



150 °C series Nickel sensor with wires For low temperatures



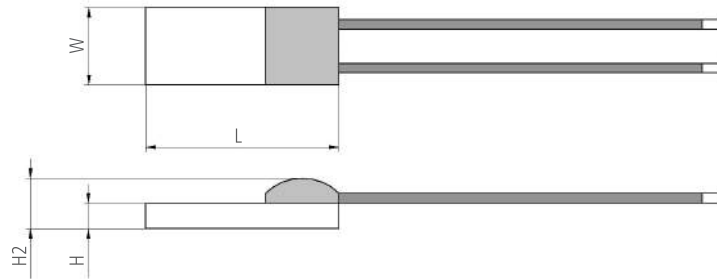
INNOVATIVE SENSOR TECHNOLOGY



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⁾

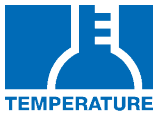


1) For actual size, see dimensions

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):*	IST AG reference	T < 0 °C	T > 0 °C
	A	0.2 + 0.014 x t	0.2 + 0.0035 x t
	B	0.4 + 0.028 x t	0.4 + 0.007 x t
	C	0.8 + 0.056 x t	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, metalized back side, (solderable, weldable)		
Alternative wire construction:*	Inverted welding		
Recommended applied current: ¹⁾	1 mA at 100 Ω		
	0.5 mA at 500 Ω		
	0.3 mA at 1000 Ω		
Other alternatives:*	Metalized backside		
	Substrate thickness		

¹⁾ Self-heating must be considered



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- * 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 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 x 0.65 / 1.3	Upon request	ND1K0.232.1E.B.025
Order code			Upon request
520	5 x 2 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 x 2 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 x 0.65 / 1.3	Upon request	ND0K1.232.1K.B.007
Order code			Upon request
Nominal resistance: 1000 Ω at 0 °C			
232	2.3 x 2 x 0.65 / 1.3	Upon request	ND1K0.232.1K.B.007
Order code			Upon request
520	5 x 2 x 0.65 / 1.3	Upon request	ND1K0.520.1K.B.007
Order code			Upon request



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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 x 2 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 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, metalized back side)

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 x 2 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



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Material

N = Nickel

S = special

TCR

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

B = Balco M = 5696 ppm/K

D = DIN 6180 ppm/K C = 4280 ppm/K (GOST 8.625-2006)

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

A = GOST 8.625-2006 F0.15

B = GOST 8.625-2006 F0.3

C = GOST 8.625-2006 F0.6

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 J 0K1. 520. 3 FW. B. 015. W



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