

## Temperature sensors of machinery and device parts TOPGE-3, TTJGE-3, TTKGE-3

### 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		
Thread D	Standard length L [mm]	
M6	8	
M8x1	8	
M10x1	8	
M12x1,5	12	
M14x1,5	12	
M16	14	
M20x1,5	15	
M24x1,5	15	
G½	15	
G¾	20	
Lead wire		
– Cu wire or thermocouple wire: 2, 4x0,22 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		
Options		
– Pt500, Pt1000, Ni100, Ni1000, N, T		
– measuring junction for TC: grounded SP		
– 3-, 4-wire connection for RTD		
– other lead wire insulation types: PVC, silicone, teflon, acc. to requirements		
– Pt100: class A (-30 ÷ 300) °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

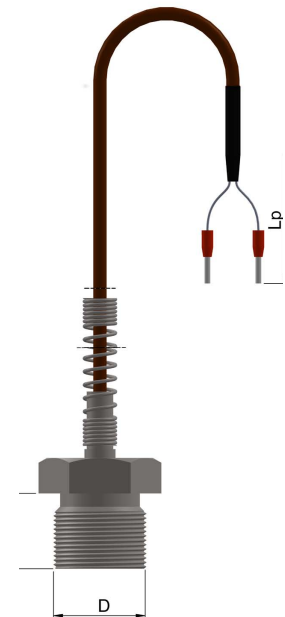
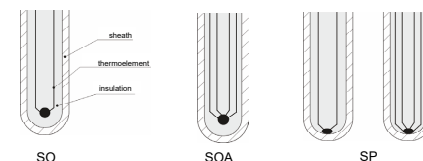
#### Resistors tolerance acc. to PN-EN 60751

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	...	GE-3	-	...	-	...	-	...	-	...	-	...
Resistor Pt	<b>OP</b>												
Thermocouple Fe-CuNi	<b>TJ</b>												
Thermocouple NiCr-NiAl	<b>TK</b>												
Resistor type			<b>Pt100*</b>										
Junction insulated from the sheath	dla		<b>SO</b>										
Junction grounded	TC		<b>SP</b>										
Resistor class										<b>A, B*</b>			
Thermocouple class										<b>1, 2</b>			
Measuring circuit for RTD										<b>2, 3, 4</b>			
Thread dimension D										<b>G¾; M6*</b>			
Thread length L [mm]											<b>8, 12</b>		
Cable length L <sub>p</sub> [m]												<b>1,5m*</b>	

\* or others acc. to requirements

### Ordering example

TTJGE-3-SO-2-M20x1,5-15-1,5m