ETd 04
Battery Powered
Precision Digital Gauge

Stainless Steel Sensor

class 0.05

Nominal pressure
from 0 ... 100 mbar up to 0 ... 400 bar

Special characteristics
► modular sensor concept
► data logger
► graphic display
► stainless steel housing Ø 100 mm
► communication interface USB 2.0

Optional
► accredited calibration certificate
► IS-version zone 1
► software incl. USB converter
► service case with accessories

Functions
► zero point calibration
► data logger
► turn off automatic
► configurable switch-off automatic
► background illumination

The digital pressure gauge ETd04 is a precision device fulfilling highest demands. It was conceived especially for the process monitoring and calibration. The advantage: With the digital display ETd 04, different pressure transmitters can be used for various measurement ranges.

The pressure transmitter can be selected and easily exchanged for the required pressure range on site – without tools or parameter setting.

Outstanding measuring qualities, an intuitive operation, as well as an innovative, modular sensor concept characterise the ETd 04. The battery-powered digital pressure gauge can be used e.g. for controlling pressure courses or calibrating pressure transmitters.

The integrated data logger is able to record pressure and temperature values linearly and cyclically which can be analysed with software|LOG.

Preferred areas of use are

- Calibrating techniques
- Laboratory applications
- Plant and Machine Engineering

Type: ETd 04
<table>
<thead>
<tr>
<th>Input pressure</th>
<th>Technical Data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal pressure gauge [bar]</strong></td>
<td>[-1...0 0.10 0.16 0.25 0.40 0.60 1 1.6 2.5 4 6]</td>
</tr>
<tr>
<td><strong>Nominal pressure abs. [bar]</strong></td>
<td>[- - - - - 0.40 0.60 1 1.6 2.5 4 6]</td>
</tr>
<tr>
<td><strong>Overpressure [bar]</strong></td>
<td>[5 1 1 1 2 5 5 10 10 17.5 35]</td>
</tr>
<tr>
<td><strong>Burst pressure ≥ [bar]</strong></td>
<td>[7.5 1.5 1.5 1.5 3 7.5 7.5 15 15 25 50]</td>
</tr>
<tr>
<td><strong>Nominal pressure gauge / abs. [bar]</strong></td>
<td>[10 16 25 40 60 100 160 250 400]</td>
</tr>
<tr>
<td><strong>Overpressure [bar]</strong></td>
<td>[35 80 80 105 210 600 600 1000 1000]</td>
</tr>
<tr>
<td><strong>Burst pressure ≥ [bar]</strong></td>
<td>[50 120 120 210 420 1000 1000 1250 1250]</td>
</tr>
<tr>
<td><strong>Vacuum resistance</strong></td>
<td>$P_n ≥ 1 \text{ bar}: \text{ unlimited vacuum resistant}; P_n &lt; 1 \text{ bar}: \text{ on request}$</td>
</tr>
</tbody>
</table>

**Performance**

- **Accuracy**: standard for $P_n ≥ 0.4 \text{ bar}$: ± 0.05 % BFSL; standard for $P_n < 0.4 \text{ bar}$: ± 0.125 % BFSL
- **Long term stability**: ≤ ± 0.1 % FSO / year at reference conditions
- **Measuring rate / Display**: 1 or 2 measurements per second

**Thermal effects (Offset and Span)**

- **Temperature error**: for nominal pressure ranges $P_n ≤ 160 \text{ bar}$: included in the accuracy information
- **Permissible temperatures**: for nominal pressure ranges $P_n > 160 \text{ bar}$: tolerance band ≤ ± 0.75 % FSO (is valid for compensated ranges 0 ... 50 °C)

**Materials**

- **Pressure port / housing**: stainless steel 1.4404 (316L)
- **Display housing**: stainless steel 1.4301 (304)
- **Seals (media wetted)**: FKM
- **Diaphragm**: Stainless steel 1.4435 (316L)
- **Media wetted parts**: pressure port, seal, diaphragm

**Explosion protection**

- **AX16-DM01 IBExU12ATEX1108 X zone 1: II 2G Ex ia IIC T4 Gb**

**Miscellaneous**

- **Display**: graphic LC display: visible area 55 x 46 mm; (resolution 128x64)
  - figure height 5.5 mm (displaying of pressure value)
  - measuring value display: max. 7 digits, depending on pressure range
  - temperature display, time, 100-segment-bargraph, potential input value
  - illumination period and intensity adjustable
- **Temperature display range accuracy**: ± 2 K
- **Temperature display range resolution**: 0.1 K
- **Temperature display range display**: -10 … 55 °C
- **adjustable units**: [bar], [mbar], [psi], [mbar], [kPa], [mbar], [kPa], [mbar], [kPa], [mbar], [kPa], [mbar]
- **Data logger**: recording pressure values and sensor temperature (min, hrs, daily at a defined time)
  - max. 8500 values
  - modes: cyclic, linear
  - measuring value interval adjustable
- **Current consumption**
  - without background illumination: approx. 1.3 mA
  - with background illumination: approx. 16 mA (depending on adjusted intensity)
  - standby mode: approx. 1.2 µA
- **Supply**: 3x 1.5 V: Duracell Plus battery, DUR087033, AA (LR6)
- **Ingress protection**: IP 67
- **Mounting position**: any
- **Weight**: approx. 680 g
- **A / D-converter resolution**: 16 bit
- **Battery life**: standard use: > 2.000 h; standby mode: at least 5 years
- **Load cycles**: > 100 × 10³
- **CE-conformity**: EMC directive: electromagnetic compatibility: 2004/108/EC
  - pressure equipment directive: 97/23/EC (Module A)
  - according to EN 61326

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2 Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for pressure ranges $P_n ≤ 1 \text{ bar}$.

3 This directive is only valid for devices with maximum permissible overpressure > 200 bar.
# ETd 04
Precision Digital Gauge

## Technical Data

### Dimensions (in mm)

<table>
<thead>
<tr>
<th>Standard</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="G1/2&quot; EN 837" /></td>
<td><img src="image2" alt="G1/2&quot; EN 837 (pressure transmitter and display separated)" /></td>
</tr>
<tr>
<td><img src="image3" alt="G1/2&quot; DIN 3852" /></td>
<td><img src="image4" alt="G1/2&quot; DIN 3852 with flush sensor" /></td>
</tr>
<tr>
<td><img src="image5" alt="G1/4&quot; DIN 3852" /></td>
<td><img src="image6" alt="1/2&quot; NPT" /></td>
</tr>
<tr>
<td><img src="image7" alt="1/4&quot; NPT" /></td>
<td><img src="image8" alt="G 1/4&quot; EN 837" /></td>
</tr>
<tr>
<td><img src="image9" alt="G1/2&quot; DIN 3852 open pressure port" /></td>
<td></td>
</tr>
</tbody>
</table>

→ metrical threads and other variations on request

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*only possible for nominal pressure ranges \( P_n \leq 40 \) bar
**Accessories are not in scope of supply and have to be ordered separately!**

**ETd 04|LOG software**

Optionally software ETd 04|LOG and an interface cable can be ordered. The software is also available for download on our homepage.

**Software:**

- display of device information (serial number, pressure and temperature range,…)
- configuration area for all parameters
- download area for recorded data:
  - date
  - pressure measurement
  - temperature measurement
- actual value

Interface cable with integrated USB converter
l: 1.7 m

Ordering number: ETD04/software
<table>
<thead>
<tr>
<th><strong>Accessory</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
</table>
| Hard-shell service case without accessories | Hard shell case.  
Dimension in mm (L x W x H): 432 X 363 X 138 |
| Protective cap | Rubber protection |
| Additional batteries (only in combination with service case) | for IS-version only  
- 3 x 1.5 V / AA Duracell Power Plus |
| Seal set (only in combination with service case) | Flat seal copper for mechanical connections according to EN 837 |
| PTFE seal tape (only in combination with service case) | Seal tape for mechanical connections  
material: PTFE (Teflon)  
Temperature range: -200 ... 280 °C |
| Wrench (only in combination with service case) | Wrench SW 27 |
| Calibration test pump KHP 35 | The KHP 35 calibration test pump is used to generate pressure and vacuum for checking, adjusting and calibrating mechanical and electronic pressure measuring instruments by comparative measurements. These pressure tests may be carried out in laboratories, workshop or on site at the measuring point.  
pressure: 0 ... 35 bar  
vacuum: 0 ... -0.95 bar  
weight: ca. 510 g  
dimension: ca. 220 x 105 x 63 mm |

**Adapter for calibration test pump**

<table>
<thead>
<tr>
<th><strong>Test unit connection:</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
</table>
| Adapter to connect the test unit to the calibration test pump. | Adapter to connect the test unit to the calibration test pump.  
external thread: G ¼” EN 837  
to:  
internal thread: G ¼” DIN 3852  
or G ½” EN o. DIN  
or ¼” NPT  
or ½” NPT  
others on request |

<table>
<thead>
<tr>
<th><strong>Reference unit connection:</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
</table>
| Adapter to connect the digital gauge to the calibration test pump | Adapter to connect the pressure sensor module DM01 to the calibration test pump.  
external thread: G ¼” EN 837  
to:  
internal thread: G ¼” DIN 3852  
or G ½” DIN 3852  
or ¼” NPT  
or ½” NPT  
others on request |