



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Proline Promass 200 Coriolis flow measurement in efficient two-wire technology for the chemical industry

For the highest operational safety round the clock

- Efficient two-wire technology – guarantees cost-effective and seamless system integration
- Industry-optimized flowmeter – fulfills all relevant requirements of the chemical and petrochemical industry (SIL, Ex approval, 3-A, EHEDG, self-diagnosis as per NE107, NAMUR, etc.)
- Tried-and-tested sensors – over 500 000 Coriolis flowmeters successfully installed since 1986
- Optimum process monitoring through multi-functionality – simultaneous measurement of mass flow, volume flow, density and process temperature
- Traceable measurement results – each device is tested on accredited calibration rigs (ISO/IEC 17025)
- Worldwide sales and service network with highly competent application consultants

Endress + Hauser 

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.

Consistent and uniform

Proline is a proven and uniform product concept, designed to do the same things the same way, thereby increasing the safety and efficiency of your operations.

Ingeniously simple

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

Perfect integration

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

Promass 200

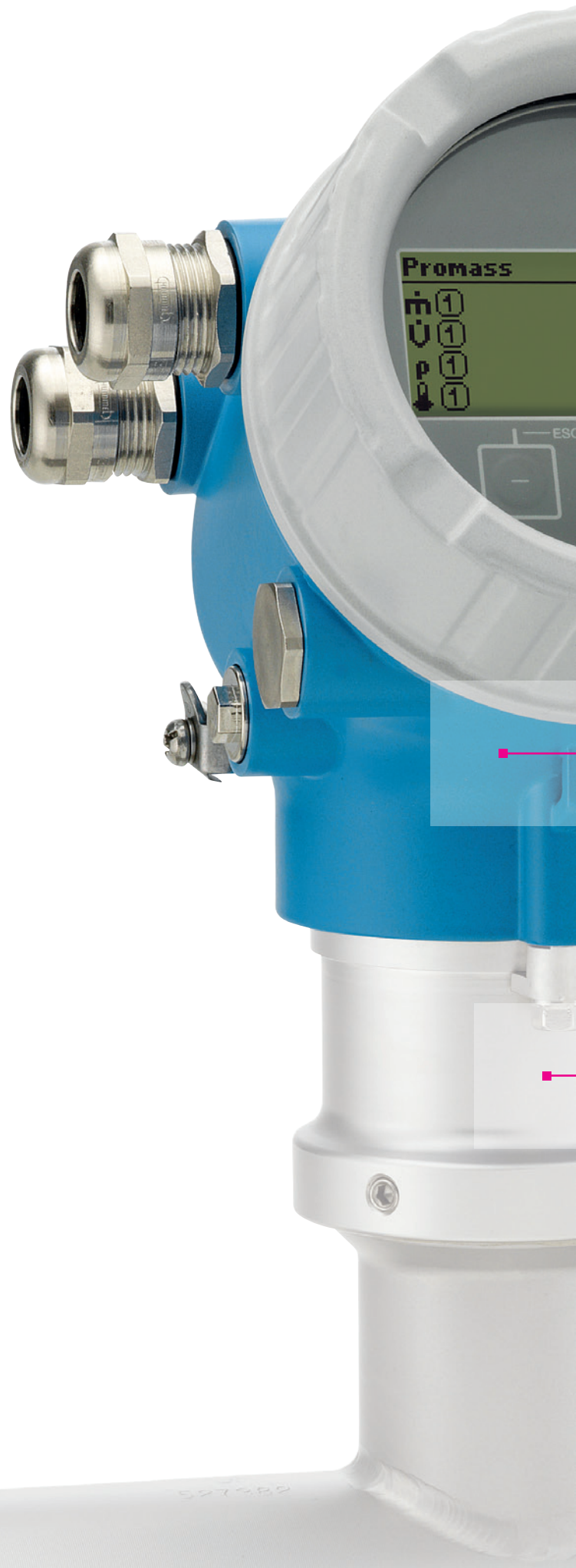
For higher safety and lower operating costs

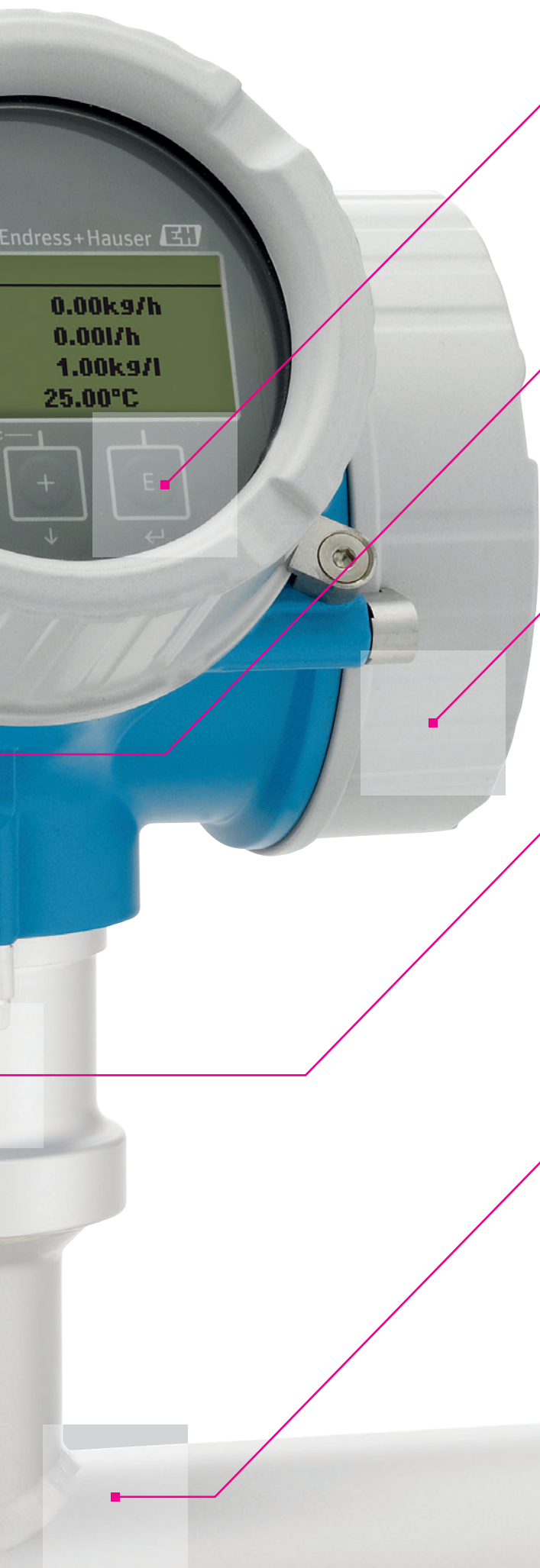
Round-the-clock operational safety and plant availability are particularly important in the chemical and petrochemical industry. In addition, plants have to be operated over the years so as to attain increasingly high performance and flexibility – as cost-effectively as possible.

The complexity involved, whether in the process or in utilities, can be managed only by uniform and standardized field instrumentation. Promass 200 is the perfect solution for exactly such areas of application. Together with the new two-wire

concept from Endress+Hauser, Promass 200 creates new benchmarks in relation to safety and uniformity in flow measurement:

- Efficient two-wire technology (4–20 mA) from the measuring point to the control room (PLC, DCS)
- Developed for SIL 2/3 applications
- Suitable for use in safety devices
- Internationally recognized Ex approvals
- High measuring performance for continuous process control





Easy operation

- Time-saving device configuration with the uniform Endress+Hauser operating concept
- Guided menu with make-it-run wizards
- Integrated help function (Tool tips)
- 16 display languages for worldwide use
- Simultaneous display of up to four measured values, e.g. mass flow, volume flow, totalizer and temperature
- Line recorder function in real time

Secure data storage (HistoROM)

- High plant availability through customer-friendly data storage concept
- Automatic measurement device data backup (HistoROM)
- Fast recovery of device and configuration data for servicing
- Display module with backup and transfer function for configuration data
- Integral data logger for monitoring and analysis of values measured

Maximum operational safety through industry standards

- Fulfills all relevant requirements of the chemical industry (e.g. SIL, NAMUR)
- Continuous self-diagnosis and error monitoring
- Clear and unambiguous categorization of errors (NE107) enabling targeted reaction to device and process errors
- SIL-compliant device development as per IEC 61508

Seamless system integration / W@M life cycle management

- Proven W@M information system for cost-effective business process support:
 - Open and flexible: connects all Endress+Hauser software programs, products and services
 - Device information can be called up around the clock (engineering, procurement, integration, operation, maintenance, service)
- Seamless integration into existing process control and asset management systems, as a true two-wire device (4–20 mA)
- Firmware versions 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

- Tried and tested 500 000 times in 25 years
- Industry-optimized for long-term, reliable operation at maximum measuring accuracy
- Immune to process and environmental influences
- Traceable measurement results, since every device is tested on accredited calibration rigs (ISO/IEC 17025)

Tried-and-tested sensors for your application

In the chemical process industry, Coriolis flowmeters have been used for decades with great success. This is in no way astonishing, because this measurement technology has unique advantages in comparison to other methods:

- Independent of physical fluid properties such as conductivity, pressure, temperature, density or viscosity
- One-of-a-kind multi-functionality – simultaneous measurement of mass flow, volume flow, density and temperature
- Maintenance-free devices without moving parts
- No inlet and outlet runs required
- Operable flow range of up to 1000:1
- Insensitive to external process influences such as pipe vibrations
- High field accuracy, even with greatly fluctuating process and ambient conditions

1 Promass E 200 – for basic applications

- Cost-effective flow measurement of liquids and gases
- Measuring tube material: 1.4539/904L
- Compact design
- Process temperature: -40 to $+140$ °C (-40 to $+284$ °F)
- Developed to SIL 2/3 (IEC 61508); 3-A, Ex approvals, PED, CRN
- Nominal diameters: DN 8 to 50 (3/8 to 2")

2 Promass F 200 – the proven multi-talent

- Universal flow measurement of liquids and gases in a wide variety of applications
- Measuring tube material: 1.4539/904L or Alloy C-22 for corrosive fluids
- Secondary containment: up to 40 bar (580 psi)
- Max. measured error: $\pm 0.10\%$ o.r. (mass flow), ± 0.0005 g/cm³ (density)
- Process temperature: -50 to $+200$ °C (-58 to $+392$ °F)
- Developed to SIL 2/3 (IEC 61508); 3-A, Ex approvals, EHEDG, PED, CRN
- Nominal diameters: DN 8 to 50 (3/8 to 2")





Two-wire technology at Endress+Hauser

Efficiency through uniformity

Combining the benefits of the Coriolis flow measuring principle with two-wire technology no longer requires compromises. As a true two-wire device (4–20 mA), the Promass 200 can be integrated into existing plant systems seamlessly and without added effort:

- High operational safety in Ex areas due to intrinsically safe design (Ex ia)
- Reduced costs for installation and wiring
- Seamless system integration into existing infrastructures
- Common installation practice

Perfectly standardized

Uniform operation, menu structures, function designations, software, interfaces, data management, system integration, documentation, product structures, etc.

High flexibility

Modular housing components and electronic modules

Increased safety

Consistent implementation of all requirements of common industrial standards and recommendations

Precise diagnostics

Clear categorization of device or process errors according to NE107: Failure / Out of specification / Function check / Failure

Simply “unforgettable”

Customer-friendly data storage concept (HistoROM): back up, copy, compare or restore data

Fulfills industry standards

Interference immunity, data retention, signal level, software, pressure equipment directive, self-monitoring, etc.





Technical data

Promass 200 (transmitter)

- Display 4-line, with push buttons or optical keys (Touch Control)
- Operation
 - Via local display
 - Via operating tool, e.g. “FieldCare” from Endress+Hauser
- Power supply DC 18 to 30 V
- Ambient temperature –40 to +60 °C (–40 to +140 °F)
- Degree of protection IP66 and IP67 (Type 4X enclosure)
- Design Compact (aluminum or stainless steel housing)
- Galvanic isolation All circuits for outputs and power supply are galvanically isolated from each other
- Outputs Current output (4–20 mA, HART)
Pulse/frequency/switch output
- Communication HART, PROFIBUS PA
- Ex approvals ATEX, IEC, cCSAus
NEPSI (in preparation)
- Ignition protection type Intrinsically safe (Ex ia)
Flame-proof (Ex d)

Subject to modification

Promass E, F (sensor)

- Max. measured error
 - Mass/volume flow (liquid) Promass E: ±0.25% o.r.
Promass F: ±0.10% o.r.
 - Mass flow (gas) Promass E: ±0.75% o.r.
Promass F: ±0.35% o.r.
 - Density (liquid) Promass E:
Standard calibration: ±0.02 g/cm³
Reference conditions: ±0.0005 g/cm³
Promass F:
Wide range density spec.: ±0.001 g/cm³
Reference conditions: ±0.0005 g/cm³
- Nominal diameters DN 8 to 50 (3/8 to 2")
- Process connections Flanges (EN, ASME, JIS), VCO connections, tri-clamp, threaded connections, flat flanges
- Process pressure PN 40 to 100, Class 150 to 600, 10 to 63K
- Process temperature Promass E: –40 to +140 °C (–40 to +284 °F)
Promass F: –50 to +200 °C (–58 to +392 °F)
- Degree of protection IP66 and IP67 (Type 4X enclosure)
- Material (measuring tube) Promass E: 1.4539/904L
Promass F: 1.4539/904L or
Alloy 2.4602/N 06022
- Secondary containment Promass E: conform to NE132
Promass F: conform to NE132
up to 40 bar (580 psi)
- Approvals/Certificates Promass E/F: PED, CRN, SIL, 3-A
Promass F: EHEDG

The Promass E 200 / F 200 measuring system fulfills 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 **UL** mark.

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