

Proline Promag W 400

For flow measurement of water and wastewater

Time- and cost-saving measuring technology

- Industry-optimized flowmeters with internationally recognized drinking water approvals
- Suitable for pipes up to DN 3000 (120")
- Convenient device configuration in the field using cutting-edge web server technology
- HistoROM: Automatic device backup ensures high plant availability
- Reliable long-term operation under water or underground thanks to IP68 (Type 6P enclosure) and certified corrosion protection (EN ISO 12944)
- Traceable verification according to ISO 9001 for fulfilling the legal obligation to provide evidence and for optimizing calibration intervals
- Tried-and-tested sensors: installed successfully in over 3 million applications since 1977



Proline

simply clever

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

The current 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.

Optimal application solutions Proline incorporates all modern flow measuring technologies, hereby optimizing plant up-time – true to our motto: “The industry-optimized flowmeter for your application.”

Ingeniously simple Proline is user-friendly through and through, ensuring that the plant operator's process can be securely controlled with confidence.

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

Proline – simply clever & more

- Reliable measurement independent of flow profile and mounting location thanks to the option 0 x DN full bore
- Improved process efficiency and product quality due to calibrated conductivity measurement
- Improved maintenance in applications with buildup thanks to buildup index of Heartbeat Technology
- Increased confidence in the sensor integrity due to HBSI (Heartbeat Technology Sensor Integrity)

Added value in every respect



Heartbeat Technology

- Continuous device and process diagnostics with remedy instructions
- Traceable device verification without process interruption and with verification report
- Information for process optimization and predictive maintenance



Web server

- Time-saving local operation without additional software
- Comprehensive access to device, diagnostics and process information
- 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



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 product life cycle enables device replacement without expert know-how



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

Promag W 400

The water specialist

Whether drinking water, industrial water or wastewater, whether in urban or rural areas – water has become a scarce commodity. This is due to worldwide population growth, as well as rapidly advancing industrialization and urbanization. The aims of sustainable water management are clear:

- Conveying water in sufficient quantities
- Distributing and billing water comprehensively
- Purifying water optimally

A decisive factor in these applications is the accurate measurement of water flows. To accomplish this, plant operators need robust and high-quality flowmeters that guarantee reliable operation around the clock. Precisely these are the requirements that Promag W 400 fulfills without compromise. For almost 50 years, Promag sensors have proven ideal for deployment in a wide range of applications such as:

- Quantity measurement of drinking water, industrial water, irrigation water or wastewater
- Applications in small plant engineering or in large-scale projects
- Measurement in distribution networks, pump systems or in shafts
- Monitoring, regulating, billing and leak detection





Promag W with no inlet run and no restriction (0 x DN full bore)

- Best measuring performance independent of flow profiles
- The first and only electromagnetic flowmeter with no inlet/outlet runs (0 x DN), no measuring tube restriction and thus no pressure loss
- Perfect solution for installation in space-restricted situations, e.g., on skids; especially after fittings and other turbulence-generating obstacles in the pipe

Promag W 400

Advantages at a glance

Secure data storage

- Maximum plant availability through user-friendly HistoROM data storage concept
- No loss of data – automatic backup of device data
- Fast recovery of device and configuration data for servicing
- Integrated data logger for querying, monitoring and analyzing measured values

Simple operation

- Fast commissioning with the standard-integrated web server incl. WLAN technology
- Time-saving device configuration with the uniform Endress+Hauser operating concept
- Guided parameterization with make-it-run wizards
- Over 15 display languages for worldwide use
- Wide range of operating options from local display to commercially available field devices

Maximum operational safety

- With drinking water approvals
- With custody transfer approvals according to OIML R49 and MI-001 water meter standards
- Heartbeat Technology
 - Permanent self-monitoring with categorized and clear diagnostic messages according to NAMUR NE 107 and with remedy instructions in case of device and process faults
 - Highest reliability and long-term stability, monitoring of the entire signal chain in the device, redundant references as well as guaranteed traceability according to ISO 9001 from the factory
 - Internal verification for quality documentation and for optimization of calibration intervals

Seamless system integration

- Flexible operation via web server or via HART, PROFIBUS DP, Modbus RS485 and EtherNet/IP
- Compatibility between field device and process control system ensured at all times as firmware/device drivers are available during the entire life cycle

Sensors proven in real-world applications

- Tried and tested 3 million times in almost 50 years
- Industry-optimized Promag sensors for continuously reliable operation
- High measuring accuracy even in long-term operation
- Traceable measurement results as every device is certified on accredited and traceable calibration rigs (ISO/IEC 17025)



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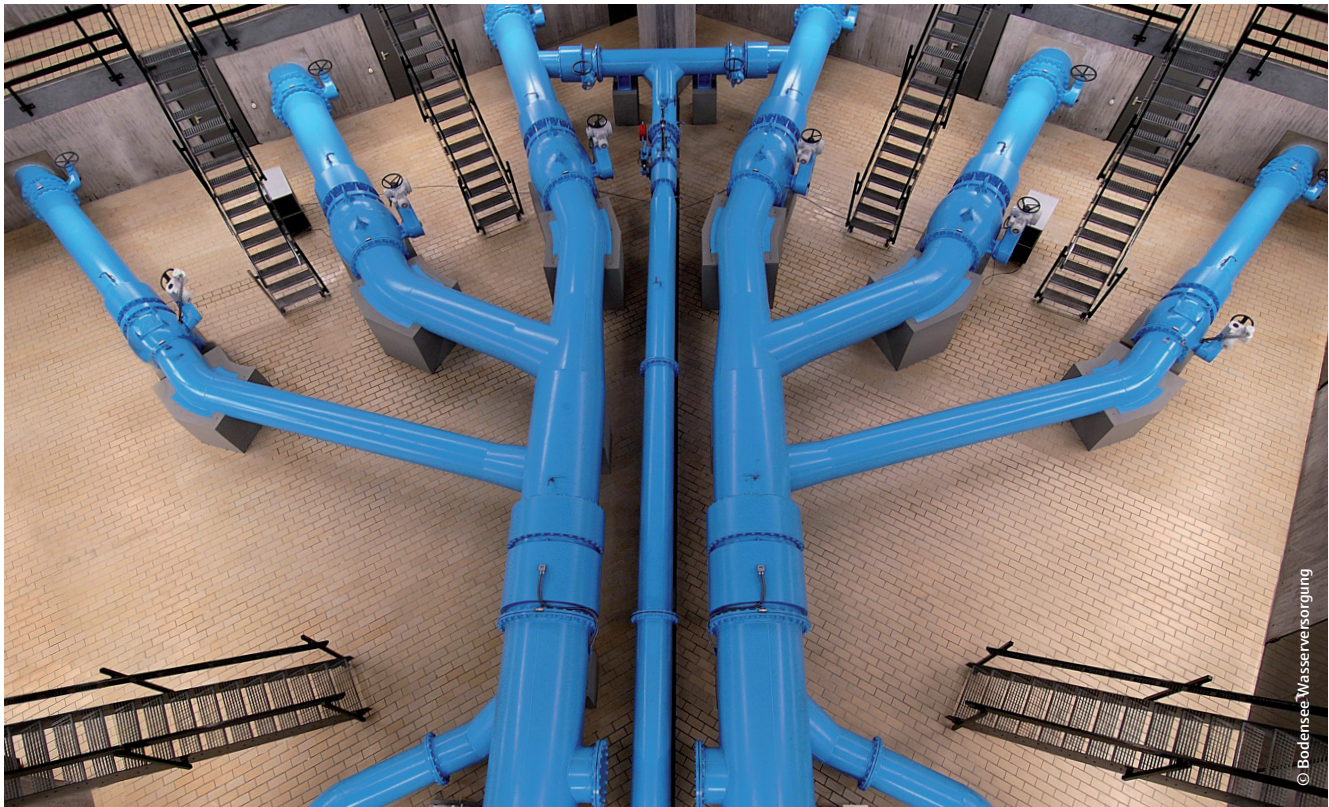


Your benefits throughout the life cycle

- Accurate measurement of drinking water, industrial water and wastewater
- Assured compliance with guidelines and regulations
- Reduced operating costs by means of proven, innovative and maintenance-free measuring technology

Sensors for your application

Endress+Hauser offers a wide range of high-quality electromagnetic flowmeters, all of which can be delivered with internationally recognized drinking water approvals



Promag W

The standard device for the water and wastewater industry

- Lap-joint flanges (up to DN 300/12") and fixed flanges
- Weight-saving design with short installation lengths taking into account ISO and DVGW
- Approved for custody transfer according to MI-001 and OIML R49
- With certified corrosion protection and IP68 ingress protection (Type 6P enclosure) for continuous underwater use, for corrosive environment and for direct underground installation
- DN 25 to 3000 (1 to 120")
- Available with the "0 x DN inlet/outlet runs" option:
 - Full-bore version (DN 25 to 3000 / 1 to 120")
 - Version with restricted measuring tube (DN 50 to 300 / 2 to 12")



Electromagnetic

Promag W

Long-term reliability underground or under water

Measuring devices are frequently installed outdoors and subjected to heat, dust or extreme climatic fluctuation. Continuous use underwater or underground is even more demanding. Promag W was specially developed for such environments and guarantees long-term reliable operation without additional protective measures or costs:

- Certified corrosion protection according to EN ISO 12944 for installing a device:
 - under water (fulfills Im1 and Im2 according to EN ISO 12944)
 - underground (fulfills Im3 according to EN ISO 12944)
 - in regions with a saline environment (fulfills C5-M according to EN ISO 12944)
 - in regions with extreme fluctuations of humidity or temperature (in deserts, tropics, etc.)
- Accurate long-term operation due to the robust and completely welded sensor
- Corrosion-resistant connection housing made of polycarbonate
- High water ingress resistance due to IP68 protection type (Type 6P enclosure)



Heartbeat Technology – device verification made easy



Highest measuring accuracy and maximum reliability are absolutely essential in the water industry. Promag W 400 with Heartbeat Technology features integrated diagnostic, verification and monitoring functions that check device functionality and strengthen confidence in measurement:

- Permanent self-diagnostics with very high test coverage
- Traceable verification according to ISO 9001 (attested by TÜV SÜD) for fulfilling the legal obligation to provide evidence, for quality documentation at audits and for seamless documentation of device functionality
- Verification during operation – possible at any time via device interfaces and through remote access, without process interruption or device removal
- Reliable and continuous monitoring of buildup in the measuring tube – for improved maintenance planning, optimized cleaning cycles, reduced downtime and higher process efficiency
- Optimization of calibration intervals (in consultation with metrology authorities)

Technical data

Proline 400 (transmitter)

Measured values	Volume flow, electrical conductivity
Display	Backlit, 4-line, 3 optical keys (touch control)
Operation	■ Via local display ■ Via web browser ■ Via operating tool, e.g., "FieldCare" from Endress+Hauser ■ Via HART handheld
Power supply	With universal power supply: DC 24 V AC 24 V (50/60 Hz) AC 100 to 240 V (50/60 Hz)
Housing	Polycarbonate, aluminum
Ambient temperature	-40 to +60 °C (-40 to +140 °F)
Degree of protection	IP66 und IP67 (Type 4X enclosure)
Design	Compact or remote version
Galvanic isolation	All circuits for outputs and power supply are galvanically isolated from each other
Outputs / Inputs	Current output (0/4–20 mA HART), pulse/frequency/switch output (2), status input
Communication	HART, EtherNet/IP, PROFIBUS DP, Modbus RS485, integrated web server, service interface via RJ45 Ethernet and WLAN
Approvals	Hazardous area: cCSAus (Cl. I Div. 2)
Custody transfer approvals	OIML R49, MI-001

Subject to modification

Promag W (sensor)

Diameters	DN 25 to 3000 (1 to 120")
Process connections	Flanges (EN [DIN], ASME, JIS, AWWA, AS), lap-joint flanges (EN [DIN], ASME)
Process temperature	-20 to +90 °C (-4 to +194 °F)
Degree of protection	Standard: IP67 (Type 4X enclosure) Optional: IP68 (Type 6P enclosure)
Max. measured error	±0.5% o.r. Optional ±0.2% o.r.
Turndown	Over 1000:1
Materials (liners)	Polyurethane, hard rubber, PTFE
Electrical conductivity	≥5 µS/cm (liquids in general)
Approvals	■ Drinking water: KTW-BWGL, WRAS BS6920, ACS, NSF 61 ■ Pressure: PED, CRN

The Promag W 400 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 **RoHS** mark.

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