



Platinum Temperature Sensors

R – Product Series

Temperature Range: $-50^{\circ}\text{C} \dots +600^{\circ}\text{C}$

Platinum temperature sensors in round housing

Advantage: Facilitates mounting

Technical Data

Specification: DIN EN 60751

Temperature range: -50°C to $+600^{\circ}\text{C}$

Temperature Coefficient: TCR = 3850 ppm/K

Tolerance Classes:	F 0.1 (Class Y)	-50°C to $+150^{\circ}\text{C}$
	F 0.15 (Class A)	-50°C to $+300^{\circ}\text{C}$
	F 0.3 (Class B)	-50°C to $+600^{\circ}\text{C}$
	F 0.6 (Class C)	-50°C to $+600^{\circ}\text{C}$
	1/5 F 0.3 (Class K)	on request
	1/10 F 0.3 (Class K)	on request

Leads: Platinum-coated nickel wire ($\varnothing = 0.2 \text{ mm}$)
Recommended connection technology: Soldering, Welding, Crimping

Lead Lengths: 7 mm

Long-term stability: Max. Drift = Less than 0.03% after 1000h at max. operating temperature

Note: Only usable in dry environment



INNOVATIVE SENSOR TECHNOLOGY

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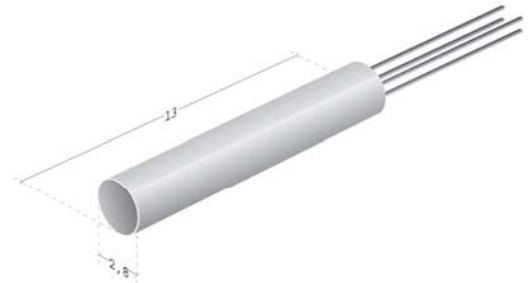
R 281

Dimensions, Lx\emptyset:	13.0 x 2.8 mm	
Nominal Resistance at 0°C (ohm):	100/500/1000	
Self Heating (mK):	Water (v= 0 m/s)	$\Delta T_w = 1.7$ at 0°C
	Air (v= 0 m/s)	$\Delta T_a = 18$ at 0°C
Response Time (s):	Water (v= 0.4 m/s)	$T_{0.5} = 2.5$ $T_{0.63} = 4.5$ $T_{0.9} = 8$
	Air (v= 1 m/s)	$T_{0.5} = 10$ $T_{0.63} = 15$ $T_{0.9} = 28$
Measuring Current (mA):	100 Ω : 1	
	500 Ω : 0.5	
	1000 Ω : 0.3	



R 281(2x)

Dimensions, Lx\emptyset:	13.0 x 2.8 mm	
Nominal Resistance at 0°C (ohm):	100/500/1000	
Self Heating (mK):	Water (v= 0 m/s)	$\Delta T_w = 2.2$ at 0°C
	Air (v= 0 m/s)	$\Delta T_a = 25$ at 0°C
Response Time (s):	Water (v= 0.4 m/s)	$T_{0.5} = 2$ $T_{0.63} = 2.5$ $T_{0.9} = 5.5$
	Air (v= 1 m/s)	$T_{0.5} = 10$ $T_{0.63} = 12$ $T_{0.9} = 22$
Measuring Current (mA):	100 Ω : 1	
	500 Ω : 0.5	
	1000 Ω : 0.3	
Note:	2 sensors in 1 ceramic tube	



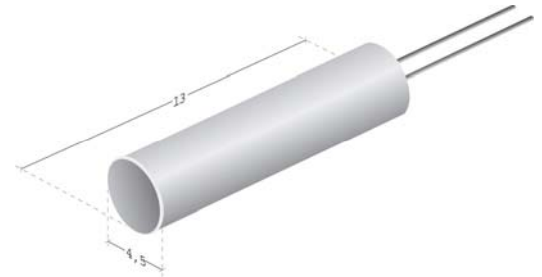
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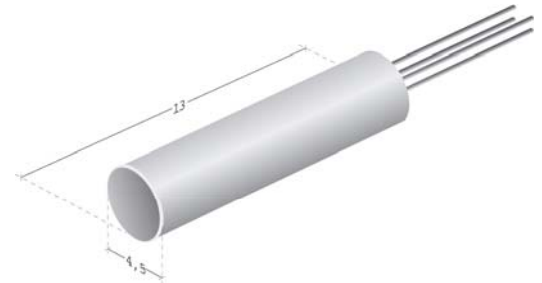
R 451

Dimensions, LxØ:	13.0 x 4.5 mm	
Nominal Resistance at 0°C (ohm):	100/500/1000	
Self Heating (mK):	Water (v= 0 m/s) Air (v= 0 m/s)	$\Delta T_w = 1.2$ at 0°C $\Delta T_a = 13$ at 0°C
Response Time (s):	Water (v= 0.4 m/s)	$T_{0.5} = 8$ $T_{0.63} = 10$ $T_{0.9} = 22$
	Air (v= 1 m/s)	$T_{0.5} = 12$ $T_{0.63} = 22$ $T_{0.9} = 40$
Measuring Current (mA):	100 Ω : 1 500 Ω : 0.5 1000 Ω : 0.3	



R 451(2x)

Dimensions, LxØ:	13.0 x 4.5 mm	
Nominal Resistance at 0°C (ohm):	100/500/1000	
Self Heating (mK):	Water (v= 0 m/s) Air (v= 0 m/s)	$\Delta T_w = 1.2$ at 0°C $\Delta T_a = 13$ at 0°C
Response Time (s):	Water (v= 0.4 m/s)	$T_{0.5} = 8$ $T_{0.63} = 10$ $T_{0.9} = 22$
	Air (v= 1 m/s)	$T_{0.5} = 12$ $T_{0.63} = 22$ $T_{0.9} = 40$
Measuring Current (mA):	100 Ω : 1 500 Ω : 0.5 1000 Ω : 0.3	
Note:	2 sensors in 1 ceramic tube	





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Order Example:

P	1K0.	281.	6	W.	B.	R
1	2	3	4	5	6	7

1. *Material Identification = Platinum temperature sensor*
2. *Resistance Value in ohm = $1000\Omega / 0^{\circ}\text{C}$*
3. *Chip Dimension = $13.0 \times 2.8 \text{ mm}$*
4. *Temperature Range = -50°C to $+600^{\circ}\text{C}$*
5. *Extension = Wire Connections*
6. *Tolerance Class = DIN EN 60751 F 0.3 (former Class B)*
7. *Special = Round housing*



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