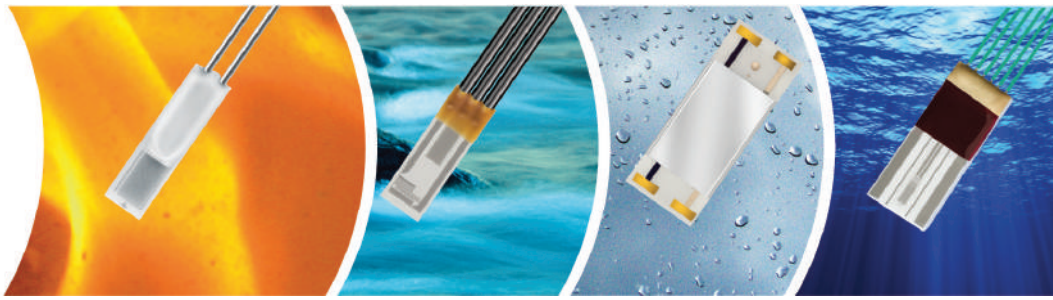
INNOVATIVE SENSOR TECHNOLOGY



PLATINUM TEMPERATURE SENSORS

CONTENTS

Innovative Sensor Technology

Company Profile:

Innovative Sensor Technology IST USA Division is a fully owned subsidiary of Innovative Sensor Technology IST AG, based in Switzerland. We are a world-class manufacturer of thin-film platinum and nickel RTD temperature sensors, capacitive humidity sensors, mass flow sensors, and conductivity sensors at the component level. With our state-of-the-art manufacturing technology, we offer both standard and custom sensors to satisfy various applications. Our sensors cover requirements for system integrators in the process control, building automation, test & measurement, medical, automotive, and appliance industries.

IST USA Division offers high flexibility in sourcing and supporting our products. We offer in-house stock and on-site engineering support, application and after sales support.

Line of Products:

The core technology of all IST products is thin-film deposition, in which a thin layer of metal is deposited onto a ceramic substrate. This technology allows for the production of extremely small sensors with enhanced operational capabilities such as improved response times, robustness, and packaging versatility.

IST product line includes:

- Temperature Sensors: Platinum and Nickel RTD's, Temperature Sensor IC's (TSic)
- Mass Flow Sensors
- Capacitive Humidity Sensors: Passive components, calibrated modules - analogue and digital
- Conductivity Sensors

IST consults and supports the development of a customized sensor, for all measurement technologies, to define the key attributes of a custom specific sensor layout, for example nominal resistance, TCR value, dimensions, extension type, housing, layout, substrate, wire length, capacitive value, polymer, and cell constant.

Application Development Service:

Our highly qualified technical teams provide consulting, development, and production assistance for your projects. IST's application development department can act as an interface between your application and our sensor components.

We employ our simplified embedded frontend solutions (electronic and software based), modules, and software algorithms, to support a fast design-in-process and provide ideal sensor operation conditions during your development and for your application.

We are looking forward to your challenging inquiries and to sharing our experience in developing innovative, turnkey designs that add value to your products.

Innovative Sensor Technology USA Division, 9516 W. Flamingo Rd., # 210, Las Vegas, NV 89147, Phone +1 702 894 9891, Fax +1 702 894 9993
contact@ist-usadivision.com, www.ist-usadivision.com

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

Order Information
Wired RTD Platinum Sensor

INNOVATIVE SENSOR TECHNOLOGY

Material

P	=	Platin

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

Connection

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	=	DIN EN 60751 F0.15	K	=	customer specific
B	=	DIN EN 60751 F0.3	P	=	pair
C	=	DIN EN 60751 F0.6	G	=	group
Y	=	DIN EN 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 0K1. 232. 6 W. A. 010. U

ISO 9001

RoHS

Innovative Sensor Technology USA Division, 9516 W. Flamingo Rd., # 210, Las Vegas, NV 89147, Phone +1 702 894 9891, Fax +1 702 894 9993
contact@ist-usadivision.com, www.ist-usadivision.com

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

Order Information

Surface Mount RTD Platinum Sensor

INNOVATIVE SENSOR TECHNOLOGY

Material

P	=	Platin

TCR

Pt 3850 ppm/K		

Resistance in Ω at 0 °C

Size in mm

Operating temperature range

1	=	-50 °C to +150 °C	4	=	-50 °C to +250 °C
2	=	-50 °C to +150 °C / 250 °C	5	=	-50 °C to +400 °C
3	=	-50 °C to +150 °C / 250 °C	6	=	-50 °C to +600 °C

Connection (SMD/FC)

(2)P	=	tin-coated (96.5Sn/3Ag/0.5Cu), LMP lead-free, (reflow soldering)	(1)FC	=	tin-coated, LMP lead-free, 96.5Sn/3Ag/0.5Cu)
(3)P	=	tin-coated (5Sn/93.5Pb/1.5Ag), HMP, (reflow soldering)	(2)FC	=	tin-coated, soldering depot, HMP, 5Sn/93.5Pb/1.5Ag
(4)P	=	gold-coated, (solderable coating)	(3)FC	=	Au-Pads (bonding pads), various types available
			(5)FC	=	reinforced thin film Pt-pads
			(6)FC	=	thick film Pt-pads

Tolerance class

A[1)]	=	DIN EN 60751 F0.15	C	=	DIN EN 60751 F0.6
B	=	DIN EN 60751 F0.3	K	=	customer specific

Special

S	=	special	M	=	metallized backside

P 0K1. 0805. 2 P. A. S

1) Class A only available as SMD

ISO 9001

RoHS

Innovative Sensor Technology USA Division, 9516 W. Flamingo Rd., # 210, Las Vegas, NV 89147, Phone +1 702 894 9891, Fax +1 702 894 9993
contact@ist-usadivision.com, www.ist-usadivision.com

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

Platinum Temperature Sensors
CustomSens

INNOVATIVE SENSOR TECHNOLOGY

Thin film temperature sensors with universal connection possibilities

To best serve our customer needs, IST policy is putting forward as many sensor options as possible. The true to this policy is to create and provide a versatile CustomSens product solution facing all customer specific requirements. The highlight of these thin-film temperature sensor solutions is the flexibility of determining your own packaging which could help to improve your assembly solutions considerably.

You can decide how much work we should take off your hands. You can choose between short or long leads, whether they are to be bare or insulated, and whether the sensor is to be completed in 2-, 3- or even 4-wire technology. It is not only the great choice of these variables which offers you many advantages.

Through our customized connection structure we can propose you sensors directly soldered on a metallic surface (such as copper, stainless steel, or brass) and which is also characterized by superior product properties, giving you a double benefit.

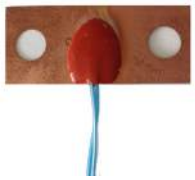
Universal connection solutions

Directly welded:
Leads up to 1000mm, 2- / 3-/ 4-wire, bare wire, PTFE insulated solutions (-50° +200°C), single wire or stranded wire (generally AWG30, or AWG28/7), with connectors (e.g. ST PHR-2, ST HR-3, Molex 6471).

Extended:
All lead length available, 2- / 3-/ 4-wire extensions, extended by soldering process, welding or brazing, connection protections using shrinking sleeves, PTFE insulated solutions (-50° +200°C), or using glass fibre sleeves (-50° +400°C).

Sensors soldered on a metallic surface

All our sensor solutions with metallized backside can be soldered in a metallic sheet or surface. Enhanced thermal contact to the measured medium improves response time considerably.



Based on our experience and outstanding soldering process we can offer you various solutions with backside solderable sensors (even on stainless steel materials) at favorable prices.

Sensors with soft-coating

Depending on the assembly method and various materials used for housing and potting, the sensor element could change its characteristic curve or basic value.

We can offer you sensors with soft-coating creating a deformable zone to avoid any mechanical stress against the sensing element caused by embedding materials.

Sensors with custom housing

Within our large product range we can offer you custom specific housings. Depending on your requirements with regard to dimensions, electrical specifications, temperature range, tolerances etc., or based on your formal drawing, we can propose you a suitable assembly solution.

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

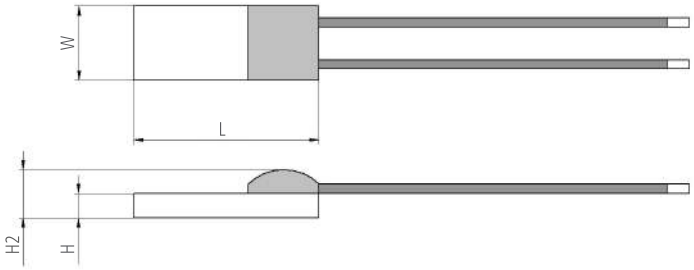
150 °C series
Wired RTD Platinum Sensor
For low temperatures

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Excellent long-term stability
- Low self-heating
- Long isolated wires
- Fast response time
- Metalized backside available
- Customer specific sensor available upon request

Illustration [1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	-50 °C to +150 °C	
Nominal resistance:*	100 Ω at 0 °C	
	500 Ω at 0 °C	
	1000 Ω at 0 °C	
Characteristics curve:*	3850 ppm/K	
Long-term stability:	< 0.04 % at 1000 h at maximal operating temperature	
Tolerance class (dependent on temperature range):*		IST AG reference
	DIN EN 60751 F0.15	A
	DIN EN 60751 F0.3	B
	DIN EN 60751 F0.6	C
	DIN EN 60751 F0.1	Y
Connection:*	Enameled Cu wire, Ø 0.2 mm	
Alternative wire construction:*	Inverted wires	
	Extended wires	
Recommended applied current:[1)]	1 mA at 100 Ω	
[1) Self-heating must be considered]	0.5 mA at 500 Ω	
	0.3 mA at 1000 Ω	
Other alternatives:*	Metalized backside	
	Housed in round ceramics (for dry environments only)	
	Grouped and paired	
	Substrate thickness	

* Customer specific alternatives available

150 °C series
Wired RTD Platinum Sensor
For low temperatures

TEMPERATURE
FLOW
HUMIDITY
CONDUCTIVITY

INNOVATIVE SENSOR TECHNOLOGY

Order Information - 1E (Enameled Cu wire, Ø 0.2 mm (161) / Ø 0.15 mm (308))

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	Upon request	Upon request	P0K1.161.1E.B.065
Order code				010.00693
308	3 x 0.8 x 0.4 / 1	Upon request	Upon request	P0K1.308.1E.B.100
Order code				010.01672
With metalized backside				
232	2.3 x 2 x 0.65 / 1.3			P0K1.232.1E.B.015.M
Order code				010.02444
Nominal resistance: 1000 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	Upon request	P1K0.161.1E.A.040	P1K0.161.1E.B.020
Order code			010.01732	010.02327
308	3 x 0.8 x 0.4 / 1	Upon request	Upon request	P1K0.308.1E.B.050
Order code				010.01189

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

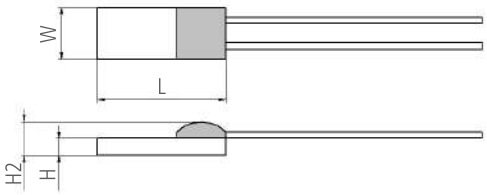
200 °C series
Wired RTD Platinum Sensor
For low temperatures

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Excellent long-term stability
- Low self-heating
- Long isolated wires
- Stranded wires available
- Fast response time
- Metalized backside available
- Customer specific sensor available upon request

Illustration[1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	-50 °C to +200 °C	
Nominal resistance:*	100 Ω at 0 °C	
	500 Ω at 0 °C	
	1000 Ω at 0 °C	
Characteristics curve:*	3850 ppm/K	
Long-term stability:	< 0.04 % at 1000 h at maximal operating temperature	
Tolerance class (dependent on temperature range):*		IST AG reference
	DIN EN 60751 F0.15	A
	DIN EN 60751 F0.3	B
	DIN EN 60751 F0.6	C
	DIN EN 60751 F0.1	Y
Connection:*	Cu/Ag single wire with PTFE (solderable, weldable, crimpable)	
	Cu/Ag stranded wire with PTFE (solderable, weldable, crimpable)	
	Ag-wire, Ø 0.25 mm, metalized backside	
Alternative wire construction:*	Inverted wires	
	Extended wires	
Recommended applied current:[1)]	1 mA at 100 Ω	
[1)] Self-heating must be considered	0.5 mA at 500 Ω	
	0.3 mA at 1000 Ω	

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

200 °C series
Wired RTD Platinum Sensor
For low temperatures

INNOVATIVE SENSOR TECHNOLOGY

Other alternatives:*	Metalized backside
	Housed in round ceramics (for dry environments only)
	Grouped and paired
	Substrate thickness

* Customer specific alternatives available

Order Information - 2I (Cu/Ag-wire, AWG30, PTFE insulated)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	Upon request	Upon request	P0K1.161.2I.B.050
Order code				010.02677
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K1.232.2I.B.030
Order code				010.02071
232	2.3 x 2 x 0.65 / 1.3	Upon request	P0K1.232.2I.A.050	P0K1.232.2I.B.050
Order code			010.02487	010.00678
516	5 x 1.6 x 0.65 / 1.3	Upon request	Upon request	P0K1.516.2I.B.030
Order code				010.00508
520	5 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K1.520.2I.B.100
Order code				010.00110
538	5 x 3.8 x 0.65 / 1.3	Upon request	Upon request	P0K1.538.2I.B.060
Order code				010.00527
102	10 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K1.102.2I.B.050
Order code				010.01710
Nominal resistance: 500 Ω at 0 °C				
516	5 x 1.6 x 0.65 / 1.3	Upon request	Upon request	P0K5.516.2I.B.080
Order code				010.02278
538	5 x 3.8 x 0.65 / 1.3	Upon request	Upon request	P0K5.538.2I.B.035
Order code				010.00200
102	10 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K5.102.2I.B.070
Order code				010.00210
Nominal resistance: 1000 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	Upon request	Upon request	P1K0.161.2I.B.150
Order code				010.02674
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P1K0.232.2I.B.015
Order code				010.01691
232	2.3 x 2 x 0.65 / 1.3	P1K0.232.2I.Y.150	P1K0.232.2I.A.050	P1K0.232.2I.B.050
Order code		010.02475	010.02712	010.02225

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

200 °C series
Wired RTD Platinum Sensor
For low temperatures

INNOVATIVE SENSOR TECHNOLOGY

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P1K0.232.2I.B.080
Order code				010.02888
520	5 x 2 x 0.65 / 1.3	Upon request	P1K0.520.2I.A.050	P1K0.520.2I.B.050
Order code			010.00566	010.00565
102	10 x 2 x 0.65 / 1.3	Upon request	Upon request	P1K0.102.2I.B.045
Order code				010.00699
102	10 x 2 x 0.65 / 1.3	Upon request	Upon request	P1K0.102.2I.B.120
Order code				010.02810

Order Information - 2L (Cu/Ag-stranded wire, AWG28/7, PTFE insulated)

Nominal resistance: 100 Ω at 0 °C

202	2 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K1.202.2L.B.010
Order code				010.02392
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K1.232.2L.B.050
Order code				010.00966
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K1.232.2L.B.100
Order code				010.00609
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K1.232.2L.B.150
Order code				010.00574
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K1.232.2L.B.1500
Order code				010.02115
520	5 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K1.520.2L.B.250
Order code				010.01116

Nominal resistance: 1000 Ω at 0 °C

232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P1K0.232.2L.B.150
Order code				010.00408
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P1K0.232.2L.B.200
Order code				010.01884
102	10 x 2 x 0.65 / 1.3	Upon request	Upon request	P1K0.102.2L.B.270
Order code				010.00655

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

200 °C series
Wired RTD Platinum Sensor
For low temperatures

INNOVATIVE SENSOR TECHNOLOGY

Order Information - 2W (Ag-wire, Ø 0.25 mm, metalized backside)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
232	2.3 x 2 x 0.65 / 1.3	Upon request	P0K1.232.2W.A.010.M	P0K1.232.2W.B.010.M
Order code			010.01684	010.00661
Nominal resistance: 1000 Ω at 0 °C				
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P1K0.232.2W.B.010.M
Order code				010.02768

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

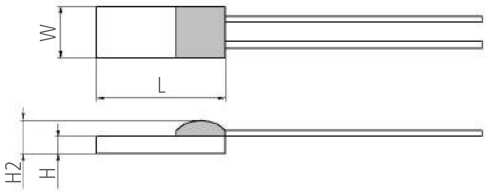
300 °C series
Wired RTD Platinum Sensor
For low to medium temperatures

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Excellent long-term stability
- Low self-heating
- Optimal price/performance ratio
- Perpendicular wires available
- Au coated Ni-wire available
- Metalized backside available
- Customer specific sensor available upon request

Illustration[1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	-200 °C to +300 °C	
Nominal resistance:*	100 Ω at 0 °C	
	500 Ω at 0 °C	
	1000 Ω at 0 °C	
Characteristics curve:*	3850 ppm/K	
Long-term stability:	< 0.04 % at 1000 h at maximal operating temperature	
Tolerance class (dependent on temperature range):*		IST AG reference
	DIN EN 60751 F0.15	A
	DIN EN 60751 F0.3	B
	DIN EN 60751 F0.6	C
	DIN EN 60751 F0.1	Y
Connection:*	Ni-wire Au coated, Ø 0.2 mm	
	Ni flat wire Au coated, 0.2 x 0.4 mm (HxW) (solderable, weldable, crimpable)	
	Ag-wire, Ø 0.25 mm	
	Ni-wire, Ø 0.2 mm	
Alternative wire construction:*	Inverted wires	
	Perpendicular wires	
Recommended applied current:[1)]	1 mA at 100 Ω	
[1)] Self-heating must be considered	0.5 mA at 500 Ω	
	0.3 mA at 1000 Ω	

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

300 °C series
Wired RTD Platinum Sensor
For low to medium temperatures

INNOVATIVE SENSOR TECHNOLOGY

Other alternatives:*	Metalized backside
	Housed in round ceramics (for dry environments only)
	Grouped and paired
	Substrate thickness

* Customer specific alternatives available

Order Information - 3K (Ni wire Au coated, Ø 0.2 mm / Ø 0.15 mm (308))

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
202	2 x 2 x 0.65 / 1.3	Upon request	P0K1.202.3K.A.010	P0K1.202.3K.B.010
Order code			010.02600	010.02599
216	2.5 x 1.6 x 0.65 / 1.3	P0K1.216.3K.Y.010	P0K1.216.3K.A.010	P0K1.216.3K.B.010
Order code		010.02688	010.02689	010.02690
308	3 x 0.8 x 0.4 / 0.6	Upon request	P0K1.308.3K.A.007	P0K1.308.3K.B.007
Order code			310.00432	310.00433
520	5 x 2 x 0.65 / 1.3	Upon request	P0K1.520.3K.A.010	P0K1.520.3K.B.010
Order code			010.02737	010.02738
102	10 x 2 x 0.65 / 1.3	Upon request	P0K1.102.3K.A.010	P0K1.102.3K.B.010
Order code			010.02740	010.02739
Nominal resistance: 500 Ω at 0 °C				
202	2 x 2 x 0.65 / 1.3	Upon request	P0K5.202.3K.A.015	P0K5.202.3K.B.015
Order code			010.02631	010.02632
Nominal resistance: 1000 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	Upon request	P1K0.161.3K.A.020	P1K0.161.3K.B.020
Order code			310.00599	310.00607
202	2 x 2 x 0.65 / 1.3	Upon request	P1K0.202.3K.A.010	P1K0.202.3K.B.010
Order code			010.02659	010.02534

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

300 °C series
Wired RTD Platinum Sensor
For low to medium temperatures

INNOVATIVE SENSOR TECHNOLOGY

Order Information - 3FW (Ni flat wire Au coated, 0.2 x 0.4 mm (HxW)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
202	2 x 2 x 0.65 / 1.3	P0K1.202.3FW.Y.007	P0K1.202.3FW.A.010	P0K1.202.3FW.B.010
Order code		010.02207	010.02035	010.01983
232	2.3 x 2 x 0.65 / 1.3	P0K1.232.3FW.Y.007	P0K1.232.3FW.A.007	P0K1.232.3FW.B.007
Order code		010.01119	010.01182	010.01118
Nominal resistance: 500 Ω at 0 °C				
202	2 x 2 x 0.65 / 1.3	Upon request	P0K5.202.3FW.A.007	P0K5.202.3FW.B.007
Order code			010.02389	010.02282
232	2.3 x 2 x 0.65 / 1.3	P0K5.232.3FW.Y.007	P0K5.232.3FW.A.007	P0K5.232.3FW.B.007
Order code		010.01655	010.01656	010.01657
Nominal resistance: 1000 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	Upon request	P1K0.161.3FW.A.010	P1K0.161.3FW.B.010
Order code			310.00231	310.00128
202	2 x 2 x 0.65 / 1.3	P1K0.202.3FW.Y.007	P1K0.202.3FW.A.007	P1K0.202.3FW.B.007
Order code		010.02310	010.02049	010.01982
216	2 x 1.6 x 0.65 / 1.3	P1K0.216.3FW.Y.007	P1K0.216.3FW.A.007	P1K0.216.3FW.B.007
Order code		010.02623	010.02340	010.01978
232	2.3 x 2 x 0.65 / 1.3	P1K0.232.3FW.Y.007	P1K0.232.3FW.A.007	P1K0.232.3FW.B.007
Order code		010.01121	010.01827	010.01120
Nominal resistance: 2000 Ω at 0 °C				
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P2K0.232.3FW.B.007
Order code				010.02140

Order Information - 3SK (Ag-wire, Ø 0.25 mm, perpendicular wire, metalized backside)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	Upon request	P0K1.161.3SK.A.010.M	P0K1.161.3SK.B.010.M
Order code			010.01164	010.01176
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K1.232.3SK.B.010.M
Order code				010.00948

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

300 °C series
Wired RTD Platinum Sensor
For low to medium temperatures

INNOVATIVE SENSOR TECHNOLOGY

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 1000 Ω at 0 °C				
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P1K0.232.3SK.B.015.M
Order code				010.00716

Order Information - 3W (Ni wire, Ø 0.2 mm / Ø 0.15 mm (308))

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
202	2 x 2 x 0.65 / 1.3		P0K1.202.3W.A.010	P0K1.202.3W.B.010
Order code			010.02509	010.02505
Nominal resistance: 1000 Ω at 0 °C				
202	2 x 2 x 0.65 / 1.3	Upon request	P1K0.202.3W.A.007	P1K0.202.3W.B.007
Order code			010.02482	010.02385
308	3 x 0.8 x 0.4 / 0.6	Upon request	P1K0.308.3W.A.025	P1K0.308.3W.B.025
Order code			310.00228	310.00243

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

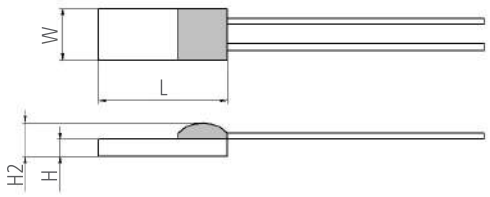
400 °C series
Wired RTD Platinum Sensor
For medium temperatures

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Outstanding long-term stability
- Excellent solderability
- Low self-heating
- Vibration and temperature shock resistant
- Paired and grouped sensors available
- 1/5 DIN and 1/10 DIN
- Customer specific sensor available upon request

Illustration[1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	-200 °C to +400 °C	
Nominal resistance:*	100 Ω at 0 °C	
	500 Ω at 0 °C	
	1000 Ω at 0 °C	
Characteristics curve:*	3850 ppm/K	
Long-term stability:	< 0.04 % at 1000 h at maximal operating temperature	
Tolerance class (dependent on temperature range):*		IST AG reference
	DIN EN 60751 F0.15	A
	DIN EN 60751 F0.3	B
	DIN EN 60751 F0.6	C
	DIN EN 60751 F0.1	Y
	1/5 DIN EN 60751 F0.3	K*
	1/10 DIN EN 60751 F0.3	K*
Connection:*	Ag-wire, Ø 0.25 mm (solderable, weldable)	
Alternative wire construction:*	Perpendicular wires	
	Inverted wires	
Recommended applied current:[1)]	1 mA at 100 Ω	
[1)] Self-heating must be considered	0.5 mA at 500 Ω	
	0.3 mA at 1000 Ω	
Other alternatives:*	Housed in round ceramics (for dry environments only)	
	Grouped and paired	
	Substrate thickness	

* Customer specific alternatives available

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

400 °C series
Wired RTD Platinum Sensor
For medium temperatures

INNOVATIVE SENSOR TECHNOLOGY

Order Information - 4W (Ag-wire, Ø 0.25 mm)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	P0K1.161.4W.Y.010	P0K1.161.4W.A.010	P0K1.161.4W.B.010
Order code		010.00048	010.00045	010.00042
216	2.5 x 1.6 x 0.65 / 1.3	Upon request	P0K1.216.4W.A.015	P0K1.216.4W.B.015
Order code			010.02699	010.02698
232	2.3 x 2 x 0.65 / 1.3	P0K1.232.4W.Y.010	P0K1.232.4W.A.007	P0K1.232.4W.B.007
Order code		010.00006	010.00008	010.00007
505	5 x 5 x 0.65 / 1.3	Upon request	P0K1.505.4W.A.010	P0K1.505.4W.B.010
Order code			010.00141	010.00139
516	5 x 1.6 x 0.65 / 1.3	P0K1.516.4W.Y.010	P0K1.516.4W.A.010	P0K1.516.4W.B.010
Order code		010.00075	010.00073	010.00071
520	5 x 2 x 0.65 / 1.3	P0K1.520.4W.Y.010	P0K1.520.4W.A.010	P0K1.520.4W.B.010
Order code		010.00096	010.00094	010.00092
538	5 x 3.8 x 0.65 / 1.3	Upon request	P0K1.538.4W.A.010	P0K1.538.4W.B.010
Order code			010.00123	010.00121
102	10 x 2 x 0.65 / 1.3	P0K1.102.4W.Y.010	P0K1.102.4W.A.010	P0K1.102.4W.B.010
Order code		010.00150	010.00148	010.00146
Nominal resistance: 500 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	P0K5.161.4W.Y.010	P0K5.161.4W.A.010	P0K5.161.4W.B.010
Order code		010.00179	010.00177	010.00175
232	2.3 x 2 x 0.65 / 1.3	Upon request	P0K5.232.4W.A.010	P0K5.232.4W.B.010
Order code			010.00667	010.00664
516	5 x 1.6 x 0.65 / 1.3	P0K5.516.4W.Y.015	P0K5.516.4W.A.015	P0K5.516.4W.B.015
Order code		010.00190	010.00189	010.00188
520	5 x 2 x 0.65 / 1.3	P0K5.520.4W.Y.015	P0K5.520.4W.A.010	P0K5.520.4W.B.010
Order code		010.00196	010.00946	010.00663
102	10 x 2 x 0.65 / 1.3	Upon request	P0K5.102.4W.A.010	P0K5.102.4W.B.010
Order code			010.02332	010.02341
Nominal resistance: 1000 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	P1K0.161.4W.Y.010	P1K0.161.4W.A.010	P1K0.161.4W.B.010
Order code		010.00217	010.00214	010.00211
232	2.3 x 2 x 0.65 / 1.3	P1K0.232.4W.Y.010	P1K0.232.4W.A.007	P1K0.232.4W.B.007
Order code		010.00228	010.01938	010.01939
505	5 x 5 x 0.65 / 1.3	Upon request	P1K0.505.4W.A.010	P1K0.505.4W.B.010
Order code			010.00295	010.00294

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

400 °C series
Wired RTD Platinum Sensor
For medium temperatures

INNOVATIVE SENSOR TECHNOLOGY

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
516	5 x 1.6 x 0.65 / 1.3	P1K0.516.4W.Y.010	P1K0.516.4W.A.010	P1K0.516.4W.B.010
Order code		010.00254	010.00252	010.00250
520	5 x 2 x 0.65 / 1.3	P1K0.520.4W.Y.010	P1K0.520.4W.A.010	P1K0.520.4W.B.010
Order code		010.00266	010.00264	010.00262
538	5 x 3.8 x 0.65 / 1.3	Upon request	P1K0.538.4W.A.010	P1K0.538.4W.B.010
Order code			010.00390	010.00389
102	10 x 2 x 0.65 / 1.3	P1K0.102.4W.Y.010	P1K0.102.4W.A.010	P1K0.102.4W.B.010
Order code		010.00305	010.00301	010.00299

Order Information - 4SW (Ag-wire, Ø 0.25 mm, perpendicular wire)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	Upon request	P0K1.161.4SW.A.010	P0K1.161.4SW.B.010
Order code			010.01108	010.00616
232	2.3 x 2 x 0.65 / 1.3	P0K1.232.4SW.Y.010	P0K1.232.4SW.A.010	P0K1.232.4SW.B.010
Order code		010.02159	010.01179	010.01695
538	5 x 3.8 x 0.65 / 1.3	Upon request	Upon request	P0K1.538.4SW.B.015
Order code				010.02497
Nominal resistance: 500 Ω at 0 °C				
232	2.3 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K5.232.4SW.B.010
Order code				010.00578
Nominal resistance: 1000 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	Upon request	P1K0.161.4SW.A.010	P1K0.161.4SW.B.010
Order code			010.00599	010.00361
232	2.3 x 2 x 0.65 / 1.3	Upon request	P1K0.232.4SW.A.015	P1K0.232.4SW.B.015
Order code			010.00586	010.00235

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

400 °C series
Wired RTD Platinum Sensor
For medium temperatures

INNOVATIVE SENSOR TECHNOLOGY

Order Information - R (in round ceramic housing, Ag-wire, Ø 0.25 mm)

Size	Dimensions (Ø x L in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
281	2.8 x 13		P0K1.281.4W.A.010.R	P0K1.281.4W.B.010.R
Order code			010.00477	010.00476
451	4.5 x 13		P0K1.451.4W.A.007.R	P0K1.451.4W.B.010.R
			010.00483	010.00481

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

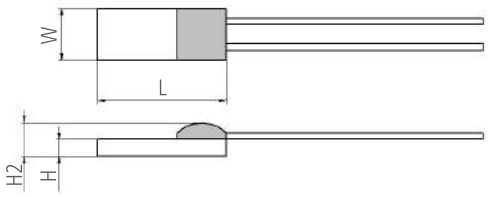
600 °C series
Wired RTD Platinum Sensor
For high temperatures

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Excellent long-term stability
- Low self-heating
- Fast response time
- Small dimensions
- Vibration and temperature shock resistant
- Paired sensors available
- 1/5 DIN and 1/10 DIN available
- Customer specific sensor available upon request

Illustration[1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	-200 °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	
Long-term stability:	< 0.04 % at 1000 h at maximal operating temperature	
Tolerance class (dependent on temperature range):*		IST AG reference
	DIN EN 60751 F0.15	A
	DIN EN 60751 F0.3	B
	DIN EN 60751 F0.6	C
	DIN EN 60751 F0.1	Y
Connection:*	Pt-cladded Ni-wire, Ø 0.2 mm (solderable, weldable, crimpable, brazeable)	
Alternative wire construction:*	Inverted wires	
Recommended applied current:[1)]	1 mA at 100 Ω	
[1)] Self-heating must be considered	0.5 mA at 500 Ω	
	0.3 mA at 1000 Ω	
Other alternatives:*	Housed in round ceramics (for dry environments only)	
	Grouped and paired	
	Substrate thickness	

* Customer specific alternatives available

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

600 °C series
Wired RTD Platinum Sensor
For high temperatures

INNOVATIVE SENSOR TECHNOLOGY

Order Information - 6W (Pt-cladded Ni-wire, Ø 0.2 mm)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	P0K1.161.6W.Y.010	P0K1.161.6W.A.007	P0K1.161.6W.B.007
Order code		010.00066	010.02195	010.02196
202	2 x 2 x 0.65 / 1.3	P0K1.202.6W.Y.010	P0K1.202.6W.A.007	P0K1.202.6W.B.007
Order code		010.02094	010.02019	010.02020
216	2.5 x 1.6 x 0.65 / 1.3	P0K1.216.6W.Y.010	P0K1.216.6W.A.007	P0K1.216.6W.B.007
Order code		010.00652	010.01111	010.01129
232	2.3 x 2 x 0.65 / 1.3	P0K1.232.6W.Y.007	P0K1.232.6W.A.007	P0K1.232.6W.B.007
Order code		010.01089	010.01793	010.01006
516	5 x 1.6 x 0.65 / 1.3	P0K1.516.6W.Y.010	P0K1.516.6W.A.007	P0K1.516.6W.B.007
Order code		010.00084	010.01942	010.01943
520	5 x 2 x 0.65 / 1.3	P0K1.520.6W.Y.010	P0K1.520.6W.A.010	P0K1.520.6W.B.010
Order code		010.00101	010.00099	010.00098
538	5 x 3.8 x 0.65 / 1.3	Upon request	P0K1.538.6W.A.010	P0K1.538.6W.B.010
Order code			010.01826	010.01001
102	10 x 2 x 0.65 / 1.3	P0K1.102.6W.Y.010	P0K1.102.6W.A.010	P0K1.102.6W.B.010
Order code		010.00154	010.00153	010.00152
Nominal resistance: 500 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	P0K5.161.6W.Y.010	P0K5.161.6W.A.010	P0K5.161.6W.B.010
Order code		010.00182	010.00181	010.00180
202	2 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K5.202.6W.B.007
Order code				010.02516
232	2.3 x 2 x 0.65 / 1.3	P0K5.232.6W.Y.010	P0K5.232.6W.A.010	P0K5.232.6W.B.010
Order code		010.00187	010.00186	010.00185
516	5 x 1.6 x 0.65 / 1.3	P0K5.516.6W.Y.010	P0K5.516.6W.A.010	P0K5.516.6W.B.010
Order code		010.00193	010.00192	010.00191
520	5 x 2 x 0.65 / 1.3	P0K5.520.6W.Y.010	P0K5.520.6W.A.010	P0K5.520.6W.B.010
Order code		010.00199	010.00198	010.00197
102	10 x 2 x 0.65 / 1.3	Upon request	P0K5.102.6W.A.010	P0K5.102.6W.B.010
Order code			010.00205	010.00204
Nominal resistance: 1000 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	P1K0.161.6W.Y.010	P1K0.161.6W.A.010	P1K0.161.6W.B.010
Order code		010.00222	010.00221	010.00220
202	2 x 2 x 0.65 / 1.3	Upon request	P1K0.202.6W.A.007	P1K0.202.6W.B.007
Order code			010.02232	010.02250
216	2.5 x 1.6 x 0.65 / 1.3	P1K0.216.6W.Y.010	P1K0.216.6W.A.010	P1K0.216.6W.B.010
Order code		010.02391	010.01109	010.01018

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

600 °C series
Wired RTD Platinum Sensor
For high temperatures

INNOVATIVE SENSOR TECHNOLOGY

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
232	2.3 x 2 x 0.65 / 1.3	P1K0.232.6W.Y.007	P1K0.232.6W.A.007	P1K0.232.6W.B.007
Order code		010.01007	010.01937	010.01008
420	4 x 2 x 0.65 / 1.3	Upon request	P1K0.420.6W.A.007	P1K0.420.6W.B.007
Order code			010.02464	010.02488
505	5 x 5 x 0.65 / 1.3	Upon request	Upon request	P1K0.505.6W.B.010
Order code				010.02686
516	5 x 1.6 x 0.65 / 1.3	P1K0.516.6W.Y.010	P1K0.516.6W.A.007	P1K0.516.6W.B.007
Order code		010.00260	010.01934	010.01935
520	5 x 2 x 0.65 / 1.3	P1K0.520.6W.Y.010	P1K0.520.6W.A.010	P1K0.520.6W.B.010
Order code		010.00282	010.00280	010.00279
538	5 x 3.8 x 0.65 / 1.3	Upon request	Upon request	P1K0.538.6W.B.010
Order code				010.00396
102	10 x 2 x 0.65 / 1.3	Upon request	Upon request	P1K0.102.6W.B.007
Order code				010.00754
102	10 x 2 x 0.65 / 1.3	P1K0.102.6W.Y.010	P1K0.102.6W.A.010	P1K0.102.6W.B.010
Order code		010.00309	010.00753	010.00306

Order Information - 7W[1)] (Pt-wire, Ø 0.2 mm, (161) (232) / Ø 0.15 mm (308))

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	Upon request	P0K1.161.7W.A.010	P0K1.161.7W.B.010
Order code			010.00738	010.00687
232	2.3 x 2 x 0.65 / 1.3	P0K1.232.7W.Y.010	P0K1.232.7W.A.010	P0K1.232.7W.B.010
Order code		010.02074	010.00952	010.00402
308	3 x 0.8 x 0.4 / 0.6	P0K1.308.7W.Y.007	P0K1.308.7W.A.007	P0K1.308.7W.B.007
Order code		010.01037	010.00996	010.00997
520	5 x 2 x 0.65 / 1.3	Upon request	P0K1.520.7W.A.010	P0K1.520.7W.B.010
Order code			010.00107	010.00106
Nominal resistance: 1000 Ω at 0 °C				
161	1.6 x 1.2 x 0.4 / 0.8	Upon request	P1K0.161.7W.A.007	P1K0.161.7W.B.007
Order code			010.02530	010.02531
232	2.3 x 2 x 0.65 / 1.3	Upon request	P1K0.232.7W.A.010	P1K0.232.7W.B.010
Order code			010.01791	010.00239
308	3 x 0.8 x 0.4 / 0.6	P1K0.308.7W.Y.007	P1K0.308.7W.A.007	P1K0.308.7W.B.007
Order code		010.01681	010.00955	010.00656

[1)] Operating temperature range of -200 °C to +600 °C

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

600 °C series
Wired RTD Platinum Sensor
For high temperatures

INNOVATIVE SENSOR TECHNOLOGY

Order Information - R (in round ceramic housing, Pt-cladded Ni-wire, Ø 0.2 mm)

Size	Dimensions (Ø x L in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
281	2.8 x 13		P0K1.281.6W.A.007.R	P0K1.281.6W.B.007.R
Order code			010.00479	010.00478
451	4.5 x 13		P0K1.451.6W.A.007.R	P0K1.451.6W.B.007.R
Order code			010.00483	010.00482
Nominal resistance: 1000 Ω at 0 °C				
281	2.8 x 13		P1K0.281.6W.A.007.R	P1K0.281.6W.B.007.R
Order code			010.02388	010.02451
451	4.5 x 13		Upon request	P1K0.451.6W.B.007.R
Order code				010.02628

Order Information - D [1] (substrate thickness, 0.4 mm)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 200 Ω at 0 °C				
516	5 x 1.6 x 0.4 / 1.05		P0K2.516.7W.A.007.D	P0K2.516.7W.B.007.D
Order code			010.02023	010.02039

[1] *Operating temperature range of -200 °C to +600 °C*

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

750 °C series

Wired RTD Platinum Sensor

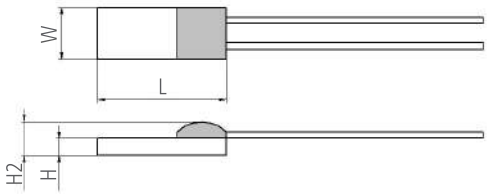
For very high temperatures

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Excellent long-term stability
- Low self-heating
- Fast response time
- Vibration and temperature shock resistant
- Simple interchangeability
- Customer specific sensor available upon request

Illustration[1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	-200 °C to +750 °C	
Nominal resistance:*	100 Ω at 0 °C	
	500 Ω at 0 °C	
	1000 Ω at 0 °C	
Characteristics curve:*	3850 ppm/K	
Long-term stability:	< 0.04 % at 1000 h at maximal operating temperature	
Tolerance class (dependent on temperature range):*		IST AG reference
	DIN EN 60751 F0.15	A
	DIN EN 60751 F0.3	B
	DIN EN 60751 F0.6	C
	DIN EN 60751 F0.1	Y
Connection:*	Pt-wire, Ø 0.2 mm (solderable, weldable, crimpable, brazeable)	
Recommended applied current:[1)]	1 mA at 100 Ω	
[1)] Self-heating must be considered	0.5 mA at 500 Ω	
	0.3 mA at 1000 Ω	
Other alternatives:*	Grouped and paired	
	Substrate thickness	

* Customer specific alternatives available

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

750 °C series
Wired RTD Platinum Sensor
For very high temperatures

INNOVATIVE SENSOR TECHNOLOGY

Order Information - 7W (Pt-wire, Ø 0.2 mm)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
516	5 x 1.6 x 0.65 / 1.3	Upon request	P0K1.516.7W.A.007	P0K1.516.7W.B.007
Order code			010.00644	010.00643
102	10 x 2 x 0.65 / 1.3	Upon request	P0K1.102.7W.A.010	P0K1.102.7W.B.010
Order code			010.00156	010.00155
Nominal resistance: 500 Ω at 0 °C				
516	5 x 1.6 x 0.65 / 1.3	Upon request	Upon request	P0K5.516.7W.B.007
Order code				010.01660
Nominal resistance: 1000 Ω at 0 °C				
216	2.5 x 1.6 x 0.65 / 1.3	Upon request	Upon request	P1K0.216.7W.B.010
Order code				310.00158
516	5 x 1.6 x 0.65 / 1.3	P1K0.516.7W.Y.010	P1K0.516.7W.A.010	P1K0.516.7W.B.010
Order code		010.01683	010.01073	010.01072
520	5 x 2 x 0.65 / 1.3	Upon request	P1K0.520.7W.A.010	P1K0.520.7W.B.010
Order code			010.00953	010.00283
102	10 x 2 x 0.65 / 1.3	Upon request	Upon request	P1K0.102.7W.B.010
Order code				010.00319

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

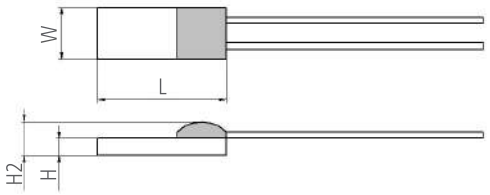
850 °C series
Wired RTD Platinum Sensor
For very high temperatures

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Excellent long-term stability
- Low self-heating
- Fast response time
- Vibration and temperature shock resistant
- Simple interchangeability
- Customer specific sensor available upon request

Illustration[1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	-200 °C to +850 °C	
Nominal resistance:*	100 Ω at 0 °C	
	200 Ω at 0 °C	
	1000 Ω at 0 °C	
Characteristics curve:*	3850 ppm/K	
Long-term stability:	< 0.04 % at 1000 h at maximal operating temperature	
Tolerance class (dependent on temperature range):*		Innovative Sensor Technology IST AG reference
	DIN EN 60751 F0.15	A
	DIN EN 60751 F0.3	B
	DIN EN 60751 F0.6	C
	DIN EN 60751 F0.1	Y
Connection:*	Pt-wire, Ø 0.2 mm (solderable, weldable, crimpable, brazeable)	
Recommended applied current:[1)]	Max. 1 mA	
1) Self-heating must be considered		
Other alternatives:*	Substrate thickness	

* Customer specific alternatives available

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

850 °C series
Wired RTD Platinum Sensor
For very high temperatures

INNOVATIVE SENSOR TECHNOLOGY

Order Information - 8W (Pt-wire, Ø 0.2 mm)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
516	5 x 1.6 x 0.65 / 1.3	Upon request	Upon request	P0K1.516.8W.B.007
Order code				010.01901
102	10 x 2 x 0.65 / 1.3	Upon request	Upon request	P0K1.102.8K.B.007
Order code				010.02303
Nominal resistance: 200 Ω at 0 °C				
420	3.85 x 1.9 x 0.65 / 1.05	Upon request	Upon request	P0K2.420.8W.B.007
Order code				010.02797
Nominal resistance: 1000 Ω at 0 °C				
516	5 x 1.6 x 0.65 / 1.3	Upon request	Upon request	P1K0.516.8W.B.007
Order code				010.02003

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

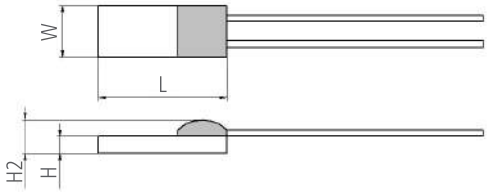
1000 °C series
Wired RTD Platinum Sensor
For extremly high temperatures

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Excellent long-term stability
- 3770 ppm/K characteristics curve
- Low self-heating
- Small dimensions
- Vibration and temperature shock resistant
- Fast response time
- Simple interchangeability

Illustration[1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	-70 °C to +1000 °C
Nominal resistance:	200 Ω at 0 °C
Characteristics curve:	3770 ppm/K
Tolerance class (dependent on temperature range):	IST AG reference -40 ° to +300 °C +300 °C to +850 °C K ±3 K ±1 %
Connection:	Pt-wire, 7 x Ø 0.25 mm (solderable, weldable, crimpable)
Recommended applied current:[1)] *1) Self-heating must be considered*	Max. 2.8 mA at 850 °C
Other alternatives:	Substrate thickness

Order Information - 10K (Pt-wire, Ø 0.25 mm)

Size	Dimensions (L x W x H / H2 in mm)	
Nominal resistance: 200 Ω at 0 °C		
420	3.85 x 1.9 x 0.45 / 0.75	P0K2.420.10K.K.007.D.S
Order code		310.00445

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

PW series

Wired RTD Platinum Sensor

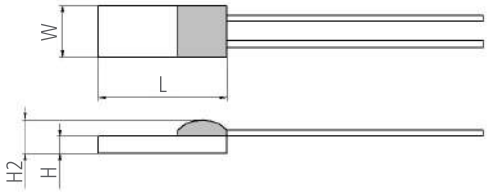
For extended operating temperature range in class A

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Capable of measuring in class A up to +600 °C
- Increased long-term stability
- Alternative to wire-wound sensors
- Short-term applicable up to +750 °C
- Very stable characteristics curve
- Available with same dimensions as a wire-wound sensor
- Very low hysteresis
- Customer specific sensor available upon request

Illustration[1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	-200 °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		
Long-term stability:	< 0.04 % at 1000 h at maximal operating temperature		
Tolerance class:*		IST AG reference	
	DIN EN 60751 F0.15	A	-200 °C to +600 °C
	DIN EN 60751 F0.3	B	-200 °C to +600 °C
	DIN EN 60751 F0.6	C	-200 °C to +600 °C
	DIN EN 60751 F0.1	Y	-200 °C to +500 °C
	1/5 DIN EN 60751 F0.3	K*	-100 °C to +300 °C
Connection:*	Pt-wire, Ø 0.2 mm (solderable, weldable, crimpable, brazeable)		
Alternative wire construction:*	Inverted wires		
Recommended applied current:[1)]	0.2 mA at 100 Ω		
[1) Self-heating must be considered]	0.09 mA at 500 Ω		
	0.06 mA at 1000 Ω		
Other alternatives:*	Housed in round ceramics (for dry environments only)		
	Grouped and paired		

* Customer specific alternatives available

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

PW series

Wired RTD Platinum Sensor

For extended operating temperature range in class A

INNOVATIVE SENSOR TECHNOLOGY

Order Information - 7W (Pt-wire, Ø 0.2 mm)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
216	2,4 x 1,4 x 0,45 / 0,8	PW0K1.216.7W.Y.007	PW0K1.216.7W.A.007	PW0K1.216.7W.B.007
Order code		310.00113	310.00112	310.00111
Nominal resistance: 500 Ω at 0 °C				
216	2,4 x 1,4 x 0,45 / 0,8	PW0K5.216.7W.Y.007	PW0K5.216.7W.A.007	PW0K5.216.7W.B.007
Order code		310.00246	310.00245	310.00161
Nominal resistance: 1000 Ω at 0 °C				
216	2,4 x 1,4 x 0,45 / 0,8	PW1K0.216.7W.Y.007	PW1K0.216.7W.A.007	PW1K0.216.7W.B.007
Order code		310.00177	310.00182	310.00183

Order Information - R (in round ceramic housing, Pt-wire, Ø 0.2 mm)

Size	Dimensions (Ø x L in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
281	2.8 x 13	PW0K1.281.7W.Y.004.R	PW0K1.281.7W.A.004.R	PW0K1.281.7W.B.004.R
Order code		310.00263	310.00255	310.00408

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

PG series

Wired RTD Platinum Sensor

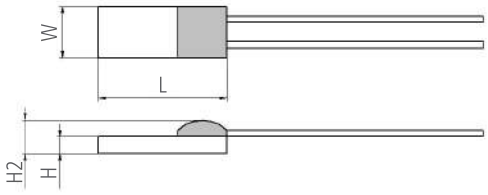
For applications with GOST-coefficient 3911 ppm/K

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Capable of measuring in class A up to +600 °C
- Short-term applicable up to +750 °C
- Very low hysteresis
- Very stable characteristics curve
- GOST norm compatible (3911 ppm/K characteristics curve)
- Available with same Dimensions as a wire-wound sensor
- Customer specific sensor available upon request

Illustration[1)]



1) For actual size, see Dimensions

Technical Data

Operating temperature range:	-200 °C to +600 °C		
Nominal resistance:*	50 Ω at 0 °C		
	100 Ω at 0 °C		
	500 Ω at 0 °C		
	1000 Ω at 0 °C		
Characteristics curve:	3911 ppm/K		
Long-term stability:	< 0.04% at 1000 h at maximal operating temperature		
Tolerance class:*		IST AG reference	
	GOST 8.625-2006 F0.15	A	-200 °C to +600 °C
	GOST 8.625-2006 F0.3	B	-200 °C to +600 °C
	GOST 8.625-2006 F0.6	C	-200 °C to +600 °C
	GOST 8.625-2006 F0.1	Y	-200 °C to +500 °C
Connection:*	Pt wire, Ø 0.2 mm (solderable, weldable, crimpable) -200 °C to +600 °C		
	Pt/Ni clad wire, Ø 0.2 mm (solderable, weldable, crimpable) -200 °C to +400 °C		
Alternative wire construction:*	Inverted wires		
Recommended applied current:[1)]	0.2 mA at 100 Ω		
[1)] Self-heating must be considered	0.09 mA at 500 Ω		
	0.06 mA at 1000 Ω		
Other alternatives:*	Housed in round ceramics (for dry environments only)		
	Grouped and paired		

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

PG series

Wired RTD Platinum Sensor

For applications with GOST-coefficient 3911 ppm/K

INNOVATIVE SENSOR TECHNOLOGY

* Customer specific alternatives available

Order Information - 4K (Pt/Ni-wire, Ø 0.2 mm)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 50 Ω at 0 °C				
216	2,4 x 1,4 x 0,45 / 0,8	Upon request	PG050.216.4K.A.010	PG050.216.4K.B.010
Order code			010.02541	010.02542
Nominal resistance: 100 Ω at 0 °C				
216	2,4 x 1,4 x 0,45 / 0,8	PG0K1.216.4K.Y.010	PG0K1.216.4K.A.010	PG0K1.216.4K.B.010
Order code		010.02723	010.02544	010.02545
Nominal resistance: 500 Ω at 0 °C				
216	2,4 x 1,4 x 0,45 / 0,8	Upon request	Upon request	PG0K5.216.4K.B.010
Order code				010.02589

Order Information - 7W (Pt-wire, Ø 0.2 mm)

Size	Dimensions (L x W x H / H2 in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 50 Ω at 0 °C				
216	2,4 x 1,4 x 0,45 / 0,8	Upon request	Upon request	PG050.216.7W.B.007
Order code				010.02761
Nominal resistance: 100 Ω at 0 °C				
216	2,4 x 1,4 x 0,45 / 0,8	PG0K1.216.7W.Y.007	PG0K1.216.7W.A.007	PG0K1.216.7W.B.007
Order code		010.02762	010.02547	010.02548
Nominal resistance: 500 Ω at 0 °C				
216	2,4 x 1,4 x 0,45 / 0,8	PG0K5.216.7W.Y.007	PG0K5.216.7W.A.007	PG0K5.216.7W.B.007
Order code		010.02570	010.02572	010.02573

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

PG series

Wired RTD Platinum Sensor

For applications with GOST-coefficient 3911 ppm/K

INNOVATIVE SENSOR TECHNOLOGY

Order Information - R (in round ceramic housing, Pt/Ni-wire, Ø 0.2 mm)

Size	Dimensions (Ø x L in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
281	2.8 x 13	Upon request	PG0K1.281.4K.A.006.R	PG0K1.281.4K.B.006.R
Order code			310.00447	310.00264

Order Information - R (in round ceramic housing, Pt-wire, Ø 0.2 mm)

Size	Dimensions (Ø x L in mm)	F0.1 (class Y)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C				
281	2.8 x 13	PG0K1.281.7W.Y.004.R	PG0K1.281.7W.A.004.R	PG0K1.281.7W.B.004.R
Order code		310.00270	310.00269	310.00268

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

SMD Series

Surface Mount RTD Platinum Sensor

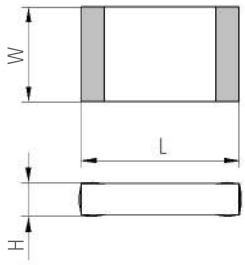
For the automatic assembling on PCBs

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Excellent long-term stability
- Low self-heating
- Fast response time
- Class A available
- Customer specific sensor available upon request

Illustration[1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	2P	-50 °C to +150 °C
	3P	-50 °C to +250 °C
	4P	-50 °C to +250 °C
Nominal resistance:*	100 Ω at 0 °C	
	500 Ω at 0 °C	
	1000 Ω at 0 °C	
Characteristics curve:*	3850 ppm/K	
Long term stability:	< 0.04 % at 1000 h at 130 °C	
		IST AG reference
Tolerance class (dependent on temperature range):*	DIN EN 60751 F0.15	A
	DIN EN 60751 F0.3	B
	DIN EN 60751 F0.6	C
Connnection:*	2P	tin-coated (96.5Sn/3Ag/0.5Cu), LMP lead-free, (reflow soldering)
	3P	tin-coated (5Sn/93.5Pb/1.5Ag), HMP, (reflow soldering)
	4P	gold-coated, (solderable coating)
Solderability:	235 °C ≤ 8 s (DIN IEC 68 T2-20, Ta Meth. 1)	
Resistance to soldering heat:[1)]	260 °C 10 s (DIN IEC 68 T2-20, Ta Meth. 1A)	

1) The soldering process can influence accuracy

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

SMD Series

Surface Mount RTD Platinum Sensor

For the automatic assembling on PCBs

INNOVATIVE SENSOR TECHNOLOGY

Recommended applied current:[2)] *2) Self-heating must be considered*	1 mA at 100 Ω 0.5 mA at 500 Ω 0.3 mA at 1000 Ω
Packaging:	< 100 pcs in bags > 100 pcs taped on reel (sensor side up or sensor side down)

* Customer specific alternatives available

Order Information - 2P (tin-coated (96.5Sn/3Ag/0.5Cu), LMP lead-free)

Packed in bags (< 100 pcs)

Size	Dimensions (L x W x H in mm)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C			
0805	2 x 1.2 x 0.4	P0K1.0805.2P.A	P0K1.0805.2P.B
Order code		010.01147	010.01146
1206	3.0 x 1.6 x 0.4	P0K1.1206.2P.A	P0K1.1206.2P.B
Order code		010.01131	010.01132
Nominal resistance: 500 Ω at 0 °C			
0805	2 x 1.2 x 0.4	P0K5.0805.2P.A	P0K5.0805.2P.B
Order code		010.01153	010.01154
1206	3.0 x 1.6 x 0.4	P0K5.1206.2P.A	P0K5.1206.2P.B
Order code		010.01141	010.01127
Nominal resistance: 1000 Ω at 0 °C			
0805	2 x 1.2 x 0.4	P1K0.0805.2P.A	P1K0.0805.2P.B
Order code		010.01157	010.01047
1206	3.0 x 1.6 x 0.4	P1K0.1206.2P.A	P1K0.1206.2P.B
Order code		010.01136	010.01135

Taped on reel - sensor side up or sensor side down (> 100 pcs)

Nominal resistance: 100 Ω at 0 °C				
0805	2 x 1.2 x 0.4	Sensor side up	P0K1.0805.2P.A.S	P0K1.0805.2P.B.S
Order code			010.02347	010.02276
1206	3.0 x 1.6 x 0.4	Sensor side up	P0K1.1206.2P.A.S	P0K1.1206.2P.B.S
Order code			010.02233	010.02275
0805	2 x 1.2 x 0.4	Sensor side down	P0K1.0805.2P.A.S	P0K1.0805.2P.B.S
Order code			010.01148	010.01126

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

SMD Series

Surface Mount RTD Platinum Sensor

For the automatic assembling on PCBs

INNOVATIVE SENSOR TECHNOLOGY

Size	Dimensions (L x W x H in mm)		F0.15 (class A)	F0.3 (class B)
1206	3.0 x 1.6 x 0.4	Sensor side down	P0K1.1206.2P.A.S	P0K1.1206.2P.B.S
Order code			010.01104	010.01105
Nominal resistance: 500 Ω at 0 °C				
0805	2 x 1.2 x 0.4	Sensor side down	P0K5.0805.2P.A.S	P0K5.0805.2P.B.S
Order code			010.01156	010.01155
1206	3.0 x 1.6 x 0.4	Sensor side down	P0K5.1206.2P.A.S	P0K5.1206.2P.B.S
Order code			010.01142	010.01117
Nominal resistance: 1000 Ω at 0 °C				
0805	2 x 1.2 x 0.4	Sensor side up	P1K0.0805.2P.A.S	P1K0.0805.2P.B.S
Order code			010.02235	010.02236
1206	3.0 x 1.6 x 0.4	Sensor side up	P1K0.1206.2P.A.S	P1K0.1206.2P.B.S
Order code			010.02224	010.02229
0805	2 x 1.2 x 0.4	Sensor side down	P1K0.0805.2P.A.S	P1K0.0805.2P.B.S
Order code			010.01158	010.01125
1206	3.0 x 1.6 x 0.4	Sensor side down	P1K0.1206.2P.A.S	P1K0.1206.2P.B.S
Order code			010.01106	010.01107

Order Information - 3P (tin-coated (5Sn/93.5Pb/1.5Ag), HMP)

Size	Dimensions (L x W x H in mm)	F0.15 (class A)	F0.3 (class B)
Packed in bags (< 100 pcs)			
Nominal resistance: 100 Ω at 0 °C			
0805	2 x 1.2 x 0.4	P0K1.0805.3P.A	P0K1.0805.3P.B
Order code		010.00928	010.00929
1206	3.0 x 1.6 x 0.4	P0K1.1206.3P.A	P0K1.1206.3P.B
Order code		010.00166	010.00165
Nominal resistance: 500 Ω at 0 °C			
0805	2 x 1.2 x 0.4	P0K5.0805.3P.A	P0K5.0805.3P.B
Order code		010.00934	010.00935
1206	3.0 x 1.6 x 0.4	P0K5.1206.3P.A	P0K5.1206.3P.B
Order code		010.00403	010.00208

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

SMD Series
Surface Mount RTD Platinum Sensor
For the automatic assembling on PCBs

INNOVATIVE SENSOR TECHNOLOGY

Size	Dimensions (L x W x H in mm)		F0.15 (class A)	F0.3 (class B)
Nominal resistance: 1000 Ω at 0 °C				
0805	2 x 1.2 x 0.4		P1K0.0805.3P.A	P1K0.0805.3P.B
Order code			010.00922	010.00923
1206	3.0 x 1.6 x 0.4		P1K0.1206.3P.A	P1K0.1206.3P.B
Order code			010.00326	010.00323
Taped on reel - sensor side up or sensor side down (> 100 pcs)				
Nominal resistance: 100 Ω at 0 °C				
0805	2 x 1.2 x 0.4	Sensor side down	P0K1.0805.3P.A.S	P0K1.0805.3P.B.S
Order code			010.01150	010.01149
1206	3.0 x 1.6 x 0.4	Sensor side down	Upon request	P0K1.1206.3P.B.S
Order code				010.01145
Nominal resistance: 500 Ω at 0 °C				
0805	2 x 1.2 x 0.4	Sensor side down	Upon request	P0K5.0805.3P.B.S
Order code				010.01152
1206	3.0 x 1.6 x 0.4	Sensor side down	P0K5.1206.3P.A.S	P0K5.1206.3P.B.S
Order code			010.01144	010.01143
Nominal resistance: 1000 Ω at 0 °C				
0805	2 x 1.2 x 0.4	Sensor side down	P1K0.0805.3P.A.S	P1K0.0805.3P.B.S
Order code			010.01160	010.01159
1206	3.0 x 1.6 x 0.4	Sensor side down	Upon request	P1K0.1206.3P.B.S
Order code				010.01043

Order Information - 4P (gold-coated)

Size	Dimensions (L x W x H in mm)	F0.15 (class A)	F0.3 (class B)
Packed in bags (< 100 pcs)			
Nominal resistance: 100 Ω at 0 °C			
0805	2 x 1.2 x 0.4	P0K1.0805.4P.A	P0K1.0805.4P.B
Order code		010.00930	010.00931
1206	3.0 x 1.6 x 0.4	P0K1.1206.4P.A	P0K1.1206.4P.B
Order code		010.00169	010.00168

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

SMD Series

Surface Mount RTD Platinum Sensor

For the automatic assembling on PCBs

INNOVATIVE SENSOR TECHNOLOGY

Size	Dimensions (L x W x H in mm)		F0.15 (class A)	F0.3 (class B)
Nominal resistance: 500 Ω at 0 °C				
0805	2 x 1.2 x 0.4		P0K5.0805.4P.A	P0K5.0805.4P.B
Order code			010.00936	010.00937
1206	3.0 x 1.6 x 0.4		P0K5.1206.4P.A	P0K5.1206.4P.B
Order code			010.00404	010.00209
Nominal resistance: 1000 Ω at 0 °C				
0805	2 x 1.2 x 0.4		P1K0.0805.4P.A	P1K0.0805.4P.B
Order code			010.00925	010.00924
1206	3.0 x 1.6 x 0.4		P1K0.1206.4P.A	P1K0.1206.4P.B
Order code			010.00327	010.00324
Taped on reel - sensor side up or sensor side down (> 100 pcs)				
Nominal resistance: 100 Ω at 0 °C				
1206	3.0 x 1.6 x 0.4	Sensor side up	P0K1.1206.4P.A.S	Upon request
Order code			010.02501	
Nominal resistance: 1000 Ω at 0 °C				
0805	2 x 1.2 x 0.4	Sensor side up	P1K0.0805.4P.A.S	Upon request
Order code			010.02679	
0805	2 x 1.2 x 0.4	Sensor side down	P1K0.0805.4P.A.S	P1K0.0805.4P.B.S
Order code			010.02605	010.02619
1206	3.0 x 1.6 x 0.4	Sensor side up	P1K0.1206.4P.A.S	Upon request
Order code			010.02441	

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

FlipChip series

Surface Mount RTD Platinum Sensor

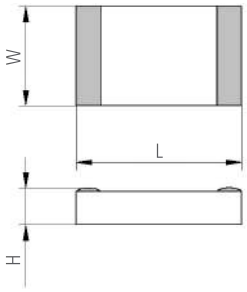
For the automatic assembling on PCB by soldering or bonding

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Excellent long-term stability
- Minimum space consumption on PCB
- Fast response time
- Low self-heating
- Optimal price-performance ratio
- Bondable versions available
- Customer specific sensor available upon request

Illustration[1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	1FC	-50 °C to +150 °C
	2FC	-50 °C to +250 °C
	3FC	-50 °C to +250 °C
	5FC	-50 °C to +400 °C
	6FC	-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	
Long-term stability:	< 0.04 % at 1000 h at 130 °C	
Tolerance class (dependent on temperature range):*		IST AG reference
	DIN EN 60751 F0.3	B
	DIN EN 60751 F0.6	C
Connection:*	1FC	tin-coated, LMP lead-free, 96.5Sn/3Ag/0.5Cu) (reflow soldering)
	2FC	tin-coated, HMP soldering depot, 5Sn/93.5Pb/1.5Ag (reflow soldering)
	3FC	Au-Pads (bonding pads), various types available
	5FC	reinforced thin film Pt-pads (solderable pads)
	6FC	thick film Pt-pads (weldable)

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

FlipChip series

Surface Mount RTD Platinum Sensor

For the automatic assembling on PCB by soldering or bonding

INNOVATIVE SENSOR TECHNOLOGY

Solderability:[1)] *1) The soldering process can influence accuracy*	235 °C ≤ 8 s (DIN IEC 68 T2-20, Ta Meth. 1) - 1FC, 2FC, 5FC
Resistance to soldering heat:	260 °C 10 s (DIN IEC 68 T2-20, Ta Meth. 1A) - 1FC, 2FC, 5FC
Recommended applied current:[2)] *2) Self-heating must be considered*	1 mA at 100 Ω 0.5 mA at 500 Ω 0.3 mA at 1000 Ω
Other alternatives:*	Metalized backside Substrate thickness
Packaging:	< 100 pcs in trays > 100 pcs taped on reel > 100 pcs diced substrate on foil

* Customer specific alternatives available

Order Information - 1FC (Contacts tin-coated (96.5Sn/3Ag/0.5Cu), LMP lead-free)

Size	Dimensions (L x W x H in mm)		F0.3 (class B)
Packed in trays (< 100 pcs)			
Nominal resistance: 100 Ω at 0 °C			
0603	1.5 x 0.75 x 0.4		P0K1.0603.1FC.B
Order code			310.00655
0805	1.9 x 1.15 x 0.4		P0K1.0805.1FC.B
Order code			010.02586
Nominal resistance: 500 Ω at 0 °C			
0805	1.9 x 1.15 x 0.4		P0K5.0805.1FC.B
Order code			010.02705
Nominal resistance: 1000 Ω at 0 °C			
0603	1.5 x 0.75 x 0.4		P1K0.0603.1FC.B
Order code			310.00656
0805	1.9 x 1.15 x 0.4		P1K0.0805.1FC.B
Order code			010.02557
Taped on reel (> 100 pcs)			
Nominal resistance: 500 Ω at 0 °C			
0805	1.9 x 1.15 x 0.4	Sensor side down	P0K5.0805.1FC.B.S
Order code			010.02706

FlipChip series

Surface Mount RTD Platinum Sensor

For the automatic assembling on PCB by soldering or bonding

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

INNOVATIVE SENSOR TECHNOLOGY

Size	Dimensions (L x W x H in mm)		F0.3 (class B)
Nominal resistance: 1000 Ω at 0 °C			
0805	1.9 x 1.15 x 0.4	Sensor side down	P1K0.0805.1FC.B.S
Order code			010.02558
Diced substrate on foil (> 100 pcs)			
Nominal resistance: 1000 Ω at 0 °C			
0805	1.9 x 1.15 x 0.4		P1K0.0805.1FC.B.S
Order code			010.02602

Order Information - 2FC (Contacts tin-coated, soldering depot, HMP, 5Sn/93.5Pb/1.5Ag)

Available upon request

Order Information - 3FC (Au-Pads (bonding pads), various types available)

Size	Dimensions (L x W x H in mm)	F0.3 (class B)
Packed in trays (< 100 pcs)		
Nominal resistance: 100 Ω at 0 °C		
0805	1.9 x 1.15 x 0.4	P0K1.0805.3FC.B
Order code		310.00536
1206	2.9 x 1.4 x 0.4	P0K1.1206.3FC.B
Order code		310.00499
Nominal resistance: 1000 Ω at 0 °C		
0603	1.5 x 0.75 x 0.4	P0K1.0805.3FC.B
Order code		310.00653
0805	1.9 x 1.15 x 0.4	P1K0.0805.3FC.B
Order code		010.02749
161	1.6 x 1.2 x 0.25	P1K0.161.3FC.B
Order code		010.01863

FlipChip series

Surface Mount RTD Platinum Sensor

For the automatic assembling on PCB by soldering or bonding

Size	Dimensions (L x W x H in mm)	F0.3 (class B)
Diced substrate on foil (> 100 pcs)		
Nominal resistance: 1000 Ω at 0 °C		
0805	1.9 x 1.15 x 0.4	P0K1.0805.3FC.B.S
Order code		010.02717

Order Information - 5FC (Reinforced thin film Pt-pads (solderable pads))

Available upon request

Order Information - 6FC (Thick film Pt-pads (weldable))

Size	Dimensions (L x W x H in mm)	F0.3 (class B)
Nominal resistance: 1000 Ω at 0 °C		
161	1.6 x 1.2 x 0.25	P1K0.161.6FC.B
Order code		010.00626

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

RealProbe^Temp

RTD Platinum Sensor in Stainless Steel Probe

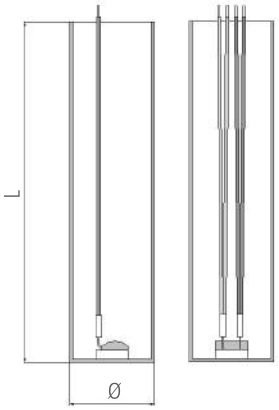
For outstanding thermal coupling and probe assemblies

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Minimum immersion depth (< 10 mm)
- Fast response time
- Resistant against vibrations
- Tip reacts to very small changes
- Fast accurate measurement
- Isolated thermal conductivity
- Customer specific sensor available upon request

Illustration[1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	-50 °C to +200 °C	
Nominal resistance:*	100 Ω at 0 °C	
	500 Ω at 0 °C	
	1000 Ω at 0 °C	
Characteristics curve:*	3850 ppm/K	
Long term stability:	< 0.04 % at 1000 h at maximal operating temperature	
Response time:	< 1.5 s (in water, 0.4 m/s, assembled, immersion depth 80 mm to 100 mm)	
Maximal allowed pressure:	100 bar	
Electrical strength:	1000 V_{DC}, 1 s	
Tolerance class (dependent on temperature range):*		IST AG reference
	DIN EN 60751 F0.15	A
	DIN EN 60751 F0.3	B
Connection:*	4 x AWG 28/7, Cu/Ag stranded wire, PTFE insulated, 5 mm stripped	
Wire lengths:*	375 mm or 1175 mm	

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

RealProbe^Temp

RTD Platinum Sensor in Stainless Steel Probe

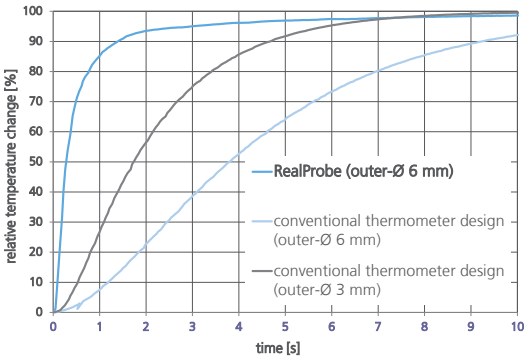
For outstanding thermal coupling and probe assemblies

INNOVATIVE SENSOR TECHNOLOGY

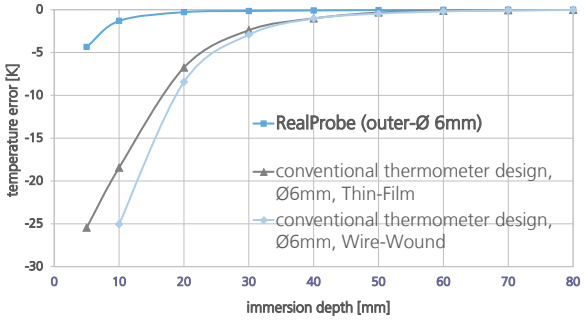
Wire color coding:*	class A: 2 x red, 2 x white; class B: 2 x red, 2 x blue
Deep drawing sheath:*	material: 1.4404 / 316L, wall thickness: 0.4 mm, length: 25 mm, outer Ø: 6 mm
Recommended applied current:[1)] *[1)] Self-heating must be considered*	1 mA at 100 Ω 0.5 mA at 500 Ω 0.3 mA at 1000 Ω

* Customer specific alternatives available

Measurements of comparison



Response time compared with standard RTDs



Minimized immersion depth compared with standard RTDs

Order Information - 4x AWG 28/7, Cu/Ag stranded wire, PTFE insulated, 5 mm stripped

Size	Dimensions (Ø x L in mm)	F0.15 (class A)	F0.3 (class B)
Nominal resistance: 100 Ω at 0 °C			
625	6 x 25	RPT0K1.625.2K.A.385-4.H	RPT0K1.625.2K.B.385-4.H
Order code		600.00033	600.00034
Nominal resistance: 500 Ω at 0 °C			
625	6 x 25	RPT0K5.625.2K.A.385-4.H	Upon request
Order code		600.00045	
Nominal resistance: 1000 Ω at 0 °C			
625	6 x 25	RPT1K0.625.2K.A.800-4.H	Upon request
Order code		600.00050	

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

Application Note
RTD Platinum Sensor

INNOVATIVE SENSOR TECHNOLOGY

1. General Information

In many sectors, temperature measurement is one of the most important physically defined parameter to determine product quality, security and reliability. Temperature sensors are produced with different technologies to fit specific application requirements. To this end, IST has concentrated the development, manufacturing processes and materials to produce high-end thin-film temperature sensors. This know-how, partially derived from the semiconductor industry, allowing IST to manufacture sensors in very small dimensions. Thin-film temperature sensors exhibit a very short response time due to their low thermal mass. The technologies and processes of IST thin-film sensors combines the positive attributes of traditional sensors - accuracy, long-term stability, repeatability and interchangeability within a wide temperature range. The advantages of thin-film mass-production creates an optimal price/performance ratio.

2. Construction

The temperature sensor consists of a high-purity platinum meander, photolithographically structured on a ceramic substrate. The resistivity is laser-trimmed and precisely adjusted to the final value. The resistive structure is covered with a glass passivation layer protecting the sensor against mechanical and chemical damages. The welded lead wires are covered with an additional fixation layer.

3. Nominal Value and Temperature Coefficent

The nominal value of the sensor is the defined value of the sensor resistance at 0 °C. The temperature coefficient α (TCR) is defined as:

$$\alpha = \frac{R_{100} - R_0}{100 \times R_0}$$ [K^{-1}] according to the DIN EN 60751, 2009-05 numerical value of 0.00385 K^{-1}.

Generally, the value is defined in ppm/K.

This example defines 3850 ppm/K[1)].

R_0 = resistance value in Ω at 0 °C
R_{100} = resistance value in Ω at +100 °C

1) Other TCRs available upon request

4. Long-Term Stability

For all sensor types up to 7W (+750 °C), the change in ohmic value after 1000 hrs is less than 0.04 % at maximum operating temperatures.

5. Temperature Characteristic Curve

The curve determines the relationship between the electrical resistance and the temperature.

$R(T) = R_0 (1 + A \times T + B \times T^2)$ 0 °C to +850 °C
$R(T) = R_0 (1 + A \times T + B \times T^2 + C \times [T-100] \times T^3)$ -200 °C to 0 °C

	Platinum (3850 ppm/K)	Platinum (3911 ppm/K)	Platinum (3750 ppm/K)	Platinum (3770 ppm/K)
A	A = 3.9083 x 10^{-3} [°C^{-1}]	A = 3.9692 x 10^{-3} [°C^{-1}]	A = 3.8102 x 10^{-3} [°C^{-1}]	A = 3.8285 x 10^{-3} [°C^{-1}]
B	B = -5.775 x 10^{-7} [°C^{-2}]	B = -5.829 x 10^{-7} [°C^{-2}]	B = -6.01888 x 10^{-7} [°C^{-2}]	B = -5.85 x 10^{-7} [°C^{-2}]
C	C = -4.183 x 10^{-12} [°C^{-4}]	C = -4.3303 x 10^{-12} [°C^{-4}]	C = -6 x 10^{-12} [°C^{-4}]	

R_0 = resistance value in Ω at 0 °C
T = temperature in accordance with ITS 90

Application Note
RTD Platinum Sensor

6. Tolerance Classes DIN EN 60751 Norm

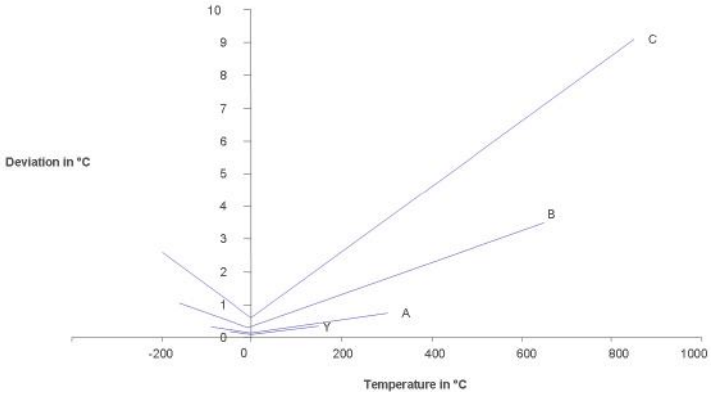
Temperature sensors are classified according to DIN EN 60751, 2009-05.

Class	± deviations in °C	IST AG reference	Temperature range of validity
DIN EN 60751 F 0.1	0.10 + 0.0017 x |T|	Y	-50 °C to +150 °C
DIN EN 60751 F 0.15	0.15 + 0.002 x |T|	A	-90 °C to +300 °C
DIN EN 60751 F 0.3	0.30 + 0.005 x |T|	B	-200 °C to +600 °C
DIN EN 60751 F 0.6	0.60 + 0.01 x |T|	C	-200 °C to +850 °C
1/5 DIN EN 60751 F 0.3	0.06 + 0.001 x |T|	K	upon request
1/10 DIN EN 60751 F 0.3	0.03 + 0.0005 x |T|	K	upon request

|T| is the numerical value of the temperature in °C without taking leading signs into account.

The temperature curves refers to DIN EN 60751 standards. The values in the table are for informative purposes only. Based on the assembly method and the different measurement conditions, accuracy, self-heating and response time may vary.

The measurement point is 5 mm from the wire end. For long wires (> 20 mm) the resistance is compensated (measured at room temperature) to ensure the correct resistance at the chip edge. For 1/3 DIN EN 60751, 1/5 DIN EN 60751, 1/10 DIN EN 60751 and 3- or 4-wire sensors please contact us.



7. Applied Current

The current applied is highly dependent on the application and leads to self-heating effects. Depending on the thermal transfer from the sensor into the application, the current can be increased. There is no bottom current limit for platinum thin-film sensors. The maximum current for sensors between +750 °C and +1000 °C (7W, 8W, 10W) should not exceed 1 mA.

Recommended current supplies:

100 Ω	500 Ω	1000 Ω	2000 Ω	10000 Ω
1 mA	0.5 mA	0.3 mA	0.2 mA	0.1 mA

Application Note
RTD Platinum Sensor

8. Self Heating

The electric current generates self-heating resulting in errors of measurement. To minimize the error, the testing current should be kept as low as possible. The measurement error caused by self-heating is dependent on temperature error $\Delta T = R \times I^2 / E$.

E = self-heating coefficient in mW/K, R = resistance in kΩ, I = measuring current in mA

9. Response Time

The response time is defined as the time in seconds the sensor needs to detect the change in temperature. $t_{0.63}$ describes the time in seconds the sensor needs to measure 63 % of the temperature change. The response time is depending on the sensor dimensions, the thermal contact resistance and the surounding medium.

Dimensions number	Sensor size	Response time in seconds						Self-heating			
	L x W x H / H2 in mm	Water (v = 0.4 m/s)			Air (v = 1 m/s)			Water (v = 0 m/s)		Air (v = 0 m/s)	
		$t_{0.5}$	$t_{0.63}$	$t_{0.9}$	$t_{0.5}$	$t_{0.63}$	$t_{0.9}$	E in mW/K	ΔT in [mK][1)]	E in mW/K	ΔT in [mK][1)]
161	1.6 x 1.2 x 0.25/0.8	0.05	0.08	0.18	1	1.2	2.5	12	8.3	1.8	56
308	3.0 x 0.8 x 0.25/0.6	0.08	0.1	0.25	1.2	1.5	3.5	15	6.7	2.2	46
232	2.3 x 2.0 x 0.25/0.9	0.09	0.12	0.33	2.7	3.6	7.5	40	2.5	4	25
202	2.0 x 2.0 x 0.65/1.3	0.11	0.16	0.38	3.6	4.9	10.2	32	3.1	3.2	31
216	2.5 x 1.6 x 0.65/1.3	0.12	0.18	0.42	4	5.4	11	36	2.8	3.6	28
232	2.3 x 2.0 x 0.65/1.3	0.15	0.2	0.55	4.5	6	12	40	2.5	4	25
325	3.0 x 2.5 x 0.65/1.3	0.25	0.3	0.7	5.5	7.5	16	90	1.1	8	13
516	5.0 x 1.6 x 0.65/1.3	0.25	0.3	0.7	5.5	7.5	16	80	1.3	7	14
520	5.0 x 2.0 x 0.65/1.3	0.25	0.3	0.75	6	8.5	18	80	1.3	7	14
525	5.0 x 2.5 x 0.65/1.3	0.33	0.4	0.85	6.5	9	19	90	1.1	8	13
538	5.0 x 3.8 x 0.65/1.3	0.35	0.4	0.90	7.5	10	20	140	0.7	10	10
505	5.0 x 5.0 x 0.65/1.3	0.4	0.5	1.1	8	11	21	150	0.7	11	9
102	10.0 x 2.0 x 0.65/1.3	0.33	0.4	0.85	7.5	10.5	20	140	0.7	10	10
281	13 x Ø 2.8	2.5	4.5	8	10	15	28	60	1.7	5.5	18
281*	13 x Ø 2.8	2	2.5	5.5	10	12	22	45	2.2	4	25
451	13 x Ø 4.5	8	10	22	12	22	40	85	1.2	8	13
451*	13 x Ø 4.5	5	6	14	16	18	37	60	1.7	6.5	15
SMD 1206	3.2 x 1.6 x 0.4	0.15	0.25	0.45	3.5	4.2	10	55	1.8	7	14
SMD 0805	2.0 x 1.2 x 0.4	0.1	0.12	0.33	2.5	3	8	38	2.6	4	25
FC 0603	1.5 x 0.75 x 0.4	0.08	0.1	0.25	1.8	2.2	5.5	25	4	2.5	40

1) Self-heating ΔT[mK] measured with Pt100 at 1 mA applied current at 0 °C

* Two sensing elements in the same round ceramic housing

L: Sensor length (without connections)
W: Sensor width
H: Sensor height (without connections)
H2: Sensor height (incl. connections and strain relief)

10. Dimensions Tolerances

Sensor width (W) ±0.2 mm
Sensor length (L) ±0.2 mm
Sensor height (H2) ±0.3 mm
Sensor height (H) ±0.1 mm
Wire length ±1 mm (5 mm to 30 mm)
Wire length > 30 mm, tolerances on request

Application Note
RTD Platinum Sensor

11. Sensor Construction Examples

Wire

SIL

FlipChip and SMD

Minisens and Slimsens

Long wire, insulated wire and insulated stranded wire

Inverted wire and perpendicular wire

Round ceramic housing

Order Information
Wired RTD Platinum Sensor

INNOVATIVE SENSOR TECHNOLOGY

Material

P	=	Platin

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

Connection

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	=	DIN EN 60751 F0.15	K	=	customer specific
B	=	DIN EN 60751 F0.3	P	=	pair
C	=	DIN EN 60751 F0.6	G	=	group
Y	=	DIN EN 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 0K1. 232. 6 W. A. 010. U

ISO 9001 RoHS

TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

Order Information

Surface Mount RTD Platinum Sensor

INNOVATIVE SENSOR TECHNOLOGY

Material

P	=	Platin

TCR

Pt 3850 ppm/K		

Resistance in Ω at 0 °C

Size in mm

Operating temperature range

1	=	-50 °C to +150 °C	4	=	-50 °C to +250 °C
2	=	-50 °C to +150 °C / 250 °C	5	=	-50 °C to +400 °C
3	=	-50 °C to +150 °C / 250 °C	6	=	-50 °C to +600 °C

Connection (SMD/FC)

(2)P	=	tin-coated (96.5Sn/3Ag/0.5Cu), LMP lead-free, (reflow soldering)	(1)FC	=	tin-coated, LMP lead-free, 96.5Sn/3Ag/0.5Cu)
(3)P	=	tin-coated (5Sn/93.5Pb/1.5Ag), HMP, (reflow soldering)	(2)FC	=	tin-coated, soldering depot, HMP, 5Sn/93.5Pb/1.5Ag
(4)P	=	gold-coated, (solderable coating)	(3)FC	=	Au-Pads (bonding pads), various types available
			(5)FC	=	reinforced thin film Pt-pads
			(6)FC	=	thick film Pt-pads

Tolerance class

A[1)]	=	DIN EN 60751 F0.15	C	=	DIN EN 60751 F0.6
B	=	DIN EN 60751 F0.3	K	=	customer specific

Special

S	=	special	M	=	metallized backside

P 0K1. 0805. 2 P. A. S

1) Class A only available as SMD

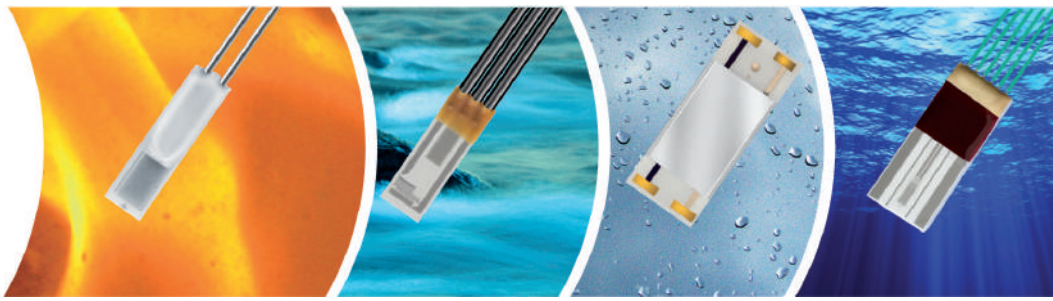
ISO 9001

RoHS

INNOVATIVE SENSOR TECHNOLOGY

Innovative Sensor Technology USA Division, 9516 W. Flamingo Rd., # 210, Las Vegas, NV 89147, Phone +1 702 894 9891, Fax +1 702 894 9993
contact@ist-usadivision.com, www.ist-usadivision.com

INNOVATIVE SENSOR TECHNOLOGY



Scan the QR code
for more
information

www.ist-usadivision.com