



# R-Series

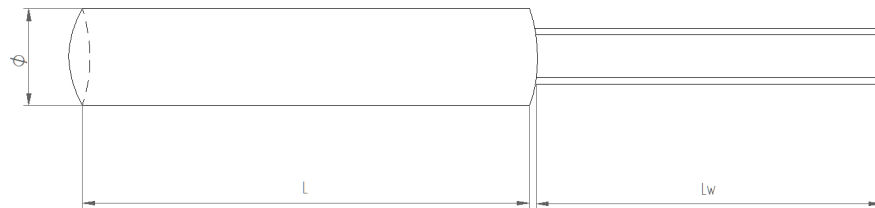
## Platinum sensor with round ceramic housing

### For medium temperatures

#### Benefits & Characteristics

- Same dimensions as a traditional wire wound sensor - easy interchangeability into existing applications
- Available in class F0.15 within a temperature range from -200 °C to +600 °C (PW-Series)
- Easy to assemble (boreholes etc.)
- Fast response time (depending on assembly)
- Excellent long-term stability
- Low self-heating
- Vibration and temperature shock resistant (depending on assembly)
- Customer-specific solutions available upon request

#### Illustration <sup>1)</sup>



Dimension tolerances:  $\varnothing \pm 0.2 \text{ mm}$ ,  $L \pm 1 \text{ mm}$ ,  $L_w$  (up to 30 mm)  $\pm 1 \text{ mm}$

<sup>1)</sup> For actual size, see dimensions

#### Technical Data

Operating temperature range:	-200 °C to +600 °C	
Nominal resistance:*	100 $\Omega$ at 0 °C	
	500 $\Omega$ at 0 °C	
	1000 $\Omega$ at 0 °C	
Characteristics curve:*	3850 ppm/K	
	3911 ppm/K (PG Series)	
Long-term stability:	< 0.04 % at 1000 h at maximal operating temperature	
Tolerance class (dependent on temperature range):*	IST AG reference	
	IEC 60751 F0.15	A
	IEC 60751 F0.3	B
	IEC 60751 F0.6	C
	IEC 60751 F0.1	Y
Connection:*	Ag-wire, $\varnothing$ 0.25 mm (solderable, weldable)	
	Pt-cladded Ni-wire, $\varnothing$ 0.2 mm (solderable, weldable, crimpable, brazeable)	
	Pt-wire, $\varnothing$ 0.2 mm (solderable, weldable, crimpable, brazeable)	



Recommended applied current: <sup>2)</sup>	1 mA at 100 Ω
<sup>2)</sup> Self-heating must be considered	0.5 mA at 500 Ω
	0.3 mA at 1000 Ω

Other alternatives:*	Insulated wires, stranded wires etc. Two sensors in one ceramic housing
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\* Customer-specific alternatives available

### Order Information -200 °C to +400 °C (Ag-wire, Ø 0.25 mm)

Size	Dimensions (Ø x L; L <sub>w</sub> in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
<b>Nominal resistance: 100 Ω at 0 °C</b>				
281	2.8 x 13.0; 10.0	Upon request	P0K1.281.4W.A.010.R	P0K1.281.4W.B.010.R
Order code			100371	100370
Former order code			010.00477	010.00476
451	4.5 x 13.0; 8.0	Upon request	P0K1.451.4W.A.008.R	Upon request
Order code			Upon request	
Former order code			010.00771	
451	4.5 x 13.0; 10.0	Upon request	Upon request	P0K1.451.4W.B.010.R
Order code				Upon request
Former order code				010.00481

### Order Information -200 °C to +600 °C (Pt-cladded Ni-wire, Ø 0.2 mm)

Size	Dimensions (Ø x L; L <sub>w</sub> in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
<b>Nominal resistance: 100 Ω at 0 °C</b>				
281	2.8 x 13.0; 7.0	Upon request	P0K1.281.6W.A.007.R	P0K1.281.6W.B.007.R
Order code			100373	100372
Former order code			010.00479	010.00478
451	4.5 x 13.0; 7.0	Upon request	P0K1.451.6W.A.007.R	P0K1.451.6W.B.007.R
Order code			100374	Upon request
Former order code			010.00483	010.00482
<b>2x 100 Ω at 0 °C (two sensors in one housing)</b>				
281	2.8 x 13.0; 10.0/15.0	Upon request	Upon request	2xP0K1.281.6W.B.010/015.R
Order code				101011
Former order code				010.02328
451	4.5 x 13.0; 6.0/8.0	Upon request	Upon request	2xP0K1.451.6W.B.006/008.R
Order code				101298
Former order code				010.02826



**Nominal resistance: 1000 Ω at 0 °C**

281	2.8 x 13.0; 7.0	Upon request	P1K0.281.6W.A.007.R	P1K0.281.6W.B.007.R
Order code			101039	101070
Former order code			010.02388	010.02451
451	4.5 x 13.0; 7.0	Upon request	Upon request	P1K0.451.6W.B.007.R
Order code				Upon request
Former order code				010.02628

**Order Information -200 °C to +400 °C, PG-Series (Pt-cladded Ni-wire, Ø 0.2 mm)**

Size	Dimensions (Ø x L; L <sub>w</sub> in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
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**Nominal resistance: 100 Ω at 0 °C**

281	2.8 x 13.0; 6.0	Upon request	PG0K1.281.4K.A.006.R	PG0K1.281.4K.B.006.R
Order code			Upon request	Upon request
Former order code			310.00447	310.00264

**Order Information -200 °C to +600 °C, PW-Series (Pt-wire, Ø 0.2 mm)**

Size	Dimensions (Ø x L; L <sub>w</sub> in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
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**Nominal resistance: 100 Ω at 0 °C**

281	2.8 x 13.0; 4.0	PW0K1.281.7W.Y.004.R	PW0K1.281.7W.A.004.R	PW0K1.281.7W.B.004.R
Order code		Upon request	104060	150638
Former order code		310.00263	310.00255	310.00408

**Additional Documents**

Application Note:	Document name: ATP_E
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# Order Information

## Platinum Sensor

### Secondary reference

#### Material

P = Platinum

#### TCR

= Pt 3850 ppm/K    G = Pt 3911 ppm/K  
U = Pt 3750 ppm/K    W = Pt 3850 ppm/K (extended operating temperature range in class A)

#### Resistance in $\Omega$ at 0 °C

#### Size in mm

#### Operating temperature range

1 = -50 °C to +150 °C    6 = -200 °C to +600 °C  
2 = -50 °C to +200 °C    7 = -200 °C to +750 °C  
3 = -200 °C to +300 °C    8 = -200 °C to +850 °C  
4 = -200 °C to +400 °C    10 = -70 °C to +1000 °C

#### Connections

S = SIL    FK = flat wire customer-specific  
I = insulated wire    SW = perpendicular wire  
K = customer specific    L = insulate stranded wire  
W = wire    E = enameled Cu-wire  
FW = flat wire

#### Tolerance class

A = IEC 60751 F0.15    K = customer specific  
B = IEC 60751 F0.3    P = pair  
C = IEC 60751 F0.6    G = group  
Y = IEC 60751 F0.1

#### Wire length in mm

#### Special

T = substrate thickness 0.25 mm    M = metallized backside  
D = substrate thickness 0.38 mm    U = inverted welding  
R = round housing    S = special  
W = sintered powder

P    OK1. 451. 4    W.    A. 010. R



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