

## Gas density transmitter Model GD10-L, with angular connector Model GD10-C, with cable connection

### Applications

- Gas density monitoring of closed SF<sub>6</sub> tanks
- For indoor and outdoor installation in SF<sub>6</sub>-gas-insulated switchgear

### Special features

- Measuring ranges from 0 ... 10 to 0 ... 80 g/litre
- Output signal 4 ... 20 mA, 2-wire
- Wetted parts and case made of stainless steel, fully welded
- Ingress protection IP 54 up to 68, depending on the electrical wiring
- Excellent long-term stability, high EMI performance



### Gas density transmitter

- Fig. left: with angular connector, model GD10-L  
Fig. right: with cable connection, model GD10-C

### Description

The gas density transmitter is electronically compensated. The compensation follows the nonlinear behavior of SF<sub>6</sub> gas. The basic principle is the calculation following virial equation. The gas density transmitter picks up the physical variables pressure and temperature of the SF<sub>6</sub> gas contained in the device (tank). The current gas density is ascertained from both variables by means of an electronic evaluation system. Thermal induced pressure changes are dynamically compensated and do not affect the output signal.

The gas density transmitter generates a density proportional, standardized signal of 4 ... 20 mA.

A recalibration of the zero signal as well as maintenance service will no longer be necessary due to the high long-term stability of the gas density transmitter.

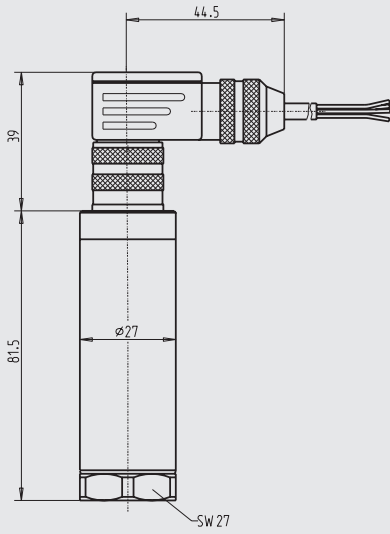
As a standard, wetted parts are made of stainless steel. The hermetically welded measuring cell guarantees high long-term tightness. The specific structure of the measuring cell requires absolutely no internal sealing elements so that any leakage of the instruments can be excluded. Due to these features the gas density transmitter is also in-dependent of atmospheric pressure fluctuations and variations of the mounting height.

The EMI properties of the transmitter are tested according according to industrial standards (see page 3) and guarantee a safe pick-up of the signal which is especially suited to conditions prevailing in high-voltage switching units.

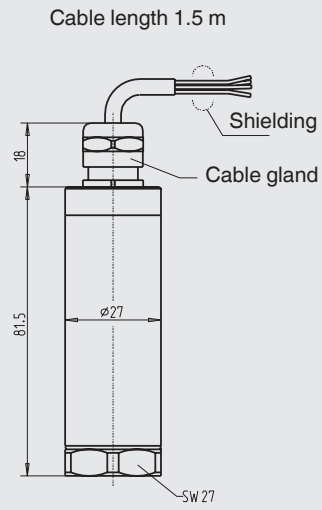
## Dimensions in mm

### Electrical connection

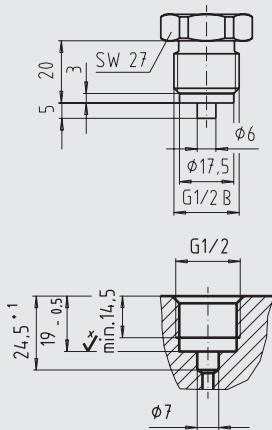
#### 2-pin angular connector (model GD10-L)



#### with flying leads (model GD10-C)



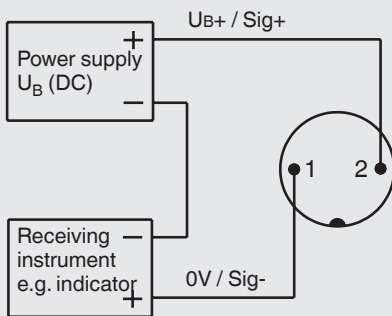
### Process connection, socket



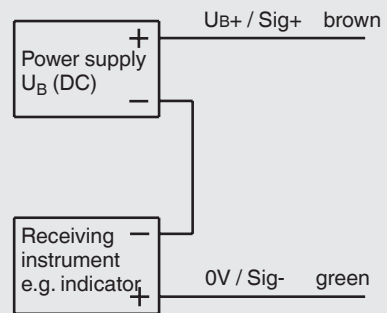
## Wiring details

### 2-wire connection

#### 2-pin angular connector (model GD10-L)



#### with flying leads (model GD10-C)



## Specifications

| Specifications, model GD10-L, model GD10-C                |            |  |        |        |        |        |         |
|---|------------|--|--------|--------|--------|--------|---------|
| Density ranges  | g/Litre    | 10   | 16     | 25     | 40     | 60     | 80      |
| (Pressure ranges related to 20 °C)                        | (bar abs.) | (1.64)   | (2.59) | (3.97) | (6.16) | (8.87) | (11.33) |
| Over pressure safety                                      | bar abs.   | 14   | 14     | 14     | 29     | 29     | 67      |
| Burst pressure of sensor                                  | bar abs.   | 17   | 17     | 17     | 35     | 35     | 80      |
| Designed for sensing                                      |            | pure SF <sub>6</sub> gas   |        |        |        |        |         |
| Principle   |            | piezoresistive   |        |        |        |        |         |
| Pressure reference  |            | absolute pressure  |        |        |        |        |         |
| Process connection  |            | G ½ B male (other connections on request)  |        |        |        |        |         |
| Materials   |            |  |        |        |        |        |         |
| ■ Wetted parts  |            | stainless steel  |        |        |        |        |         |
| ■ Case / terminal case                                    |            | stainless steel  |        |        |        |        |         |
| Internal transmitting fluid                               |            | synthetic oil  |        |        |        |        |         |
| Power supply U <sub>B</sub>                               |            | DC 10 ... 30 V   |        |        |        |        |         |
| Signal output and maximum load R <sub>A</sub>             |            | 4 ... 20 mA, 2-wire, R <sub>A</sub> ≤ (U <sub>B</sub> - 10 V) / 0.02 A with R <sub>A</sub> in Ohm and U <sub>B</sub> in Volt   |        |        |        |        |         |
| Accuracy  |            | -40 °C: 3 % of span, 20 °C: 1 % of span, 60 °C.: 2.3 % of span (optimal accuracy point)  |        |        |        |        |         |
|   |            | -40 °C: 4 % of span, 20 °C: 2 % of span, 60 °C: 3.3 % of span (beginning and end of measuring range)   |        |        |        |        |         |
| 1-year stability  |            | ≤ 0.3 % of span (at reference conditions)  |        |        |        |        |         |
| Permissible ambient temperature                           |            |  |        |        |        |        |         |
| ■ Nominal temperature                                     |            | -40 ... +60 °C (-40 ... +140 °F) [gas phase!]  |        |        |        |        |         |
| ■ Storage temperature                                     |            | -40 ... +80 °C (-40 ... +176 °F)   |        |        |        |        |         |
| CE conformity   |            | EN 61326-1   |        |        |        |        |         |
| EMC directive   |            | 2004/108/EC, EN 61326 Emission (Group 1, Class B) and Immunity (industrial locations)  |        |        |        |        |         |
| High voltage strength                                     |            | DC 750 V (wiring versus case)  |        |        |        |        |         |
| Electro-magnetic immunity (EMI) / RFI per IEC 61000-4     |            | IEC 61000-4-2 (ESD): test level 4 (8 kV)<br>IEC 61000-4-3 (Field): test level 3 (10 V/m)<br>IEC 61000-4-4 (Burst): test level X (±2 kV)<br>IEC 61000-4-5 (Surge): test level 2 (±1 kV)<br>IEC 61000-4-6 (Conducted RFI): test level 3 (10 V) |        |        |        |        |         |
| Cable gland and ingress protection per EN 60529 / IEC 529 |            | Model GD10-L: 2-pin plug, IP 67 {L-junction box brass, nickel-plated, IP 67}<br>Model GD10-C: cable gland with flying lead 1.5 m; IP 68  |        |        |        |        |         |
| Wiring protection   |            | protected against reverse polarity and overvoltage   |        |        |        |        |         |
| Weight  |            | max. 0.5 kg  |        |        |        |        |         |
| Dimensions  |            | see drawing  |        |        |        |        |         |

Items in curved brackets { } are optional extras for additional price.