 9\text{mm}$)
Maximum operating pressure	0,1MPa
Temperature transmitter (option)	ATEX certified

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(1) Basic version
 TP-Exi

(2) Protection sheath

601	Ø9x1mm
602	Ø10x1,5mm
603	Ø11x2mm
604	Ø12x1,5mm
605	Ø15x3mm

(3) Sensing element

1P2	1xPt100 2-wire
1P3	1xPt100 3-wire
1P4	1xPt100 4-wire
2P2	2xPt100 2-wire
2P3	2xPt100 3-wire
1J	1xJ (1 x Fe-CuNi)
1K	1xK (1 x NiCr-NiAl)
2J	2xJ (2 x Fe-CuNi)
2K	2xK (2 x NiCr-NiAl)

(4) Length in mm (100 < L < 3000)

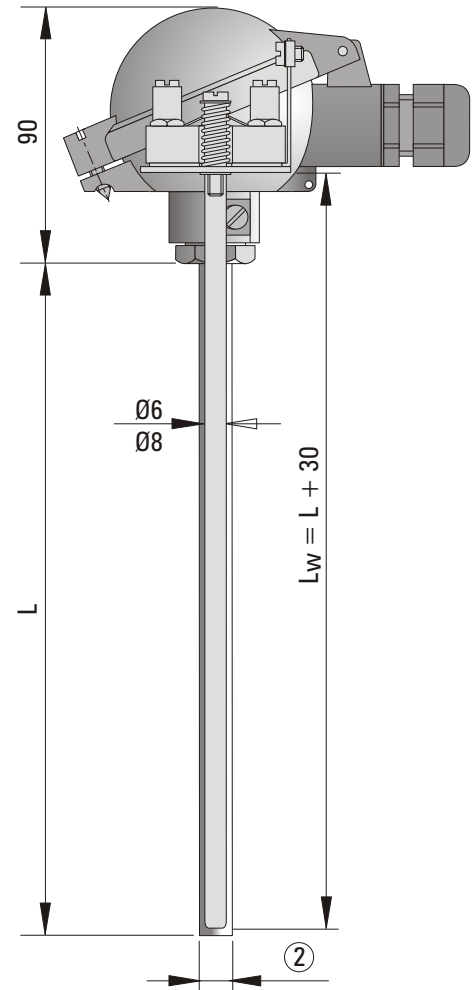
100	100 mm
150	150 mm
...	other length (by 50 mm)

(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, UZ	compression gland, clamping plate (type acc. to catalogue page)
T	ATEX certified temperature transmitter (parameters acc. to catalogue page)
class A (1)	sensor class (other than basic)
WPP	sheathed measuring insert



Ordering code:

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

TP-Exi — 601 — 1P2 — 1200 — IM1ExialMa — 0

Additional accessories please specify at the end, for example WPP, class A, UZ-15

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.