TEMPERATURE

FLOW

HUMIDITY

CONDUCTIVITY

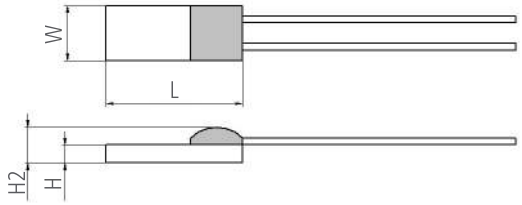
200 °C series
Nickel sensor with wires
For medium temperatures

INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Excellent long-term stability
- Connections remain in shape
- Easy interchangeability
- Small dimensions
- Simple linearization
- Vibration and temperature shock resistant
- Customer specific sensor available upon request

Illustration[1)]



1) For actual size, see dimensions

Technical Data

Operating temperature range:	-60 °C to +200 °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 range):*	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:*	Ag-wire, Ø 0.25 mm (solderable, weldable)		
	Cu/Ag-wire, PTFE AWG30 (solderable, weldable)		
	Cu/Ag-wire, PTFE AWG26 (solderable, weldable)		
	Cu/Ag-wire, Ø 0.4 mm (solderable, weldable)		
	Ni/Au flat wire, 0.2 x 0.4 mm (solderable, weldable, crimpable)		
	CuP-SIL wire post-plated with Sn (solderable, crimpable)		
Alternative wire construction:*	Inverted welding		
Recommended applied current:[1)]	1 mA at 100 Ω		
1) Self-heating must be considered	0.5 mA at 500 Ω		
	0.3 mA at 1000 Ω		

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Other alternatives:*	Metalized backside
	Substrate thickness
	Sintered powder

* 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 - 2W (Ag-wire, Ø 0.25 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	ND0K1.232.2W.A.010	ND0K1.232.2W.B.010
Order code		020.00004	020.00002
232	2.3 x 2 x 0.65 / 1.3	ND0K1.232.2W.A.015	ND0K1.232.2W.B.015
Order code		020.00003	020.00001
325	3 x 2.5 x 0.65 / 1.3	ND0K1.325.2W.A.010	ND0K1.325.2W.B.010
Order code		020.00011	020.00009
505	5 x 5 x 0.65 / 1.3	Upon request	ND0K1.505.2W.B.010
Order code			020.00529
Nominal resistance: 200 Ω at 0 °C			
520	5 x 2 x 0.65 / 1.3	Upon request	ND0K2.520.2W.B.015
Order code			020.00031
Nominal resistance: 300 Ω at 0 °C			
520	5 x 2 x 0.65 / 1.3	Upon request	ND0K3.520.2W.B.015
Order code			020.00357
Nominal resistance: 500 Ω at 0 °C			
520	5 x 2 x 0.65 / 1.3	Upon request	ND0K5.520.2W.B.010
Order code			020.00044
520	5 x 2 x 0.65 / 1.3	ND0K5.520.2W.A.015	ND0K5.520.2W.B.015
Order code		020.00683	020.00682
Nominal resistance: 1000 Ω at 0 °C			
232	2.3 x 2 x 0.65 / 1.3	ND1K0.232.2W.A.015	ND1K0.232.2W.B.010
Order code		020.00050	020.00049
520	5 x 2 x 0.65 / 1.3	ND1K0.520.2W.A.010	ND1K0.520.2W.B.010
Order code		020.00062	020.00060

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Size	Dimensions (L x W x H / H2 in mm)	Class A	Class B
538	5 x 3.8 x 0.65 / 1.3	Upon request	ND1K0.538.2W.B.015
Order code			020.00083
102	10 x 2 x 0.65 / 1.3	Upon request	ND1K0.102.2W.B.015
Order code			020.00090
Nominal resistance: 5000 Ω at 0 °C			
525	5 x 2.5 x 0.65 / 1.3	Upon request	ND5K0.525.2W.B.010
Order code			020.00098
5000 ppm/K (Nickel NL)			
Nominal resistance: 1000 Ω at 0 °C			
520	5 x 2 x 0.65 / 1.3	NL1K0.520.2W.A.010	NL1K0.520.2W.B.010
Order code		020.00110	020.00108
525	5 x 2.5 x 0.65 / 1.3	Upon request	NL1K0.525.2W.B.010
Order code			020.00117
Nominal resistance: 10000 Ω at 0 °C			
525	5 x 2.5 x 0.65 / 1.3	Upon request	NL10K.525.2W.B.010
Order code			020.00128

Order Information - 2I (Cu/Ag-wire, AWG30, PTFE insulated)

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			
325	3 x 2.5 x 0.65 / 1.3	Upon request	ND0K1.325.2I.B.030
Order code			020.00014
Nickel NL (5000ppm/K)			
Nominal resistance: 1000 Ω at 0 °C			
520	5 x 2 x 0.65 / 1.3	Upon request	NL1K0.520.2I.B.050
Order code			020.00629
520	5 x 2 x 0.65 / 1.3	Upon request	NL1K0.520.2I.B.100
Order code			020.00627

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Order Information - 2K (Cu/Ag-wire, AWG26)

Size	Dimensions (L x W x H / H2 in mm)	Class A	Class B
6180 ppm/K (Nickel ND)			
Nominal resistance: 1000 Ω at 0 °C			
520	5 x 2 x 0.65 / 1.3	Upon request	ND1K0.520.2K.B.058
Order code			020.00071
538	5 x 3.8 x 0.65 / 1.3	Upon request	ND1K0.538.2K.B.026
Order code			020.00619
5000 ppm/K (Nickel NL)			
Nominal resistance: 1000 Ω at 0 °C			
520	5 x 2 x 0.65 / 1.3	Upon request	NL1K0.520.2K.B.165
Order code			020.00605
520	5 x 2 x 0.65 / 1.3	Upon request	NL1K0.520.2K.B.215
Order code			020.00606

Order Information - 2K (Cu/Ag-wire, Ø 0.4 mm)

Size	Dimensions (L x W x H / H2 in mm)	Class A	Class B
6180 ppm/K (Nickel ND)			
Nominal resistance: 1000 Ω at 0 °C			
520	5 x 2 x 0.65 / 1.3	Upon request	ND1K0.520.2K.B.007
Order code			020.00322
538	5 x 3.8 x 0.65 / 1.3	ND1K0.538.2K.A.010	ND1K0.538.2K.B.010
Order code		020.00639	020.00635
5000 ppm/K (Nickel NL)			
Nominal resistance: 1000 Ω at 0 °C			
520	5 x 2 x 0.65 / 1.3	Upon request	NL1K0.520.2K.B.007
Order code			020.00201
520	5 x 2 x 0.65 / 1.3	Upon request	NL1K0.520.2K.B.020
Order code			020.00197

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Order Information - 2FW (Ni/Au flat wire, 0.2 x 0.4 mm (HxW)

Size	Dimensions (L x W x H / H2 in mm)	Class A	Class B
6180 ppm/K (Nickel ND)			
Nominal resistance: 1000 Ω at 0 °C			
520	5 x 2 x 0.65 / 1.3	ND1K0.520.2FW.A.007	ND1K0.520.2FW.B.007
Order code		020.00349	020.00348
325	3 x 2.5 x 0.65 / 1.3	Upon request	ND0K1.325.2I.B.030
Order code			020.00014
5000 ppm/K (Nickel NL)			
Nominal resistance: 1000 Ω at 0 °C			
520	5 x 2 x 0.65 / 1.3	NL1K0.520.2FW.A.007	NL1K0.520.2FW.B.007
Order code		020.00351	020.00350

Order Information - 2S (CuP-SIL wire post-plated with Sn, 10 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			
505	5 x 5 x 0.65 / 1.3	Upon request	ND0K1.505.2S.B
Order code			020.00027
538	5 x 3.8 x 0.65 / 1.3	Upon request	ND0K1.538.2S.B
Order code			020.00024
Nominal resistance: 200 Ω at 0 °C			
538	5 x 3.8 x 0.65 / 1.3	Upon request	ND0K2.538.2S.B
Order code			020.00034
Nominal resistance: 1000 Ω at 0 °C			
525	5 x 2.5 x 0.65 / 1.3	ND1K0.525.2S.A	ND1K0.525.2S.B
Order code		020.00078	020.00077
538	5 x 3.8 x 0.65 / 1.3	ND1K0.538.2S.A	ND1K0.538.2S.B
Order code		020.00085	020.00084
Nominal resistance: 5000 Ω at 0 °C			
525	5 x 2.5 x 0.65 / 1.3	ND5K0.525.2S.A	ND5K0.525.2S.B
Order code		020.00100	020.00099

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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: 500 Ω at 0 °C			
538	5 x 3.8 x 0.65 / 1.3	Upon request	NL0K5.538.2S.B
Order code			020.00203
Nominal resistance: 1000 Ω at 0 °C			
425	4 x 2.5 x 0.65 / 1.3	NL1K0.425.2S.A	NL1K0.425.2S.B
Order code		020.00157	020.00106
525	5 x 2.5 x 0.65 / 1.3	Upon request	NL1K0.525.2S.B
Order code			020.00118
538	5 x 3.8 x 0.65 / 1.3	Upon request	NL1K0.538.2S.B
Order code			020.00122
Nominal resistance: 5000 Ω at 0 °C			
525	5 x 2.5 x 0.65 / 1.3	Upon request	NL5K0.525.2S.B
Order code			020.00166

Additional Documents

	Document name:
Application note:	ATN_E

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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	=	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

ISO 9001

RoHS

INNOVATIVE SENSOR TECHNOLOGY
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