Flow

# Proline
# Promass 100/Promag 100
The flow specialists in a compact design

### Full functionality in a small package

- Ideally suited for modular skid-mounted process facilities
- Space-saving, multivariable measuring technology in a compact or ultra-compact design
- Highest degree of protection (IP69K) for absolute imperme-ability against water – even during intensive cleaning processes
- Quick process control in the field due to simultaneous depiction of important measured variables on the display (optional)
- User-friendly commissioning in the field due to state-of-the-art web server technology for reduced set-up time
- Seamless integration into process control and asset management systems via HART, PROFIBUS DP, Modbus RS485 and EtherNet/IP
- Fulfils all relevant requirments of the life sciences and food industry



Endress+Hauser [EH]

People for Process Automation

# Proline
## simply clever

Process monitoring is becoming more demanding and the need for maximum product quality is steadily increasing. This is why Endress+Hauser continues to provide industry-specific flow measurement solutions optimized for future technology requirements.

The new generation of our Proline flowmeters is based on a uniform device concept. This means time and cost savings, as well as maximum safety over the entire plant life cycle.

**Perfect integration**  Proline can be integrated seamlessly into your plant asset management, providing reliable information for optimizing production and business processes.

**Innovative and proven in use**  Proline is based on a versatile, continually updated technology concept, guaranteeing that you are always implementing state-of-the-art technology.

**Ingeniously simple**  Proline is user-friendly through and through, ensuring that your process can be securely controlled with confidence.

# Added value in every respect

### HistoROM
- Automatic data storage ensures maximum plant safety
- Simple data restoration enables quick exchange of components
- Event logbook and data logger for quick failure analysis

### Heartbeat Technology
- Permanent self-monitoring for all Proline measuring technologies
- Diagnostics for reduced mainte-nance and quick remedy
- Verification of measuring point, e.g. printing documents for quality reporting (e.g. ISO 9001)
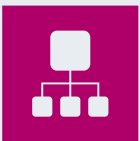
### Seamless system integration
- Direct and transparent due to a wide range of fieldbuses
- Risk-free through extended host testing and certification
- Compatibility over the entire prod-uct life cycle enables device replace-ment without expert know-how

### W@M Life Cycle Management
- Open information system for device documentation and management
- Device-specific information for everyday work
- Quality of information unparalleled in scope and depth

### Web server
- Time-saving local operation without additional software
- Comprehensive access to device, diagnostics and process informa-tion
- Fast data upload/download for maintenance and service
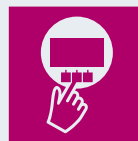
### Simple operation
- Time-saving Endress+Hauser operating concept
- Optimal usability through guided parameterization
- User-specific menu structures and device access

# Promass 100/Promag 100

## Perfection in a compact design

Whether in the life sciences or in biotechnology, whether in the food or chemical industries – the global competition is steadily rising. As a result, ever more companies are implementing their process facilities in a very short time by following a "modular principle". The production units and skids required for this include a wide variety of measurement and control technology devices in a minimum of space.

Endress+Hauser's newly developed Promass 100 and Promag 100 flow measuring lines are the perfect solution for such applications:

- Compact design without limitation of functionality
- Seamless integration into process control and asset management systems via HART, PROFIBUS DP, Modbus RS485 or EtherNet/IP
- Integrated web server for time-saving local operation without additional hardware or software
- Proven in real-world applications and with outstanding long-term stability

### Promass
### Coriolis flow meaurement

As a multivariable flowmeter, the Promass 100 opens entirely new perspectives for controlling and monitoring individual process units for heating, cooling, distillation, fermentation (bioreactors), product filtration, phase separation, inline cleaning as well as filling and dosing:

- Fewer measuring points – one single device for simultaneous measurement of mass flow, volume flow, density, concentration, temperature and viscosity
- Highest measuring performance

### Promag
### Electromagnetic flow measurement

This measurement method has enjoyed a high level of acceptance for decades in almost all industries. It can be used to measure electrically conductive liquids with a minimum conductivity of 5 µS/cm or higher. The combination of a robust compact design and tried-and-tested measurement technology guarantees a high degree of operational safety around the clock:

- Sensors proven in real-world applications, with outstanding long-term stability
- For large pipes up to DN 600 (24")
- With integrated conductivity measurement
- With integrated temperature sensor (Promag H)



**1** Promass P 100   **2** Promag H 100

# Promass 100/Promag 100

## Advantages at a glance

### Industry-optimized compact design

- Robust transmitter housing in hygienic stainless steel or aluminum design
- Ultracompact housing variant with plug connector (M12×1) for versatile and time-saving installation
- Highest degree of protection (IP69K) for absolute impermeability against water – even during intensive high-pressure or steam jet cleaning

### Maximum operational safety

- HistoROM: High plant availability due to automatic data storage
- Clear and unambiguous categorization of errors enables targeted reaction to device and process errors
- Heartbeat Technology
  - Permanent self-monitoring
  - Metrologically traceable device verification without process interruption
- Quick process control in the field due to simultaneous depiction of important measured variables on the display (optional)
- Outstanding EMC immunity

### Seamless system integration

- Flexible operation via web server or communication interfaces (HART, PROFIBUS DP, Modbus RS485, EtherNet/IP)
- Firmware and device drivers are available during the entire life cycle to ensure complete compatibility between the field device and process control system at all times

### Sensors proven in real-world applications

- Promass – 500000 installations over 25 years
- Promag – 1.7 million installations over 35 years
- High measuring accuracy even in long-term operation
- Traceable measurement results, since every device is certified on accredited and traceable calibration rigs (ISO/IEC 17025)



**Your benefits throughout the life cycle**

- Accurate metering or dosing of liquids
- Assured compliance with guidelines and regulations
- Reduced operating costs due to tried-and-tested, innovative and maintenance-free measuring technology

# Tailor-made flowmeters for your application



**Promass P 100**
Life sciences industry

- Electro-polished sensors for sterile processes
- Completely drainable, easy-to-clean single-tube system
- Complies with ASME BPE, ISPE, FDA and 3A
- Immediate availability after SIP/CIP cleaning
- Wetted parts made of 1.4435/316L (delta ferrite content <1%)
- DN 8 to 50 (⅜ to 2")



**Promass S 100**
Food industry

- Completely drainable single-tube system of stainless steel: easy to clean, hygienic, piggable and corrosion-resistant
- Non-invasive measurement without shear forces
- Immediate availability after SIP/CIP cleaning
- Complies with 3A, EHEDG and FDA
- DN 8 to 50 (⅜ to 2")



**Promass I 100**
Straight single-tube system

- Non-invasive measurement without shear forces
- Low pressure loss
- Complies with 3A, piggable
- Unique worldwide: with in-line viscosity measurement for efficient process monitoring
- Chemicals, food and beverages, life sciences, oil and gas
- DN 8 to 80 (⅜ to 3")


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**Promass E 100**
Basic applications

- Cost-effective, robust sensor
- Complies with 3A
- Chemicals, food and beverages, life sciences, oil and gas
- DN 8 to 80 (⅜ to 3")

Coriolis
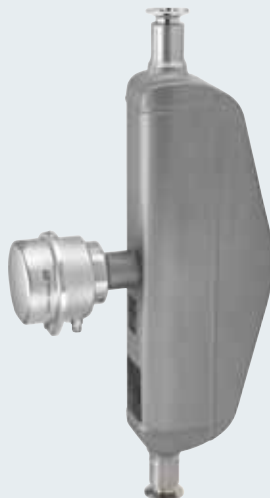
**Promass F 100**
For universal use

- Maximum measuring performance with PremiumCal calibration (±0.05%)
- Secondary containment pressure rating up to 40 bar (580 psi)
- Insensitive to fluctuating process conditions (temperature, pressure, etc.)
- Complies with 3A and EHEDG
- Chemicals, food and beverages, life sciences, oil and gas
- DN 8 to 250 (⅜ to 10")
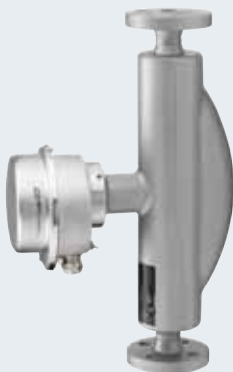
**Promag H 100**
Food industry

- With temperature and conductivity measurement
- Robust stainless steel housing
- Complies with 3A and EHEDG
- SIP and CIP cleanable
- PFA lining: −20 to +150 ℃ (−4 to +302 ℉)
- Flexible connection concept with wide variety of process connections
- PN 40 (580 psi)
- DN 2 to 150 (1/12 to 6")

**Promag P 100**
For universal use

- With drinking water approvals: ACS, NSF
- PTFE lining: −40 to +130 ℃ (−40 to +266 ℉)
- PFA lining: −20 to +180 ℃ (−4 to +356 ℉)
- DN 15 to 600 (½ to 24")

**Endress+Hauser has a wide range of other sensors that are also available in the new compact design.**

**Promass H 100**
For chemically aggressive fluids

**Promass A 100**
For lowest flow rates

**Promass O 100**
For the highest pressures in the oil and gas industry

**Promass G 100**
For highest pressures up to 350 bar (5080 psi)

**Cubemass C 100**
For lowest flow rates (ultra-compact sensor)

Electromagnetic

Coriolis

# Technical data

**Transmitter Promass 100 / Promag 100**

| | |
|---|---|
| Display (optional) | Backlit, 4-line, configurable (see "Operation") |
| Operation | • Via web browser (Internet Explorer, Firefox, etc.)<br>• Via configuration tools, e.g. "FieldCare" from Endress+Hauser<br>• Via a HART handheld<br>• Via fieldbus (see "Communication") |
| Power supply | DC 24 V |
| Ambient temperature | Standard: −40 to +60 °C (−40 to +140 °F)<br>Optional: −50 to +60 °C (−58 to +140 °F) (only Promass) |
| Degree of protection | • IP66 and IP67 (Type 4X enclosure)<br>• IP69K optionally for stainless steel housing |
| Design<br>Housing material | • Compact version (aluminum, stainless steel)<br>• Ultra-compact version (stainless steel) with pre-configured plug connectors |
| Galvanic isolation | All circuits for outputs and power supply are galvanically isolated from each other |
| Communication<br>Outputs | HART, PROFIBUS DP, Modbus RS485 and EtherNet/IP;<br>4–20 mA HART current output, pulse/frequency/switch output |
| Ex approvals | ATEX, IECEx, cCSAus; NEPSI and TIIS (Promass only)<br>Zone 2, Cl. I Div. 2<br>Zone 1, Cl. I Div. 1 (only for Promass with Modbus RS485) |

Subject to modification

**1** Ultra-compact housing made of stainless steel (hygienic) with plug connectors
**2** Compact housing made of stainless steel (hygienic)
**3** Compact housing made of aluminum
**4** With local display (available for all housing versions)

The Promass 100 / Promag 100 measuring systems fulfill the EMC requirements according to IEC/EN 61326 and NAMUR NE21.
It also conforms to the requirements of the EU and ACMA directives and thus carries the ⟨CE⟩ and the ⟨⟩ mark.

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