

Temperature sensors with ceramic protection tubes **PTOPC-39, PTTJC-39, PTTKC-39, PTTNC-39**  
**TTSC-39, TTRC-39, TTBC-39**

**Dane techniczne**

Measuring range / sensing element		
(-200 ÷ 600) °C	<b>Pt100</b>	class B
(-40 ÷ 750) °C	<b>J</b>	class 2
(-40 ÷ 1200) °C	<b>K, N</b>	class 2
(0 ÷ 1400) °C	<b>S, R</b>	class 2
(600 ÷ 1400) °C	<b>B</b>	class 3
Measuring insert		
s		
- material of the sheath: steel 1.4571 for resistor Pt – p. 44		
- material of the sheath: steel 1.4541 for J – p. 44		
- material of the sheath: 2.4816 (Inconel 600) for K, N – p. 44		
- material of the sheath: corundum ceramics 799 for S, R, B		
- wire diameter for S, R, B [mm]: 0,35		
Sheath		
- supporting sheath 1.4841 D [mm]: $\phi 22, \phi 32, L_{d \min} = 100$ mm		
- protection tube SINITEC, special ceramics with high resistance to strong mechanical and thermal shock		
Supporting thermowell diameter D [mm]		Ceramic thermowell dimension
	d [mm]	L <sub>c</sub> [mm]
22	16	300, 400, 500
32	22	300, 500, 700, 800
Connection head		
- AA, IP53, (-40 ÷ 100) °C		
Options		
- Pt resistor: class A, AA; thermocouple J, K, N, S, R: class 1; B class 2		
- with transmitter in DAAW head cover (S, R, B)		
- with two transmitters in DAAW head cover (Pt100, J, K, N)		
- wire diameter for S, R, B [mm]: 0,5		
Additional accessories		
- temperature transmitters – p. 225+241		
- compensation cables – p. 197		
- mounting brackets: UZ-11, UZ-21 – p. 216		

Response time T05/T09

Sensor type	$\phi 9$	$\phi 11$
<b>Pt</b>	$\leq 33/\leq 95$	$\leq 40/\leq 120$
<b>J, K insulated junction</b>	$\leq 22/\leq 62$	$\leq 27/\leq 90$
<b>J, K grounded junction</b>	$\leq 3/\leq 8$	$\leq 6/\leq 15$

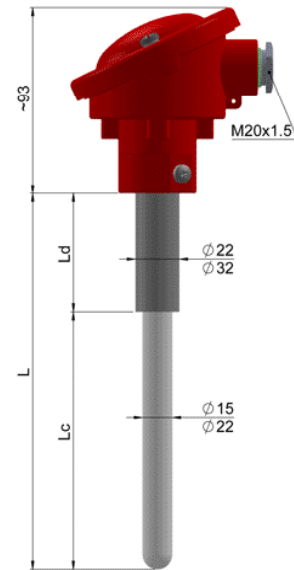
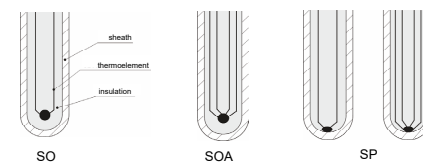
Resistors tolerance acc. to PN-EN 60751

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

Tolerance for thermocouples class acc. to PN-EN

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

Types of measuring hot junction



CZUJNIKI TEMPERATURY Z OSŁONAMI CERAMICZNYMI  
**D**

**Ordering code**

Temperature sensor	...	TT	...	C-39	...	...	...	...	...	...
Single	no sign									
Double	2									
With transmitter (Single)	AP									
With transmitter (double S, R, B)	AP2									
With two transmitters (double Pt100, J, K, N)	2AP2									
Ceramic insert for S, R, B	no sign									
Mineral insulated insert for J, K, N, Pt	P									
Resistor Pt		OP								
Thermocouple Fe-CuNi		J								
Thermocouple NiCr-NiAl		K								
Thermocouple NiCrSi-NiSi		N								
Thermocouple PtRh10-Pt		S								
Thermocouple PtRh13-Pt		R								
Thermocouple PtRh30-PtRh6		B								
Sensor sheath length L [mm]				1000*						
Ceramic thermowell length L <sub>c</sub> [mm]					800*					
Ceramic thermowell diameter d [mm]						16, 22				
Resistor class								A, B*		
Thermocouple class								1, 2, 3		
Measuring circuit for RTD									2, 3, 4	
Type of transmitter										Tx*
Setting of transmitter temperature										(0 ÷ 1200) °C*

\* or others acc. to requirements

**Ordering example**

**PTTKC-39-1000-300-22-1**