



#### Features

- Resistance thermometer with weld-in thermowell DIN 43772 model 4 or custom-made design
- Pt 100 connection in 3- or 4-wire technology
- Measuring insert 1 x Pt 100 or 2 x Pt 100
- Measuring insert interchangeable

#### Options

- Explosion protection
- Classification per SIL 2
- Transmitter can be integrated

#### Application area

- Chemical and petrochemical industry
- Machinery construction

#### Application

The resistance thermometer with weld-in thermowell is suited for operation on tanks and pipes. Weld-in thermowells per DIN 43772 model 4 or custom-made versions are available. Because of its robust design it is suitable for use in a great number of technological processes. The resistance thermometer can be supplied with a built in transmitter. A variety of transmitters for head mounting is available for different applications.

#### Technical Data

##### Mechanical design

Measuring insert interchangeable with connection head and neck-tube

##### Connection head

selective

- model B, cap with 2 slotted screws, mat. aluminium, IP 54
- model BUZH, high spring cover with slotted screw, mat. aluminium, IP 65
- field housing Ø 60 mm, screw cap, stainless steel mat.-no. 1.4305 (303), IP 67 further connection heads upon request

##### Neck tube

stainless steel mat.no. 1.4571 (316Ti)  
neck tube Ø 9 mm  
reinforced design Ø 11 mm  
length and connection see order details

##### Measuring insert

material stainless steel, interchangeable, DIN 43735.  
length of measuring insert  $l_s$  = thermowell length L + 10 mm + M.  
Ø of meas. insert 6 mm  
resistor Pt 100 according to DIN EN 60751

##### Type of sensor/class/circuit

see order details

##### Ex-approval

BVS 04 ATEX E 144 X  
Ex II 2G Ex ia IIC T4/T6  
 $U_i \leq 30$  V  
 $P_i \leq 200$  mW

##### Functional safety

per EN 61508, classification per SIL 2; without transmitter, only

##### Accuracy of the measuring resistor

class A according to DIN EN 60751

##### Thermowell

weld-in thermowell acc. to DIN 43772 model 4 or custom-made design  
applications and materials see order code  
option: certification of material testing per DIN EN 10204  
Upon request a calculation for thermowells can be made (for static or dynamic application) with certificate.

##### Integration of transmitter

suitable Pt 100 transmitters can be integrated into the connection head.

Options:

- a) instead of terminal block
  - b) mounting in the spring cover of the connection head BUZH
- see product group T4 for analog or digital transmitters

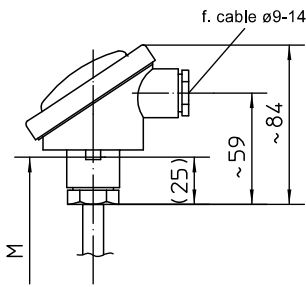
##### LED-on-site indication

programmable LED-on-site indication for stainless steel field housing (Ø 60 mm), see data sheet M6-031.

**Dimensions**

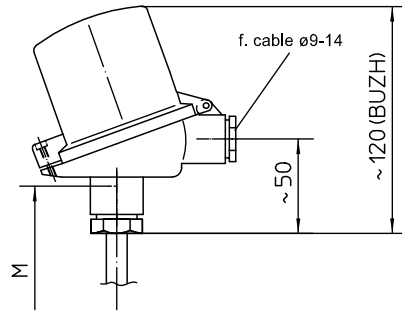
Connection heads

model B, cap with 2 slotted screws  
mat. aluminium, IP 54



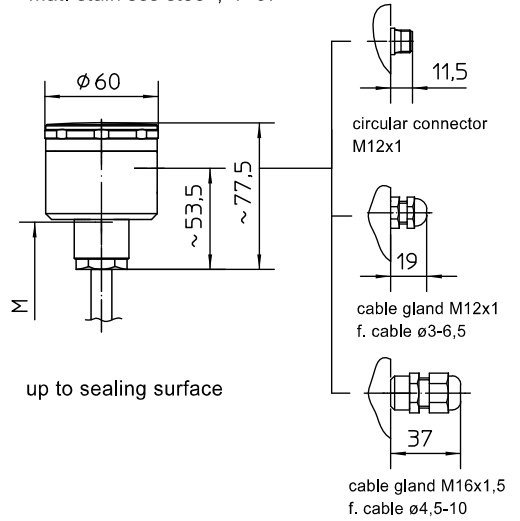
up to sealing surface

model BUZH, high spring cover with slotted screw,  
mat. aluminium, IP 65

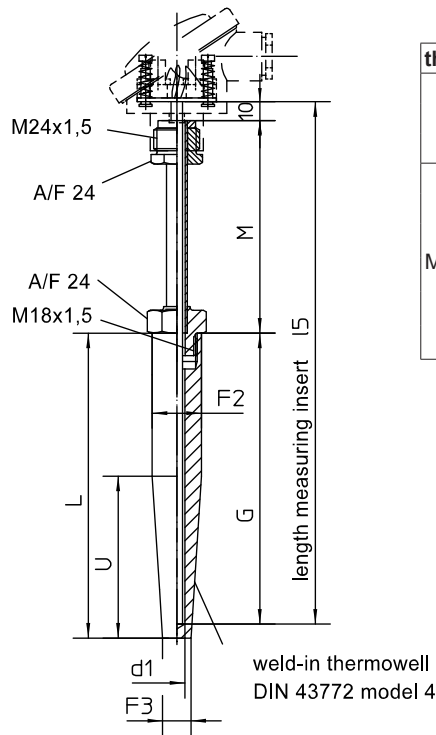
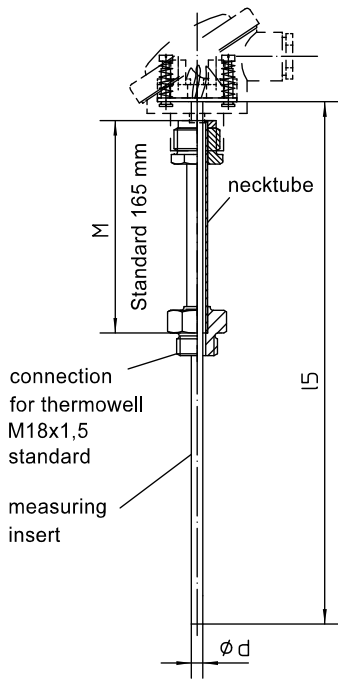


up to sealing surface

connection head field housing, screw cap,  
mat. stainless steel , IP 67



up to sealing surface

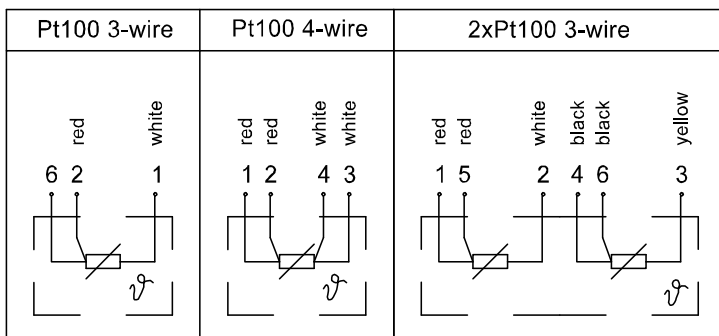


length measuring insert I5= L + 10 + M

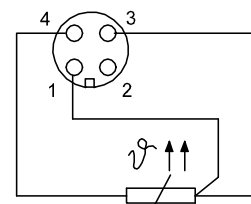
| N         | L   | G   | U   | F2   | F3   | d1 |
|-----------|-----|-----|-----|------|------|----|
| M18 x 1.5 | +2  | +1  | +2  | 24h7 | 12.5 | 7  |
|           | 0   | 0   | 0   |      |      |    |
|           | 110 | 105 | 65  |      |      |    |
|           | 140 | 135 | 65  |      |      |    |
|           | 170 | 165 | 133 |      |      |    |
|           | 200 | 195 | 65  |      |      |    |
| 200       | 195 | 125 |     |      |      |    |
| 260       | 255 | 125 |     |      |      |    |

**Connection diagram**


connection head



circular connector M12x1



**Order Details** - please give additional specifications for models not listed -

| Resistance thermometer Pt 100 with weld-in thermowell   |  |                          |   |   |                 |        |        |    |        |        |  |
|---|--|--------------------------|---|---|-----------------|--------|--------|----|--------|--------|--|
| design  | - with weld-in thermowell  |                          |   | GA252 .                                       |                 |        |        |    |        |        |  |
| ex-protection   | - without  |                          |   | 0   |                 |        |        |    |        |        |  |
|   | - explosion protection, type of ex-protection s. below   |                          |   | 1   |                 |        |        |    |        |        |  |
| with neck tube  | - to connection head M24x1.5   |                          |   | A23 . . . . .                                 |                 |        |        |    |        |        |  |
|   | - to thermowell M18x1.5  |                          |   | 17  |                 |        |        |    |        |        |  |
|   | neck tube Ø  | 9 mm, standard           |   |   | 1               |        |        |    |        |        |  |
|   |  | 11 mm, reinforced design |   |   | 2               |        |        |    |        |        |  |
|   |  | varying                  |   |   | 9               |        |        |    |        |        |  |
|   | length neck tube   | M = 165 mm               |   |   | 2               |        |        |    |        |        |  |
| varying   |  |                          | 9   |   |                 |        |        |    |        |        |  |
| mat. neck tube  | stainless steel mat.-no. 1.4571 (316Ti)  |                          |   | 1   |                 |        |        |    |        |        |  |
|   | varying  |                          |   | 9   |                 |        |        |    |        |        |  |
| weld-in thermowell<br>DIN 43772, model 4  | dimensions thermowell  |                          |   | meas. insert length with neck tube M = 165 mm |                 |        |        |    |        |        |  |
|   | L =  | U =                      | d1 Ø  |   |                 |        |        |    |        |        |  |
|   | 110 mm   | 65 mm                    | 7 mm  | 285 mm  |                 |        | B10 .  |    |        |        |  |
|   | 140 mm   | 65 mm                    | 7 mm  | 315 mm  |                 |        | B11 .  |    |        |        |  |
|   | 170 mm   | 133 mm                   | 7 mm  | 345 mm  |                 |        | B12 .  |    |        |        |  |
|   | 200 mm   | 125 mm                   | 7 mm  | 375 mm  |                 |        | B13 .  |    |        |        |  |
|   | 200 mm   | 65 mm                    | 7 mm  | 375 mm  |                 |        | B14 .  |    |        |        |  |
|   | 260 mm   | 125 mm                   | 7 mm  | 435 mm  |                 |        | B15 .  |    |        |        |  |
| thermowell material   | - stainless steel mat.-no. 1.4571 (316Ti)  |                          |   | 1   |                 |        |        |    |        |        |  |
|   | - steel mat.-no. 1.5415, 15 Mo 3   |                          |   | 2   |                 |        |        |    |        |        |  |
|   | - steel mat.-no. 1.7335, 13 Cr Mo 44   |                          |   | 3   |                 |        |        |    |        |        |  |
|   | varying  |                          |   | 9   |                 |        |        |    |        |        |  |
| measuring insert,<br>as per DIN EN 43735<br>(class A)   | diameter, design, material   |                          | meas. element   |   | operating range |        |        |    |        |        |  |
|   | - 6 mm, rigid, st. steel, standard   |                          | thin film   |   | -50...+400 °C   |        | D2-M22 |    |        |        |  |
| - 6 mm, sheathed element, st. steel   |  | ceramic                  |   | -200...+600 °C                                |                 | D6-M21 |        |    |        |        |  |
| sensor type   | - 1 x Pt 100 in 3-wire technology, standard  |                          |   |   |                 |        | N2     |    |        |        |  |
|   | - 1 x Pt 100 in 4-wire technology  |                          |   |   |                 |        | N3     |    |        |        |  |
|   | - 2 x Pt 100 in 3-wire technology  |                          |   |   |                 |        | N5     |    |        |        |  |
| connection head   | - model B  |                          | electrical connection cable gland M20x1.5 nickel plated brass |   |                 |        |        |    | T11    |        |  |
|   | - model BUZH   |                          | cable Ø 9-14  |   |                 |        |        |    | T15    |        |  |
|   | - field housing  | cable gland              | polyamide   |   | cable Ø 3-6.5   |        |        |    |        | T47    |  |
|   |  |                          | black   |   | cable Ø 4.5-10  |        |        |    |        | T47.40 |  |
|   |  |                          | st. steel   |   | cable Ø 3-6.5   |        |        |    |        | T47.21 |  |
| with plug connector M12x1   |  |                          |   |   |                 |        |        |    | T47.51 |        |  |
| <b>additional features (to be indicated in case of need, only)</b>                                    |  |                          |   |   |                 |        |        |    |        |        |  |
| type of ex-protection   | -  II 2G Ex ia IIC T4/T6 <sup>1</sup> |                          |   |   |                 |        | S68    |    |        |        |  |
| incl. transmitter<br>(pls specify separately)   | - mounting on the measuring insert (instead of terminal block)   |                          |   |   |                 |        |        |    |        | Z1     |  |
|   | - mounting in the spring cover of the connection head BUZH   |                          |   |   |                 |        |        |    |        | Z2     |  |
| material certificate per DIN EN 10204-3.1   |  |                          |   |   |                 |        |        |    |        | W1020  |  |
| functional safety per EN 61508, classification per SIL 2  |  |                          |   |   |                 |        |        |    |        | W2604  |  |
| transmitter with resistance thermometer calibrated, incl. calibration certificate with 3 meas. points |  |                          |   |   |                 |        |        |    |        | W4057  |  |
| <b>order code (example):</b>  |  |                          |   | GA2520  | A2317121        | B111   | D2-M22 | N2 | T47    |        |  |

<sup>1</sup> only with sheathed element