

# Ex Mineral Insulated Thermocouple model 3F

for operation in the hazardous area with gas or dust

In general   

The temperature sensors manufactured by Reckmann GmbH (R58®) are solely intended for the measurement of process temperatures in solid, liquid and gaseous media. This design allows a direct flanging to the weld-neck-flange of a process vessel or a pipeline. The tapering reduces the response time.

## Application area:

Autoclave, machine and plant engineering, chemicals industry, power plant technology industry of building materials, recycling

Depended on electrical and thermal parameters for operating with the following types of protection:

II 1/2G Ex ia IIC T1...T6 Ga/Gb or

II 1/2D Ex ia IIIC T135 °C Da/Db.

**For installation please see our operating instructions.**

**Ex-stock-number-code: TR15-J.**

## Technical datas

- **Connection head** (fig. 1/1) according to DIN EN 50446.  
Standard connection heads: Form B-G12, B-KL, B-VA, BA-KL, BA-KLH, B-KUKL, B-KUHKL. IP54, Dimension see page 2.  
On request IP65 or IP67.
- **Protection shell** (fig. 1/3 up to 4) according or similar to DIN 43772.  
Standard material 1.4571.  
Standard - D/d 12 tapered to 9 mm.
- **Process connection** (fig.1/4) by welded blind flange according DIN EN 1092-1 Typ 05 or ASME B 16.5.  
Standard flange DN25 PN40 / DN50 PN16 model B1.
- **Measuring insert** (fig.1/2) replaceable according or similar to DIN 43735.  
**Sensor** depended 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:  
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.  
**Notice:** Process temperatures above 450 °C are only possible with appropriate process decoupling.  
Double sensor with exi-transmitter only on request.
- **Sheath material** according to IEC / EN 61515.  
Standard material 2.4816,  
Standard diameter 3 or 6 mm.
- **Protection shell** (fig. 1/3 up to 4) the following demension are acceptable:  
outer diameter(D) ≥ 6,0 mm, wall thickness(S) ≥ 1,0 mm, base thickness ≥ 1,3 x S [mm].  
nominal length (NL) max. 8000 mm.
- **Optional materials for gas and dust explosion protection:**  
please see our Ex-Operating Instructions chapter 4 Ex-Conditions.

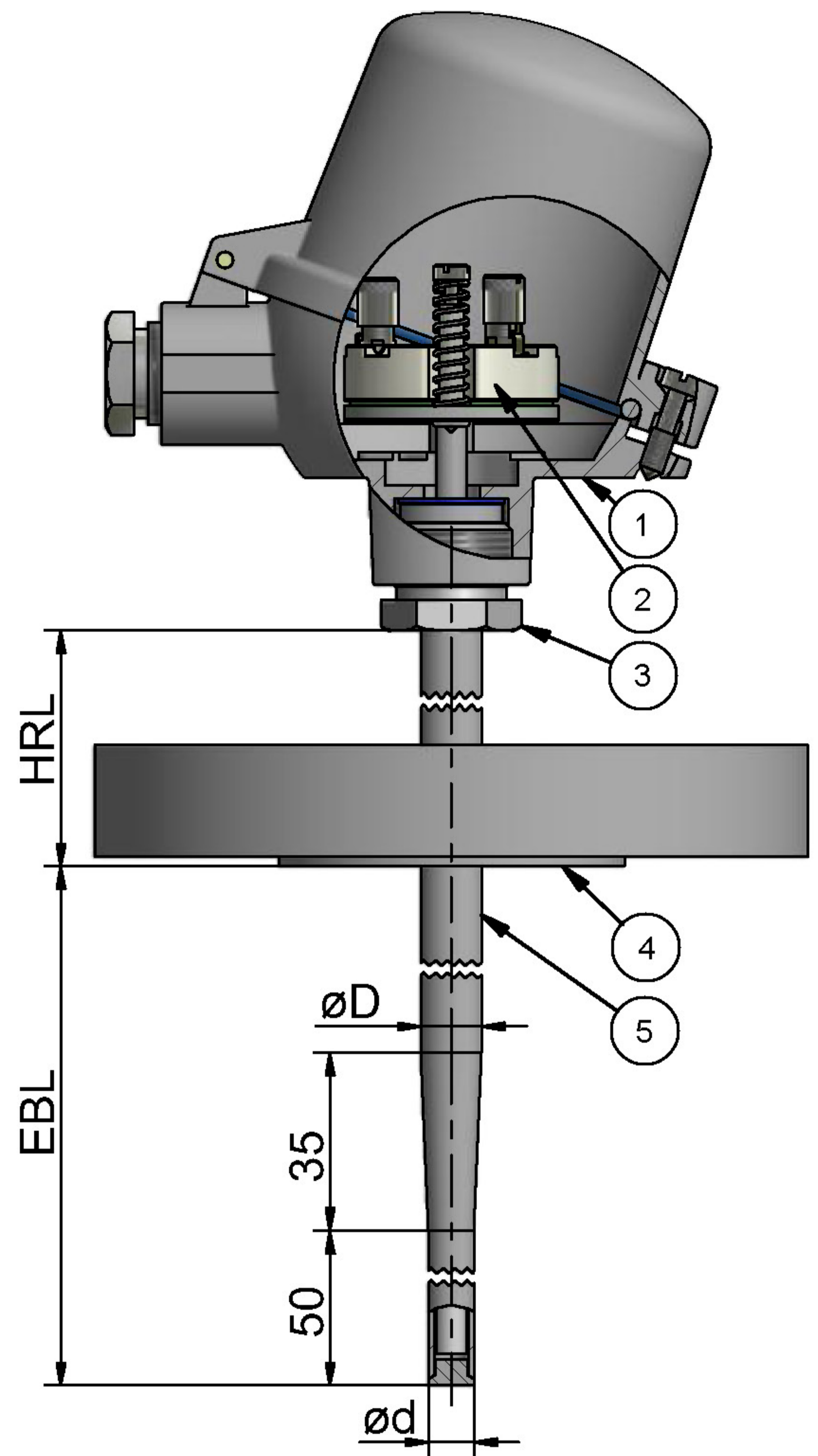
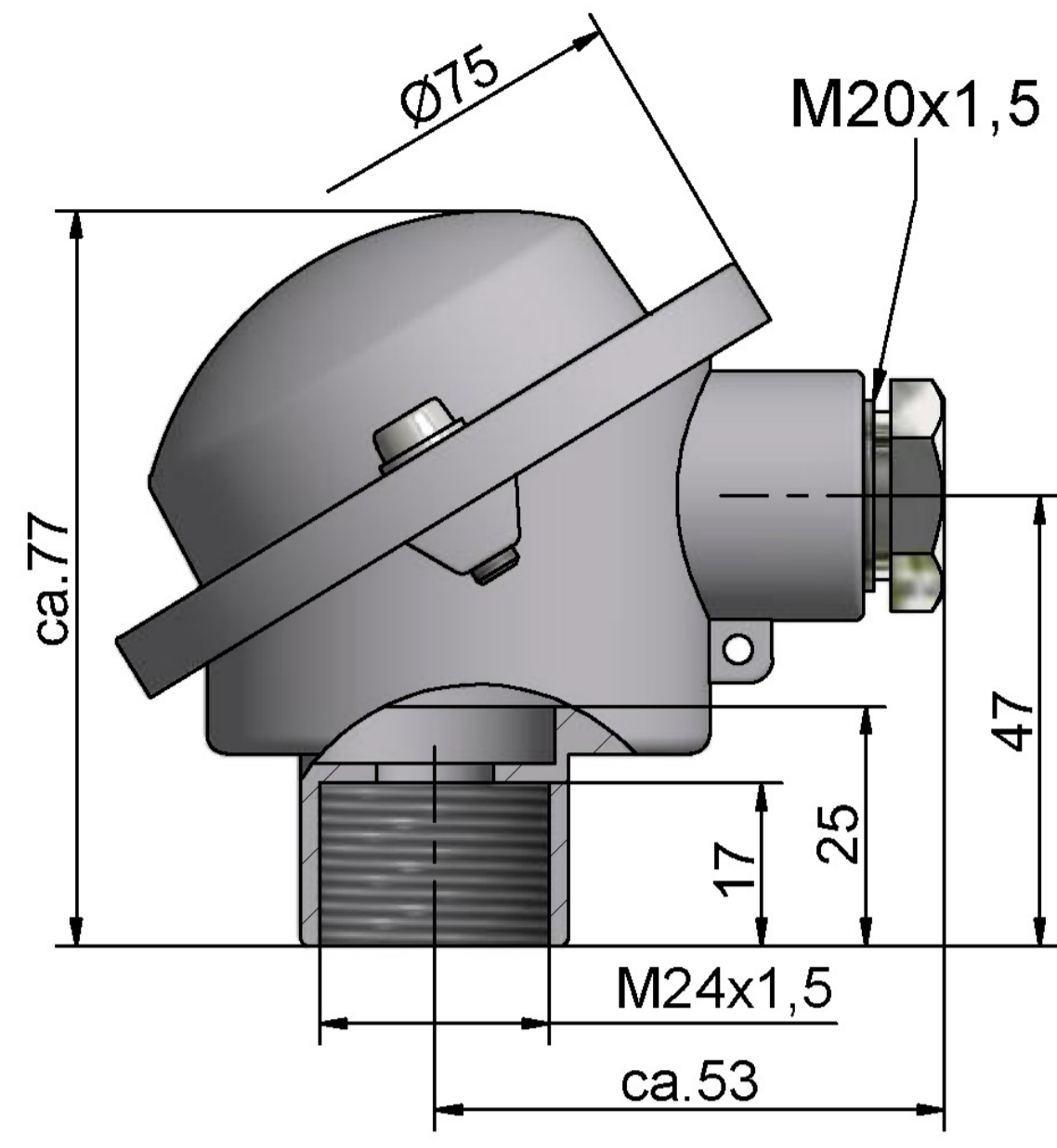


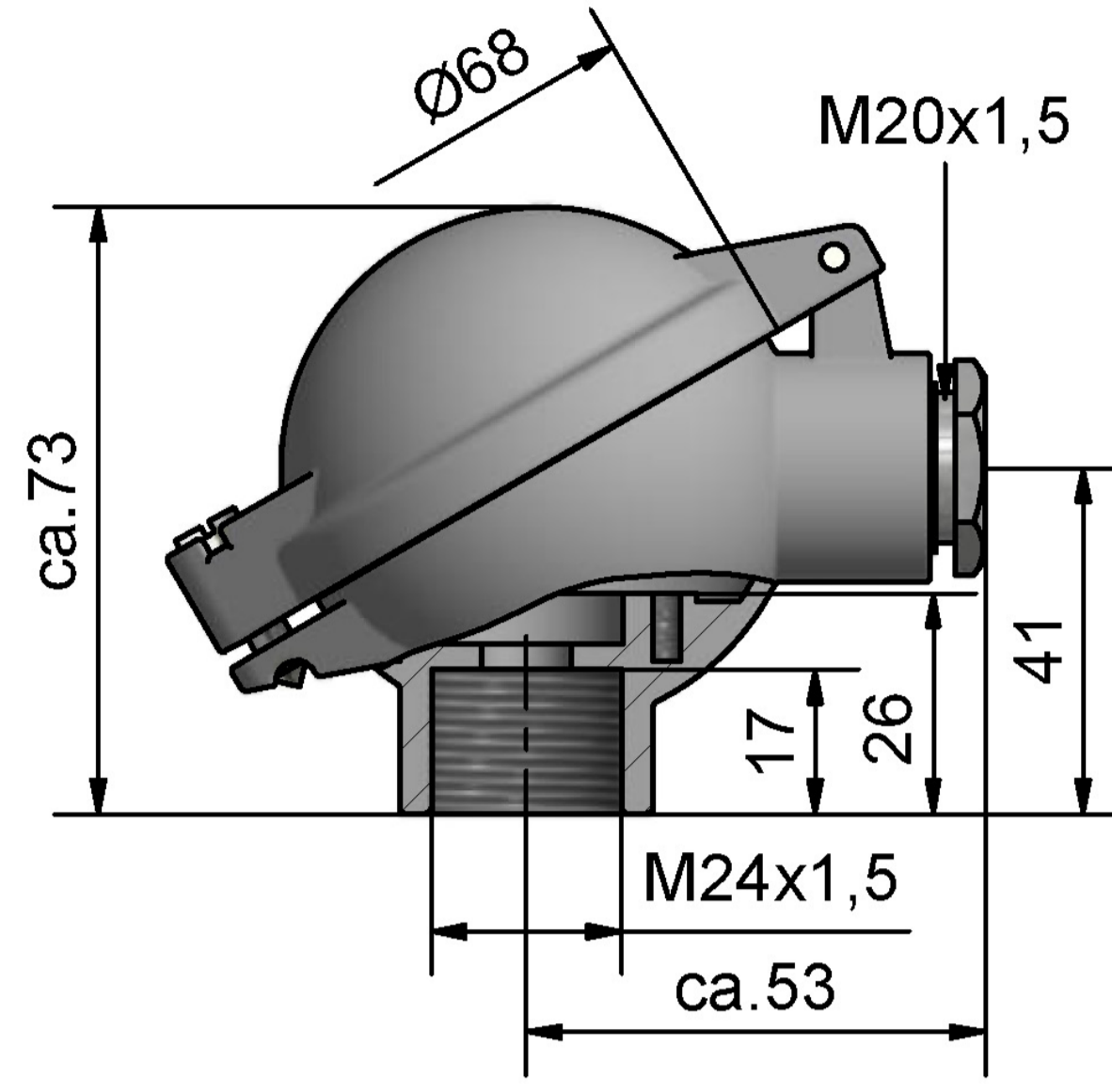
fig. 1

## Optional Connection heads / wiring diagram

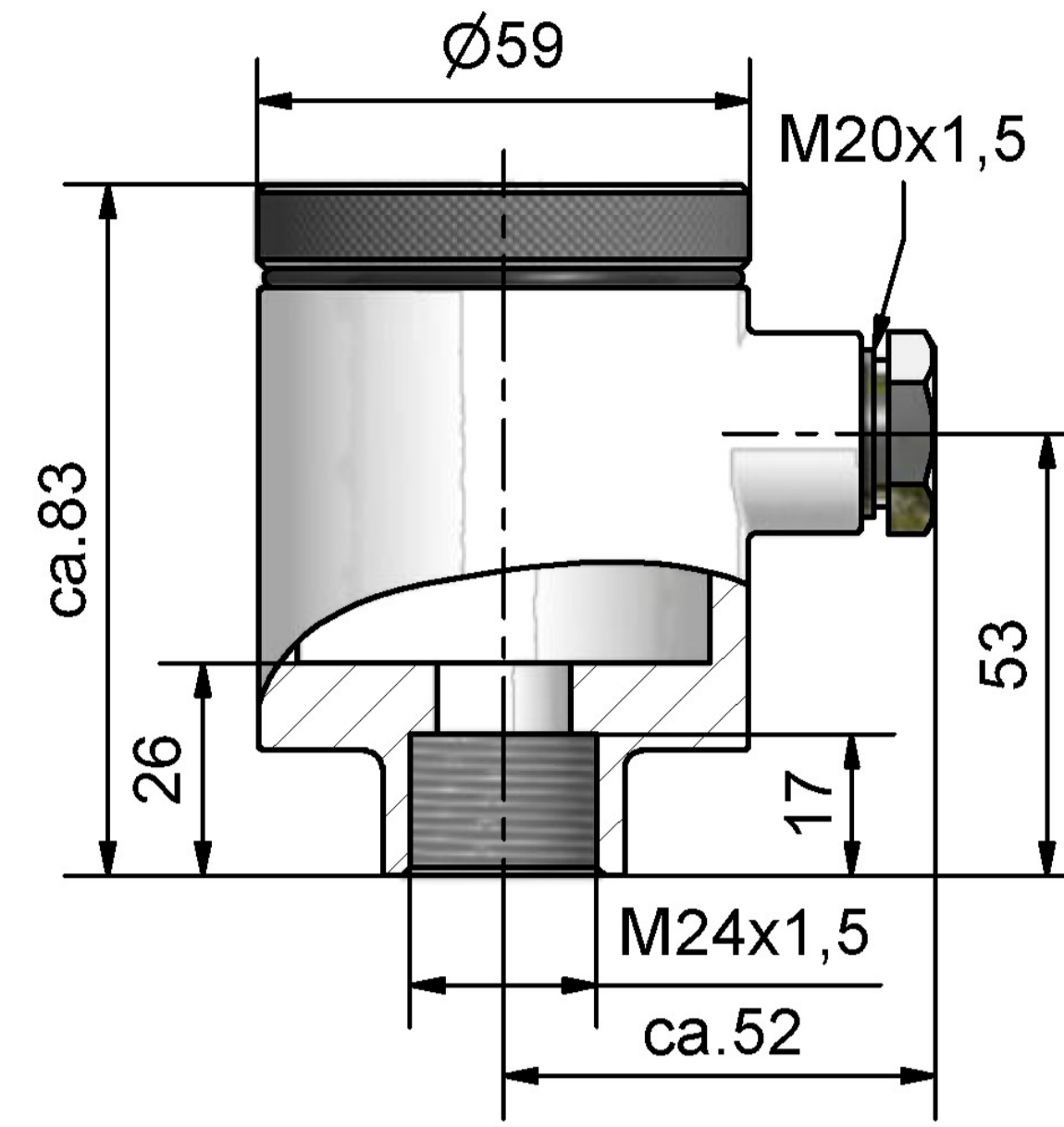
As an alternative to the cable gland, an M12 flush-type connector is possible.



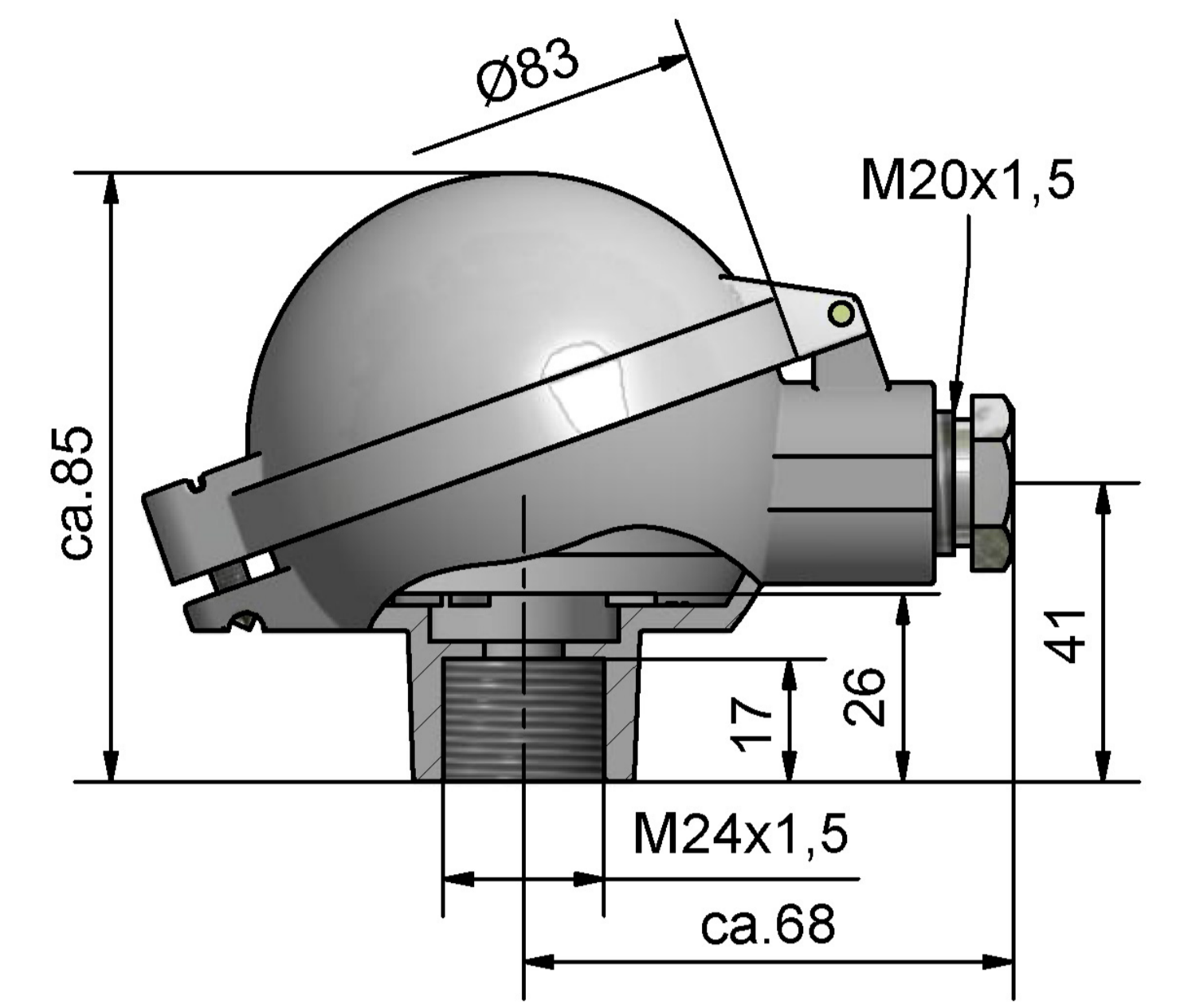
head model B-G12  
M24 x 1,5



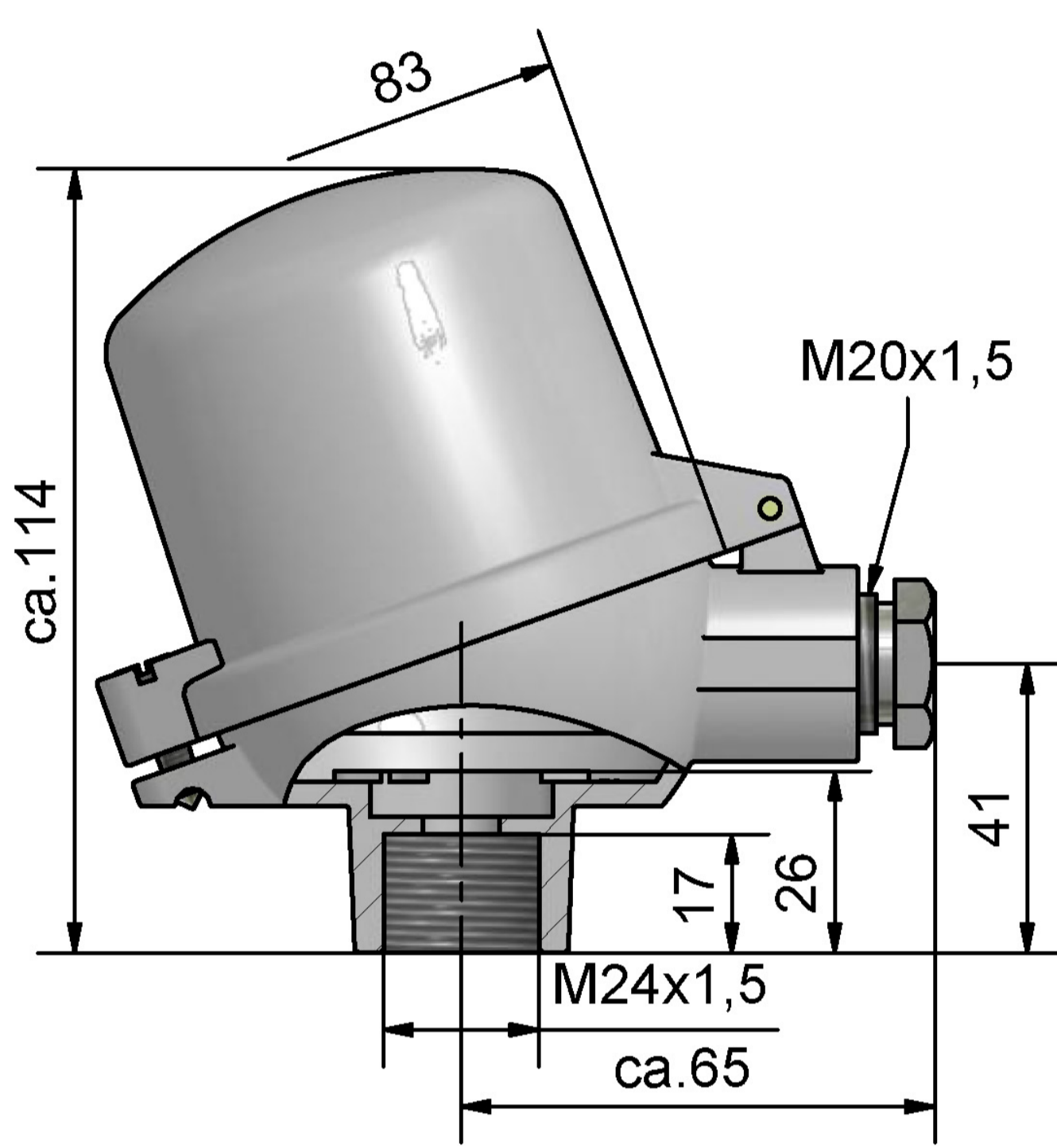
head model B-KL  
M24 x 1,5



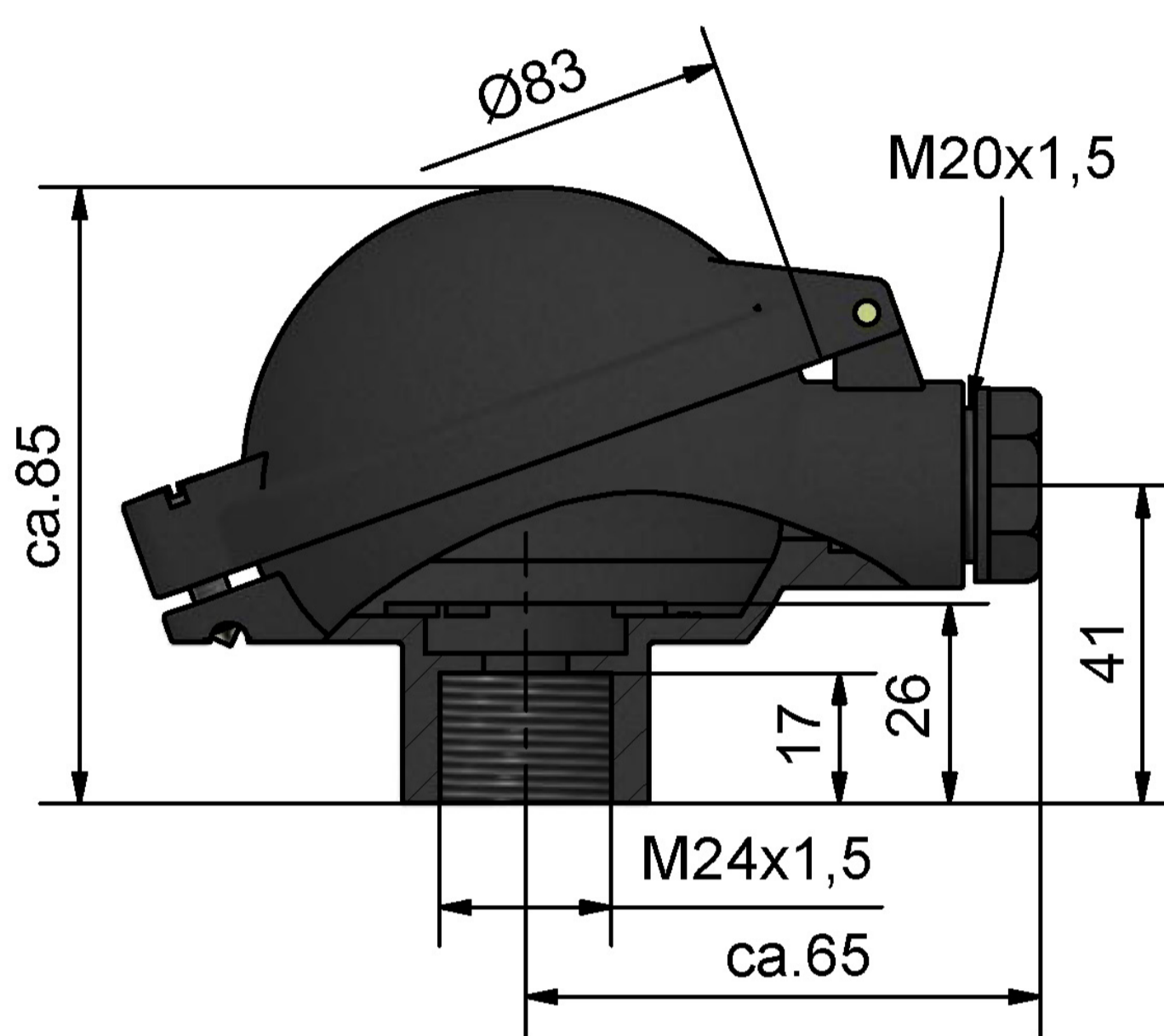
head model B-VA  
M24 x 1,5



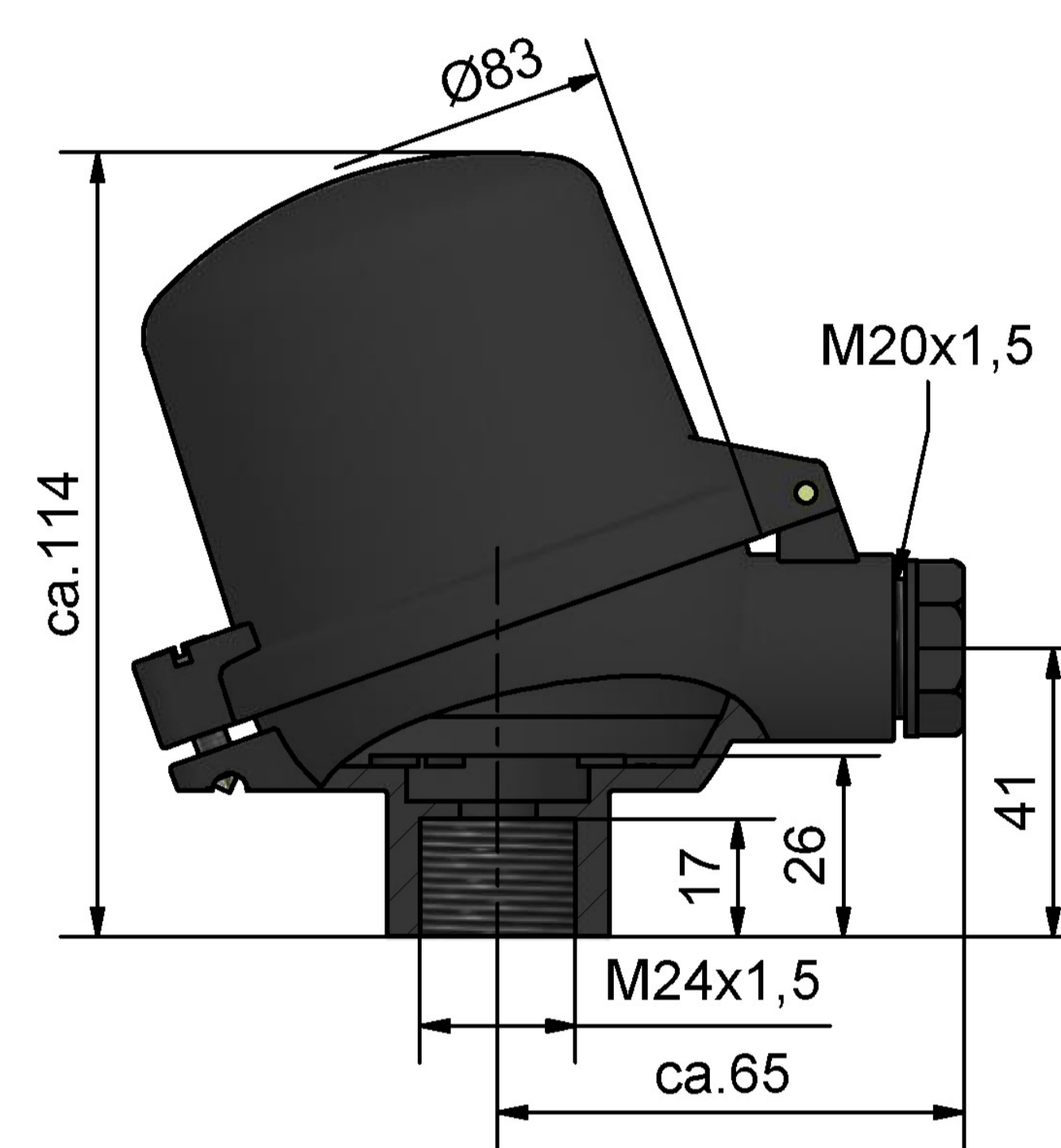
head model BA-KL  
M24 x 1,5



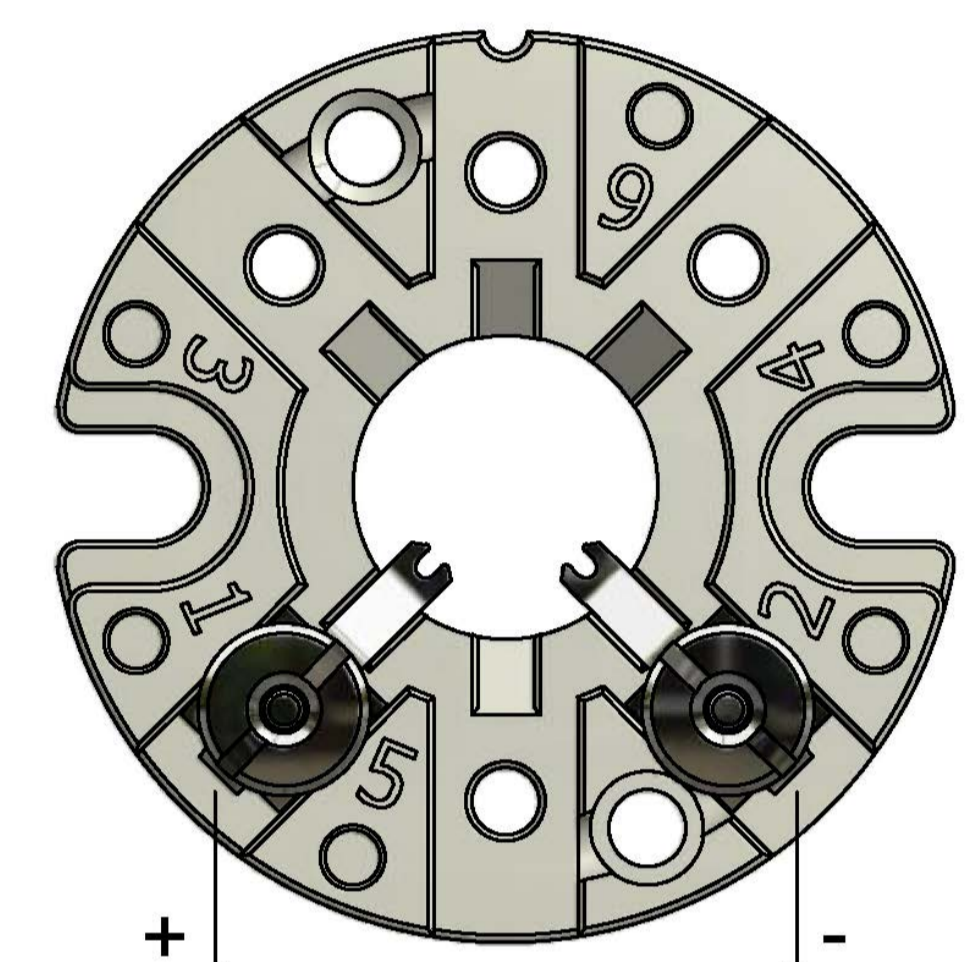
head model BA-KLH  
M24 x 1,5



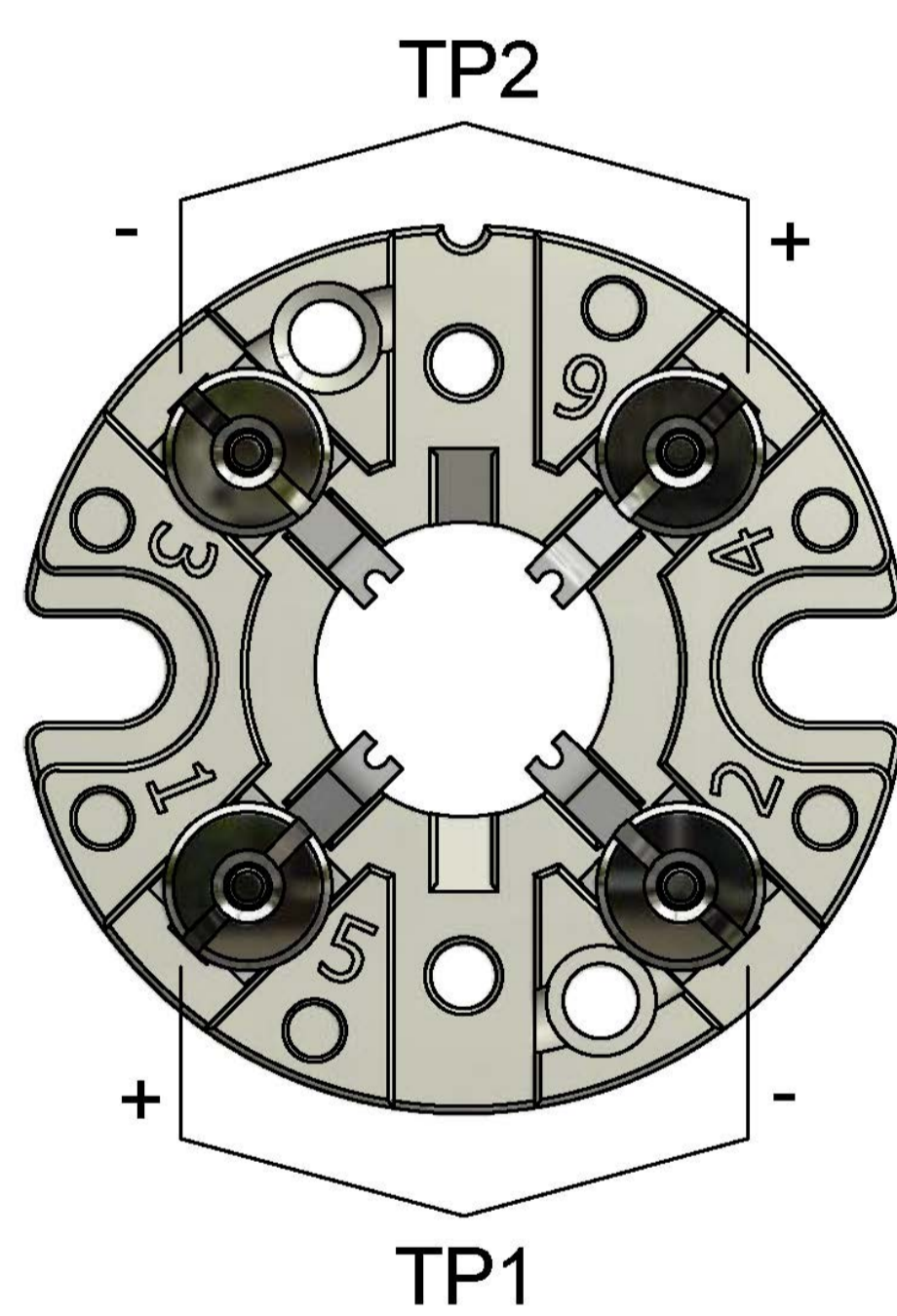
head model B-KUKL  
M24 x 1,5



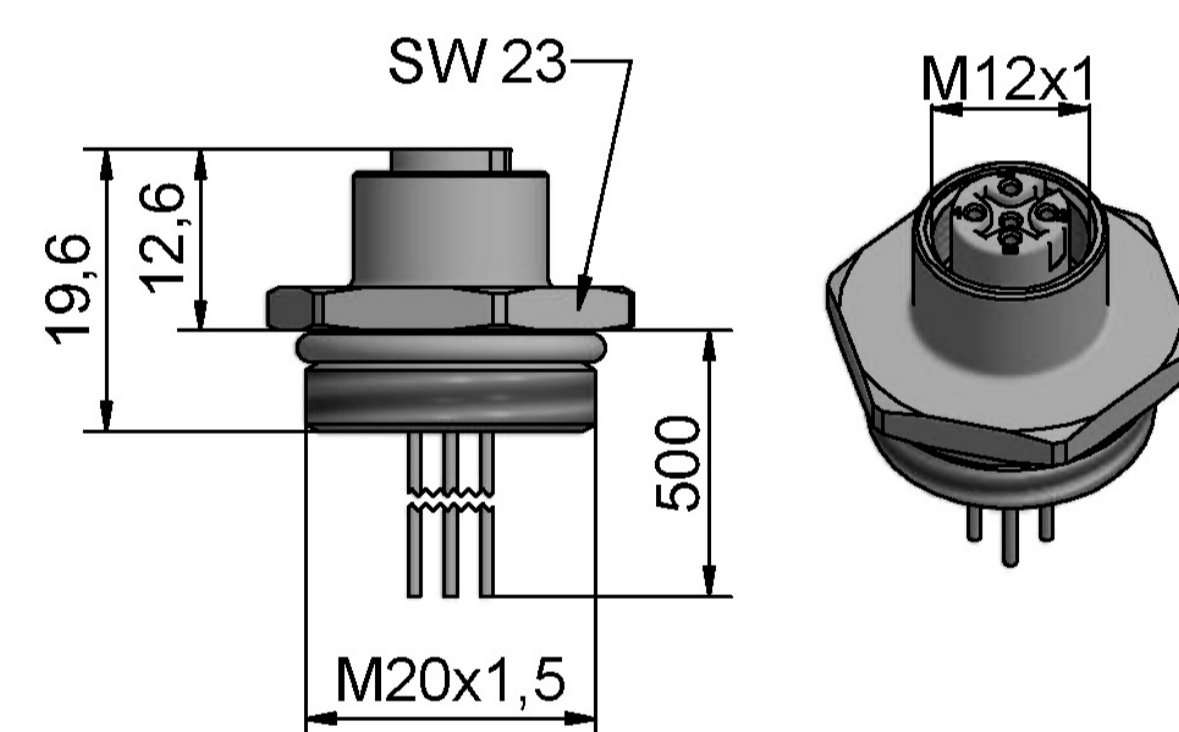
head model B-KUKLH  
M24 x 1,5



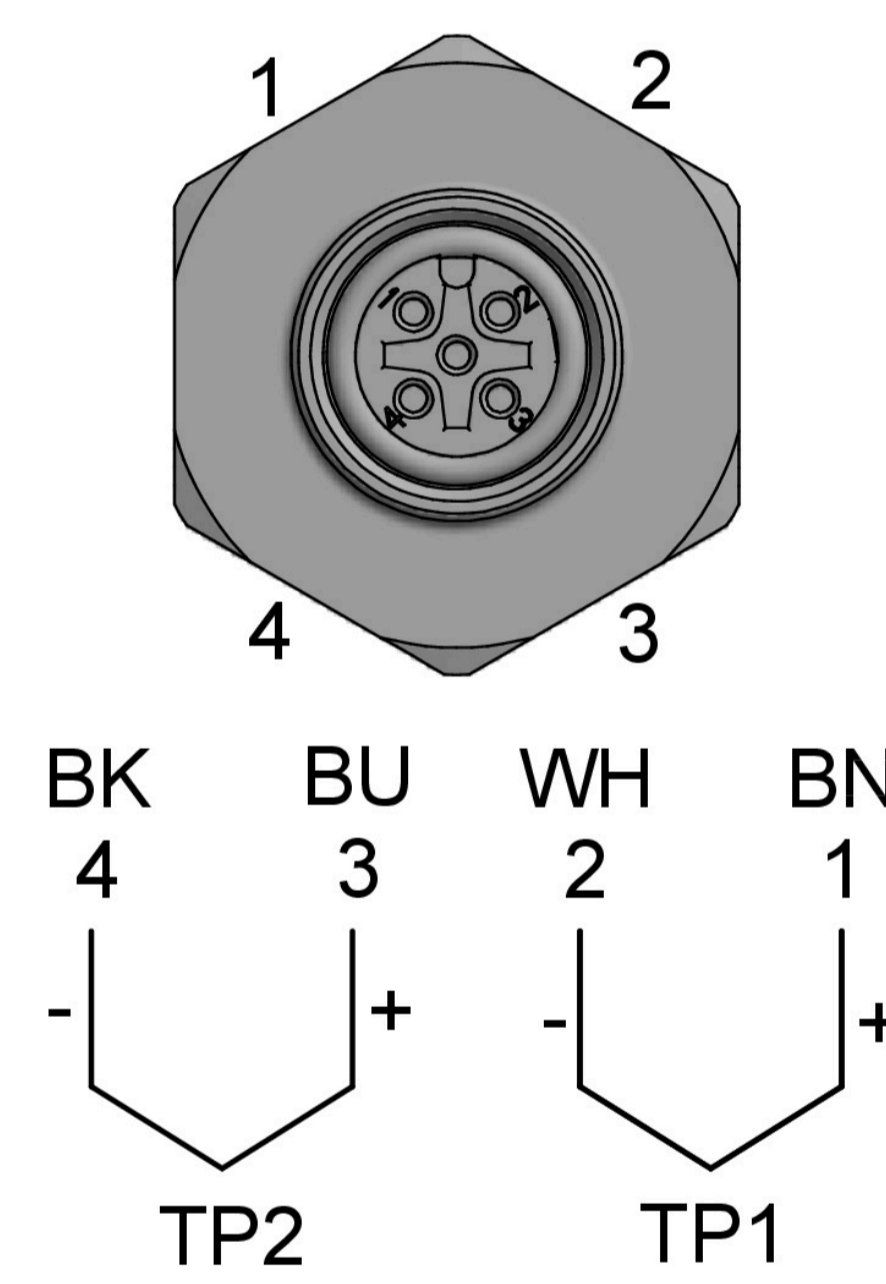
standard socket  
1 thermocouple



standard double socket  
2 Thermocouple



M12 insert socket  
4-terminals



M12 insert socket  
2 thermocouples