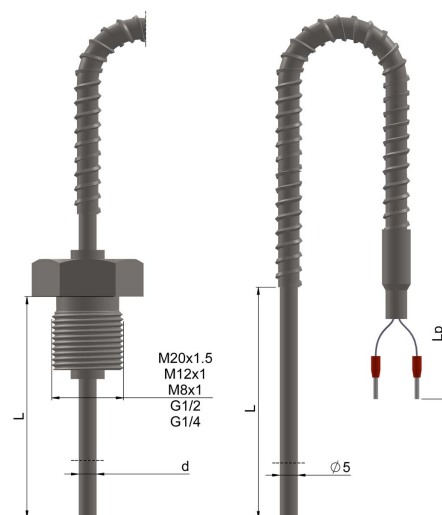


Temperature sensors of machinery and device parts TOPWO-1, TTJWO-1, TTKWO-1

Technical description

Measuring range / sensing element		
(-50 ÷ 400) °C	Pt100	class B
(-40 ÷ 400) °C	J, K	class 2
Sheath		
– material: steel 1.4541		
– length L [mm]: 50÷1000		
Thread dimension	Max. Thermowell diameter d [mm]	
M8x1	5	
M10; M10x1; G½	6	
M12; M12x1,5; M12x1	8	
G¾; M14x1,5	9	
G¾; M16x1,5	10	
G¾; M20x1,5	14	
Lead wire		
– Cu wire or thermocouple wire: 2x0,22 mm ²		
– fiberglass insulation with metal braid		
– measuring junction for TC: insulated SO		
– flexible protective hose, stainless ø7/ø5 mm		
– length L _p =1,5m (standard)		
– wires resistance Cu ~0,14 Ω/m=~-0,36 °C		
Options		
– Pt500, Pt1000, Ni100, Ni1000		
– 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		



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

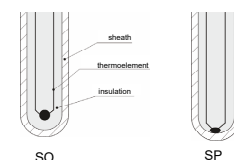
Resistors tolerance acc. to PN-EN 60751

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	...	WO-1	-	...	-
Resistor Pt	OP										
Thermocouple Fe-CuNi	TJ										
Thermocouple NiCr-NiAl	TK										
Sheath length L [mm]						500*					
Thermowell diameter d [mm] (for sensors with thread)						5, 6, 8*					
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		
Thread dimension									M8x1; M10x1*		
Cable length L _p [m]										1,5m*	

* or others acc. to requirements

Ordering example

TOPWO-1-200-Pt100-B-2-1,5m sensor with Pt100, class B, 2-wire connection connection, straight sheath ø5 mm without thread, sheath length L=200 mm, with lead wire - length L_p=1,5m

TTJWO-1-100-8-SO-1-G¾-2m sensor with thermocouple Fe-CuNi, class 1, insulated junction, sheath ø8 mm, with threaded connector G¾, lead wire length L_p= 2m