300 °C Series

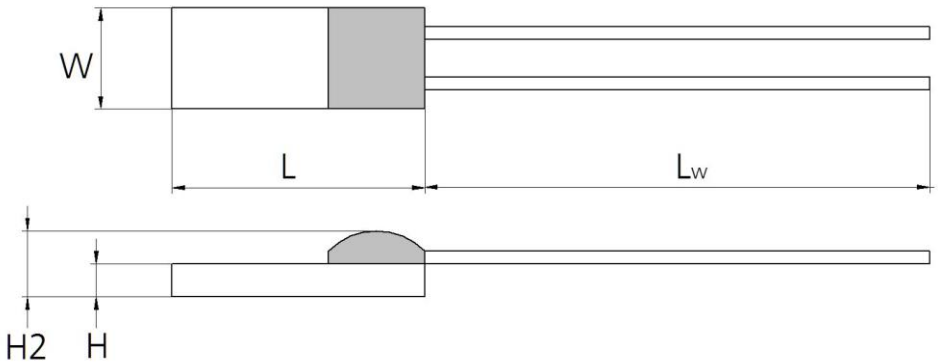
Nickel sensor with wires

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)]:* (dependent on temperature range) *1) For tolerances <0°C please check application note*	**iST reference** — T > 0 °C A — 0.2 + 0.0035 x |t| B — 0.4 + 0.007 x |t| C — 0.8 + 0.014 x |t|
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)] *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

Nominal Resistance	Size	Dimensions (L x W x H / H2 in mm)	Class*	Order code	Product name (secondary reference)	Wire length in mm	Special
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	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 x |t|
B	=	0.4 + 0.007 x |t|
C	=	0.8 + 0.014 x |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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