



Level



Pressure



Flow



Temperature



Liquid  
Analysis



Registration



Systems  
Components



Services



Solutions

# Proline Promass 830/840

## The Coriolis flowmeter for the highest pressures in offshore applications



The market leader – corrosion-resistant, robust and precise

- Safe measurement – industry-optimized Coriolis flowmeter for high pressures up to 3742 psi (258 bar)
- Highest resistance to stress corrosion cracking – fluid-wetted parts are made from Super Duplex (25Cr Duplex), materials in accordance with NORSOK M-630 and NACE MR175/MR103
- Ideal for demanding offshore and onshore environmental conditions – housing made entirely of stainless steel (316L/1.4404)
- Exact billing due to excellent traceable accuracy that is the highest in the world ( $\pm 0.05\%$  o.r. with PremiumCal)
- Fully balanced device – immune to pipe vibrations and external process influences
- Robust, maintenance-free device without moving parts in the measuring system
- Worldwide sales and service network (engineering, commissioning)



Look for our link emblem inside to access more information about Endress+Hauser and our products

Endress+Hauser

People for Process Automation



## Promass O for demanding measuring tasks

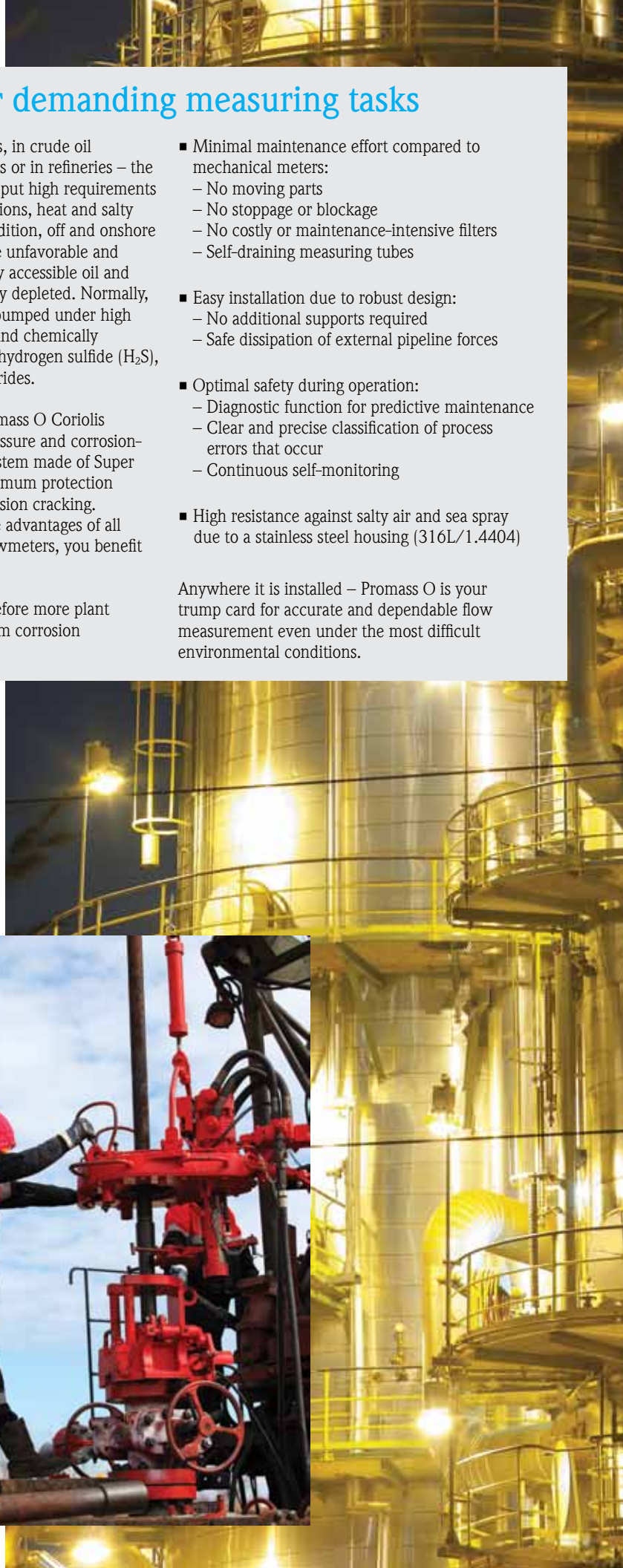
Whether on drilling platforms, in crude oil production systems, on FPSOs or in refineries – the prevailing process conditions put high requirements on measuring systems. Vibrations, heat and salty seawater are the norm. In addition, off and onshore exploration advances to more unfavorable and deeper environments as easily accessible oil and natural gas reserves are slowly depleted. Normally, such hydrocarbon holdings, pumped under high pressure, contain poisonous and chemically corrosive substances such as hydrogen sulfide ( $H_2S$ ), carbon dioxide ( $CO_2$ ) or chlorides.

As a worldwide first, the Promass O Coriolis flowmeter now combines pressure and corrosion-resistance. The measuring system made of Super Duplex steel now offers maximum protection from the dreaded stress corrosion cracking. Together with the unbeatable advantages of all Endress+Hauser's Proline flowmeters, you benefit in many respects:

- Lower downtime and therefore more plant availability due to maximum corrosion resistance

- Minimal maintenance effort compared to mechanical meters:
  - No moving parts
  - No stoppage or blockage
  - No costly or maintenance-intensive filters
  - Self-draining measuring tubes
- Easy installation due to robust design:
  - No additional supports required
  - Safe dissipation of external pipeline forces
- Optimal safety during operation:
  - Diagnostic function for predictive maintenance
  - Clear and precise classification of process errors that occur
  - Continuous self-monitoring
- High resistance against salty air and sea spray due to a stainless steel housing (316L/1.4404)

Anywhere it is installed – Promass O is your trump card for accurate and dependable flow measurement even under the most difficult environmental conditions.





## Global calibration concept

For over 35 years, we have developed and built high-tech calibration rigs to document the accuracy of our flowmeters in a reliable and traceable manner. All of our calibration rigs are accredited by A2LA in accordance with ISO/IEC 17025. This is one-of-a-kind and confirms the high confidence national authorities place in Endress+Hauser's measurement technology. Our global calibration concept offers the following advantages:

- Worldwide accreditation of all flow calibration rigs
- Periodic inspection by national standard authorities
- Complete traceability back to national standards (e.g. METAS, PTB, NPL, LNE, NIST, CN), as described in ISO/IEC 17025
- High-tech calibration rigs based on a common design platform
- Calibration service in more than 40 countries



## 100% traceability

At Endress+Hauser, each flowmeter is subjected to rigorous testing on accredited and fully traceable calibration facilities. Verification comparisons between device under test, calibration rig, test equipment and a country's hierarchically highest "national standard" are the only way of conclusively establishing the end-to-end traceability of values measured – and consequently of the measuring uncertainty stated by the device manufacturer.

With "PremiumCal" – the world's best production calibration facility – we can specify Promass O to a maximum measured error of  $\pm 0.05\%$ . An international best!



Prototype Kilogram



National standard



Gravimetric scales (E+H)



Calibration rig (E+H)



Flowmeter





## Technical data



### Promass 83/84 (transmitter)

Promass 83: Standard transmitter with extended functionality  
Promass 84: In addition to custody transfer approvals

- Outputs HART® (4–20 mA), PROFIBUS® DP/PA, FOUNDATION™ Fieldbus, MODBUS, EtherNet/IP

### Promass O (sensor)

- Nominal diameter 3" (DN80), 4" (DN100), 6" (DN150)
- Materials Measuring tube: 1.4410/UNS S32750 (25Cr Duplex)  
Flange connections: 1.4410/F53 (25Cr Duplex)  
Housing: 316L/1.4404 (stainless steel)
- Process connections Flanges: EN, ASME
- Process temperature –40 to +392°F (–40 to +200°C)
- Ambient temperature Standard: –4 to +140°F (–20 to +60°C)  
Optional: –40 to +140°F (–40 to +60°C)
- Process pressure PN 160, PN 250  
Cl 900, Cl 1500
- Degree of protection NEMA 4X (IP 67)

### Promass 83/84 (transmitter)

- Measured error
  - Mass/volume flow (liquids) Standard: ±0.1% o.r.  
Optional: ±0.05% o.r. (PremiumCal)
  - Mass flow (gas) ±0.35% o.r.
  - Density Standard calibration: ±0.01 g/cm<sup>3</sup>  
Special calibration: ±0.001 g/cm<sup>3</sup>  
Reference/field calibration: ±0.0005 g/cm<sup>3</sup>
  - Temperature ±0.5°C ± (0.005 × fluid temperature)
- Repeatability (mass flow) Standard: ±0.05%  
Optional: ±0.025% (PremiumCal)
- Approvals Functional safety: SIL 2 acc. to IEC 61508/IEC 61511-1 (FDIS)  
Pressure: PED Cat. III, CRN, AD2000  
Materials: acc. to NORSOK M-630 and NACE MR175/MR103  
Custody transfer: MID (OIML R117)
- Ex approvals FM, CSA, ATEX, TIIS, IECEx, NEPSI
- Application suitability API 5.6, AGA 11, DOT 49CFR192, 49CFR195

Subject to change

The Promass 830/840 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 **✓** mark.



ISO 9001 Certified

03.12/SCUSA (KF)

#### USA

Endress+Hauser, Inc.  
2350 Endress Place  
Greenwood, IN 46143  
Tel: 317-535-7138  
Sales: 888-ENDRESS (888-363-7377)  
Service: 800-642-8737  
Fax: 317-535-8498  
inquiry@us.endress.com  
www.us.endress.com

#### Canada

Endress+Hauser Canada  
1075 Sutton Drive  
Burlington, ON L7L 5Z8  
Tel: 905-681-9292  
800-668-3199  
Fax: 905-681-9444  
info@ca.endress.com  
www.ca.endress.com

#### Mexico

Endress+Hauser México S.A. de C.V.  
Fernando Montes de Oca 21 Edificio A Piso 3  
Fracc. Industrial San Nicolás  
54030 Tlalnepantla de Baz  
Estado de México  
México  
Tel: +52 55 5321 2080  
Fax: +52 55 5321 2099  
eh.mexico@mx.endress.com  
www.mx.endress.com