



300 °C Series



Nickel sensor with wires



For high temperatures



Benefits & characteristics



- Very robust connections



- Easy interchangeability



- Small dimensions

- Simple linearization

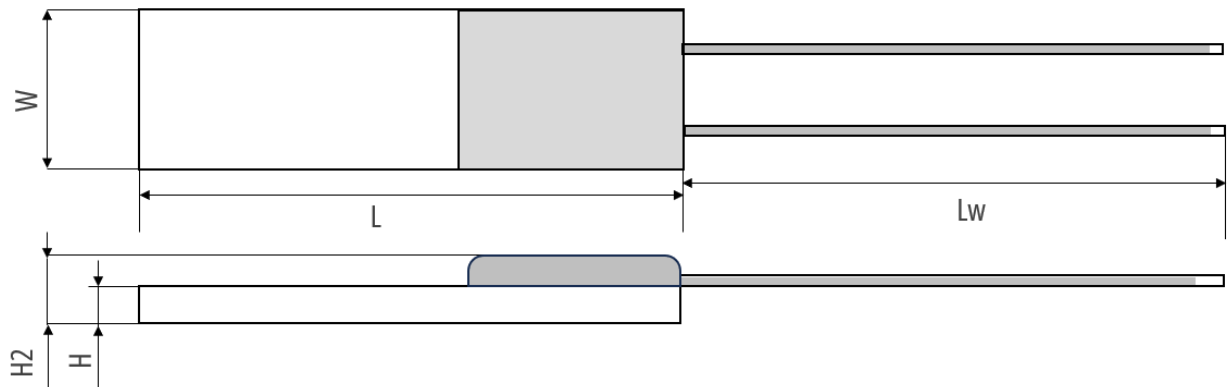
- Vibration and temperature shock resistant

- Wide temperature range

- Inorganic glass passivation

- Customer-specific sensor available upon request

Illustration ¹⁾



¹⁾ for actual size see dimensions in order information

H = Substrate Height

H2 = Height

W = Width

L = Length

L_w = Wire length

Dimension tolerances:

W ± 0.2 mm, L ± 0.2 mm, H ± 0.1 mm, H2 ± 0.3 mm,

L_w (up to 30 mm) ± 1 mm



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⁾ : * (dependent on temperature range)	iST reference	T > 0 °C
	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	
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



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