

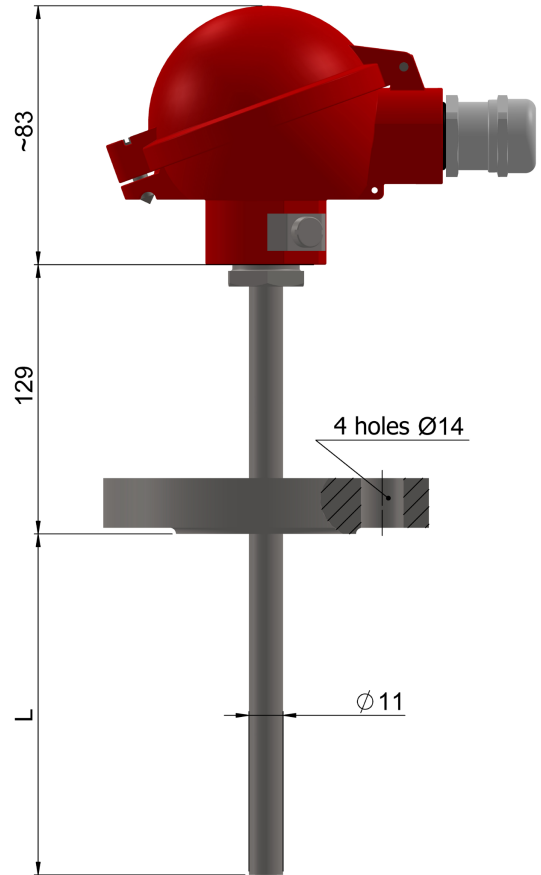
Intrinsically safe temperature sensors with replaceable measuring inserts

**TOPT-1..Exi,
TTJT-1..Exi,
TTKT-1..Exi**



Technical description

Measuring range / sensing element		
(-200 + 550) °C	Pt100	class B
(-40 + 550) °C	J, K	class 2
Measuring insert – p. 179		
– diameter [mm]: $\varnothing 6$		
– 2-, 3-, 4-wire connection (for Pt100)		
– 2-, 3-wire connection (for 2xPt100)		
– insert length: L+155 mm		
– mineral insulated measuring insert (min. 3-wire connection)		
Thermowell		
– material: steel 1.4541		
– flange: PN16, DN20 or DN25* with rebate B1 acc. to EN-1092		
– diameter [mm]: $\varnothing 11$		
– length L [mm]: 50+2000		
Connection head – p. 219		
– aluminium XE-DANA (S1-standard), XE-DAND (S2), XE-DANAW (W1), XE-DANDW (W2) or stainless steel XE-BE (N1), IP65		
– cable gland ATEX II GD IP68 (for cable 5+10 mm)		
– operating temperature up to 90 °C		
Construction version		
– Exi acc. to ATEX		
– WE Type-Examination Certificate: KDB 07ATEX055		
– I M1 Ex ia I (only with connection head N1)		
– II 1/2G Ex ia IIC T6; II 1D Ex ia IIIC T85 °C		
– 2AP version... and AP2... only with connection heads W1 and W2		
Options		
– Pt500, Pt1000, T, N		
– Pt100: class A (-50 + 400) °C, class AA (0 + 150) °C;		
– TC: class 1		
Additional accessories		
– temperature transmitters with Exi version – p. 225+241		



TEMPERATURE SENSORS FOR FOOD INDUSTRY

J

Response time T05/T09

Sensor type	$\varnothing 11$
Pt	$\leq 40/\leq 120$
J, K insulated junction	$\leq 27/\leq 90$
J, K grounded junction	$\leq 6/\leq 15$

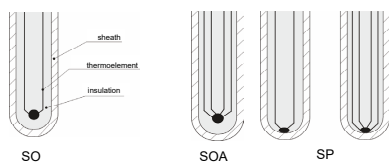
Resistors tolerance acc. to PN-EN 60751

Class	Wire wound resistor	
	Range [°C]	Tolerance [°C]
AA	(-50+250)	$\pm(0,1+0,0017 \cdot |t|)$
A	(-100+450)	$\pm(0,15+0,002 \cdot |t|)$
B	(-196+600)	$\pm(0,3+0,005 \cdot |t|)$

Tolerance for thermocouples class acc to. PN-EN 60584

Thermocouple	Class 1		Class 2	
	Range [°C]	Tolerance [°C]	Range [°C]	Tolerance [°C]
J Fe-CuNi	(-40+375) (375+750)	$\pm 1,5$ $\pm 0,004 |t|$	(-40+333) (333+750)	$\pm 2,5$ $\pm 0,0075 |t|$
K, Na NiCr-NiAl	(-40+375) (375+1000)	$\pm 1,5$ $\pm 0,004 |t|$	from (-40+333) (333+1200)	$\pm 2,5$ $\pm 0,0075 |t|$

Types of measuring hot junction



Ordering code

Temperature sensor	...	...	T	...	T-1	...	Exi	-	-	...	...	...	...	...	...	...	...
Without transmitter	no sign																
With transmitter	AP																
With two transmitters	2AP																
Single	no sign																
Double	2																
Resistor Pt					OP												
Thermocouple Fe-CuNi; NiCr-NiAl					TJ; TK												
Thermocouple Cu-CuNi; NiCrSi-NiSi					TT; TN												
Replaceable pipe insert										1							
Replaceable mineral insulated insert										2							
Type of head connection for II group (standard S1)										S1, S2, W1, W2							
Type of head connection for I and II groups										N1							
Sheath length L [mm]																	160*
Flange dimension																	PN16DN20B1*
Resistor type																	Pt100*
Hot junction type for TC																	SO, SP, SOA
Resistor class																	A, B*
Thermocouple class																	1, 2
Measuring circuit for RTD																	2, 3, 4
Type of transmitter																	FT2202Ex
Setting of transmitter temperature																	(0 ÷ 50) °C*

* or others acc. to requirements

Ordering example

2TTTT-12Exi-S1-160-PN16DN20B1-SOA-2