



150 °C Series

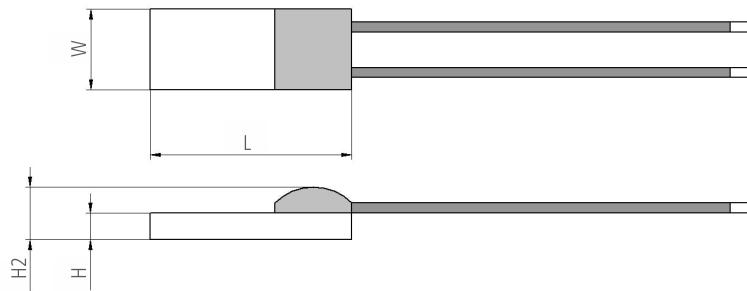
Nickel sensor with wires

For low temperatures

Benefits & Characteristics

- Excellent long-term stability
- Insulated wires
- Easy interchangeability
- Small dimensions
- Simple linearization
- Vibration and temperature shock resistant
- Customer-specific sensor available upon request

Illustration¹⁾



1) For actual size, see dimensions

Technical Data

Operating temperature range:	-60 °C to +150 °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 (dependent on temperature) ^{1):*}	IST AG reference T > 0 °C
<small>1) For tolerances <0°C please check application note</small>	A 0.2 + 0.0035 x t B 0.4 + 0.007 x t C 0.8 + 0.014 x t
Connection:*	Enameled Cu-wire, Ø 0.2 mm (solderable, weldable) Enameled Cu-wire, Ø 0.15 mm (solderable, weldable) Enameled Cu-wire, Ø 0.25 mm, metallized backside (solderable, weldable)
Alternative wire construction:*	Inverted welding



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:*

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 - 1E (enameled Cu-wire, Ø 0.2 mm)

Size	Dimensions (L x W x H / H2 in mm)	Class A	Class B
6180 ppm/K (Nickel ND)			
Nominal resistance: 100 Ω at 0 °C			
232	2.3 x 2.0 x 0.65 / 1.3	Upon request	ND0K1.232.1E.B.025
Order code			Upon request
Nominal resistance: 1000 Ω at 0 °C			
232	2.3 x 2.0 x 0.65 / 1.3	Upon request	ND1K0.232.1E.B.025
Order code			Upon request
520	5.0 x 2.0 x 0.65 / 1.3	Upon request	ND1K0.520.1E.B.025
Order code			Upon request
5000 ppm/K (Nickel NL)			
Nominal resistance: 1000 Ω at 0 °C			
520	5.0 x 2.0 x 0.65 / 1.3	Upon request	NL1K0.520.1E.B.025
Order code			Upon request

Order Information - 1K (enameled Cu-wire, Ø 0.15 mm)

Size	Dimensions (L x W x H / H2 in mm)	Class A	Class B
6180 ppm/K (Nickel ND)			
Nominal resistance: 100 Ω at 0 °C			
232	2.3 x 2.0 x 0.65 / 1.3	Upon request	ND0K1.232.1K.B.007
Order code			Upon request



Size	Dimensions (L x W x H / H2 in mm)	Class A	Class B
Nominal resistance: 1000 Ω at 0 °C			
232	2.3 x 2.0 x 0.65 / 1.3	Upon request	ND1K0.232.1K.B.007
Order code			Upon request
520	5.0 x 2.0 x 0.65 / 1.3	Upon request	ND1K0.520.1K.B.007
Order code			Upon request
5000 ppm/K (Nickel NL)			
Nominal resistance: 1000 Ω at 0 °C			
520	5.0 x 2.0 x 0.65 / 1.3	Upon request	NL1K0.520.1K.B.007
Order code			Upon request
6370 ppm/K (Nickel NJ)			
Nominal resistance: 891 Ω at 0 °C			
538	5.0 x 3.8 x 0.65 / 1.3		NJ891.538.1K.K.076
Order code			020.00514

Order Information - 1K (enameled Cu-wire, Ø 0.25 mm, metallized backside)

Size	Dimensions (L x W x H / H2 in mm)	Class A	Class B
5000 ppm/K (Nickel NL)			
Nominal resistance: 1000 Ω at 0 °C			
520	5.0 x 2.0 x 0.65 / 1.3		NL1K0.520.1K.B.300.M
Order code			020.00604

Additional Documents

Application Note:	Document name: ATN_E
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Order Information

Nickel sensors

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 FK = flat wire customer-specific

I = insulated wire K = customer-specific

W = wire E = enameled Cu-wire

FW = flat 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 D OK1. 232. 1 E. B. 025



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