Ultra high purity transducer
For explosion-protected areas, Ex nA ic
Models WU-20, WU-25 and WU-26

Reliable
The WU-2x series combines state-of-the-art digital transducer concepts with analogue-like output signals, in order to provide the safest and most accurate pressure measurements necessary for today’s market requirements.

Pressure measurement, based on a true vacuum reference, and electronic measures for interference shielding and signal noise cancellation ensure high-accuracy pressure measurement and excellent long-term stability.

Active temperature compensation reduces the impact of changing temperatures on the transducer, allowing safe operations even in applications with high fluctuations in temperature, e.g. Joule-Thomson effect in the case of gas expansion.

Abb. left: WU-20, single end
Abb. centre: WU-25, flow through
Abb. right: WU-26, modular surface mount

Versatile
The WU-2x transducer can be readily installed in indoor or outdoor systems as well as in non-flammable or potentially flammable areas. The hermetically sealed design of the WU-2x prevents the ingress of humidity.

Approvals for non-flammable and potentially flammable environments ensure a high level of product safety. Instruments for temperature class T6 meet the high requirements for low, spontaneous ignition temperature media (phosphine (PH3) and silane (SiH4)).

Compact
With its small footprint the WU-2x is the most compact UHP transducer in the market. Thus it is optimally suited for installation in applications with limited mounting space, and even in existing plants it can be easily retrofitted.

sensor failure due to loads at the process connection or welded joints.
## Specifications

<table>
<thead>
<tr>
<th>Model WU-20, WU-25</th>
<th>Model WU-26</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measuring range (psi)</strong></td>
<td>30 60 100 160 250</td>
</tr>
<tr>
<td><strong>Measuring range (bar)</strong></td>
<td>2 4 7 11 17</td>
</tr>
<tr>
<td><strong>Overload safety (psi)</strong></td>
<td>120 120 210 320 500</td>
</tr>
<tr>
<td><strong>Burst pressure (psi)</strong></td>
<td>1,800 1,800 2,200 2,600 4,800</td>
</tr>
</tbody>
</table>

Further measuring ranges on request

**Measuring principle**
- Thin-film sensor

**Materials**
- **Wetted parts**
  - Process connection: 316L stainless steel, according to SEMI F20 (option: 316L VIM/VAR)
  - Thin-film sensor: 2.4711 / UNS R30003
- **Case**
  - 304 SS
- **Helium leak test**
  - < 1 x 10⁻⁹ mbar l/sec (atm STD cc/sec) per SEMI F1
- **Surface treatment**
  - Electropolished, typical Ra ≤ 0.13 µm (RA 5); max. Ra ≤ 0.18 µm (RA 7) per SEMI F19
- **Dead volume**
  - WU-20 < 1.5 cm³, WU-25 < 1 cm³, WU-26 < 1 cm³
- **Permissible media**
  - Speciality gases, vapours, liquids
- **Power supply U+**
  - DC 10 ... 30 V with output signal DC 0 ... 5 V / 4 ... 20 mA
  - DC 14 ... 30 V with output signal DC 0 ... 10 V
- **Output signal and permissible max. load R_A in Ω**
  - 4 ... 20 mA, 2-wire, R_A ≤ (U+ – 10 V) / 0.02 A
  - DC 0 ... 5 V, 3-wire, R_A > 5 kΩ
  - DC 0 ... 10 V, 3-wire, R_A > 10 kΩ
- **Power P_max**
  - 1 W
- **Adjustability of zero point**
  - -3.5 ... +3.5 % of span (via potentiometer), current output
  - -2 ... +3.5 % of span (via potentiometer), voltage output
- **Response time (10 ... 90 %)**
  - ≤ 300 ms
- **Insulation voltage**
  - DC 500 V
- **Accuracy**
  - ≤ 0.15 % of span (≤ 0.4 % of span with measuring ranges ≤ 2 bar) RSS (root sum squares)
  - ≤ 0.3 % of span 1) (≤ 0.6 % of span 1) with measuring ranges ≤ 2 bar) per IEC 61298-2
- **Non-linearity**
  - ≤ 0.1 % of span (≤ 0.15 % of span for measuring ranges ≤ 2 bar) (BFSL) per IEC 61298-2
- **Hysteresis**
  - ≤ 0.14 % of span
- **Non-repeatability**
  - ≤ 0.12 % of span
- **Stability per year**
  - ≤ 0.25 % of span (typ.), at reference conditions (≤ 0.4 % of span with measuring ranges ≤ 2 bar)
- **Permissible temperature ranges**
  - **Medium**
    - -20 ... +100 °C
    - -4 ... +212 °F
  - **Ambient**
    - -20 ... +85 °C
    - -4 ... +185 °F
  - **Storage**
    - -40 ... +100 °C
    - -40 ... +212 °F
- **Rated temperature range**
  - -20 ... +80 °C, -4 ... +176 °F (actively compensated)
- **Temperature coefficients within the rated temperature range (actively compensated)**
  - **Mean TC of zero**
    - ≤ 0.1 % of span/10 K
  - **Mean TC of span**
    - ≤ 0.15 % of span/10 K
- **Assembly and packaging area**
  - Clean room class 5 per ISO 14644
- **Packaging**
  - Double packaging per SEMI E49.6
- **Shock resistance**
  - 500 g (1.5 ms) per IEC 60068-2-27
- **Vibration resistance**
  - 0.35 mm (10 ... 58 Hz) / 5 g (58.1 ... 2,000 Hz) per IEC 60068-2-6
- **Short circuit**
  - S+ vs. U- (short time)
- **Reverse polarity**
  - U+ vs. U-
- **Weight**
  - Approx. 0.1 kg

---

1) Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2)
### Electrical connections

<table>
<thead>
<tr>
<th>Bayonet connector (4-pin)</th>
<th>Circular connector M12 x 1 (4-pin)</th>
<th>Cable outlet 1.5 m and 3 m</th>
</tr>
</thead>
</table>

#### Electrical connections

<table>
<thead>
<tr>
<th></th>
<th>Sub-D connector, 9-pin</th>
<th>Sub-D HD connector (15-pin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-wire</td>
<td>U+ = 4</td>
<td>U+ = 7</td>
</tr>
<tr>
<td></td>
<td>U- = 8</td>
<td>U- = 5</td>
</tr>
<tr>
<td></td>
<td>U- = 9</td>
<td>U- = 12</td>
</tr>
<tr>
<td>3-wire</td>
<td>U+ = 4</td>
<td>U+ = 7</td>
</tr>
<tr>
<td></td>
<td>U- = 8</td>
<td>U+ = 5</td>
</tr>
<tr>
<td></td>
<td>U- = 9</td>
<td>U- = 12</td>
</tr>
<tr>
<td></td>
<td>S+ = 1</td>
<td>S+ = 2</td>
</tr>
<tr>
<td>Conductor cross-section</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cable diameter</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ingress protection per IEC 60529</td>
<td>IP54</td>
<td>IP54</td>
</tr>
</tbody>
</table>

Ingress protection only applies when plugged in using mating connectors that have the appropriate ingress protection.
Dimensions in inch [mm], model WU-20

Bayonet connector

ickness.

¼" union nut, rotatable

Process connections

¼" weld stub

Max. available pressure: 300 psi

¼" male nut, rotatable

¼" T-connector, weld stub

Potentiometer for zero adjustment

Max. available pressure: 300 psi
**Dimensions in inch [mm], model WU-25**

Bayonet connector

1/4" male nut, fixed
1/4" male nut, rotatable

Process connections

1/4" union nut, rotatable
1/4" union nut, rotatable
1/4" male nut, rotatable
1/4" male nut, rotatable
1/4" male nut, fixed
1/4" weld stub
Dimensions in inch [mm], model WU-26

Process connections

Potentiometer for zero adjustment
## Approvals

<table>
<thead>
<tr>
<th>Logo</th>
<th>Description</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>🟢</td>
<td><strong>EU declaration of conformity</strong></td>
<td>European Union</td>
</tr>
<tr>
<td>🟢</td>
<td>- EMC directive</td>
<td></td>
</tr>
<tr>
<td>🟢</td>
<td></td>
<td></td>
</tr>
<tr>
<td>🟢</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⚪️</td>
<td>EN 61326 emission (group 1, class B) and interference immunity (industrial application)</td>
<td></td>
</tr>
<tr>
<td>⚪️</td>
<td>Pressure equipment directive</td>
<td></td>
</tr>
<tr>
<td>⚪️</td>
<td>RoHS directive</td>
<td></td>
</tr>
<tr>
<td>⚪️</td>
<td>ATEX directive (option)</td>
<td></td>
</tr>
<tr>
<td>⚪️</td>
<td>Hazardous areas</td>
<td></td>
</tr>
<tr>
<td>⚪️</td>
<td>- Ex n Zone 2 gas</td>
<td>[II 3G Ex nA ic IIC T6/T5/T4 Gc X]</td>
</tr>
<tr>
<td>⚪️</td>
<td><strong>IECEEx (option)</strong></td>
<td>International</td>
</tr>
<tr>
<td>⚪️</td>
<td>Hazardous areas</td>
<td></td>
</tr>
<tr>
<td>⚪️</td>
<td>- Ex n Zone 2 gas</td>
<td>[Ex nA ic IIC T6/T5/T4 Gc]</td>
</tr>
<tr>
<td>⚪️</td>
<td><strong>FM (option)</strong></td>
<td>USA</td>
</tr>
<tr>
<td>⚪️</td>
<td>Hazardous areas</td>
<td></td>
</tr>
<tr>
<td>⚪️</td>
<td>- Nonincendive Apparatus for use in Class I, Division 2, Groups A, B, C, D</td>
<td></td>
</tr>
<tr>
<td>⚪️</td>
<td>- Nonincendive for use in Class I, Zone 2, Group IIC (classified) locations</td>
<td></td>
</tr>
</tbody>
</table>

## Ordering information

Model / Measuring range / Process connection / Output signal / Power supply / Electrical connection / Cable length / Approval

© 03/2010 WIKA Alexander Wiegand SE & Co. KG, all rights reserved.
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.