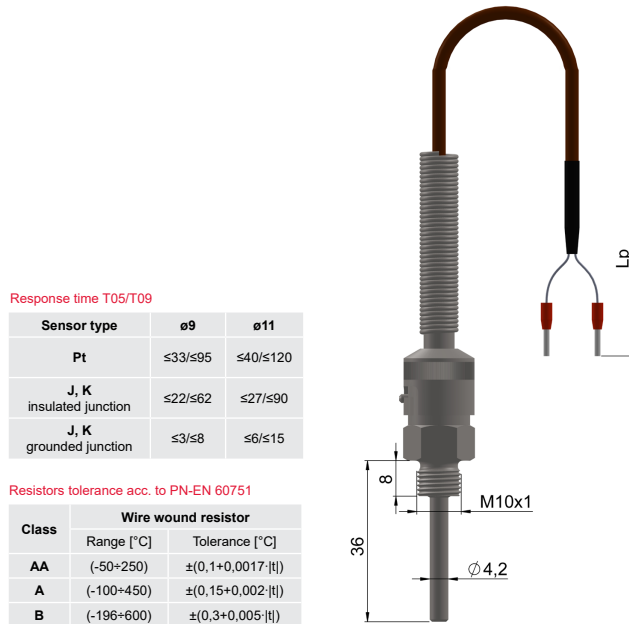


## Temperature sensors of machinery and device parts TOPE-5, TTJE-5, TTKE-5

### Dane techniczne

Measuring range / sensing element		
(-50 ÷ 250) °C	<b>Pt100</b>	class B
(-40 ÷ 400) °C	<b>J, K</b>	class 2
Sheath		
– material: nickel plated brass, atmospheric pressure		
Lead wire		
– Cu wire or thermocouple wire: 2x0,22 mm <sup>2</sup>		
– fiberglass insulation with metal braid		
– length L <sub>p</sub> =1,5m (standard)		
– measuring junction for TC: insulated SO		
– wires resistance Cu ~0,14 Ω/m~0,36 °C for 0,22 mm <sup>2</sup>		
Options		
– Pt500, Pt1000, Ni100, Ni1000, T		
– other lead wire insulation types: silicone, teflon, PVC		
silicone insulation: operating temperature up to 180 °C		
teflon insulation: operating temperature up to 200 °C		
PVC insulation, operating temperature up to 100 °C		
– measuring junction for TC: grounded SP		
– 3-, 4-wire connection for RTD		
– Pt100: class A (-30 ÷ 250) °C, class AA (0 ÷ 150) °C;		
TC: class 1		



#### Response time T05/T09

Sensor type	ø9	ø11
<b>Pt</b>	≤33/≤95	≤40/≤120
<b>J, K</b> insulated junction	≤22/≤62	≤27/≤90
<b>J, K</b> grounded junction	≤3/≤8	≤6/≤15

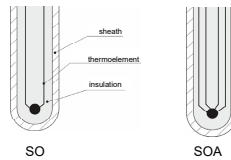
#### Resistors tolerance acc. to PN-EN 60751

Class	Wire wound resistor	
	Range [°C]	Tolerance [°C]
<b>AA</b>	(-50÷250)	±(0,1+0,0017· t )
<b>A</b>	(-100÷450)	±(0,15+0,002· t )
<b>B</b>	(-196÷600)	±(0,3+0,005· t )

#### Tolerance for thermocouples class acc. to PN-EN 60584

Thermocouple	Class 1		Class 2	
	Range [°C]	Tolerance [°C]	Range [°C]	Tolerance [°C]
<b>J</b> Fe-CuNi	(-40÷375) (375÷750)	±1,5 ±0,004  t	(-40÷333) (333÷750)	±2,5 ±0,0075  t
<b>K</b> NiCr-NiAl	(-40÷375) (375÷1000)	±1,5 ±0,004  t	from (-40÷333) (333÷1200)	±2,5 ±0,0075  t

#### Types of measuring hot junction



### Ordering code

Temperature sensor		...	T	...	E-5	...	...	...	...	...	...
Single			no sign								
Double			2								
Resistor Pt				OP							
Thermocouple Fe-CuNi				TJ							
Thermocouple NiCr-NiAl				TK							
Resistor type					Pt100*						
Junction insulated from the sheath	dla					SO					
Junction grounded	TC					SP					
Resistor class							A, B*				
Thermocouple class								1, 2			
Measuring circuit for RTD									2, 3, 4		
Cable insulation: braided teflon										Fu	
Cable insulation: braided fiberglass										Ws	
Cable length L <sub>p</sub> [m]											1,5m*

\* or others acc. to requirements

### Ordering example

TOPE-5-Pt100-A-3-Ws-M10x1-1,5m