UniTrans® Universal Pressure Transmitters
Type UT-10, UT-11

Applications
- Process engineering
- Chemical engineering
- Plant construction

Special features
- Scaleable measuring ranges via turndown 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
- Multifunction display

Description

Turn Down
With its maximum 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.

Multifunction display
The optional display can be adjusted mechanically and electronically, thus guaranteeing many display variations and an optimal reading from different directions. Bar graph 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® can be used for linearization with up to 32 set 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

<table>
<thead>
<tr>
<th>Type UT-10, standard version</th>
<th>Type UT-11, flush diaphragm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pressure ranges</strong>&lt;sup&gt;1)&lt;/sup&gt; *</td>
<td><strong>0.4 bar</strong></td>
</tr>
<tr>
<td>Over pressure safety</td>
<td>2 bar</td>
</tr>
<tr>
<td>Burst pressure</td>
<td>2.4 bar</td>
</tr>
<tr>
<td><strong>Pressure ranges</strong>&lt;sup&gt;1)&lt;/sup&gt; *</td>
<td><strong>1,000 bar</strong>&lt;sup&gt;2)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Over pressure safety</td>
<td>1,500 bar</td>
</tr>
<tr>
<td>Burst pressure</td>
<td>3,000 bar</td>
</tr>
</tbody>
</table>

(Vacuum, gauge pressure, compound range, absolute pressure are available)

### Materials

- **Wetted parts** (other materials see WIKA diaphragm seal program)<sup>3)</sup>
  - Model UT-10 Stainless steel (pressure ranges > 16 bar additional Elgiloy®)
  - Model UT-11 Stainless steel (Hastelloy® C4); O-ring: NBR {FPM/FKM or EPDM}
- **Case** Highly resistive, fiberglass-enforced plastic (PBT); {Aluminum}
- **Internal transmission fluid**<sup>5)</sup> Synthetic oil (Halocarbon® oil for oxygen applications)

{Listed by FDA for Food & Beverage}

### Power supply

- DC V: 12 < $U_B$ ≤ 36
- Signal output: 4 ... 20 mA, 2-wire

### Permissible max. load

- $R_A$ ≤ ($U_B$ – 12 V) / 0.023 A with $R_A$ in Ohm and $U_B$ in Volt

### Adjustability

- **Zero point** %: -2.5 ... 99
- **Span** Turndown 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)

- No change of accuracy
- The accuracy must be multiplied by the factor (k / 5)

### 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)
- **Ambience** °C: -30 ... +150 (G 1 according to EHEDG with cooling element)
- **Storage** °C: -40 ... +85 (<20 ... +70 with display)
- **Compensated temp. range** °C: -40 ... +85 (-35 ... +80 with display)

### Temperature coefficients within compensated temp range

- 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 (Module 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}

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<sup>1)</sup> Items in curved brackets are optional extras for additional price.
<sup>2)</sup> 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 ... +80 °C / -4 ... +180 °F.
<sup>3)</sup> Other measuring ranges (e.g. 4 bar) can be set via the respective Turn down. Even when the measuring range is present by us (e.g. 4 bar) the standard range of (6 bar) can be set again by a reset.
<sup>4)</sup> Only Type UT-10.
<sup>5)</sup> For Type UT-11: the value specified in the table applies only when sealing is accomplished with the sealing ring underneath the hex. Otherwise max. 1,500 bar applies.
<sup>6)</sup> 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.
<sup>7)</sup> -40 °C only with Aluminum case.
### Pressure connections UT-10

<table>
<thead>
<tr>
<th>Connection Type</th>
<th>EN 837 Standard</th>
<th>Maximum Pressure</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>G 1/2</td>
<td>EN 837</td>
<td>1.600 bar</td>
<td>GD</td>
</tr>
<tr>
<td>G 1/2</td>
<td>EN 837</td>
<td>&gt; 1.6 bar</td>
<td>G6</td>
</tr>
<tr>
<td>G 1/2</td>
<td>EN 837</td>
<td>0 ... 0.4 bar</td>
<td>83</td>
</tr>
</tbody>
</table>

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

### Pressure connections UT-11

<table>
<thead>
<tr>
<th>Connection Type</th>
<th>Maximum Pressure</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>G 1</td>
<td>0 ... 0.4 bar</td>
<td>85</td>
</tr>
<tr>
<td>G 1/2</td>
<td>&gt; 1.6 bar</td>
<td>86</td>
</tr>
<tr>
<td>G 1/2</td>
<td>0 ... 0.4 bar</td>
<td>83</td>
</tr>
<tr>
<td>G 1/2</td>
<td>0 ... 16 bar</td>
<td>84</td>
</tr>
</tbody>
</table>

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

2) European Hygienic Equipment Design Group
Electrical connection

2-wire

Legend:

- Power supply
- Load (e.g. display)
- Ground
- Supply minus
- Supply plus
- Test circuit; connect meter between the clamps L+ and I

Random example of the optional display

- Trend display
- Bar graph display
- Measured value display
  - 4 digits with floating decimal point
- Line 1 (unit)
- Line 2
- Line 3

Specifications and dimensions given in this data sheet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.