Pressure measurement
Powerful instruments for process pressure, differential pressure, level and flow
Your complete process automation solution

Close to you, whenever you need us

Committed to our U.S. operations
Endress+Hauser invests an average of 10% of its annual revenue in its infrastructure with many investments being in the U.S. In the years of 2012-2014, Endress+Hauser will invest over $40 million in U.S. operations alone – expanding our flow, level and pressure manufacturing capabilities. More than 90% of all instruments ordered and shipped within the U.S. are manufactured in the U.S. What does this mean for you? When you are experiencing downtime in production, we will be there to get you back up and running – quickly.

Pioneers in modern measuring technology
Today, we provide 43 different sensor technologies, making us unparalleled as your supplier of process instrumentation. Every year, Endress+Hauser employees register in excess of 200 patent applications to add to the more than 3,500 currently registered. We take pride in developing groundbreaking measurement solutions that bring new levels of safety and reliability to process automation.

Our offering:
- Pressure
- Level
- Flow
- Temperature
- Liquid Analysis
- Recorders and Components
- Services
- Solutions

Caring for you and our environment
We are currently working toward the goal of receiving LEED Certification. This certification recognizes eco-friendly buildings that reduce pollution and erosion, efficiently use water and energy, recycle construction materials and improve air quality. While adding over 200,000 square feet of manufacturing space to our campus in Indiana, 65% of all materials used during construction will be recycled.

Learn more about our U.S. manufacturing
www.us.endress.com/usmanufacturing
Competence in pressure measurement

Constant product quality, plant safety and economic efficiency – these are important aspects for any pressure measuring point. Whether pressure, level or flow, today pressure measurement technology is often used for measuring liquids, pastes and gases.

Application examples come from all industry sectors – from the chemical, petrochemical and energy industries to the pharmaceutical, food and environmental industries or in power plants.

The broad range of products available means that finding the ideal solution is easy. No product is suited to all application areas. Therefore measuring systems must be selected that work reliably under the conditions of a particular application and, at the same time, meet the economic situations.

Being one of the leading suppliers in pressure measurement, Endress+Hauser supports you from planning and commissioning through to the maintenance of your measuring point. In addition, we assist you in automation, asset management and the visualization of process data.

Endress+Hauser’s pressure instrumentation has a strong presence in all areas of process automation.

Endress+Hauser Operations App

The app offers fast access to up-to-date product information and device details e.g. order code, availability, spare parts, successor products for old devices and general product information - wherever you are, whenever you need it. Simply enter the serial number or scan the data matrix code on the device to download the information.

Available on the App Store

Scan the QR-Code
Industry segmentation

Hygienic

- Food and Beverages
- Life Sciences

The hygienic instruments of Endress+Hauser were especially designed to meet the strict requirements of the food, beverages and pharmaceutical industry and to offer customers safety and reliability. The design, material selection and surface quality of the instruments as well as the process connections correspond to the international hygiene standard according to EHEDG, FDA, 3-A and ASME-BPE.

Process

- Oil and Gas
- Chemicals/Petrochemicals
- Energy
- Pulp and Paper
- Primaries and Metal

Endress+Hauser is one of the internationally leading providers of robust and reliable field instrumentation of the process industry. The contacts and experience of many years provide the know-how for the process safety required. Abrasive and corrosive media place high demands on the functions and materials of the instruments. Endress+Hauser offers high-performance and safe solutions with relevant certificates like Ex or SIL.

Environment

- Water
- Waste Water

Instrumentation plays an important role in the provision of water. In order to guarantee a high degree of plant availability and constant process safety, the instruments of Endress+Hauser reliably measure levels and pressures in all areas of potable water production and treatment as well as waste water production and purification. Endress+Hauser has more than 60 years of experience and the required potable water approvals for the instruments.
## Endress+Hauser sensor technology

### Ceramic cell

**Ceraphire®**

Ceramic is one of the hardest materials in the world and ensures the best material properties for the medium. Endress+Hauser capacitive ceramic sensors have membranes up to 30 times thicker than conventional sensors.

Even the tiniest of deflections result in measuring signals with the highest accuracy. The property of the ultra-pure ceramic (99.9%) guarantees high resistance to corrosion, low temperature hysteresis and the best overload resistance.

![Ceramic cell for process pressure applications](image)

### Silicon technology

Silicon sensors with metal membrane are available for gauge pressure, absolute pressure and differential pressure measurement. As a high-performance solution for high pressure applications up to 10,500psi (700bar), these sensors meet the highest requirements and work reliably across a large temperature range.

![For process pressure applications](image)

![For differential pressure applications](image)

### Contite (Silicon technology)

The Contite sensor has been specially developed for hydrostatic level measurement based on silicon technology.

With its protection for sensor and cell electronics, the Contite sensor is a convincing solution in the event of severe moisture and condensate formation. The measuring element itself is protected and hermetically sealed between the process membrane and measuring membrane. The process membrane is of Hastelloy C and, because of its clever design, is insensitive to any kind of build-up.

![Contite sensor](image)

### Diaphragm seals (Silicon technology)

If measurement is to take place under extreme conditions, a variety of diaphragm seals are available for direct mounting or with capillary extension. They can be used for media temperatures from -94°F up to 752°F, are resistant to aggressive, highly viscous, crystallizing or polymerizing media and are suitable for measuring points that are difficult to access. Endress+Hauser offers the highest quality in the manufacturing process and a wide range of special materials (coating and fill fluids) for all diaphragm seals. Our experts optimize the measuring systems to ensure the maximum degree of performance and reliability.

![Diaphragm seal](image)
### Advantages Ceraphire
- Completely dry measuring system free of oil
- Self-monitoring measuring cell with membrane breakage detection
- FDA-listed and USP Class VI-tested material
- Surface roughnesses <0.38µm
- Up to 40-fold overload stability
- CIP and SIP cleaning

### Advantages silicon technology
- Smallest process connections and membrane diameters with constant accuracy
- Surface roughnesses <0.38µm
- Numerous process connections
- FDA-listed fill oils
- CIP and SIP cleaning

### Advantages Contite
- Absolute condensate resistance due to hermetically sealed measuring cell
- Highest measurement stability in extreme temperature changes
- High accuracy and repeatability, particularly in small measuring ranges
- FDA-listed fill oil
- Surface roughnesses <0.38µm
- CIP and SIP cleaning

### Advantages diaphragm seals
- For flush-mounted pressure measurement in extreme process temperatures of up to 752°F
- Highest degree of availability and flexibility in membrane materials and process connections (e.g. tube)
- Process connections separated by capillary extensions for applications with high vibration

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### Advantages Ceraphire
- Highest corrosion resistance
- Extended service life in abrasive media
- Highly vacuum-proof due to measuring cell free of oil
- Process temperatures up to 302°F in flush-mounted installation
- Up to 40-fold overload stability

### Advantages silicon technology
- Process pressures up to 10,000psi (700bar)
- Large selection of process connections and materials
- Coated membranes available

### Advantages Contite
- Hastelloy measurement membrane for high corrosion resistance
- Different membrane coatings possible

### Advantages Contite
- Membrane coatings to prevent hydrogen diffusion into the measuring cell (e.g. in case of hydrogen sulfide)
- Choice of rod or cable construction for top of vessel installation

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### Advantages Ceraphire
- Unaffected by build-up formation and abrasion
- Easily cleaned in case of sludge
- Unaffected by strong pressure surges in pipes
- Field adjustment cable length for measurement in wells and shafts
- Sensor with temperature compensation
- Potable water approval
The hygienic instruments of Endress+Hauser distinguish themselves by their sophisticated hygienic process connections developed according to international standards and facilitating easy and effective cleaning of the pressure instruments. The pressure instruments measure continually and reliably also in case of high cleaning temperatures and/or the use of aggressive cleaning agents frequently employed, for example, in CIP/SIP processes. They correspond to the relevant international hygienic standards according to EHEDG, FDA, 3-A and ASME-BPE.

Endress+Hauser offers a very wide selection of standard hygienic process connections.

### Products for the hygienic industry

Cerabar T
- Simple installation, no calibration required
- Large measuring range for gauge pressure and absolute pressure
- Ceramic or stainless steel sensors
- Flush-mounted connections and materials with FDA conformity

Ceraphant T
- Quick and flexible process connections thanks to modular design
- Function check and on-site information with LEDs and digital display
- Operation and visualization also possible via PC
- Stainless steel housing and laser etched nameplate

<table>
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<tr>
<td>Cerabar T</td>
<td>Gauge pressure/absolute pressure</td>
<td>Process pressure</td>
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<td>Metal up to 6,000psi (400bar)</td>
</tr>
<tr>
<td>Ceraphant T</td>
<td>Gauge pressure/absolute pressure</td>
<td>Process pressure</td>
<td>1.5psi to 600psi 100mbar to 40bar</td>
<td>Metal up to 600psi (40bar)</td>
</tr>
<tr>
<td>Cerabar M</td>
<td>Gauge pressure/absolute pressure</td>
<td>Process pressure Level</td>
<td>0.15psi to 600psi 10mbar to 40bar</td>
<td>Ceramic up to 600psi (40bar) Metal up to 600psi (40bar)</td>
</tr>
<tr>
<td>Cerabar S</td>
<td>Gauge pressure/absolute pressure</td>
<td>Process pressure Level</td>
<td>0.075psi to 6,000psi 5mbar to 400bar</td>
<td>Ceramic up to 600psi (40bar) Metal up to 6,000psi (40bar)</td>
</tr>
<tr>
<td>Deltabar S</td>
<td>Differential pressure</td>
<td>Differential pressure Level Flow</td>
<td>0.00375psi to 600psi 0.25mbar to 40bar</td>
<td>Metal up to 600psi (40bar) Static pressure up to 6,300 psi (420bar)</td>
</tr>
<tr>
<td>Deltapilot M</td>
<td>Hydrostatic pressure</td>
<td>Level</td>
<td>0.15psi to 150psi 10mbar to 10bar</td>
<td>Contite up to 150psi (10bar)</td>
</tr>
<tr>
<td>Deltapilot S</td>
<td>Hydrostatic pressure</td>
<td>Level</td>
<td>0.15psi to 150psi 10mbar to 10bar</td>
<td>Contite up to 150psi (10bar)</td>
</tr>
</tbody>
</table>
### Cerabar M
- Configurable with multiple options
- Very simple operator interface directly at the instrument or via the control system
- Aseptic connections and FDA-conforming materials
- Modular electronics and displays
- Option remote electronic housing separate from the process connection

### Cerabar S / Deltabar S
- Very simple operation directly on the instrument or via the control system
- Reliable data management with HistoROM/M-DAT
- Extensive diagnosis functionality
- Housing may be turned by 380° (!) for an optimum view of the display
- Option remote electronic housing separate from the process connection

### Deltapilot M
- Contite measuring cell: Waterproof and climate-resistant with long-term stability
- High accuracy even after extreme temperature changes
- Compact design for installation on the bottom or outlet of a tank
- Very easy operation directly at the instrument or via the control system
- Option remote electronic housing separate from the process connection

### Deltapilot S
- Contite measuring cell: Waterproof and climate-resistant with long-term stability
- Highest accuracy and reproducibility
- Reliable data management with HistoROM/M-DAT
- High accuracy even after extreme temperature changes
- Very easy operation directly at the instrument or via the control system
- Option remote electronic housing separate from the process connection

<table>
<thead>
<tr>
<th>Process temperature</th>
<th>Accuracy</th>
<th>Long-term stability</th>
<th>Process connections</th>
<th>Certificates / approvals</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>–13 to +275°F / –25 to +135°C</td>
<td>0.5%</td>
<td>≤ 0.15% / year</td>
<td>Clamp, Triclamp, SMS</td>
<td>ATEX, CSA, SIL2</td>
<td>PMP135</td>
</tr>
<tr>
<td>–40 to +275°F / –40 to +135°C</td>
<td>0.5%</td>
<td>≤ 0.15% / year</td>
<td>Clamp, SMS, Varivent, DIN 11851, APV</td>
<td>CULUS</td>
<td>PTP35</td>
</tr>
<tr>
<td>–40 to +302°F / –40 to +150°C / –94 to +752°F with diaphragm seal –70 to +600°C with diaphragm seal</td>
<td>0.15% 0.075% optional</td>
<td>≤ 0.1% / year ≤ 0.25% / 5 years</td>
<td>DIN 11851/11864, Varivent, Neumo BioControl, APV, DRD, universal adapter, Triclamp, SMS</td>
<td>ATEX, FM, CSA, IEC Ex, SIL2, NEPSI, TIS</td>
<td>PMC51, PMP51, PMP55 (with hyg. connections)</td>
</tr>
<tr>
<td>13 to +302°F / –25 to +150°C –70 to +600°C with diaphragm seal –94 to +752°F with diaphragm seal</td>
<td>0.075%</td>
<td>≤ 0.05% / year ≤ 0.15% / 5 years</td>
<td>DIN 11851, Triclamp, Varivent, DRD, SMS, APV, universal adapter</td>
<td>ATEX, FM, CSA, NEPSI, TIS, IEC Ex, SIL3</td>
<td>PMP75, PMC71 (with hyg. connections)</td>
</tr>
<tr>
<td>–40 to +185°F / –40 to +85°C / –94 to +752°F with diaphragm seal –70 to +600°C with diaphragm seal</td>
<td>0.075% 0.05% optional</td>
<td>≤ 0.05% / year ≤ 0.15% / 5 years</td>
<td>Varivent, DRD, DIN 11851, Sanitary tank spud</td>
<td>ATEX, FM, CSA, NEPSI, TIS, IEC Ex, SIL3</td>
<td>FMD78 (with hyg. connections)</td>
</tr>
<tr>
<td>+14 to +212°F / –10 to +100°C 275°F / 135°C for 30 min.</td>
<td>0.2% 0.1% optional</td>
<td>≤ 0.1% / year ≤ 0.25% / 5 years</td>
<td>Universal adapter, DIN 11851/11864, Neumo BioControl, SMS, DRD, Varivent, Triclamp, Anderson</td>
<td>ATEX, FM, CSA, NEPSI, TIS, IEC Ex, SIL3</td>
<td>FMB850</td>
</tr>
<tr>
<td>+14 to +212°F / –10 to +100°C 275°F / 135°C for 30 min.</td>
<td>0.1% 0.075% optional</td>
<td>≤ 0.05% / year ≤ 0.125% / 5 years</td>
<td>Universal adapter, DIN 11851/11864, Neumo BioControl, SMS, DRD, Varivent, Triclamp, Anderson</td>
<td>ATEX, FM, CSA, NEPSI, TIS, IEC Ex, SIL3</td>
<td>FMB70</td>
</tr>
</tbody>
</table>
Products for the process industry

The instruments of Endress+Hauser are equipped with a robust housing variant of aluminum or stainless steel (316L) for the aggressive ambient conditions of the process industry. Even for extremely rough process conditions, the instruments offer a wide selection of sensor materials. This contributes to a longer serviceable life of the instruments and increased process safety in a decisive manner.

<table>
<thead>
<tr>
<th>Pressure types</th>
<th>Areas of application</th>
<th>Span</th>
<th>Sensor</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cerabar T</td>
<td>Gauge pressure/absolute pressure</td>
<td>Process pressure</td>
<td>1.5psi to 6,000psi (100mbar to 4000bar)</td>
<td>Ceramic up to 600psi (40bar) Metal up to 6,000psi (400bar)</td>
</tr>
<tr>
<td>Ceraphant T</td>
<td>Gauge pressure/absolute pressure</td>
<td>Process pressure Pressure switch</td>
<td>1.5psi to 6,000psi (100mbar to 4000bar)</td>
<td>Ceramic up to 600psi (40bar) Metal up to 6,000psi (400bar)</td>
</tr>
<tr>
<td>Cerabar M</td>
<td>Gauge pressure/absolute pressure</td>
<td>Process pressure Level</td>
<td>0.15psi to 6,000psi (10mbar to 400bar)</td>
<td>Ceramic up to 600psi (40bar) Metal up to 6,000psi (400bar)</td>
</tr>
<tr>
<td>Cerabar S</td>
<td>Gauge pressure/absolute pressure</td>
<td>Process pressure Level</td>
<td>0.075psi to 10,500psi (5mbar to 700bar)</td>
<td>Ceramic up to 600psi (40bar) Metal up to 10,000psi (700bar)</td>
</tr>
<tr>
<td>Deltabar M</td>
<td>Differential pressure</td>
<td>Differential pressure Level Flow</td>
<td>0.015psi to 600psi (1mbar to 40bar)</td>
<td>Metal up to 600psi (40bar) Static pressure up to 2,320psi (160bar)</td>
</tr>
<tr>
<td>Deltabar FMD72 electronic dp</td>
<td>Differential pressure Level</td>
<td>0.15psi to 150psi (400mbar to 10bar)</td>
<td>Metal up to 150psi (10bar)</td>
<td>4 - 20mA HART®</td>
</tr>
<tr>
<td>Deltabar S</td>
<td>Differential pressure</td>
<td>Differential pressure Level Flow</td>
<td>0.00375psi to 600psi (0.25mbar to 40bar)</td>
<td>Ceramic up to 45psi (3bar) Metal up to 600psi (40bar) Static pressure up to 6,300psi (430bar)</td>
</tr>
<tr>
<td>Waterpilot</td>
<td>Hydrostatic pressure</td>
<td>Level</td>
<td>1.5psi to 300psi (100mbar to 20bar)</td>
<td>Ceramic up to 300psi (20bar)</td>
</tr>
<tr>
<td>Deltapilot M</td>
<td>Hydrostatic pressure</td>
<td>Level</td>
<td>0.15psi to 150psi (10mbar to 10bar)</td>
<td>Contite up to 150psi (10bar)</td>
</tr>
<tr>
<td>Process temperature</td>
<td>Accuracy</td>
<td>Long-term stability</td>
<td>Process connections</td>
<td>Certificates / approvals</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------</td>
<td>---------------------</td>
<td>--------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>~13 to +212°F / -25 to +100°C</td>
<td>0.15%</td>
<td>≤ 0.15% / year</td>
<td>Threads: ISO, ANSI, M</td>
<td>ATEX, CSA, SIL2</td>
</tr>
<tr>
<td>~40 to +212°F / ~40 to +100°C</td>
<td>0.15% optional</td>
<td>≤ 0.25% / 5 years</td>
<td>Flanges: ANSI, EN, JIS</td>
<td>ATEX, FM, CSA, NEPSI, TiS, IEC Ex, SIL2</td>
</tr>
<tr>
<td>~40 to +302°F / ~40 to +150°C</td>
<td>0.075%</td>
<td>≤ 0.25% / 5 years</td>
<td>Flanges: ANSI, EN, JIS</td>
<td>ATEX, FM, CSA, NEPSI, TiS, IEC Ex, SIL3</td>
</tr>
<tr>
<td>~40 to +185°F / ~60 to +85°C</td>
<td>0.1% optional</td>
<td>≤ 0.25% / year</td>
<td>¼” - 18 NPT</td>
<td>ATEX, FM, CSA, NEPSI, TiS</td>
</tr>
<tr>
<td>~40 to +257°F / ~40 to +125°C</td>
<td>0.1%</td>
<td>≤ 0.25% / year</td>
<td>¼” - 18 NPT</td>
<td>ATEX, CSA, IEC Ex</td>
</tr>
<tr>
<td>~40 to +185°F / ~60 to +85°C</td>
<td>0.1% optional</td>
<td>≤ 0.25% / year</td>
<td>¼” - 18 NPT, RC ¼</td>
<td>ATEX, FM, CSA, NEPSI, TiS, IEC Ex, SIL3</td>
</tr>
<tr>
<td>~14 to +158°F / ~10 to +70°C</td>
<td>0.1%</td>
<td>≤ 0.25% / year</td>
<td>Mounting clamp, cable assembly screw</td>
<td>ATEX, FM, CSA</td>
</tr>
<tr>
<td>~14 to +185°F / ~10 to +85°C</td>
<td>0.1%</td>
<td>≤ 0.25% / year</td>
<td>Flanges: ANSI, EN, JIS</td>
<td>ATEX, FM, CSA, NEPSI, TiS, SIL2</td>
</tr>
</tbody>
</table>

**Deltabar M**
- Compact design
- Large choice of standard process connections
- Modular electronics and displays
- User-friendly software with application-specific parameter selection
- Single/Dual Seal Certification

**Deltabar FMD72**
- Impulse line and capillary free electronic differential pressure for level measurement
- Independent of ambient temperature changes
- Intuitive, menu-driven installation and commissioning

**Cerabar S / Deltabar S**
- Very easy operator interface directly at the instrument or via the control system
- Reliable data management with HistoROM/M-DAT
- Extensive diagnosis functionality
- Housing may be turned by 380° (!)
- Functional safety up to SIL3
- Single/Dual Seal Certification

**Waterpilot**
- Ceramic measurement cell protects against abrasion
- Rugged small diameter probes
- Highest accuracy
- Integrated temperature sensor
- Material conforms to potable water directives

**Deltapilot M**
- Contitae measuring cell: Waterproof and climate-resistant with long-term stable
- Very easy operator interface directly at the instrument or via the control system
- Rod/cable versions for top of vessel installation
- User-friendly software with application-specific parameter selection

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**Areas of application**
- **Output**
- **Gauge pressure / Level**
- **Hydrostatic pressure**

**Sensor**
- Differential pressure

**Span**
- 10mbar to 10bar
- 100mbar to 20bar
- 0.25mbar to 40bar
- 400mbar to 10bar
- 1mbar to 40bar
- 5mbar to 700bar
- 0.075 psi to 10,500 psi
- 0.15 psi to 6,000 psi
- 100mbar to 400bar
- 1.5 psi to 6,000 psi
- 100mbar to 400bar

**Contitae up to 150psi (10bar)**

**Ceramic up to 300psi (20bar)**

**Static pressure up to 6,300psi (430bar)**

**Ceramic up to 45psi (3bar)**

**Metal up to 150psi (10bar)**

**Static pressure up to 2,320psi (160bar)**

**Metal up to 600psi (40bar)**

**Ceramic up to 600psi (40bar)**

**Metal up to 6,000psi (400bar)**

**Ceramic up to 600psi (40bar)**

**Metal up to 6,000psi (400bar)**

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**Foundation™ Fieldbus**
- 4 - 20mA HART®, PROFIBUS® PA

**4 - 20mA analog**
- 1 x PNP switch with additional
- 1 x PNP switch, 2 x PNP switch

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**Details**
- System: 0.1%
- ≤ 0.1% / year Threads: ISO, DIN, ANSI
- ≤ 0.25% / 5 years Flanges: ANSI, EN
- ≤ 0.1% / year Flanges: ANSI, EN, DIN
- ≤ 0.2% / 10 years Flanges: ANSI, EN, DIN, flush-mounted process membrane
- ≤ 0.05% / year Flanges: ANSI, EN, DIN, flush-mounted process membrane
- ≤ 0.2% / 10 years Threads: ANSI, ISO
- ≤ 0.075 % / 5 years Threads: ANSI, ISO
- ≤ 0.05 % / year Threads: ANSI, ISO
- ≤ 0.25% / year Threads: ANSI, ISO
- ≤ 0.5 % / year Threads: ANSI, ISO
- ≤ 0.075 % / 5 years Threads: ANSI, ISO
- ≤ 0.05 % / year Flanges: ANSI, EN, JIS
- ≤ 0.075 % / 5 years Flanges: ANSI, EN, JIS
- ≤ 0.15% / year Flanges: ANSI, EN, JIS
- ≤ 0.25% / year Flanges: ANSI, EN, JIS
- ≤ 0.15% / year Flanges: ANSI, EN, JIS
- ≤ 0.25% / 5 years Flanges: ANSI, EN, JIS
- ≤ 0.25% / 5 years Flanges: ANSI, EN, JIS
- ≤ 0.2% / 10 years Flanges: ANSI, EN, JIS
- ≤ 0.5% / year Flanges: ANSI, EN, JIS

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**Selection**
- User
- Mass
- Accuracy
Hydrostatic instruments of Endress+Hauser are designed for the specific requirements of the environmental industry. Materials conforming to potable water directives, robust designs for applications in sludges or systems without any metal for use in salt water offer the right instrument for any application. Easy instrument operation facilitates commissioning and verification of the pressure devices.

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<td>Gauge pressure/absolute pressure Process pressure</td>
<td>1.5 psi to 6,000 psi 100 mbar to 400 bar</td>
<td>Ceramic up to 600 psi (40 bar) Metal up to 6,000 psi (400 bar)</td>
<td>4 - 20 mA analog</td>
</tr>
<tr>
<td>Ceraphant T</td>
<td>Gauge pressure/absolute pressure Process pressure Pressure switch</td>
<td>1.5 psi to 6,000 psi 100 mbar to 400 bar</td>
<td>Ceramic up to 600 psi (40 bar) Metal up to 6,000 psi (400 bar)</td>
<td>1 x PNP switch, 2 x PNP switch 1 x PNP switch with additional 4 - 20 mA analog</td>
</tr>
<tr>
<td>Cerabar M</td>
<td>Gauge pressure/absolute pressure Process pressure Level</td>
<td>0.15 psi to 6,000 psi 10 mbar to 400 bar</td>
<td>Ceramic up to 600 psi (40 bar) Metal up to 6,000 psi (400 bar)</td>
<td>4 - 20 mA analog, 4 - 20 mA HART®, PROFIBUS® PA, FOUNDATION™ Fieldbus</td>
</tr>
<tr>
<td>Deltabar M</td>
<td>Differential pressure Differential pressure Level Flow</td>
<td>0.015 psi to 600 psi 1 mbar to 40 bar</td>
<td>Metal up to 600 psi (40 bar) Static pressure up to 2,320 psi (160 bar)</td>
<td>4 - 20 mA HART®, PROFIBUS® PA FOUNDATION™ Fieldbus</td>
</tr>
<tr>
<td>Waterpilot</td>
<td>Hydrostatic pressure Level</td>
<td>1.5 psi to 3,000 psi 100 mbar to 20 bar</td>
<td>Ceramic up to 300 psi (20 bar)</td>
<td>4 - 20 mA analog, 4 - 20 mA HART® optionally with temperature sensor Pt100</td>
</tr>
<tr>
<td>Deltapilot M</td>
<td>Hydrostatic pressure Level</td>
<td>0.15 psi to 150 psi 10 mbar to 10 bar</td>
<td>Contite up to 150 psi (10 bar)</td>
<td>4 - 20 mA HART®, PROFIBUS® PA FOUNDATION™ Fieldbus</td>
</tr>
</tbody>
</table>

Cerabar T
- Simple installation, no calibration required
- Large measuring range for gauge pressure and absolute pressure
- Ceramic or metal sensor

Ceraphant T
- Quick and flexible process connections thanks to modular design
- Function check and on-site information with LEDs and digital display
- Configuration and display also possible via your PC
- Stainless steel housing and laser etched nameplate
### Cerabar M
- Configurable with many options
- Very simple operator interface directly at the instrument or via the control system
- Modular electronics and displays
- User-friendly software with application-specific parameter selection

### Deltabar M
- Compact design
- Large choice of standard process connections
- Very simple operator interface directly at the instrument or via the control system
- Modular electronics and displays
- User-friendly software with application-specific parameter selection

### Waterpilot
- Ceramic measurement cell protects against abrasion
- Rugged small diameter probe
- Highest accuracy
- Integrated temperature sensor
- Material conform to potable water directives
- Multiple accessories

### Deltapilot M
- Contite measuring cell: Waterproof and climate-resistant, with long-term stability
- Very small temperature influences
- Very easy operator interface at the instrument or via the control system
- Rod/cable versions for top of vessel installation
- User-friendly software with application-specific parameter selection

<table>
<thead>
<tr>
<th>Process temperature</th>
<th>Accuracy</th>
<th>Long-term stability</th>
<th>Process connection</th>
<th>Certificates/approvals</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>-13 to +212°F / -25 to +100°C</td>
<td>0.5%</td>
<td>≤ 0.15% / year</td>
<td>Threads: ISO, ANSI</td>
<td>ATEX, CSA, SIL2</td>
<td>PMC131, PMP131</td>
</tr>
<tr>
<td>-40 to +212°F / -40 to +100°C</td>
<td>0.5%</td>
<td>≤ 0.15% / year</td>
<td>Threads: ISO, DIN, ANSI</td>
<td>CULUS</td>
<td>PTC31, PTP31</td>
</tr>
<tr>
<td>-40 to +302°F / -40 to +150°C</td>
<td>0.15% / 0.075% optional</td>
<td>≤ 0.1% / year ≤ 0.25% / 5 years</td>
<td>Flanges: ANSI, EN, JIS Threads: ISO, ANSI, JIS</td>
<td>ATEX, FM, CSA, IEC Ex, SIL2, NEPSI, TIS WHG</td>
<td>PMC51, PMC55</td>
</tr>
<tr>
<td>-40 to +185°F / -40 to +85°C</td>
<td>0.1% / 0.075% optional</td>
<td>≤ 0.1% / year ≤ 0.25% / 5 years</td>
<td>%&quot; - 18 NPT</td>
<td>ATEX, FM, CSA, IEC Ex, SIL2, NEPSI, TIS WHG</td>
<td>PMD55</td>
</tr>
<tr>
<td>+14 to +158°F / -10 to +70°C</td>
<td>0.2% / 0.1% optional</td>
<td>≤ 0.1% / year ≤ 0.25% / 5 years</td>
<td>Mounting clamp, cable assembly screw</td>
<td>ATEX, FM, CSA WHG</td>
<td>FMX21, FMX167</td>
</tr>
<tr>
<td>+14 to +185°F / -10 to +85°C</td>
<td>0.2% / 0.1% optional</td>
<td>≤ 0.1% / year ≤ 0.25% / 5 years</td>
<td>Flanges: ANSI, EN, JIS Threads: ANSI, ISO</td>
<td>ATEX, FM, CSA, IEC Ex, NEPSI, TIS, SIL2 WHG</td>
<td>FMB51, FMB52, FMB53</td>
</tr>
</tbody>
</table>
Cerabar T
Simple, practical, reliable – Cerabar T

Cerabar T is the ideal solution for measurement tasks requiring a compact pressure transducer with a set measuring range. The instrument is quickly integrated in the process using either threaded or flush-mounted process connections. For gauge and absolute pressure measurement, the Cerabar T offers the robust ceramic sensor with a measuring range of up to 600psi (40bar) or the metal sensor up to 6,000psi (400bar). Both versions guarantee safe functioning in gas, steam and liquid.

Advantages at a glance

- Simple installation, no calibration required
- Large measuring range for gauge or absolute pressure
- Ceramic or stainless steel sensors
- Flush-mounted process connections and FDA compliant

Metal sensors – reliable and robust
PMP131 with a metal sensor is the perfect choice for high-pressure applications, e.g. in hydraulic systems. The compact design supports installation in the smallest of spaces in the shortest of timeframes.
- Up to 4-fold overload resistance
- For areas with a hazardous classification

Ceramic sensors – safe and sound
The PMC131 with a ceramic sensor offers stability and reliability. The sensor does not use a filling fluid, so is the ideal choice for vacuum applications.
- Corrosion and abrasion resistant
- Up to 40-fold overload resistant
- Excellent linearity down to the smallest measuring range

Hygiene matters!
Applications in hygienic processes make major demands on the material and the design. The PMP135 hygienic line combines the typical compact design with flush-mounted process connection and FDA compliant materials. This means you can use this device in aseptic processes without hesitation.
Ceraphant T

Comfortable pressure switch

Our 25 years of knowledge and experience in pressure measurement have naturally left a mark in the development of Ceraphant T, with the right amount of innovation at the right point, as in the hallmark of Endress+Hauser products.

Ceraphant T provides safe measurement and monitoring of absolute and gauge pressure in gas, steam, liquid and dust.

Thanks to its modular adapter system, the pressure switch can be integrated quickly and easily in the process. The stainless steel housing is extremely resistant. Cleaning is simple, as the device information is lasered into the housing.

As it should be for any modern pressure switch, the Ceraphant T is equipped with an illuminated display as standard.

The measured values are visualized with the corresponding unit. The rotatable housing can be positioned in accordance with your requirements, regardless of how the Ceraphant T is installed.

Sure and simple guidance through the setup

You are guided directly to the essential menu items either via the local display or via the PC.

The following versions are available for the various requirements:

**Electronic versions**
- One PNP switch output
- Two PNP switch outputs
- PNP switch output with additional 4 - 20mA analog output

**Process connection versions**
- Threaded connections
- Hygienic connections

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**Advantages at a glance**

- Quick and flexible process connections thanks to modular designs
- Function check and on-site information with LEDs and digital display
- Configuration and display possible via your PC
- Stainless steel housing and laser etched nameplate

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**PTP31**

**PTP35**
Waterpilot

Hydrostatic cable probe for the complete measuring solution

Level measurement in deep wells is a typical application for Endress+Hauser’s Waterpilot.

Waterpilot offers level measurement certified for drinking water with a robust ceramic sensor and integrated temperature measurement, all combined on a diameter of just 22mm (0.9”). As a result Waterpilot can be used for your smallest of wells.

A robust design for applications in waste water and sludges or a design free of metal with long-term stability for usage in salt water is also available.

Intelligent application also means using the right accessories. The know-how behind many applications is invested in the extensive range of accessories to provide a solution for your measuring tasks.

Electronic versions
- 4 - 20mA (FMX167)
- 4 - 20mA HART® (FMX21)

Optional with Pt100 for temperature measurement.

Advantages at a glance
- Rugged small diameter probe
- Robust and abrasion-resistant ceramic cell
- The ceramic cell provides protection against overload and aggressive media
- Highest accuracy
- Integrated temperature sensor
- Materials in compliance with drinking water directives
- Extensive measuring point accessories
- Option: Automatic density correction

Accessories

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Additional weight .66lbs</th>
<th>Suspension clamp</th>
<th>Cable gland</th>
<th>Temperature transmitter</th>
<th>Terminal box</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMX167</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FMX167</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Drinking water</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>FMX21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wastewater</td>
<td></td>
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</tr>
</tbody>
</table>

ATEX KTWABS ACS WHG NSF
Cerabar M
Compact process pressure measurement

The Cerabar M pressure transmitter of Endress+Hauser constitutes a product suitable for many applications in the most varied industries due to the combination of different properties. Whether you intend to measure gauge or absolute pressure in liquids, steams or gases – Cerabar M will meet all of these challenges. The modular design permits maximum flexibility. The range of features offered is particularly convincing.

The stainless steel housing of Cerabar M distinguishes itself especially by its hygienic design. For aggressive ambient conditions, an even more robust aluminum housing is available.

The compact and light instrument provides ingress protection up to IP 69K. Cerabar M can be supplied with all common and especially small, flush-mounted process connections for food and life science applications. The function monitoring system and the unique Ceraphire ceramic sensor make Cerabar M a pressure transmitter for any industry.

Electronics variants
- 4 - 20mA analog
- 4 - 20mA HART®
- PROFIBUS® PA
- FOUNDATION™ Fieldbus

Advantages at a glance
- Instrument platform with numerous options
- Easy operator interface directly on the instrument or via the control system
- Aseptic connections and FDA-compliant materials
- Option remote housing and electronics separate from the process connection
- Modular electronics and displays
- User-friendly software with application-specific parameter selection
- Functional safety up to SIL2
- Single seal or dual seal certification according to ANSI/ISA 12.27.01
Deltabar M

The compact class of differential pressure measurement

A new design, based on years of experience, was implemented in Deltabar M. It combines flexibility, modularity and compactness. The decisive advantage is this: Deltabar M is easily integrated into any installation. However, the compact design does not mean that accuracy, stability or the reliability of your measurement have been compromised.

On the contrary: Deltabar M works digitally and is thus robust in relation to external influences and demonstrates high reproducibility. Electronics are modularly exchangeable, i.e. the differential pressure transmitter may be flexibly integrated into any plant or adapted in case of changes. Deltabar M can be set on site without any additional device or PC. Users may even change from the high-pressure to the low-pressure side by merely moving a small switch on the main electronics. This saves costs, be it in procurement, commissioning or operation. The modularity also saves future project costs.

Electronics variants
- 4 - 20mA HART®
- PROFIBUS® PA
- FOUNDATION™ Fieldbus

Advantages at a glance
- Compact design
- Flexible and adaptable installation
- Easy operator interface directly at the instrument or via the control system
- Modular electronics and displays
- User-friendly software with application-specific parameter selection
Deltapilot M

Compact level measurement with the highest reproducibility

Hydrostatic is the most frequently used method for level measurement. The measurement principle is simple, reliable and versatile. It can be employed in liquids, pastes as well sludges and has thus secured a firm place in many industries and applications.

The compact design of Deltapilot M offers solutions for hydrostatic level measurement in tanks and vessels since it is designed to be installed on the bottom or an outlet.

The rod and cable design facilitates the installation from the top. Even under the most difficult process conditions, the different options of Deltapilot M may be utilized in the most efficient way. Deltapilot M can also be mounted at a distance from the tank. In this way, the housing - including the electronics and display are mounted at a location which is easily accessible. The electronics are installed in the transmitter in a modular system and guarantee very easy commissioning, reliable and flexible operation with many supporting functions and a high degree of safety.

The Contite measuring cell of Deltapilot M is hermetically protected against condensate or aggressive gases. Levels are measured with the highest reproducibility. Deltapilot M may be adapted in many ways including flush-mounted and hygienic process connections. In addition to level measurement, other information from the measuring point can be displayed, e.g. the content of a tank in liters.

Electronics variants
- 4 - 20mA HART®
- PROFIBUS® PA
- FOUNDATION™ Fieldbus

Advantages at a glance
- Contite measuring cell: Waterproof, climate-resistant, long-term stability
- Minimal impact on your measurement from temperature changes
- Easy operator interface directly at the instrument or via the control system
- Rod/cable versions for top mounted installations
- User-friendly software with application-specific parameter selection
Deltabar electronic dp

Electronic differential pressure for level measurement

Differential pressure measurement is often used to measure the level in pressurized and vacuum tanks. Traditional differential pressure measurement using impulse lines and capillaries have issues that can lead to less accuracy, process safety risks and greater total cost of ownership. This can be especially true in tall distillation towers or other vessels with varying ambient temperatures.

Eliminate typical mechanical issues of impulse lines like icing up, clogging, leaky taps and dry/wet leg inconsistencies as well as temperature effects in capillary systems with the new electronic differential pressure system.

The Deltabar FMD72 system uses proven pressure sensor technology in a new and innovative way. The system consists of just one transmitter and two sensor modules. One sensor module measures the hydrostatic level (high pressure) and the other one the head/blanket pressure (low pressure). The level is calculated out of these two values in the transmitter.

Safe.
- Eliminate tubing and connection leaks often seen with traditional systems
- Eliminate line condensation or evaporation events (dry/wet leg inconsistencies) and plugging events
- Reduce field personnel safety exposure risks

Cost effective.
- No system recalibration or reconfiguration required with any component change
- Water tight, quick disconnect between sensors
- Fewer spare parts – replace individual components of the system as needed
- Just one technician to install entire system
- No need for freeze protection/heat tracing

Reliable.
- Eliminate measurement drift due to ambient temperature changes - up to 95%
- Differential pressure, head pressure and sensor temperature from one system - available via HART®
- Continuous health indication of the entire system via HART® diagnostics
- Faster response time than traditional capillary systems - up to 10 times faster!
- Standard cabling connections provide flexibility

Advantages at a glance
- The electronic differential pressure system eliminates traditional mechanical issues resulting in greater process availability and reliability.
- Safety risks are minimized with the electronic differential pressure system architecture and design.
- Lowest total cost of ownership due to reduced installation time, maintenance, downtime and spare requirements.
Cerabar S / Deltabar S

Safety first

With its comprehensive safety package and the intelligent operating and device concept, Cerabar S / Deltabar S from Endress+Hauser offers unique technological innovation in demanding pressure applications. The variety of available options guarantees the user the highest degree of functionality, information and process safety.

For example, the integrated HistoROM/M-DAT data module makes it possible to record, save and readout important process and device parameters. Analysis, simulation and service parameter functions can be carried out at any time using the diagnostic capabilities of Cerabar S / Deltabar S ensuring optimal process operation.

Operation with concept
The 3-key operation allows for simple and reliable commissioning. All setting changes and verifications can be easily carried out externally.

By combining the Quick Setup and HistoRom/M-DAT memory functions device setup among multiple units can be minimized. Configurations can be duplicated by simply moving the HistoRom/M-DAT memory module between units. Rapid and reliable.

Since the housing can be rotated 380° regardless of the process connection, the pressure transmitter can be adjusted to any viewing position.

Electronics variants
- 4 - 20mA HART®
- PROFIBUS® PA
- FOUNDATION™ Fieldbus

Advantages at a glance
- Easy commissioning
- Reliable data management with HistoROM/M-DAT
- Extensive diagnosis functions
- Housing may be turned by 380° for an optimum view of the display
- Functional safety up to SIL3
Deltapilot S

Hydrostatic pressure sensor water-proof and climate-proof

The Deltapilot S is used for measuring the level of water, paste and sludge. The various versions of Deltapilot S can be optimized – even under difficult process conditions. Digital electronic inserts installed directly in the probe housing or in a remote housing away from the measuring point guarantee reliable operation even if the sensor is flooded or being cleaned at the installation point. The Contite sensor was developed especially for hydrostatic level measurement and is hermetically sealed against condensation and gases.

Information on level, volume and product weight is provided with the highest degree of accuracy and reproducibility.

The stainless steel housing and hygienic connections facilitate applications in the food industry and in life sciences. Deltapilot S supports qualification processes with required certificates, approvals, calibration protocols and test certificates.

Electronics variants

- 4 - 20mA HART®
- PROFIBUS® PA
- FOUNDATION™ Fieldbus

Advantages at a glance

- Contite measuring cell: Waterproof and climate-resistant with long-term stability
- Extraordinary accuracy and reproducibility
- High accuracy even after extreme temperature changes
- Easy operation interface directly at the instrument or via the control system
- Optional separate assembly of electronics housing and sensor with process connection

FMB70

<table>
<thead>
<tr>
<th>Compact version</th>
<th>Separated version</th>
<th>Version with flanges</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Compact version" /></td>
<td><img src="image2.png" alt="Separated version" /></td>
<td><img src="image3.png" alt="Version with flanges" /></td>
</tr>
</tbody>
</table>

ATEX  NEPSI  TIIS  PM  IECEX  SIA  ATEX  CEE  FDA
Apart from high accuracy, you need processes without any contamination for your sensitive media. This requirement – combined with process safety – is a challenging task for process engineering.

The instrumentation employed must be easily cleaned from outside and may not permit any product residue in the process. The sensors have to work smoothly, without any drift and measurement error even after SIP and CIP procedures, and ensure process safety. For decades, Endress+Hauser has been offering you a wide range of hygienic instrumentation for the requirements of the food and pharmaceutical industry.

Deltapilot S for hydrostatic level measurement with the unique Contite measuring cell has been the first choice in sophisticated applications with condensate formation or extreme temperature changes/temperature shocks for years.

### Applications

#### Process connections

<table>
<thead>
<tr>
<th>Triclamp</th>
<th>Universal connection</th>
<th>DRD</th>
<th>Thread</th>
<th>Flange</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Triclamp" /></td>
<td><img src="image2.png" alt="Universal connection" /></td>
<td><img src="image3.png" alt="DRD" /></td>
<td><img src="image4.png" alt="Thread" /></td>
<td><img src="image5.png" alt="Flange" /></td>
</tr>
</tbody>
</table>
Deltatop
The tailored solution for your flow measurement

Deltatop - compact instrumentation
In the Deltatop concept, the primary device, manifold block and differential pressure transmitter Deltabar S are already assembled and optimized on the basis of customer data. Deltatop offers minimum static pressure loss and the best accuracy of the differential pressure and sensor.

Deltatop - separate instrumentation
The Deltatop concept follows customer needs based on separate instrumentation. If the application conditions do not allow compact instrumentation or if existing impulse piping will continue to be used, this is the optimum solution for modular flow measurement.

Advantages at a glance
- Customized pre-mounting and configuration
- Complete solution for every measuring point
- Orifice plate versions from 3/8 in to 40 in (DN 10 to DN 1000)
- Pitot tubes from 2 in to 192 in (DN 50 to DN 5000)
- Easy commissioning
- Extensive diagnosis functionality

Accessories

<table>
<thead>
<tr>
<th>Block and bleed valves</th>
<th>ASME manifolds</th>
<th>Condensate trap</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Block and bleed valves" /></td>
<td><img src="image2" alt="ASME manifolds" /></td>
<td><img src="image3" alt="Condensate trap" /></td>
</tr>
</tbody>
</table>

*B31.1 versions available

With thanks to our comprehensive portfolio of accessories and assemblies in various materials and versions, your measuring point can be completely equipped. We are pleased to help you in designing your measuring point.
Smooth integration into your control system – thanks to digital communication

Endress+Hauser offers you all common electronics options. Apart from the classic analog electronics (output 4...20mA), as the most basic, multiple communication digital electronic protocols are also available:

- FOUNDATION™ Fieldbus offers easy testing of instruments, important additional information and diagnostic functionalities according to NAMUR NE107 as well as smooth system integration which increases the availability and safety of your plant.
- HART® electronics (output 4...20mA with superimposed HART® protocol) for additional functionalities and diagnostic functions.
- PROFIBUS® PA electronics for the complete integration into digital industrial bus systems. Simplified instrument identification, brief uploading and downloading times during commissioning, diagnostic functionalities according to NAMUR NE107 and the smooth integration help to reduce costs and downtimes to a minimum.

All digital electronics may be smoothly integrated into your control systems and can be configured via a PC and the universal FieldCare operating program as well as via all common PAM systems.

<table>
<thead>
<tr>
<th>Integration of Endress+Hauser field devices into automation architectures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control system</strong></td>
</tr>
<tr>
<td>■ ABB</td>
</tr>
<tr>
<td>■ Emerson</td>
</tr>
<tr>
<td>■ Honeywell</td>
</tr>
<tr>
<td>■ Invensys</td>
</tr>
<tr>
<td>■ Metso Automation</td>
</tr>
<tr>
<td>■ Rockwell</td>
</tr>
<tr>
<td>■ Schneider</td>
</tr>
<tr>
<td>■ Siemens</td>
</tr>
<tr>
<td>■ Yokogawa</td>
</tr>
</tbody>
</table>

The integration capability of the instruments is tested at the Endress+Hauser system laboratory thus ensuring their system independence. Endress+Hauser also offers training opportunities directed especially to the integration of instruments into respective control systems.
Operating cost savings due to instrument diagnosis

Plant asset management is one of the most important trends in process industry. Thanks to digital communication protocols, all current Endress+Hauser instruments support the diagnostic categories according to NAMUR NE107. The pertaining classification of failures into four categories ensures that the right information is transmitted to the right persons at the right time. This avoids operating failures, improves the maintenance cycle and finally reduces costs.

### Diagnostic categories

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Status Text</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>🚫</td>
<td>Failure</td>
<td>The output signal is invalid due to a functional failure in the field instrument or its periphery.</td>
</tr>
<tr>
<td>🚩</td>
<td>Function control</td>
<td>Work is performed on the field instrument, the output signal is thus temporarily invalid (e.g. frozen).</td>
</tr>
<tr>
<td>🚪</td>
<td>Maintenance requirement</td>
<td>The output signal is still valid but the wear and tear reserve will be depleted soon or a function will be limited shortly due to the conditions of use, e.g. ageing of the pH electrode.</td>
</tr>
<tr>
<td>🟨</td>
<td>Non-conformance to specification</td>
<td>Deviations from the permitted ambient or process conditions determined by the instrument through self-monitoring or failures in the instrument itself show that the uncertainty of measurement in sensors or set point deviation in actuators probably exceeds what is expected under operational conditions.</td>
</tr>
</tbody>
</table>

The correct use of diagnostic information can save operating costs in specific applications. Endress+Hauser pressure instrumentation has been equipped with numerous items of such information which may be very easily managed via a plant asset management system.

- The analysis of a number of incorrect pressure surges in a process permits conclusions of a shortened useful life of the instrument or a problem in the process.

- A user-specific pressure and temperature range (operating window) can be determined. If the same is underrun or surpassed, a diagnostic message can be issued.

Numerous further possibilities are available in the pressure instrumentation operating instructions.
We deliver excellence

Constant high-quality performance can only be achieved where enthusiastic and committed people pool their ideas.

For our clients and users, Endress+Hauser instruments should not just be distinguished due to technological innovation but also through the presence of people who stand behind this progress and quality, be it in service, sales, development or in production.
Calibration laboratory

Measuring correctly is the ‘metrological basis’ for any manufacturer of measuring instrumentation. Those wanting to produce to ISO 9000 standards must be able to rely on dependable calibration equipment for all measuring devices. Endress+Hauser’s own calibration since 1994.

It is responsible for managing the company’s test equipment and looks after some thousand measuring units in use in production, development and service. Devices are calibrated for Endress+Hauser’s own use, for clients and for third-party customers. This guarantees that measurements on products can be safely traced back to ‘national calibration standards’.

The Endress+Hauser calibration laboratory is accredited as a DAkkS (national accreditation body for the Federal Republic of Germany) lab (D-K-15172-01-00) for the measured variables vacuum and pressure. Pressure ranges from 1.45 x 10^-5 psi (1µbar) absolute pressure to 7,252 psi (500bar) and from -14.5 psi (-1bar) gauge pressure to 7,252 psi (500bar). The smallest uncertainty of measurement which may be passed on is 0.003%.

Fully automated DKD/DAkkS calibration in the production process

Since November 2004 we have also successfully integrated automated calibration in the running production process.

Our modern production line for the entire S- and M-class pressure instruments is a global innovation in the production of complex measurement technology. For the first time we offer fully automated DKD/DAkkS calibration of pressure instruments in the running production process.

Customers have the possibility of selecting DKD/DAkkS calibration directly via the order code when ordering their pressure device. The requirement is recognized automatically during production.

This means fully automatic control of the entire test procedure – right up to printing of test certificates and labels in the packaging unit.
Test Center

The Endress+Hauser Test Center (internationally accredited test center: DATECH, FM, CSA) has three laboratories for device safety, application technology and electromagnetic compatibility. The various test units make it possible to ensure and improve the reliability and quality of Endress+Hauser devices under realistic test conditions. In addition, the devices for new applications can be tested in advance in parallel with development.

In the various ‘durability tests’, they are exposed to extreme conditions as can be expected in real applications. These include dust tests (explosion protection), abrasion and friction tests, climate tests (heat and cold), mechanical load tests and spray water leak tests. In addition to a fully automated tank test plant with a capacity of 1,585 liter, used to simulate the most difficult applications, the Endress+Hauser Test Center also has an accredited EMC laboratory.

Apart from carrying out tests on Endress+Hauser devices in parallel with development, the Test Center also trains service staff and even customers. Customer specific application problems are analyzed, tests to simulate new applications are run and device approvals are carried out.

Applicator

Selection and Sizing Tool for your Planning Processes

Applicator provides planning reliability, fast and flexibly
The Applicator software of Endress+Hauser is a convenient selection and sizing tool for planning processes. Using the entered application parameters, e.g. from measuring point specifications, Applicator determines a selection of suitable products and solutions. It is supplemented by sizing functions and a module for project administration.

✔ Advantages at a glance

- Planning reliability
- Timesaving
- Safe project data
- Flexibility in work processes

Applicatore - Select and size products
www.products.endress.com/applicator
Worldwide service close to you

Wherever you are, your local Endress+Hauser certified service technician will provide the exact support you need, be it startup, repairs, on-site support, training or maintenance and calibration services.

As one of the largest networks of service experts in process automation, it is our desire to help you discover new opportunities and potentials for maximum benefit and minimum operating risk. We are your partner, providing the right advice and recommendations to ensure constant reduction of costs and risks.

Endress+Hauser Service: Global, competent, reliable

At a glance
- Startup and installation
- Project management
- Preventive maintenance
- Maintenance contracts
- Spare part service
- Repair service
- Training
- Helpdesk
- Online documentation
- Calibration services
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<th>Mexico</th>
<th>Other Locations</th>
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