

Mineral Insulated Thermocouple model CD

MIT Measuring Insert with connection head

In general

Reckmann GmbH temperature sensors (R58®) are used exclusively for measuring process temperatures in solid, liquid or gaseous media. The measuring insert (fig.1) is, so to speak, the carrier of the sensor element and the exchangeable unit of our thermometers of the design with protection fitting.

Range of application:

Non-critical process conditions in plant / mechanical engineering.

For installation-specific data, see installation instructions for MTE.

Type code 1R9-H0.

Technical datas

- **Connection head** (Fig. 1/1) similar to DIN 50446,
Preferred heads: Form CD, IP 54.
Dimensions see page 2.
On request: IP 65 or IP 67
- **Measuring insert** (fig. 1/2) similar to DIN 43735 installed in connection head (fig.1/1). Sensor depending on application:
with 1 or 2 thermocouples according to IEC / EN 60584-1.
Recommended application temperature depending on thermocouple type and diameter:
Type J: Ø 1.5 and 2.0 mm up to 440 °C, Ø 3.0 mm up to 520 °C, Ø 4.5 up to 620 °C, 6.0 and 8.0 mm up to 720 °C.
Type K: Ø 1.5 and 2.0 mm up to 920 °C, Ø 3.0 mm up to 1070 °C, Ø 4.5; 6.0 and 8.0 mm up to 1100 °C.
Type N: Ø 1.5 and 2.0 mm up to 920 °C, Ø 3.0 mm up to 1070 °C, Ø 4.5; 6.0 and 8.0 mm up to 1100 °C.
Type E: Ø 1.5 and 2.0 mm up to 510 °C, Ø 3.0 mm up to 650 °C, Ø 4.5 up to 730 °C, 6.0 and 8.0 mm up to 820 °C.
Type T: Ø 1.5 and 2.0 mm up to 260 °C, Ø 3.0 mm up to 315 °C, Ø 4.5 / 6.0 and 8.0 mm up to 350 °C.
Type S/R: Ø 1.5 / Ø 3.0 and 6.0 mm up to 1300 °C.

Note:

TYPE S/R only makes sense with sheath made of Pt10%RH for 0 °C up to max. 1300 °C.

- **Sheath material** design according to or similar to IEC / EN 61515.
Preferred material 2.4816.
Preferred diameter 3 or 6 mm.
- **Process connection** via sliding compression fitting, union nut or welded-on compression fitting DIN 32676.
- **Optional:** Class 3 requirements (-200 °C to 40 °C) on request. For requirements of class 1 and class 3 only possible with specially selected sheath material, high expense and not with type T.

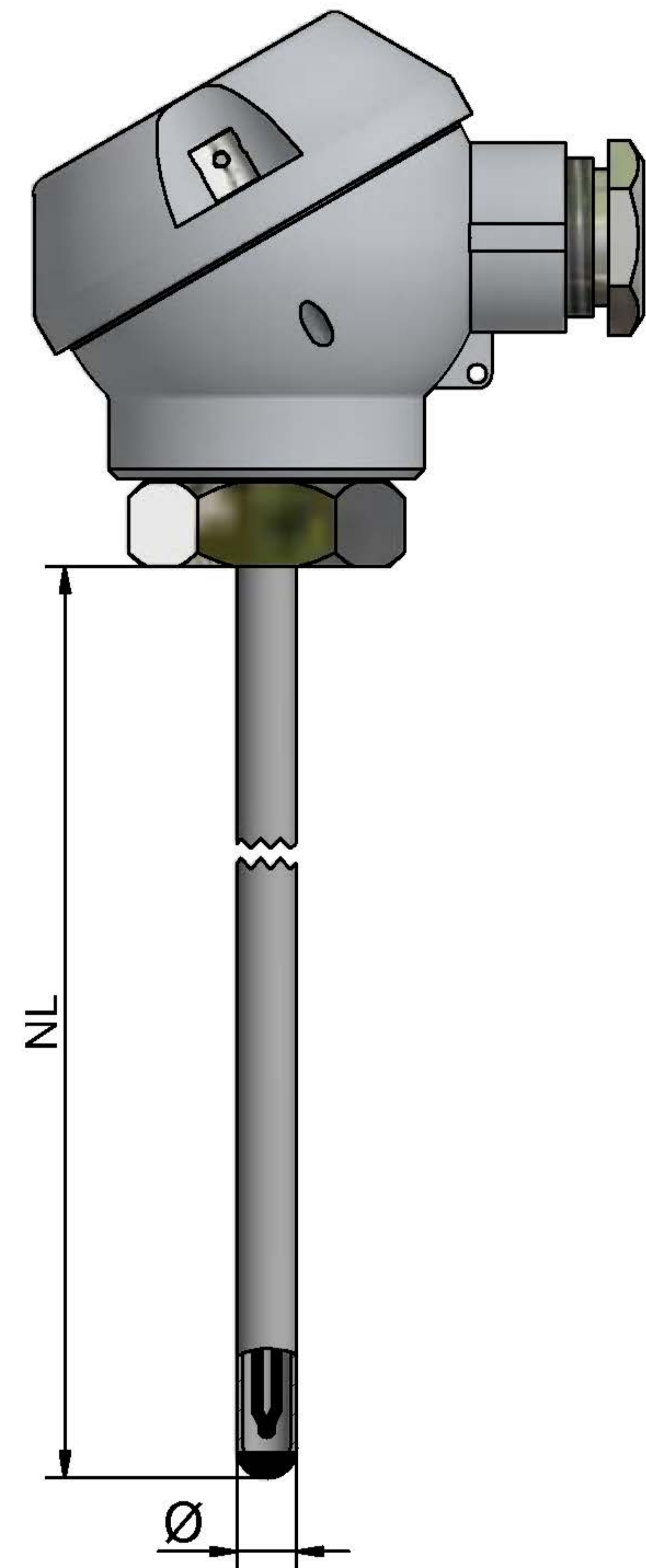


fig. 1

Deviations according to the sensor type

Thermocouples

table 1

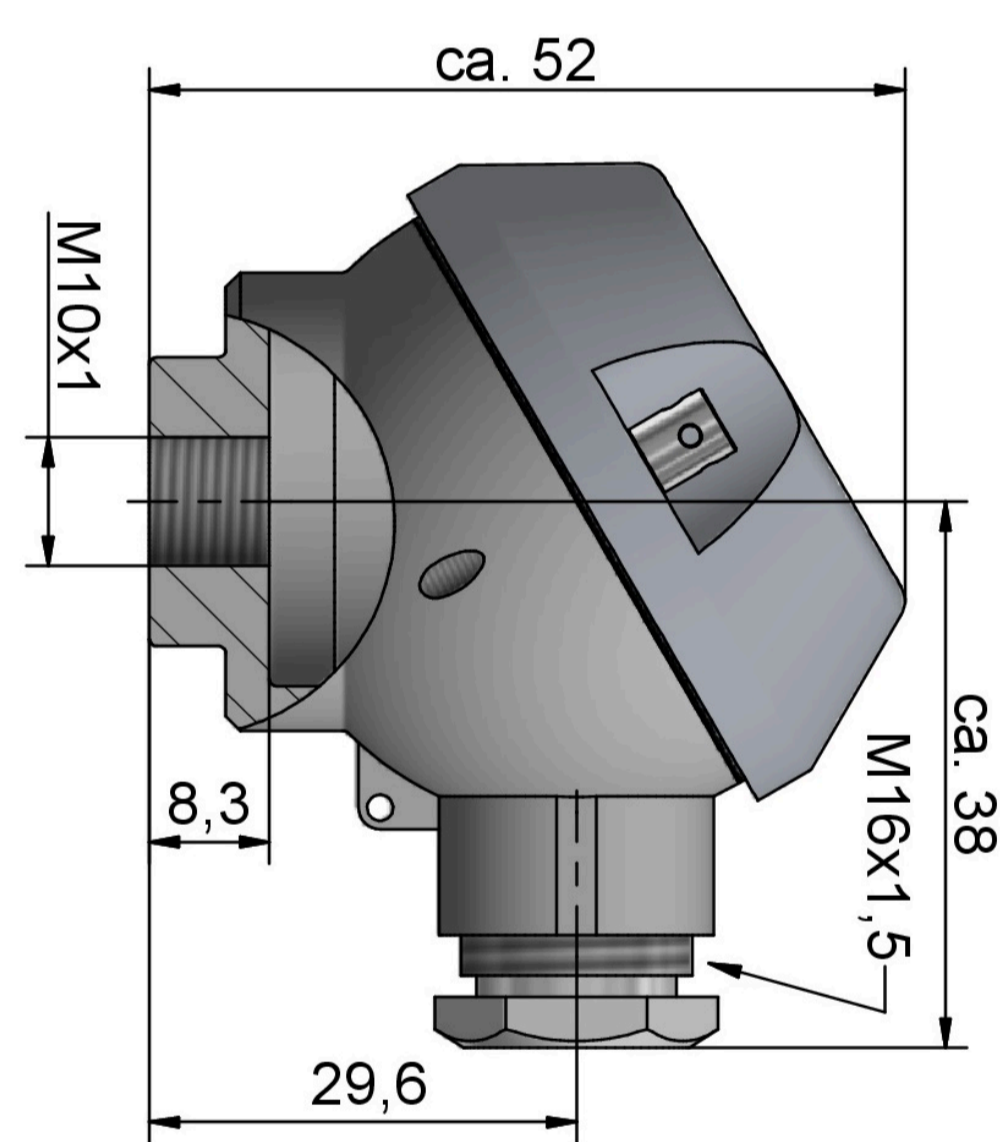
Thermocouple type	Permitted deviations ¹⁾ (±°C) and the validity for the temperature		
	class 1	class 2	class 3 ²⁾
by Type T	0,5 °C oder 0,004 x t	1 °C oder 0,0075 x t	1 °C oder 0,015 x t
Type T	-40 °C bis +350 °C	-40 °C bis +350 °C	-200 °C bis +40 °C
bei Typ E,J,K,N	1,5 °C oder 0,004 x t	2,5 °C oder 0,0075 x t	2,5 °C oder 0,015 x t
Type E	-40 °C bis +800 °C	-40 °C bis +900 °C	-200 °C bis +40 °C
Type J	-40 °C bis +750 °C	-40 °C bis +750 °C	/
Type K	-40 °C bis +1000 °C	-40 °C bis +1200 °C	-200 °C bis +40 °C
Type N	-40 °C bis +1000 °C	-40 °C bis +1200 °C	-200 °C bis +40 °C
by Typ R oder S	1 °C für t < 1100 °C [1 + 0,003 x (t - 1100)] für t > 1100 °C	1,5 °C oder 0,0025 x t	4 °C oder 0,005 x t
by Type B	/	0,01 x t	/
Type B	/	600 °C bis 1700 °C	600 °C bis 1700 °C

1) The deviation limit is either given as the difference in °C or as a function of temperature (°C from IST-90) according to the above mentioned table. For each the greater value is valid.
2) The normally available material for thermocouples keeps the limit deviation according to Table 1 for temperatures above -40°C. At low temperatures, these materials do not necessarily meet the class 3 limit deviations. If thermocouples of types T, E, K and N are required, which comply with both the class 3 and class 1 or 2 limit deviations, this must be specified by the user because therefore a special selection of the available material is usually necessary.

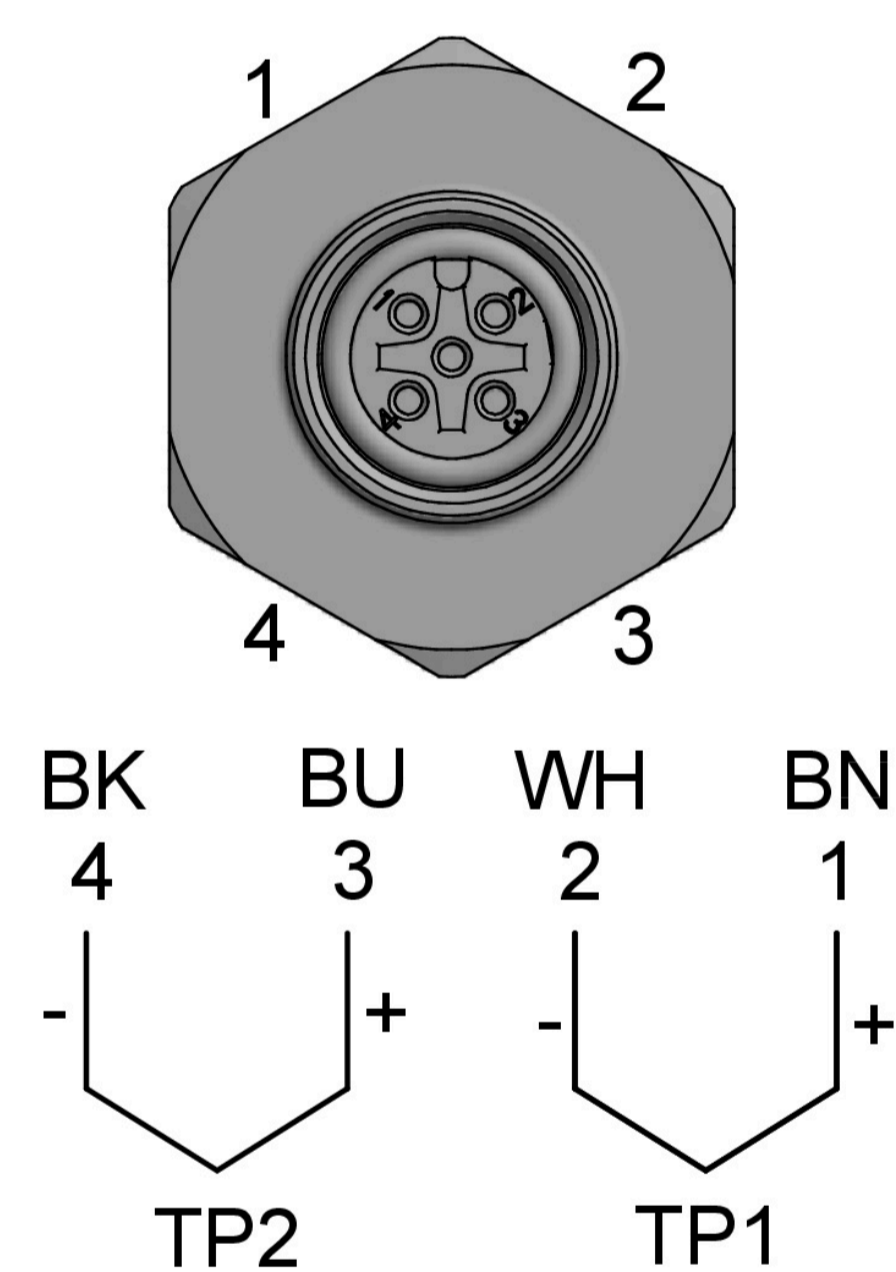
Source: Technical dates from IEC / EN 60584-1:2014-07 chapter 5

Optional connecting heads / circuit diagram

As an alternative to the cable gland, an M12 built-in connector is possible.



connection head model D-LA
PC = M10x1



M12 Insert socket
2 thermocouples