



300 °C Series



Nickel sensor with wires



For high temperatures



Benefits & characteristics



- Very robust connections
- Easy interchangeability

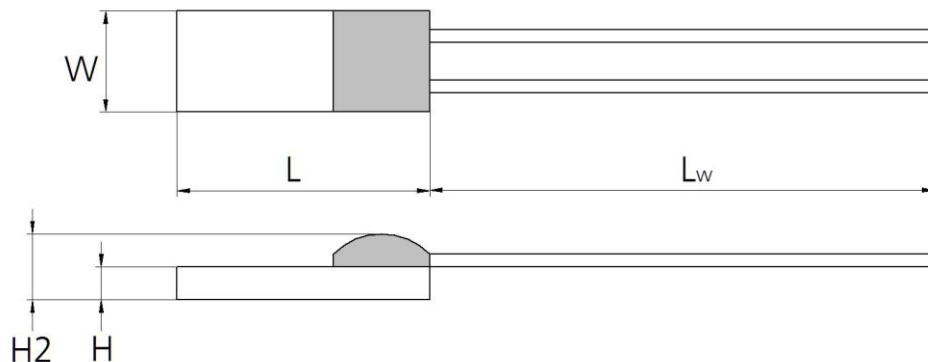


- Small dimensions
- Simple linearization



- Vibration and temperature shock resistant
- Wide temperature range
- Inorganic glass passivation
- Customer-specific sensor available upon request

Illustration ¹⁾



¹⁾ for actual size see dimensions in order information



Technical Data



Operating temperature range: -60 °C to +300 °C



Nominal resistance:*

100 Ω at 0 °C

500 Ω at 0 °C

1000 Ω at 0 °C



Characteristics curve:*

6180 ppm/K (Nickel ND)

5000 ppm/K (Nickel NL)

6370 ppm/K (Nickel NJ)**

6720 ppm/K (Nickel NA)***



Long-term stability: < 0.1 % at 1000 h at maximal operating temperature



Tolerance class ¹⁾ :*	iST reference	T > 0 °C
(dependent on temperature range)	A	$0.2 + 0.0035 \times t $
	B	$0.4 + 0.007 \times t $
	C	$0.8 + 0.014 \times t $

1) For tolerances <0°C please check application note



Connection:*

Ni-wire, Ø 0.2 mm (solderable, weldable, crimpable)

Pt/Ni-wire, Ø 0.2 mm (solderable, weldable, crimpable, brazeable)

Alternative wire construction:*

Inverted welding

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:*

Metallized backside

Substrate thickness

* Customer-specific alternatives available

** 6370 ppm/K (Nickel NJ) 891 Ω at 0 °C only

*** 6720 ppm/K (Nickel NA) 120 Ω at 0 °C only



Order Information

Nominal Resistance	Size	Dimensions (L x W x H / H2 in mm)	Class*	Order code	Product name (secondary reference)	Wire length in mm	Special
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3W (Ni-wire, Ø 0.2 mm)

6720 ppm/K (Nickel NA)

120 Ω	232	2.3 x 2.0 x 0.65 / 1.3	Class K	103170	NA120.232.3W.K.007	7	
120 Ω	420	4.0 x 2.0 x 0.65 / 1.3	Class K	103216	NA120.420.3W.K.007	7	

6180 ppm/K (Nickel ND)

100 Ω	232	2.3 x 2.0 x 0.65 / 1.3	Class A	103253	ND0K1.232.3W.A.010	10	
100 Ω	232	2.3 x 2.0 x 0.65 / 1.3	Class B	103076	ND0K1.232.3W.B.010	10	

5000 ppm/K (Nickel NL)

100 Ω	520	5.0 x 2.0 x 0.65 / 1.3	Class A	On request	NL0K1.520.3W.A.010	10	
100 Ω	520	5.0 x 2.0 x 0.65 / 1.3	Class B	103256	NL0K1.520.3W.B.010	10	
1000 Ω	520	5.0 x 2.0 x 0.65 / 1.3	Class A	On request	NL1K0.520.3W.A.010	10	
1000 Ω	520	5.0 x 2.0 x 0.65 / 1.3	Class B	103163	NL1K0.520.3W.B.010	10	
1000 Ω	520	5.0 x 2.0 x 0.65 / 1.3	Class A	On request	ND1K0.520.3W.A.010	10	
1000 Ω	520	5.0 x 2.0 x 0.65 / 1.3	Class B	103135	ND1K0.520.3W.B.010	10	

3K (Pt/Ni-wire, Ø 0.2 mm)

6720 ppm/K (Nickel NA)

120 Ω	232	2.3 x 2.0 x 0.65 / 1.3	Class K	103132	NA120.232.3K.K.007	7	
120 Ω	232	2.3 x 2.0 x 0.65 / 1.3	Class K	103178	NA120.232.3K.K.010	10	
120 Ω	420	4.0 x 2.0 x 0.65 / 1.3	Class K	103200	NA120.420.3K.K.007	7	

Additional Documents

Application Note

Document name: ATN_E



Order Information

Nickel Sensor - Secondary reference



Material

N = Nickel

S = special

TCR

A = ANSI 6720 ppm/K J = 6370 ppm/K

B = Balco M = 5696 ppm/K

D = 6180 ppm/K C = 4280 ppm/K (GOST 6651-2009)

L = 5000 ppm/K S = special

Resistance in Ω at 0 °C

Size in mm

Operating temperature range

1 = -60 °C to + 150 °C

2 = -60 °C to + 200 °C

3 = -60 °C to + 300 °C

Connection

S = SIL

I = insulated wire

W = wire

FW = flat wire

FK = flat wire customer specific

K = customer-specific

E = enameled Cu-wire

Tolerance class ($T > 0$ °C)

A = $0.2 + 0.0035 \times |t|$

B = $0.4 + 0.007 \times |t|$

C = $0.8 + 0.014 \times |t|$

K = customer-specific

Wire length in mm

Special

T = substrate thickness 0.25 mm

M = metallized backside

W = sintered powder

U = inverted welding

S = special

N A 120. 420. 3 K. B. 007.



Innovative Sensor Technology IST AG • Stegrütstrasse 14 • 9642 Ebnat-Kappel • Switzerland

+41 71 992 01 00 • info@ist-ag.com • www.ist-ag.com

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