

## Universal transmitters for various applications Models UT-10, UT-11

WIKA data sheet PE 86.01

UniTrans®

### Applications

- Process engineering
- Chemical engineering
- Plant construction

### Special features

- Scaleable measuring ranges via Turn Down of up to 1 : 20
- Measuring range from 0 ... 5 mbar up to 0 ... 4,000 bar
- High measuring accuracy
- Fully welded, stainless steel diaphragm
- Multifunctional display



Fig. left universal transmitter UT-11  
Fig. right universal transmitter UT-10

### Description

#### Turn Down

With its maximal 1 : 20 Turn Down ratio the UniTrans can be used in many different applications. This turndown ratio eliminates the necessity of keeping several transmitters in stock; it is much easier to turn down the transmitter instead of changing transmitters (e.g. a 100 bar transmitter can be turned down to 5 bar).

#### High measuring accuracy

The internal, digital signal processing allows for high measuring accuracy at fast measuring rates and pressure ranges from 5 mbar to 4,000 bar.

#### Multifunctional display

The optional display can be adjusted mechanically and electronically, thus guaranteeing many display variations and an optimal reading from different directions. Bargraph and trend are permanently displayed. Only a minor modification of the case is required in order to be able to read the display

from above. All standard units can be displayed. Two further lines are available for entering additional text (e.g. min./max. values or temperature at the sensor).

#### Configuration

With the easy-to-use menu, the user can set parameters such as language, unit, zero point, span or inverted signal. The UniTrans also offers the possibility of a tank linearisation with up to 32 holding points.

#### Signal

The UniTrans is fed with an input power of DC 12 ... 36 V. The output signal is 4 ... 20 mA, 2-wire system. The user can program an inverted signal 20 ... 4 mA or damping (up to 40 seconds).

## Specifications

## Model UT-10, standard version Model UT-11, flush diaphragm

|  |           |  |                     |                     |                     |     |     |       |                     |
|--|-----------|--|---------------------|---------------------|---------------------|-----|-----|-------|---------------------|
| Pressure ranges <sup>1) *</sup>                        | bar       | 0.4  | 1.6                 | 6                   | 16                  | 40  | 100 | 250   | 600                 |
| Over pressure safety                                   | bar       | 2  | 10                  | 35                  | 80                  | 80  | 200 | 500   | 1,200               |
| Burst pressure   | bar       | 2.4  | 12                  | 42                  | 96                  | 400 | 800 | 1,200 | 2,400 <sup>3)</sup> |
| Pressure ranges <sup>1) *</sup>                        |           | 1,000 <sup>2)</sup>  | 1,600 <sup>2)</sup> | 2,500 <sup>2)</sup> | 4,000 <sup>2)</sup> |     |     |       |                     |
| Over pressure safety                                   |           | 1,500  | 2,000               | 3,000               | 4,400               |     |     |       |                     |
| Burst pressure   |           | 3,000  | 4,000               | 5,000               | 7,000               |     |     |       |                     |
|  |           | {Vacuum, gauge pressure, compound range, absolute pressure are available}  |                     |                     |                     |     |     |       |                     |
| Materials  |           |  |                     |                     |                     |     |     |       |                     |
| ■ Wetted parts   |           | (other materials see WIKA diaphragm seal program)  |                     |                     |                     |     |     |       |                     |
| > Model UT-10  |           | Stainless steel (pressure ranges > 16 bar additional Elgiloy®)   |                     |                     |                     |     |     |       |                     |
| > Model UT-11  |           | Stainless steel {Hastelloy C4}; O-ring: NBR <sup>4)</sup> {FPM/FKM or EPDM}  |                     |                     |                     |     |     |       |                     |
| ■ Case   |           | Highly resistive, fibreglass-enforced plastic (PBT); {Aluminum}  |                     |                     |                     |     |     |       |                     |
| Internal transmission fluid <sup>5)</sup>              |           | Synthetic oil {Halocarbon oil for oxygen applications}<br>{Listed by FDA for Food & Beverage}  |                     |                     |                     |     |     |       |                     |
| Power supply U <sub>B</sub>                            | DC V      | 12 < U <sub>B</sub> ≤ 36   |                     |                     |                     |     |     |       |                     |
| Signal output  |           | 4 ... 20 mA, 2-wire  |                     |                     |                     |     |     |       |                     |
| Permissible max. load R <sub>A</sub>                   |           | R <sub>A</sub> ≤ (U <sub>B</sub> - 12 V) / 0.023 A with R <sub>A</sub> in Ohm and U <sub>B</sub> in Volt                                   |                     |                     |                     |     |     |       |                     |
| Adjustability  |           |  |                     |                     |                     |     |     |       |                     |
| ■ Zero point   | %         | -2.5 ... 99  |                     |                     |                     |     |     |       |                     |
| ■ Span   |           | Turn Down of 1 : 20 (1 : 2 for pressure ranges > 1,000 bar)  |                     |                     |                     |     |     |       |                     |
| Internal measuring rate                                | Hz        | 100  |                     |                     |                     |     |     |       |                     |
| Accuracy   | % of span | ≤ 0.1 <sup>6)</sup> (≤ 0.3 for pressure ranges 1,000 bar)  |                     |                     |                     |     |     |       |                     |
| Behavior with turn down (1 : k)                        |           |  |                     |                     |                     |     |     |       |                     |
| ■ turn down of up to 1 : 5                             |           | No change of accuracy  |                     |                     |                     |     |     |       |                     |
| ■ turn down of 1 : 5 to 1 : 20                         |           | The accuracy must be multiplied by the factor (k / 5)<br>[Calculation example for TD = 1 : 15] Accuracy = 0.1 x (15 : 5) = 0.3             |                     |                     |                     |     |     |       |                     |
| Non-linearity  | % of span | ≤ 0.05 (≤ 0.2 for pressure ranges > 1,000 bar); (BFSL) per IEC 61298-2   |                     |                     |                     |     |     |       |                     |
| 1-year stability                                       | % of span | ≤ 0.1 (at reference conditions)  |                     |                     |                     |     |     |       |                     |
| Overall deviation                                      | %         | at +10 ... +40 °C ≤ 0.15 (≤ 0.5 for pressure ranges > 1,000 bar)   |                     |                     |                     |     |     |       |                     |
| Permissible temperature of                             |           |  |                     |                     |                     |     |     |       |                     |
| ■ Medium *   | °C        | -30 ... +105 (G 1 ½ up to 30 min 140°C at an ambient temperature of < 50 °C)<br>-30 ... +150 (G 1 according to EHEDG with cooling element) |                     |                     |                     |     |     |       |                     |
| ■ Ambience   | °C        | -40 ... +85 <sup>7)</sup> (-20 ... +70 with display)   |                     |                     |                     |     |     |       |                     |
| ■ Storage  | °C        | -40 ... +85 (-35 ... +80 with display)   |                     |                     |                     |     |     |       |                     |
| Compensated temp. range                                | °C        | -20 ... +80  |                     |                     |                     |     |     |       |                     |
| Temperature coefficients within compensated temp range |           | (the temperature related deviations in the range +10 ... +40 °C included in the overall deviation)   |                     |                     |                     |     |     |       |                     |
| ■ Mean TC of zero                                      | % of span | ≤ 0.1 / 10 K   |                     |                     |                     |     |     |       |                     |
| ■ Mean TC of range                                     | % of span | ≤ 0.1 / 10 K   |                     |                     |                     |     |     |       |                     |
| Damping  | s         | display and signal: 0 ... 40 (adjustable)  |                     |                     |                     |     |     |       |                     |
| CE-conformity  |           |  |                     |                     |                     |     |     |       |                     |
| ■ Pressure equipment directive                         |           | 97/23/EG (Modul H)   |                     |                     |                     |     |     |       |                     |
| ■ EMV directive  |           | 2004/108/EG, EN 61326 Emission (Group 1, Class B) and immunity (industrial locations)  |                     |                     |                     |     |     |       |                     |
| Shock resistance                                       | g         | 100 per IEC 60068-2-27 (mechanical shock)  |                     |                     |                     |     |     |       |                     |
| Vibration resistance                                   | g         | 5 per IEC 60068-2-6 (vibration under resonance)  |                     |                     |                     |     |     |       |                     |
| Wiring protection                                      |           | Protected against reverse polarity, short circuiting and {overvoltage} on the instrument side  |                     |                     |                     |     |     |       |                     |
| Weight   | kg        | approx. 0.7 {Aluminum version approx. 1.0}   |                     |                     |                     |     |     |       |                     |

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

\*) In an oxygen version model UT-11 is not available. In an oxygen version model UT-10 is only available in gauge pressure ranges from 0.4 bar up to max. 1000 bar and with media temperatures between -20 ... +60 °C / -4 ... +140 °F.

1) Other measuring ranges (e. g. 4 bar) can be set via the respective Turn down. Even when the measuring range is present by us on (e. g. 4 bar) the standard range of (6 bar) can be set again by a reset.

2) Only Model UT-10.

3) For model UT-11: the value specified in the table applies only when sealing is realised with the sealing ring underneath the hex. Otherwise max. 1500 bar applies.

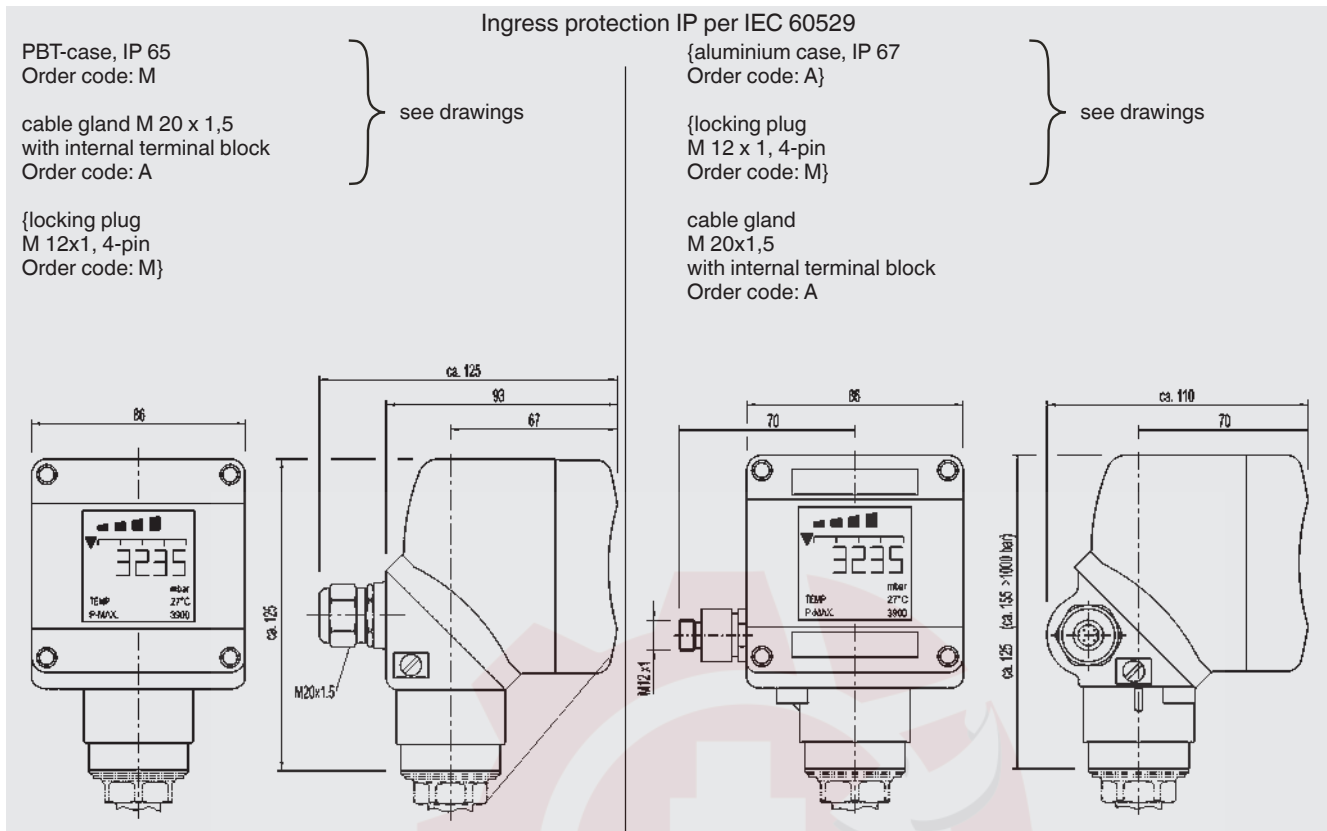
4) O-ring made of FPM/FKM {EPDM} for Model UT-11 with integrated cooling element.

5) Not for UT-10 with pressure ranges > 25 bar

6) Including non-linearity, hysteresis, non-repeatability, zero point and full scale error (corresponds to error of measurement per IEC 61298-2). Adjusted in vertical mounting position with lower pressure connection.

7) -40 °C only with Aluminium case.

## Dimensions in mm



### Pressure connections UT-10

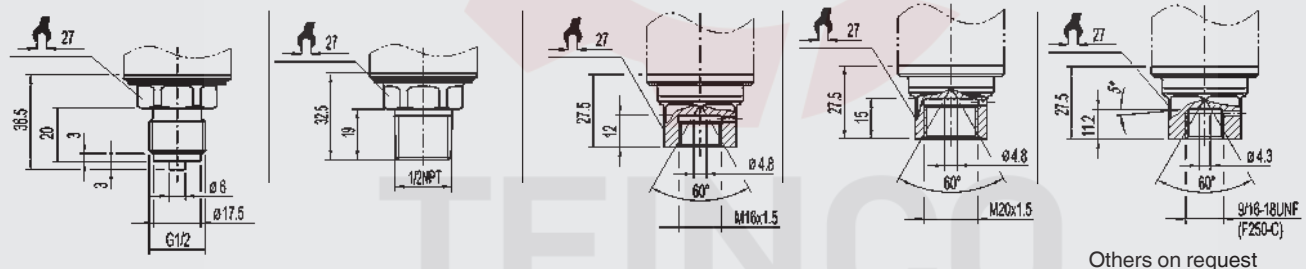
G 1/2  
EN 837  
max. 1600 bar  
Order code: GD

1/2 NPT  
per „Nominal size for US  
standard tapered pipe  
thread NPT“  
max. 1600 bar  
Order code: ND

M 16x1,5 female <sup>1)</sup>  
from 1600 bar  
Order code: ML

M 20x1,5 <sup>1)</sup>  
from 1600 bar  
Order code: MI

9/16-18 UNF female <sup>1)</sup>  
from 1600 bar  
Order code: VZ



Others on request

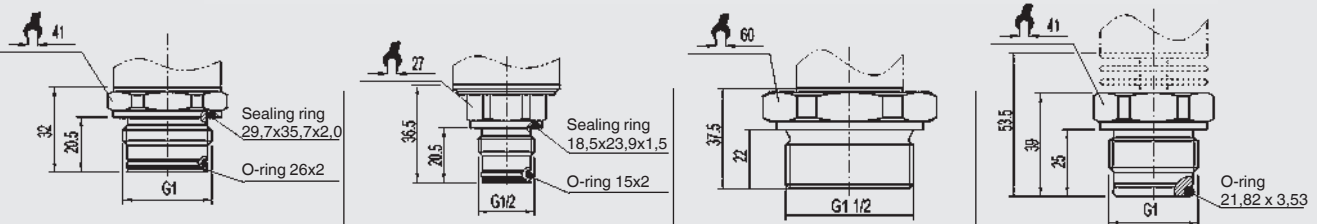
### Pressure connections UT-11

G 1  
0 ... 0,4 up to 0 ... 1.6 bar  
Order code: 85

G 1/2  
> 1.6 bar  
Order code: 86

G 1 1/2  
without O-ring  
0 ... 0.4 up to 0 ... 16 bar  
Order code: G6

G 1  
acc. EHEDG <sup>2)</sup>,  
0 ... 0.4 up to 0 ... 16 bar  
Order code: 83  
with cooling element up to 150 °C  
Order code: 84



Others on request

**For installation and safety instructions see the operating instructions for this product.**

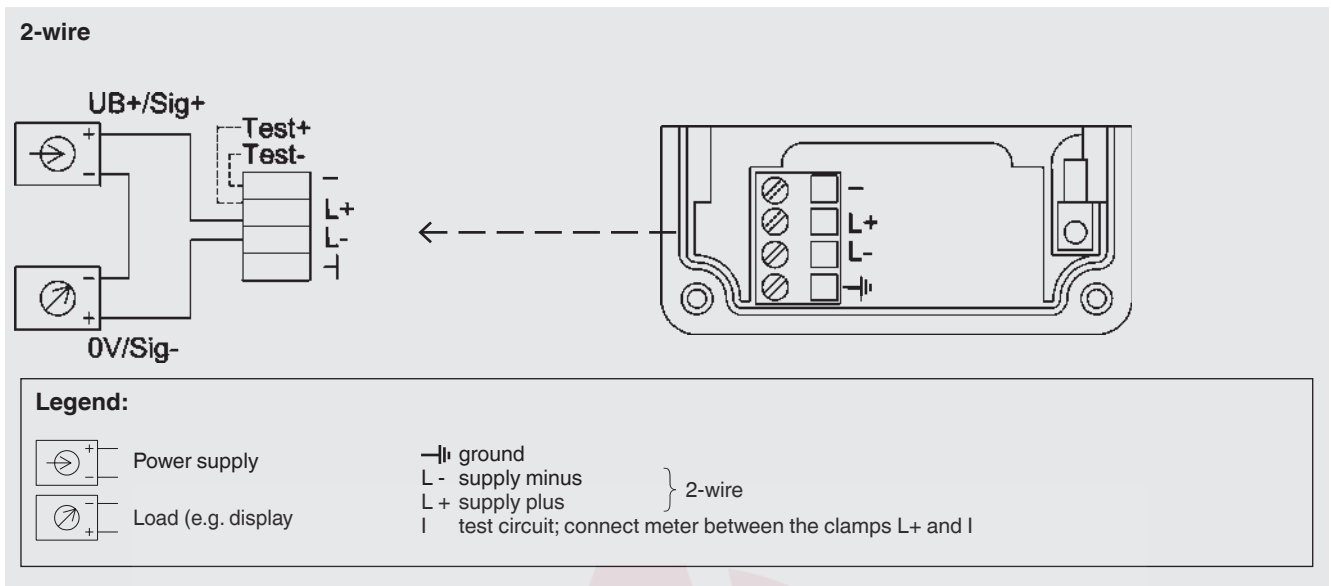
**For tapped holes and welding sockets please see Technical information IN 00.14 for download at [www.wika.de](http://www.wika.de) - Service**

<sup>1)</sup> The respective values for your mounting position please find in the documentation of your high-pressure equipment supplier.

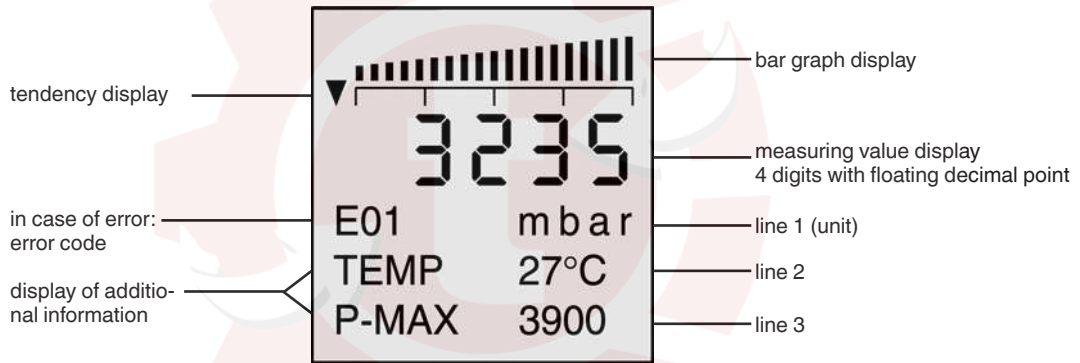
<sup>2)</sup> European Hygienic Equipment Design Group

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

## Electrical connection



## Random example of the optional display



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The specifications given in this document represent the state of engineering at the time of publishing. We reserve the right to make modifications to the specifications and materials.



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