



R-Series



Platinum sensor with round ceramic housing

For medium temperatures

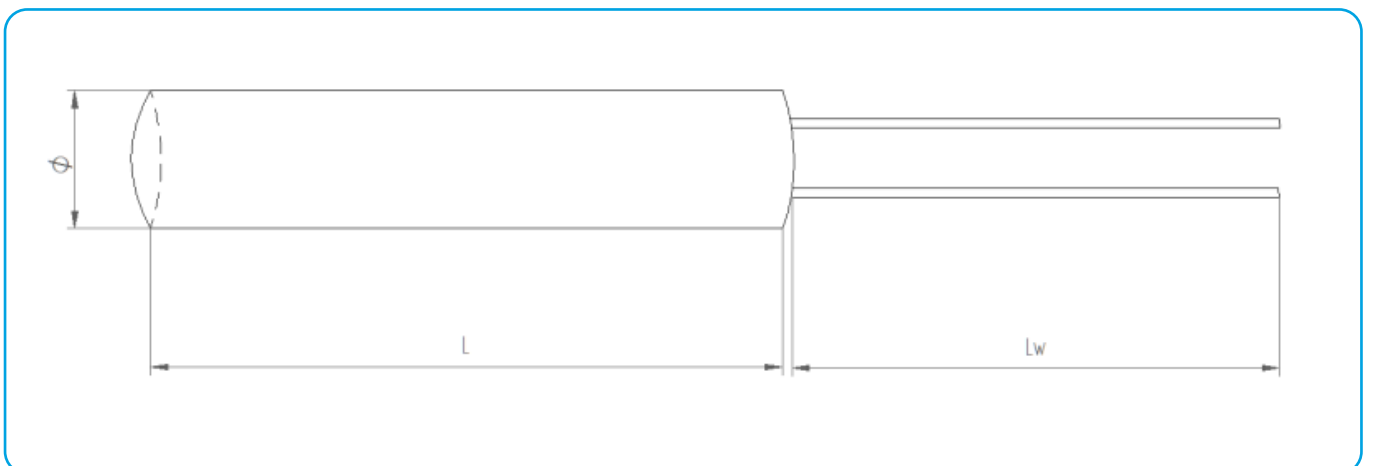


Benefits & characteristics

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



Illustration ¹⁾



Dimension tolerances

$\text{Ø} \pm 0.2 \text{ mm}$, $L \pm 1 \text{ mm}$, $LW \text{ (up to 30 mm)} \pm 1 \text{ mm}$

¹⁾ for actual size see dimensions in order information



Technical Data



Operating temperature range: -50 °C to +600 °C



Nominal resistance:*
100 Ω at 0 °C
500 Ω at 0 °C
1000 Ω 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: * **IST reference**
(dependent on temperature range)

IEC 60751 F0.15	A
IEC 60751 F0.3	B
IEC 60751 F0.6	C
GOST 8.625-2006 F0.15	A
GOST 8.625-2006 F0.3	B



Connection: *:

- Ag-wire, Ø 0.25 mm (solderable, weldable)
- Pt-cladded Ni-wire, Ø 0.2 mm (solderable, weldable, crimpable, brazeable)
- Pt-wire, Ø 0.2 mm (solderable, weldable, crimpable, brazeable)

Recommended applied current:²⁾
1 mA at 100 Ω
0.5 mA at 500 Ω
0.3 mA at 1000 Ω

²⁾Self-heating must be considered

Other alternatives*
Insulated wires, stranded wires etc.
Two sensors in one ceramic housing

* Customer-specific alternatives available



Order Information



Nominal Resistance	Size	Dimensions (Ø x L in mm)	Class*	Order code	Product name (Secondary reference)	Wire length in mm	Special
--------------------	------	--------------------------	--------	------------	------------------------------------	-------------------	---------

-200 °C to +400 °C with Ag-wire, Ø 0.25 mm

100 Ω	281	2.8 x 13.0	F0.15 (class A)	100371	P0K1.281.4W.A.010.R	10	
100 Ω	281	2.8 x 13.0	F0.3 (class B)	100370	P0K1.281.4W.B.010.R	10	
100 Ω	451	4.5 x 13.0	F0.15 (class A)	On request	P0K1.451.4W.A.008.R	8	
100 Ω	451	4.5 x 13.0	F0.3 (class B)	On request	P0K1.451.4W.B.010.R	10	

-200 °C to +600 °C with Pt-cladded Ni wire, Ø 0.2 mm

100 Ω	281	2.8 x 13.0	F0.15 (class A)	100373	P0K1.281.6W.A.007.R	7	
100 Ω	281	2.8 x 13.0	F0.3 (class B)	100372	P0K1.281.6W.B.007.R	7	
100 Ω	451	4.5 x 13.0	F0.15 (class A)	100374	P0K1.451.6W.A.007.R	7	
100 Ω	451	4.5 x 13.0	F0.3 (class B)	On request	P0K1.451.6W.B.007.R	7	
1000 Ω	281	2.8 x 13.0	F0.15 (class A)	101039	P1K0.281.6W.A.007.R	7	
1000 Ω	281	2.8 x 13.0	F0.3 (class B)	101070	P1K0.281.6W.B.007.R	7	
1000 Ω	451	4.5 x 13.0	F0.3 (class B)	On request	P1K0.451.6W.B.007.R	7	

Two sensors in one housing: 2x -200 °C to +600 °C with Pt-cladded Ni wire, Ø 0.2 mm –

100 Ω	281	2.8 x 13.0	F0.3 (class B)	101011	2xP0K1.281.6W.B.010/015.R	10/15	Two sensors
100 Ω	451	4.5 x 13.0	F0.3 (class B)	101298	2xP0K1.451.6W.B.006/008.R	6/8	Two sensors

PG-Series -200 °C to +400 °C with Pt-cladded Ni wire, Ø 0.2 mm

100 Ω	281	2.8 x 13.0	F0.15 (class A)	104079	PG0K1.281.4K.A.006.R	6	
100 Ω	281	2.8 x 13.0	F0.3 (class B)	104063	PG0K1.281.4K.B.006.R	6	

PW-Series -200 °C to +600 °C with Pt-cladded Ni wire, Ø 0.2 mm

100 Ω	281	2.8 x 13.0	F0.1(class Y)	On request	PW0K1.281.7W.Y.004.R	4	
-------	-----	------------	---------------	------------	----------------------	---	--

Additional Documents

Application Note Platinum Temperature Sensors

Document name: ATP_E



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 Ω 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 = Extended wire	L = Insulated stranded wire
W = Wire	E = Enameled Cu-wire
FW = Flat wire	SE = Perpendicular enameled Cu-wire

Tolerance class

A = IEC 60751 F0.15	A = GOST 8.625-2006 F0.15
B = IEC 60751 F0.3	B = GOST 8.625-2006 F.03
C = IEC 60751 F0.6	K = Customer-specific
Y = IEC 60751 F0.1	P = Pair
	G = Group

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. B. 007. R



Innovative Sensor Technology IST AG • Stegrütistrasse 14 • 9642 Ebnat-Kappel • Switzerland
 +41 71 992 01 00 • info@ist-ag.com • www.ist-ag.com

Technical specifications are subject to change without prior notice. The information contained in this data sheet has been carefully reviewed and is believed to be accurate; however, no liability is assumed for any errors or omissions. Continuous exposure to extreme operating conditions may impact product lifetime or reliability. The customer is solely responsible for assessing the suitability and fitness of the product for their specific application. This product is not designed, authorized, or warranted for use in life support or safety-critical applications. The customer agrees to hold the supplier harmless from any claims, damages, or liabilities arising from such use. No explicit or implied warranties, including but not limited to warranties of merchantability or fitness for a particular purpose, are provided. The material provided herein may not be reproduced, adapted, merged, translated, stored, or utilized in any form without prior written consent from the copyright holder. No transfer of any intellectual property rights is granted or implied. All rights reserved.