

Mineral Insulated Thermocouple model A

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 bendable sheath material in combination with a sliding compression fitting, allows variable installation, but this design also allows direct installation in a suitable thermowell.

Range of application:

Non-critical process conditions in plant / mechanical engineering

For installation-specific data, see installation instructions MTE

Type code: 1R9-F0

Technical datas

- **Connection head** (Fig. 1/1) according to DIN 50446, Preferred heads: Form A, A-KL, A-KS, A-KLH, A-KSH. Protection class IP 53. Dimensions see page 2.
- **Measuring insert** (fig. 1/2) according to or 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 operating temperature depending on thermocouple type and diameter:
 - 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 up to 1070 °C, Ø 4.5; 6.0 and 8.0 mm up to 1100 °C.
 - Type J: 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 E: 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 3.0 mm up to 315 °C, Ø 4.5 / 6.0 and 8.0 mm up to 350 °C.
 - Type S/R: 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. Standard - material 2.4816. Preferred diameter 3, 6 or 8 mm. Process connection via sliding compression fitting, union nut or welded-on compression fitting DIN 32676.
- **Optional:** requirements of class 3 (-200 °C to 40 °C) on request. For requirements better than class 1 only possible with specially selected sheath material, high expense and not with type T. Translated with www.DeepL.com/Translator (free version)

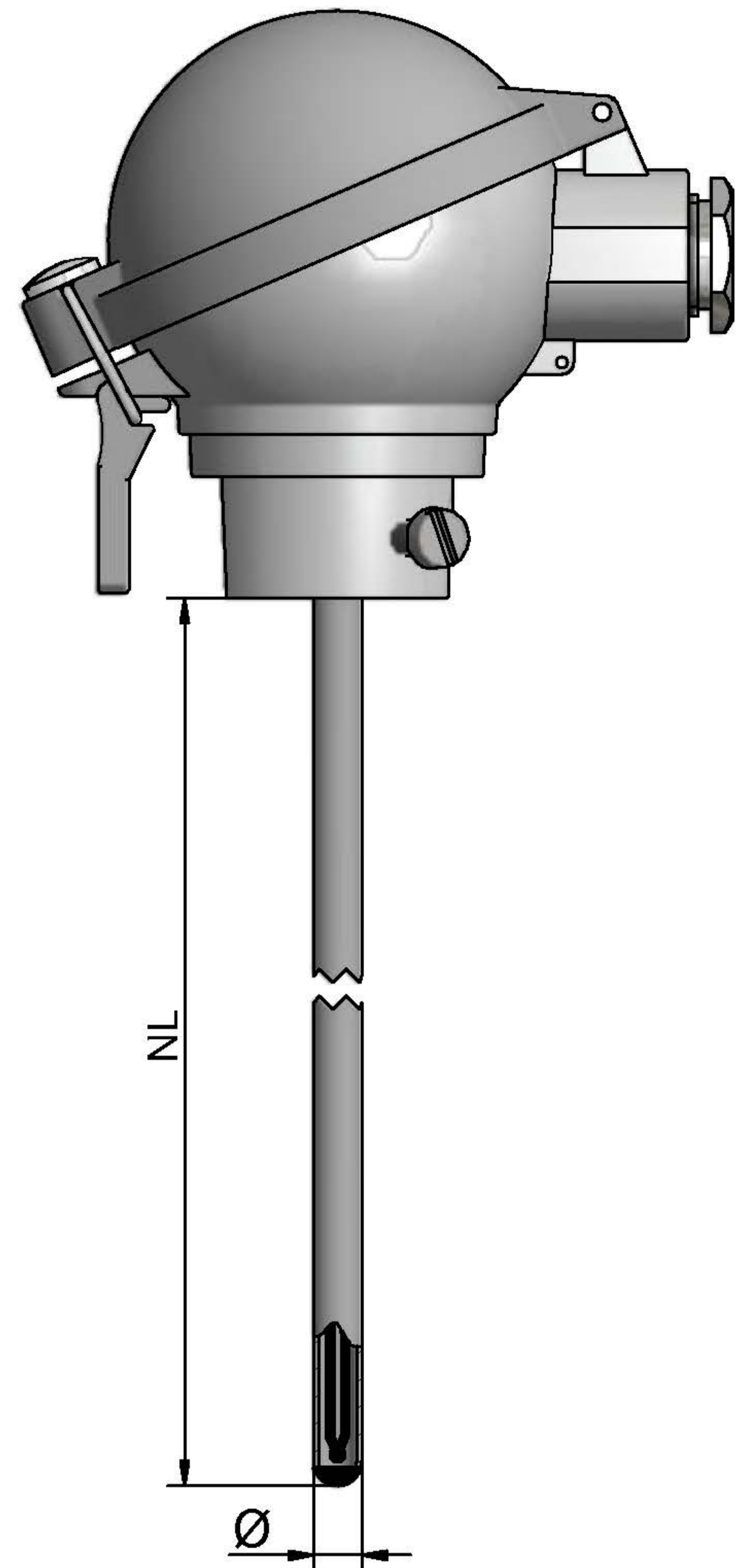


fig. 1

Deviations according to the sensor type

Thermocouples

table 1

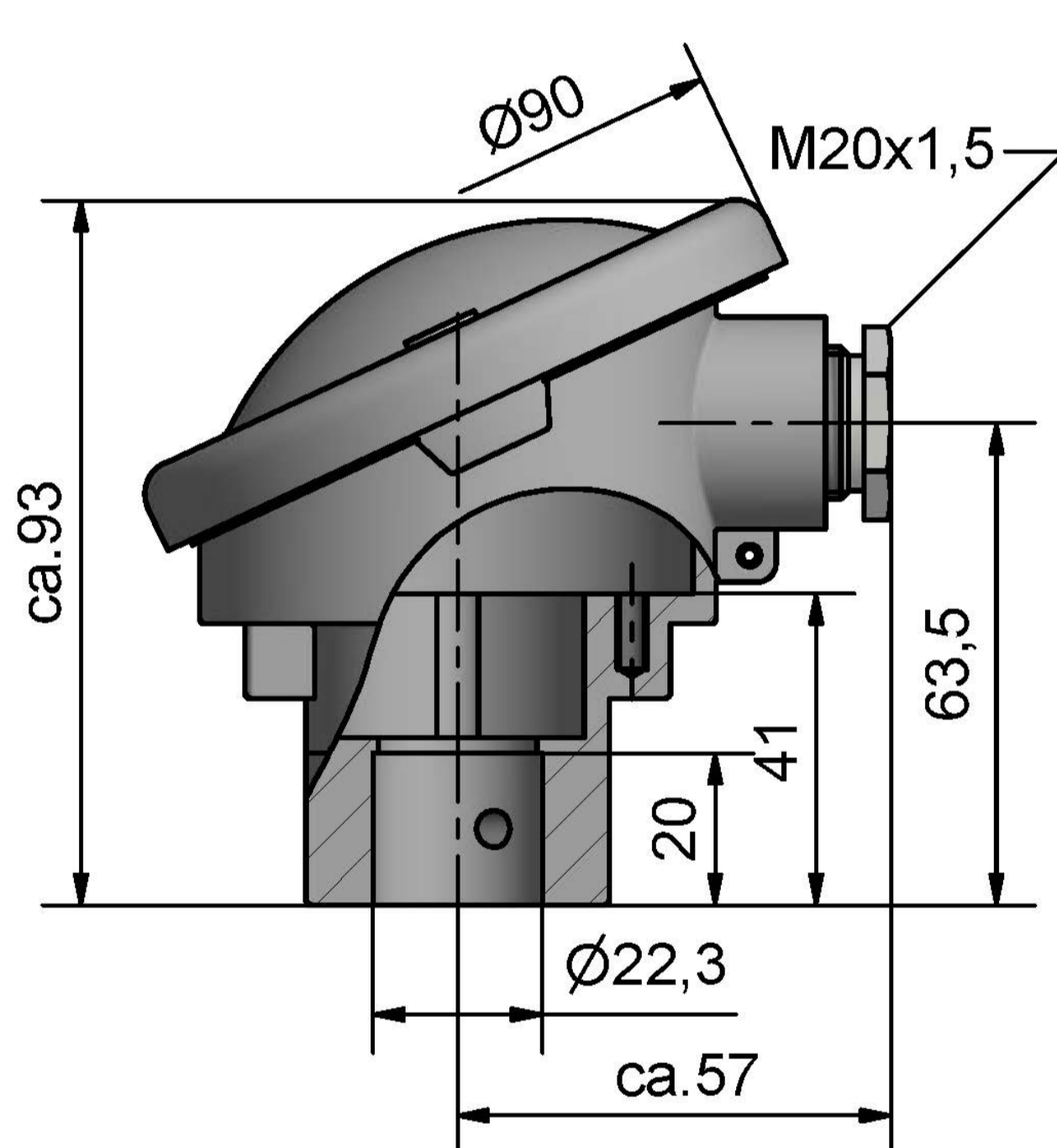
Thermocouple type	Permitted deviations ¹⁾ (±°C) and the validity for the temperature		
	class 1	class 2	class 3 ²⁾
for Type T	0,5 °C or 0,004 x t	1 °C or 0,0075 x t	1 °C or 0,015 x t
Type T	-40 °C up to +350 °C	-40 °C up to +350 °C	-200 °C up to +40 °C
for Typ E,J,K,N	1,5 °C or 0,004 x t	2,5 °C or 0,0075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

1) = The specified limit deviation is either the deviation in °C or as a function of temperature (°Celsius of ACTUAL-90) as in the above table. The larger value applies.
2) = The normally available thermocouple material complies with the limiting deviations according to table 1 for temperatures above -40 °C. These materials do not necessarily comply with the limit deviations of class 3 at low temperatures. If thermocouples of types T, E, K and N are required that comply with the limit deviations of class 3 as well as class 1 or 2, this must be explicitly specified by the user, as a special selection of the available material is usually necessary.

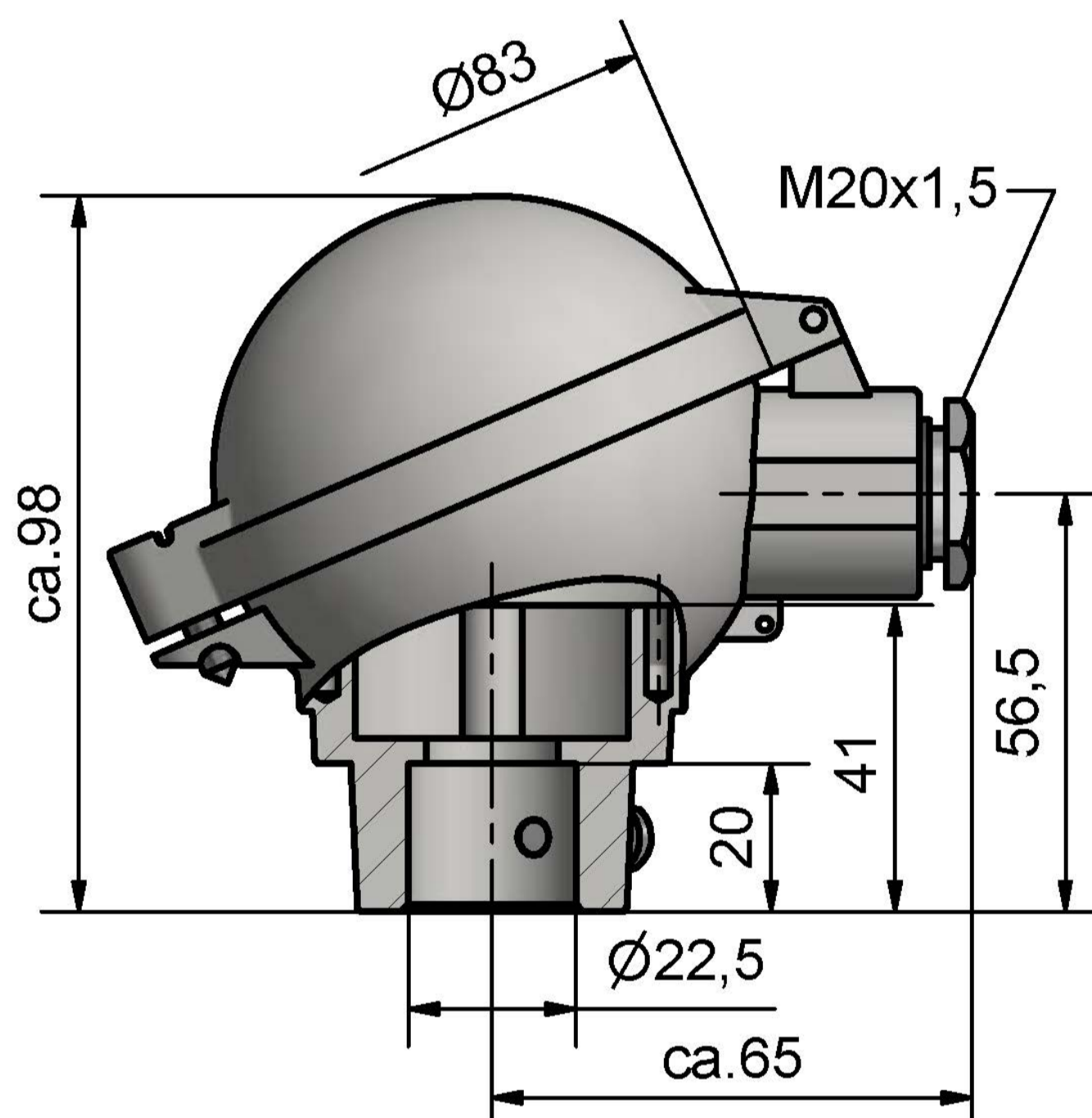
Source: Technical dates from IEC / EN 60584-1:2014-07 chapter 5

Optional connecting heads / circuit diagram

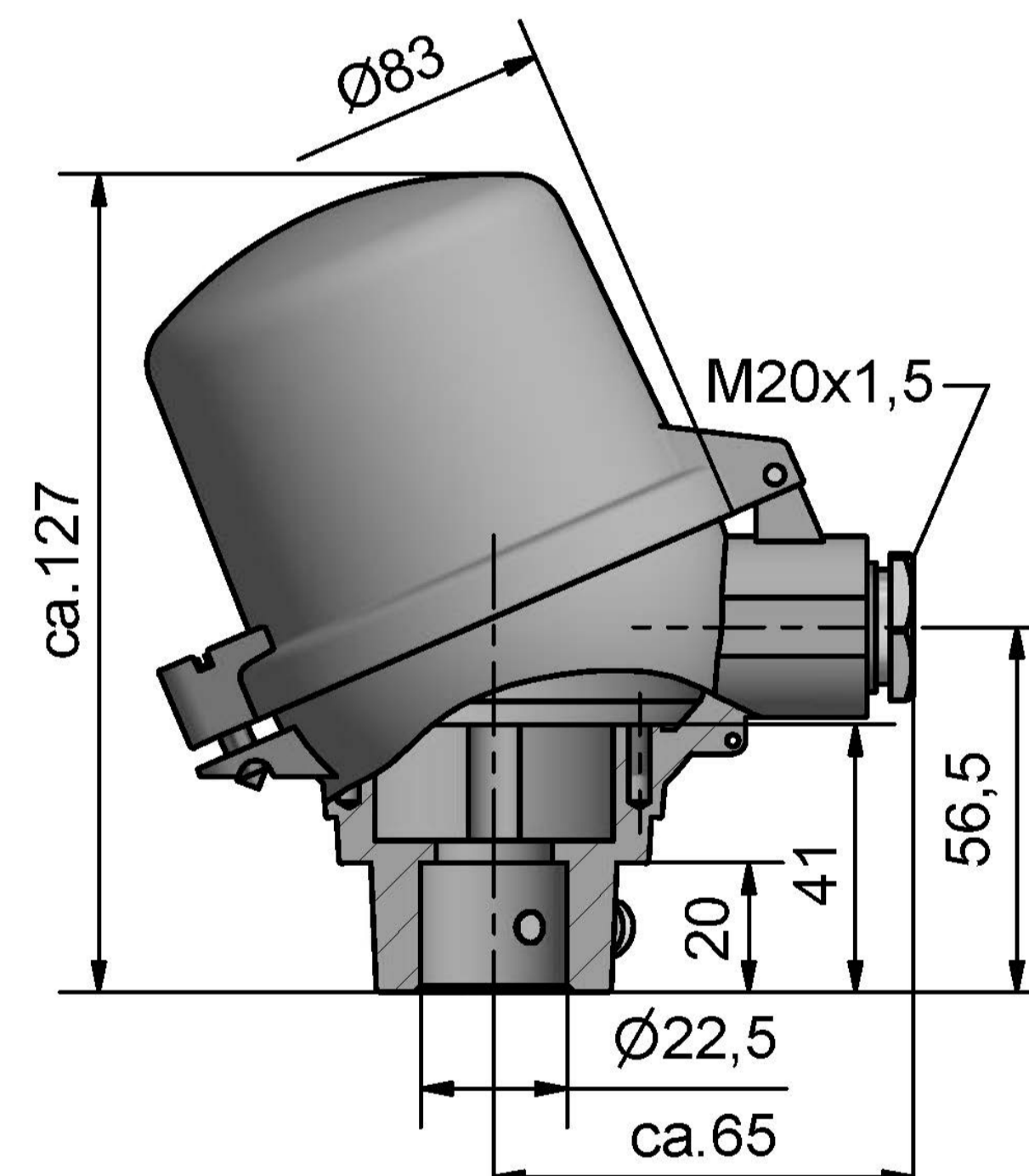
As an alternative to the cable gland, an M12 built-in connector is possible.



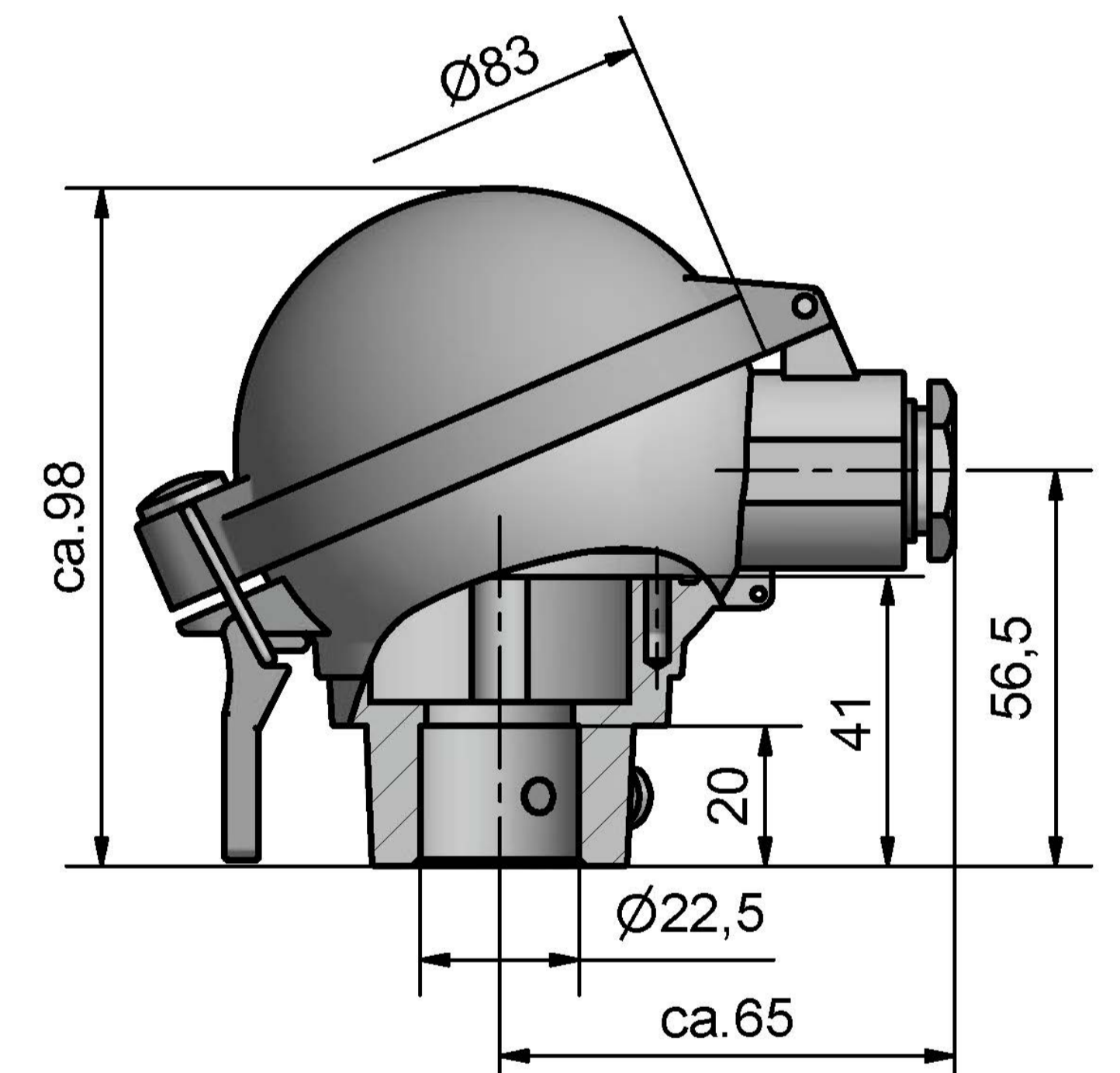
connection head model A
1 cable gland



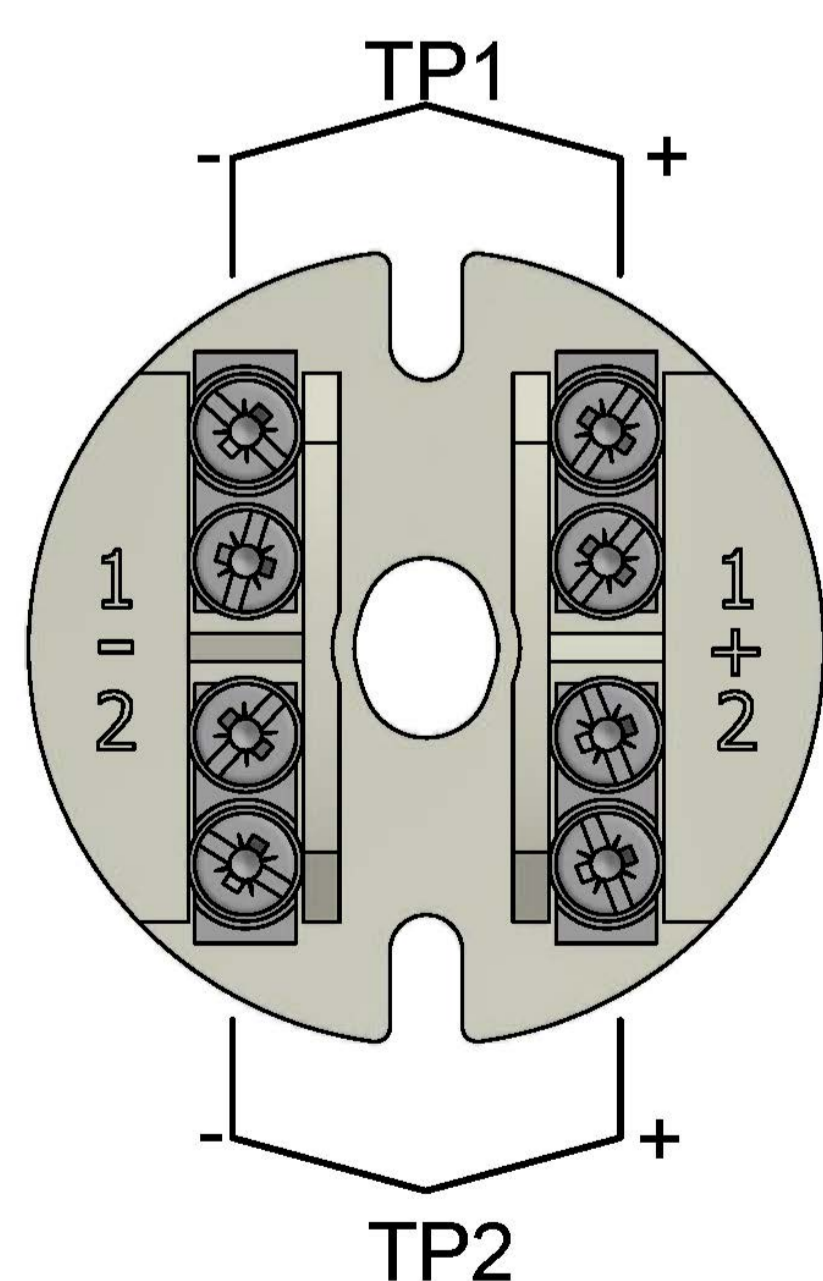
connection head model A-KL
1 cable gland



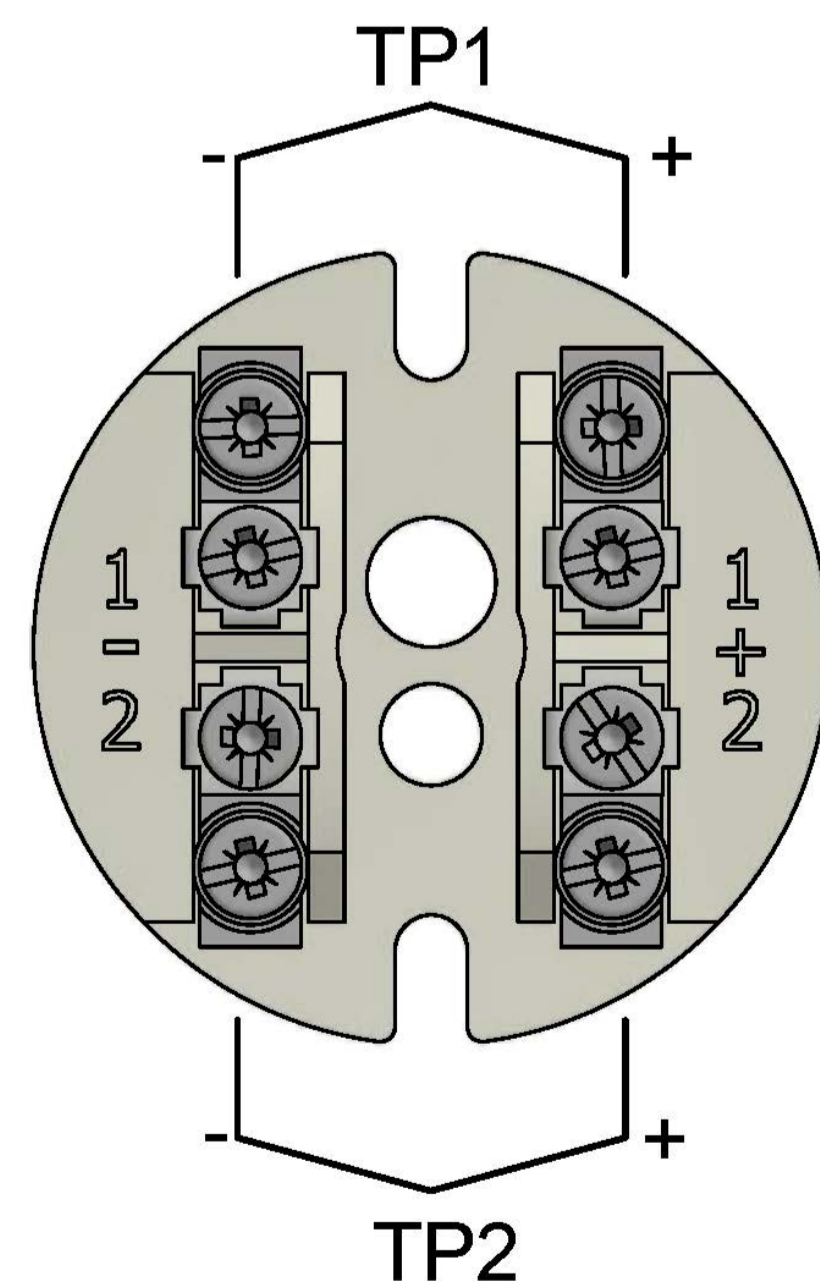
connection head model A-KLH
1 cable gland



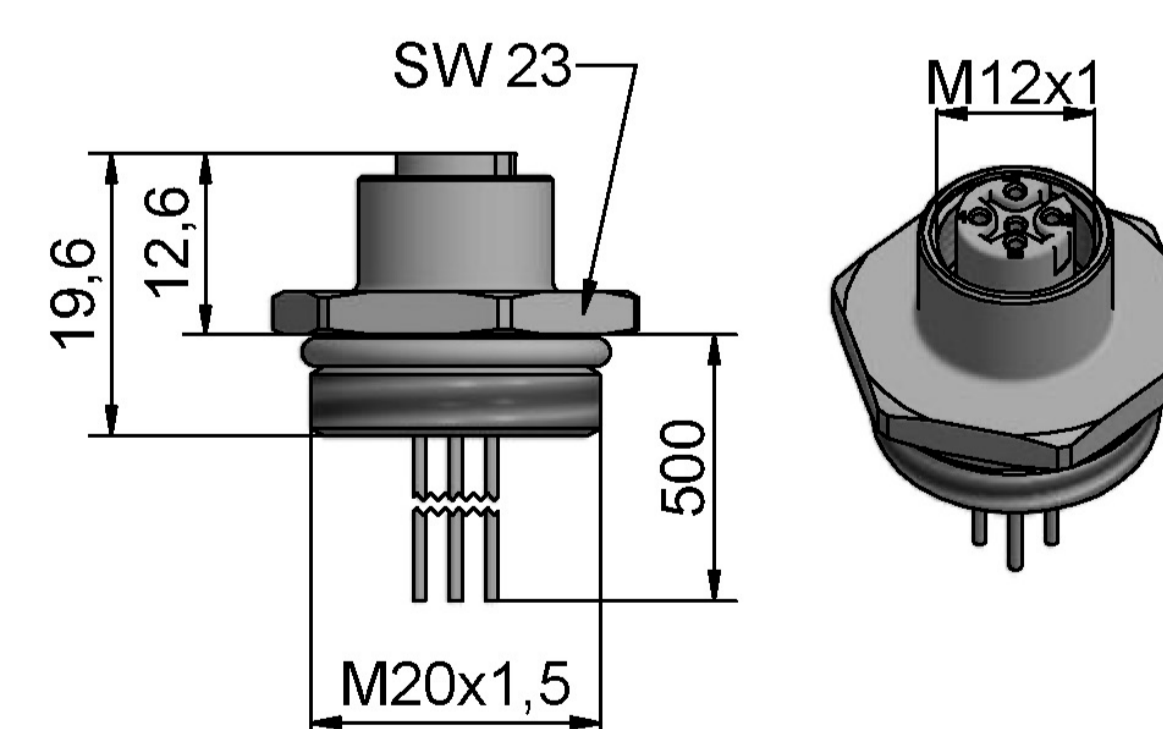
connection head model A-KLS
1 cable gland



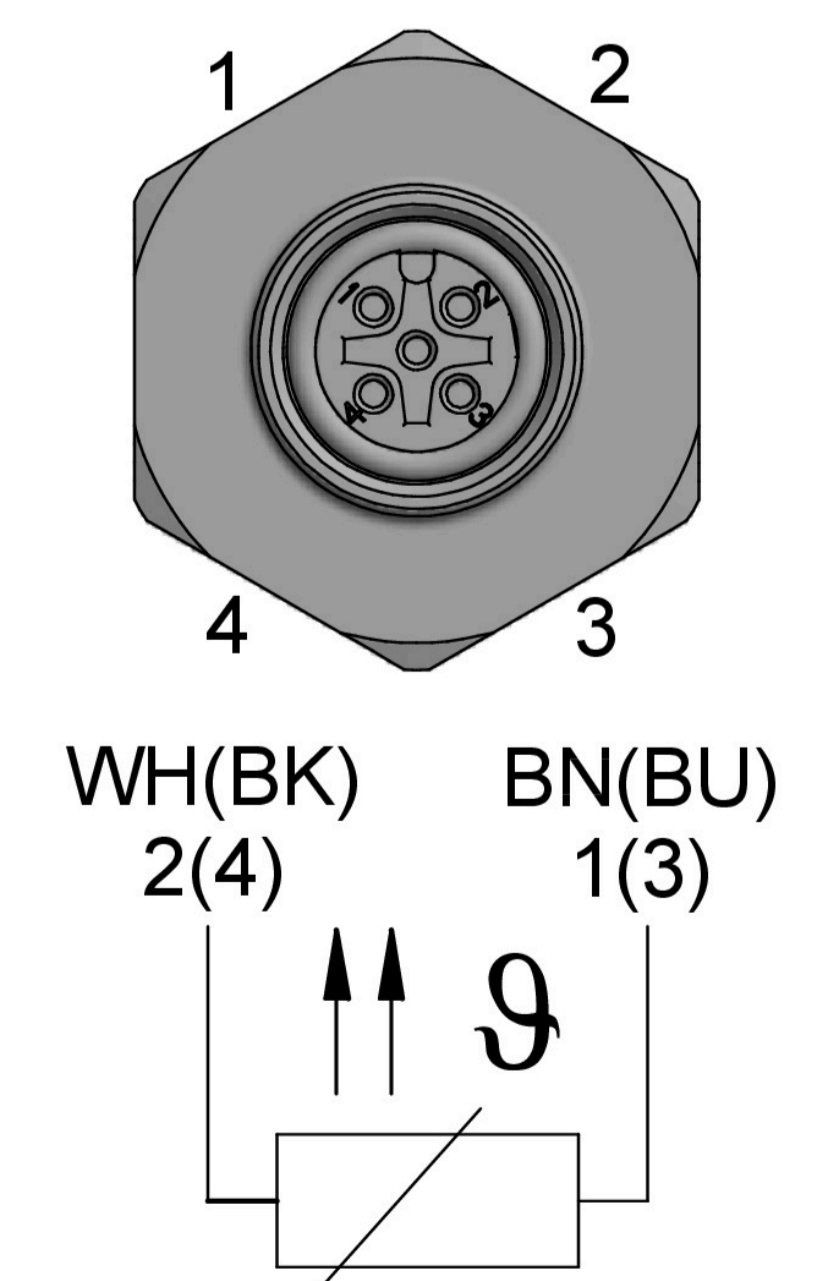
terminal base model A
2 thermocouples



terminal base model A
with separate test hole



M12 insert socket
4-terminals



M12 insert socket
2 thermocouples