

## Temperature sensors of machinery and device parts TOPE-11, 13, TTJE-11, 13, TTKE-11, 13

### Dane techniczne

Measuring range / sensing element		
(-50 ÷ 400) °C	<b>Pt100</b>	class 2
(-40 ÷ 400) °C	<b>J, K</b>	class B
Sheath		
– material: nickel plated brass		
– sheath length: 10 mm (standard)		
– sheath tip: flat		
– standard fastening stub (TTJE-11)		
– elongated connector (TTJE-13)		
Lead wire		
– strand: 2x0,22mm <sup>2</sup> in double glass insulation and metal braid		
– measuring junction for TC: insulated SO		
– length L <sub>p</sub> =1,5m (standard)		
Options		
– Pt100, Pt500, Pt1000		
– 2-, 3-, 4-wire resistance sensor		
– measuring junction for TC: grounded SP		
– accuracy class: A, AA for resistance sensor		
1 for thermocouples		
– other threads for TT...E-11 - inch: G <sup>1</sup> / <sub>4</sub> ; G <sup>3</sup> / <sub>8</sub>		
metric: M12x1,25; M12x1,5;		
M12x1,75; 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

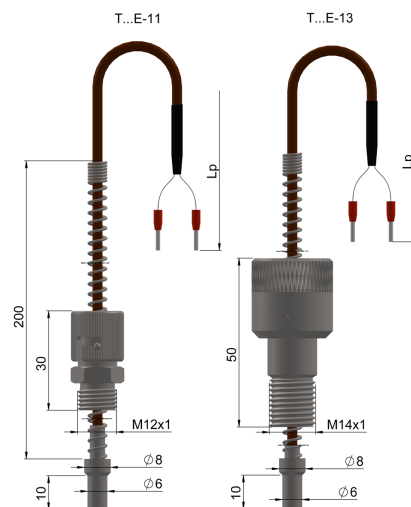
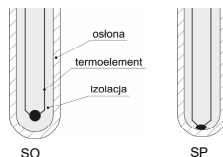
#### Resistors tolerance acc. to PN-EN 60751

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	-	...	-	...	-	...
Resistor Pt	OP								
Thermocouple Fe-CuNi	TJ								
Thermocouple NiCr-NiAl	TK								
Standard connector			11						
Elongated connector M14x1,5			13						
Measuring circuit for RTD					2, 3, 4				
Junction insulated from the sheath		for			SO				
Junction grounded		TC			SP				
Resistor class								A, B*	
Thermocouple class								1, 2	
Cable length L <sub>p</sub> [m]									1,5m*

\* or others acc. to requirements

### Ordering example

TTJE-11-SO-2-2m