PAUL-GOTHE-GmbH Bochum

Wittener Straße 82
D-44789 Bochum

CE

Manual for metal sheathed thermocouples type K

Can used from -270 °C to +1200 °C.

Sheath material: Inconel 600. Type K (NiCr - Ni).

Permitted deviation acc to class 1 DIN EN 60 584-2: 1,5 °C or 0,004 * (t) °C.

((t) = Numeric value of temperature in °C without algebraic signs)

Response time of thermocouples (Air 2 m/s):

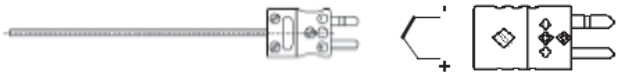
Sheath diameter 3 mm: 80 Seconds

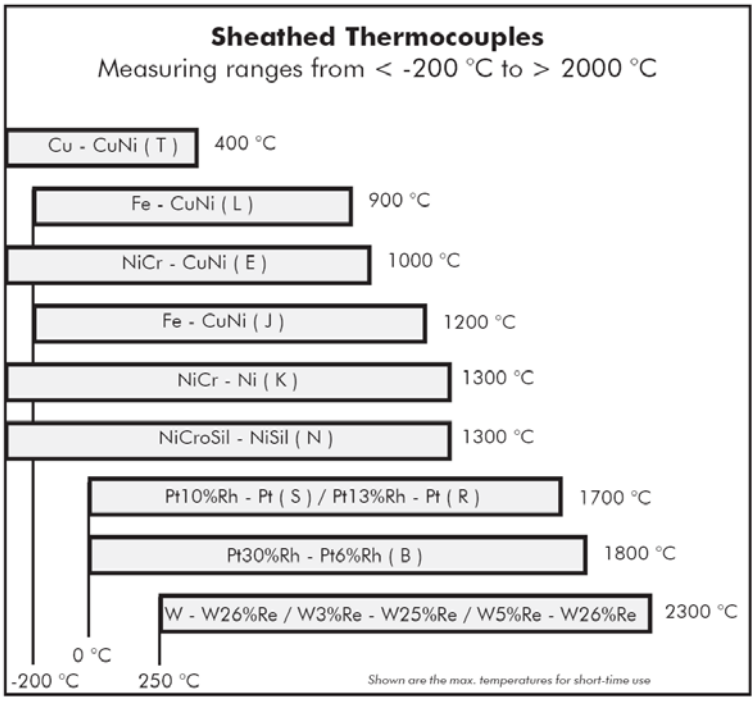
Sheath diameter 6 mm: 200 Seconds

With hard-wired thermocouple plug miniature or standard:

Miniature plug

Standard-plug





PAUL GOTHE BOCHUM

PAUL GOTHE GmbH

Manufacturer of Emissions Control Technology

since 1924

Product Info: Ni-Cr-Ni

Technical Data about our Thermocouple type K (NiCr-Ni) acc. to IEC 60 584-1.

Mineral-Insulated Thermocouples for Measurements in Industry, Laboratories and Research

The thermocouple wires are embedded in a compact insulation of high-purity MgO and enclosed by a metal sheath of Inconel. The compact insulation fixes the wires securely so that no damage can occur because of strong vibrations or high bending loads. Also, short circuits between the wires or between wire and sheath are virtually impossible.

Response time of MI-thermocouples in seconds (-5 % / +15 %)

Condi-tions	Time	Measuring junction insulated from sheath Sheath diameter in mm						
	sec.	0.5	1.0	1.5	3.0	4.5	6.0	8.0
Water 0.2 m/s	50 %	0.06	0.15	0.21	1.2	2.5	4.0	7
	90 %	0.13	0.5	0.6	2.9	5.9	9.6	17
Air 2 m/s	50 %	1.8	3	8	23	37	60	100
	90 %	5.9	15	25	80	120	200	360

Cross-section of sheathed cable

Measuring tip type:

Thermal EMF Values acc. to DIN EN 60 584-1
(Type L acc. to DIN 43 710 (standard withdrawn 07/97)

Temperature [°C]	[µV]
-200	-5891
0	0
100	4096
300	12209
500	20644
700	29129
900	37326
1100	45119

Technical Data:

Standard for the thermocouples:

according to IEC 60 584-1

Permitted Deviations: acc. to DIN EN 60 584-2; IEC 60 584-2 Class 1 (Measuring range types K: -40 ... +1000 °C):

1.5 °C or 0.004 x (t) °C [(t) = Numeric value of temperature in °C without algebraic signs]

Insulation resistance:

>/= 5000 MOhm m at 23 °C Min. 1000 MOhm m (EN 61 515)

Insulation material:

High-purity magnesium-oxide (MgO)

Sheath material:

Inconel 600, mat. no: 2.4816

Version 04/10