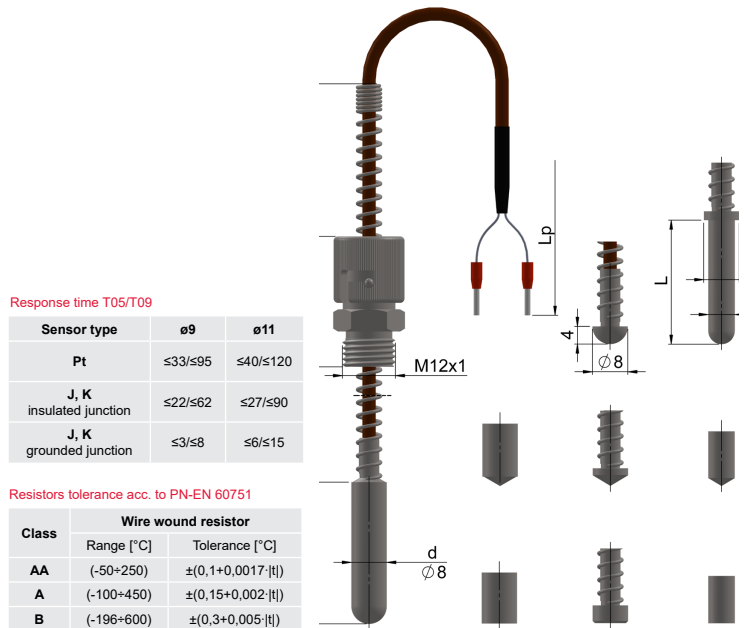


## Temperature sensors of machinery and device parts TOPE-28, TTJE-28, TTKE-28

### Dane techniczne

Measuring range / sensing element		
(-50 ÷ 400) °C	<b>Pt100</b>	class B
(-40 ÷ 400) °C	<b>J, K</b>	class 2
Sheath		
– material: steel 1.4541		
– diameter d [mm]: ø6, ø8		
– length L [mm]: 0÷100		
– spring diameter: ø8 mm		
– tip: spherical (K), flat (P) or conical (S)		
– bayonet handle with connector - nickel-plated brass		
– standard length of spherical sheath L [mm]: 13		
Lead wire		
– Cu wire or thermocouple wire: 2x0,22 mm <sup>2</sup>		
– fiberglass insulation with metal braid		
– measuring junction for TC: insulated SO		
– length L <sub>p</sub> = 1,5m (standard)		
– wires resistance Cu ~0,14 Ω/m ≈ 0,36 °C		
Options		
– Pt500, Pt1000, Ni100, Ni1000, T		
– other cable insulations PVC, silicone, acc. to requirements		
– measuring junction for TC: grounded SP		
– 3-, 4-wire connection for RTD		
– Pt100: class A (-30 ÷ 300) °C, class AA (0 ÷ 150) °C; TC: class 1		
– other threads - inch: G¼; G¾		
metric: M12x1,25; M12x1,5; M14x1,5; M16x1,5		



Response time T05/T09

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

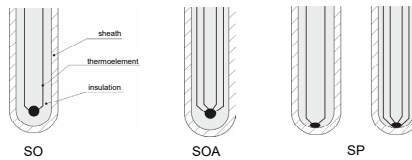
Resistors tolerance acc. to PN-EN 60751

Class	Wire wound resistor	
	Range [°C]	Tolerance [°C]
AA	(-50÷250)	±(0,1+0,0017· t )
A	(-100÷450)	±(0,15+0,002· t )
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]
J Fe-CuNi	(-40÷375) (375÷750)	±1,5 ±0,004  t	(-40÷333) (333÷750)	±2,5 ±0,0075  t
K 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-28	...	...	...	...	...	...	...	...	...	...
Resistor Pt	OP												
Thermocouple Fe-CuNi	TJ												
Thermocouple NiCr-NiAl	TK												
With tip: flat			P										
With tip: spherical			K										
With tip: conical			S										
Sheath length L [mm]							13*						
Tip diameter d [mm]								6, 8					
Thread dimension									M12x1,5*				
Resistor type										Pt100*			
Junction insulated from the sheath		for									SO		
Junction grounded		TC										SP	
Resistor class												A, B*	
Thermocouple class												1, 2	
Measuring circuit for RTD													2, 3, 4
Cable length L <sub>p</sub> [m]													1,5m*

\* or others acc. to requirements

### Ordering example

TOPE-28-K-10-6-M14x1,5-Pt100-B-2-2m