

Ex-MIT Measuring insert model BM

for operation in the hazardous area with gas or dust

In general   

Explosion-proof temperature sensors from Reckmann GmbH (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 TR15 design. The projected nominal length guarantees ground contact, the spring-mounted ceramic connection base (fig.1/1-5) compensates for different thermal expansion coefficients of the measuring insert and the protective fitting.

Application area:

Use in potentially explosive atmospheres is only permissible with installation in a suitable protective fitting. or in model B.

Types TR15 / TR14-J. Type of protection marking depending on design and installation specification

II 2G Ex ia IIC T1...T6 Gb or

II 2D Ex ia IIIC T135 °C Db.

Ambient temperature at the connection head -40 °C to 100 °C.

For installation-specific data, see the operating instructions

Type code TR14-X-D.

Technical datas

- **Measuring insert** (fig. 1) according to or similar to DIN 43735.
- **Sensor** depending on use:
 - with 1 or 2 thermocouples according to IEC / EN 60584-1.
 - Operating temperature MIT (fig. 1/5) depended on the thermocouple type and diameter -40°C up to:
 - Type J: Ø 3,0 mm up to 520°C, Ø 4,5 up to 620°C, 6,0 und 8,0 mm up to 720°C.
 - Type K: Ø 3,0 mm up to 1070°C, Ø 4,5; 6,0 and 8,0 mm up to 1100°C.
 - Type N: Ø 3,0 mm bis 1070°C, Ø 4,5; 6,0 and 8,0 mm up to 1100°C.
 - Type E: Ø 3,0 mm up to 650°C, Ø 4,5 up to 730°C, 6,0 und 8,0 mm up to 820°C.
 - Type T: Ø 3,0 mm up to 315°C, Ø 4,5 / 6,0 and 8,0 mm up to 350°C.
- **Note:** Process temperatures above 450 °C are only possible with appropriate process decoupling. MIT ground welded or Sensors with Ø 3 mm and more than 4 inner conductors, Ø < 3 mm, Ø > 3 mm and more than 6 inner conductors are considered to be non-insulated or grounded in accordance with IEC / EN 60079-11 (dielectric strength) and must be connected to equipotential bonding of the system throughout the intrinsically safe circuit for safety reasons, taking into account the special conditions according to IEC / EN 60079-14.
- **Sheath material** type according to IEC / EN 61515.
 - Standard - material 2.4816.
 - Preference diameter 3 or 6 mm.
- **Optional materials for gas and dust explosion protection:**
 - please see operating instructions chapter 4 X-conditions.

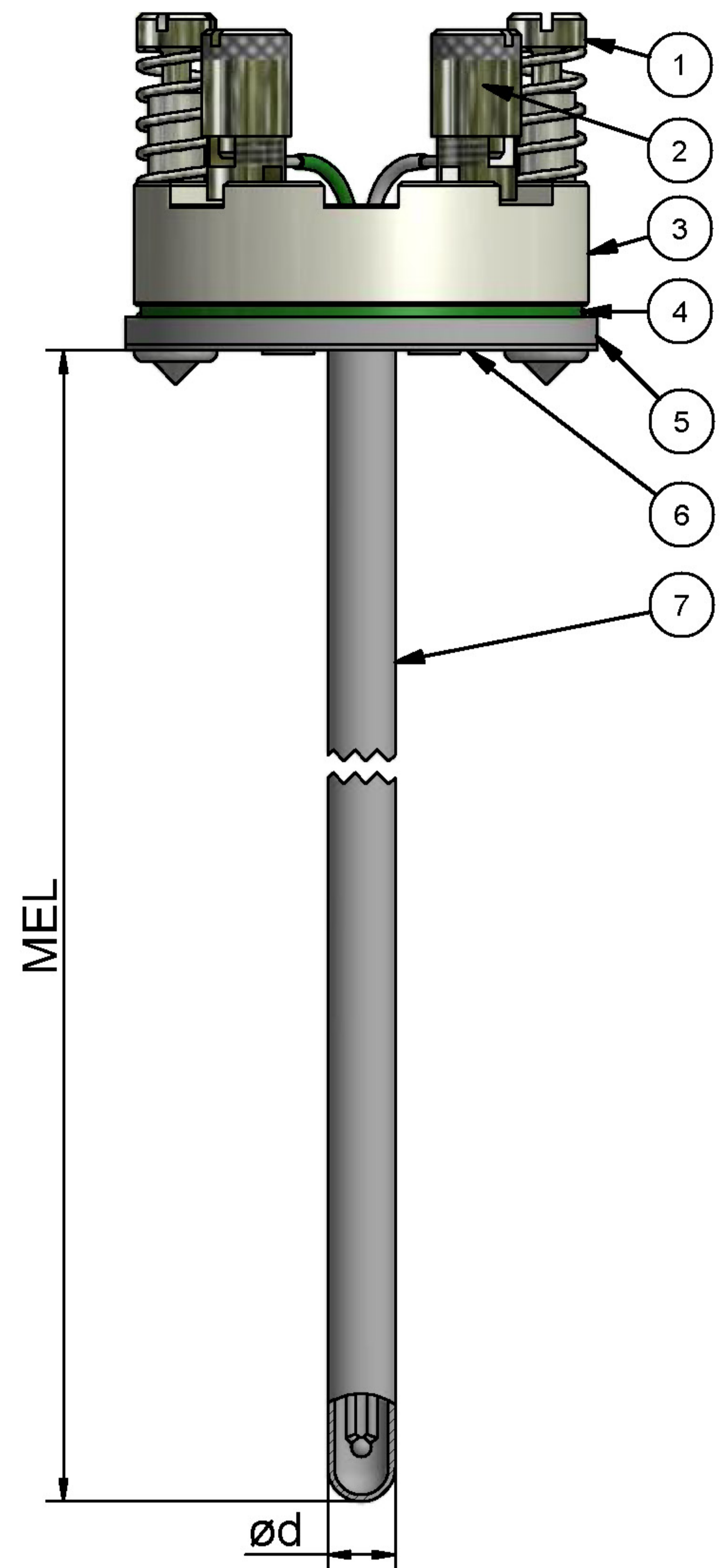


fig. 1

Deviations according to the sensor type

Thermocouples

table 1

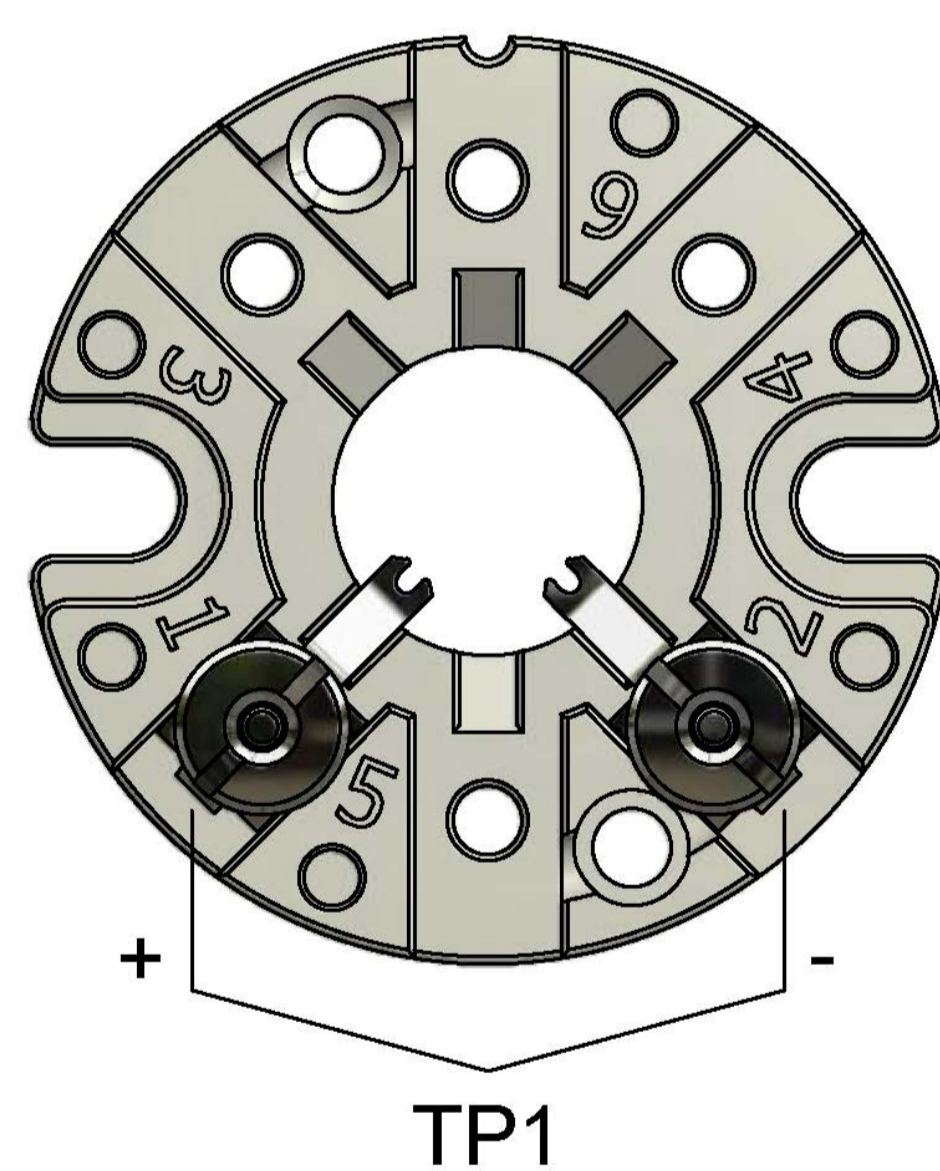
Thermocouple type	Permitted deviations ¹⁾ (±°C) and the validity for the temperature		
	class 1	class 2	class 3 ²⁾
by Type T	0,5 °C oder 0,004 x t	1 °C oder 0,0075 x t	1 °C oder 0,015 x t
Type T	-40 °C bis +350 °C	-40 °C bis +350 °C	-200 °C bis +40 °C
bei Typ E,J,K,N	1,5 °C oder 0,004 x t	2,5 °C oder 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.

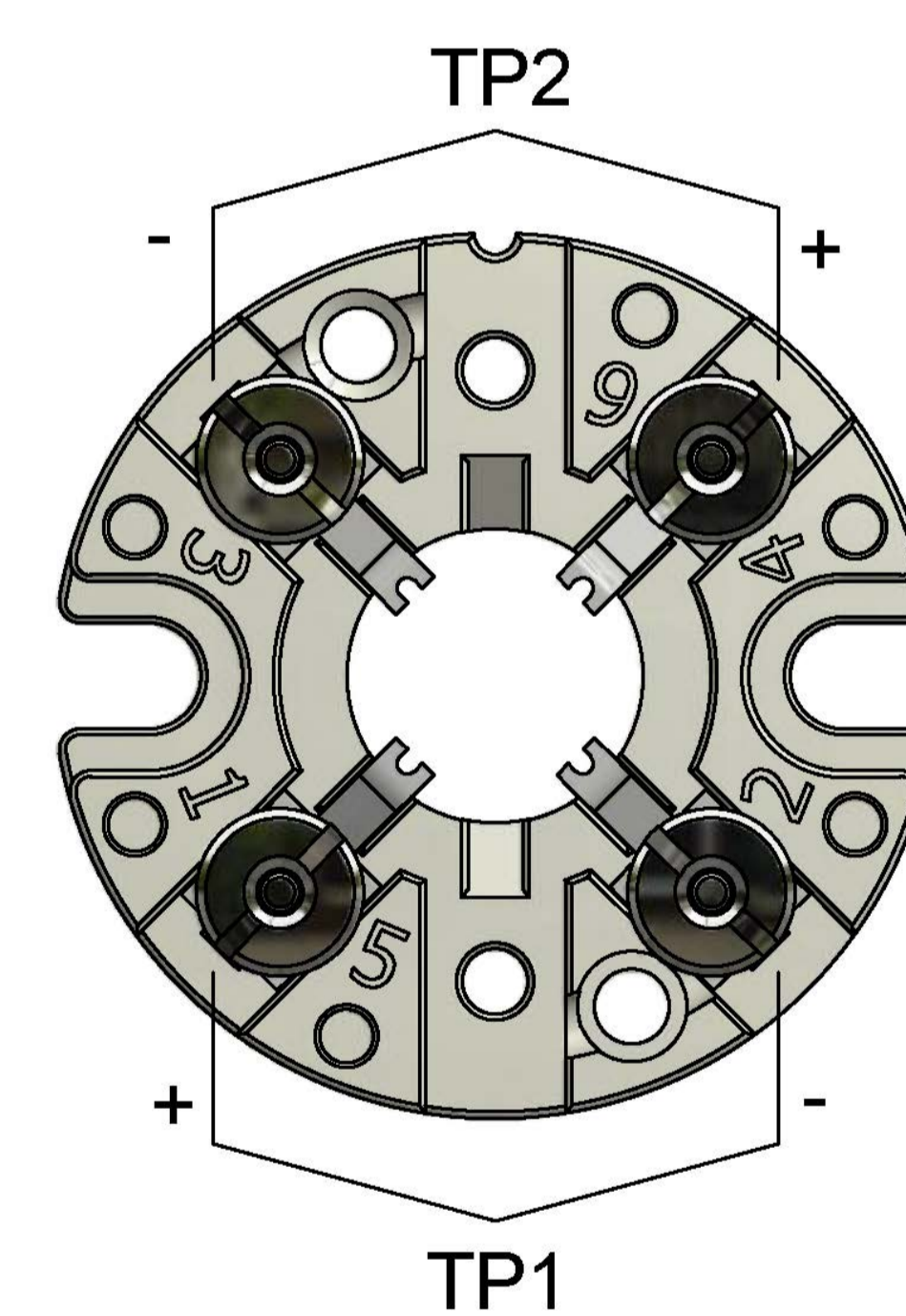
Source: Technical dates from IEC / EN 60584-1:2014-07 chapter 5

wiring diagram

Thermocouples according to IEC / EN 60584-1 and colour code according to IEC / EN 60584-3.



standard socket
1 thermocouple



standard double socket
2 thermocouples