

Proline Promass O 500 Coriolis flowmeter

Robust high-pressure flowmeter, as remote version with up to 4 I/Os



Benefits:

- Maximum safety – highest resistance to stress corrosion cracking
- Fewer process measuring points – multivariable measurement (flow, density, temperature)
- Space-saving installation – no in-/outlet run needs
- Full access to process and diagnostic information – numerous, freely combinable I/Os and Ethernet
- Reduced complexity and variety – freely configurable I/O functionality
- Integrated verification – Heartbeat Technology

Specs at a glance

- **Max. measurement error** Mass flow (liquid): $\pm 0.10\%$ (standard), 0.05% (option) Volume flow (liquid): $\pm 0.10\%$ Mass flow (gas): $\pm 0.35\%$ Density (liquid): $\pm 0.0005 \text{ g/cm}^3$
- **Measuring range** 0 to 800 000 kg/h (0 to 29 400 lb/min)
- **Medium temperature range** -40 to $+205^\circ\text{C}$ (-40 to $+401^\circ\text{F}$)
- **Max. process pressure** PN 250, Class 1500
- **Wetted materials** Measuring tube: 25Cr duplex (Super Duplex), 1.4410 (UNS S32750) Connection: 25Cr duplex (Super Duplex), 1.4410 (F53)

Field of application: Promass O is designed for premium accuracy of liquids and gases at the highest process pressures in the oil and gas industry. The sensor is fully suitable for offshore conditions and resistant to stress corrosion cracking. With its innovative remote transmitter Promass O 500 maximizes installation flexibility and operational safety in demanding environments. Heartbeat Technology enables safe processes.

Features and specifications

Liquids

Measuring principle

Coriolis

Product headline

Robust high-pressure flowmeter, as remote version with up to 4 I/Os. For premium accuracy at highest process pressures, fully suitable for offshore conditions.

Sensor features

Maximum safety – highest resistance to stress corrosion cracking. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in-/outlet run needs. Measuring tube in 25Cr Duplex, 1.4410 (UNS S32750). Process pressure up to PN 250 (Class 1500). Nominal diameter: DN 80 to 250 (3 to 10").

Transmitter features

Full access to process and diagnostic information – numerous, freely combinable I/Os and fieldbuses. Reduced complexity and variety – freely configurable I/O functionality. Integrated verification – Heartbeat Technology.

Remote version with up to 4 I/Os. Backlit display with touch control and WLAN access. Standard cable between sensor and transmitter.

Nominal diameter range

DN 80 to 250 (3 to 10")

Wetted materials

Measuring tube: 25Cr duplex (Super Duplex), 1.4410 (UNS S32750)
Connection: 25Cr duplex (Super Duplex), 1.4410 (F53)

Measured variables

Mass flow, density, temperature, volume flow, corrected volume flow (API tables), reference density, concentration

Liquids

Max. measurement error

Mass flow (liquid): ± 0.10 % (standard), 0.05 % (option)

Volume flow (liquid): ± 0.10 %

Mass flow (gas): ± 0.35 %

Density (liquid): ± 0.0005 g/cm³

Measuring range

0 to 2 200 000 kg/h (0 to 80 850 lb/min)

Max. process pressure

PN 250, Class 1500

Medium temperature range

-40 to +205 °C (-40 to +401 °F)

Ambient temperature range

Standard: -40 to +60 °C (-40 to +140 °F)

Option: -50 to +60 °C (-58 to +140 °F)

Sensor housing material

1.4404 (316L), highest corrosion resistance

Sensor connection housing (standard): AlSi10Mg, coated

Sensor connection housing (option): 1.4301 (304); 1.4404 (316L);

1.4409 (CF3M) similar to 316L

Transmitter housing material

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; Polycarbonat

Degree of protection

Sensor remote version (standard): IP66/67, type 4X enclosure

Sensor remote version (option): IP69. Transmitter remote version:

IP66/67, Type 4X enclosure

Display/Operation

4-line backlit display with touch control (operation from outside)

Configuration via local display and operating tools possible

Liquids

Outputs

4 outputs:

4-20 mA HART (active/passive)

4-20 mA WirelessHART

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

Inputs

Status input

4-20 mA input

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, PROFINET, PROFINET over Ethernet-APL, Ethernet/IP, OPC-UA

Power supply

DC 24 V

AC 100 to 230 V

AC 100 to 230 V / DC 24 V (non-hazardous area)

Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC, KC

Product safety

CE, C-tick, EAC marking

Functional safety

Functional safety according to IEC 61508, applicable in safety-relevant applications in accordance with IEC 61511

Liquids

Metrological approvals and certificates

Calibration performed on accredited calibration facilities (acc. to ISO/IEC 17025)

Heartbeat Technology complies with the requirements for measurement traceability according to ISO 9001:2015 – Section 7.1.5.2 a (TÜV SÜD attestation)

MI-005 Liquids other than water (Hydrocarbons), Cryogenic Liquids, LPG

OIML R117 Liquids other than water, Cryogenic Liquids, LPG

MI-002, PTB

Marine approvals and certificates

LR approval, DNV approval, ABS approval, BV approval, CCS approval

Pressure approvals and certificates

PED, CRN, AD 2000

Material certificates

3.1 material

NACE MR0175/MR0103, PMI; welding test acc. to EN ISO, ASME, NORSOK

Gas

Measuring principle

Coriolis

Product headline

Robust high-pressure flowmeter, as remote version with up to 4 I/Os.

For premium accuracy at highest process pressures, fully suitable for offshore conditions.

Sensor features

Maximum safety – highest resistance to stress corrosion cracking. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in-/outlet run needs.

Measuring tube in 25Cr Duplex, 1.4410 (UNS S32750). Process pressure up to PN 250 (Class 1500). Nominal diameter: DN 80 to 250 (3 to 10").

Gas

Transmitter features

Full access to process and diagnostic information – numerous, freely combinable I/Os and fieldbuses. Reduced complexity and variety – freely configurable I/O functionality. Integrated verification – Heartbeat Technology.

Remote version with up to 4 I/Os. Backlit display with touch control and WLAN access. Standard cable between sensor and transmitter.

Nominal diameter range

DN 80 to 250 (3 to 10")

Wetted materials

Measuring tube: 25Cr duplex (Super Duplex), 1.4410 (UNS S32750)

Connection: 25Cr duplex (Super Duplex), 1.4410 (F53)

Measured variables

Mass flow, density, temperature, volume flow, corrected volume flow (API tables), reference density, concentration

Max. measurement error

Mass flow (liquid): ± 0.10 % (standard), 0.05 % (option)

Volume flow (liquid): ± 0.10 %

Mass flow (gas): ± 0.35 %

Density (liquid): ± 0.0005 g/cm³

Measuring range

0 to 2 200 000 kg/h (0 to 80 850 lb/min)

Max. process pressure

PN 250, Class 1500

Medium temperature range

-40 to +205 °C (-40 to +401 °F)

Ambient temperature range

Standard: -40 to +60 °C (-40 to +140 °F)

Option: -50 to +60 °C (-58 to +140 °F)

Gas

Sensor housing material

1.4404 (316L), highest corrosion resistance

Sensor connection housing (standard): AlSi10Mg, coated

Sensor connection housing (option): 1.4301 (304); 1.4404 (316L); 1.4409 (CF3M) similar to 316L

Transmitter housing material

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; Polycarbonat

Degree of protection

Sensor remote version (standard): IP66/67, type 4X enclosure

Sensor remote version (option): IP69. Transmitter remote version: IP66/67, Type 4X enclosure

Display/Operation

4-line backlit display with touch control (operation from outside)

Configuration via local display and operating tools possible

Outputs

4 outputs:

4-20 mA HART (active/passive)

4-20 mA WirelessHART

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

Inputs

Status input

4-20 mA input

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, PROFINET, PROFINET over Ethernet-APL, Ethernet/IP, OPC-UA

Gas**Power supply**

DC 24 V

AC 100 to 230 V

AC 100 to 230 V / DC 24 V (non-hazardous area)

Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC, KC

Product safety

CE, C-tick, EAC marking

Functional safety

Functional safety according to IEC 61508, applicable in safety-relevant applications in accordance with IEC 61511

Metrological approvals and certificates

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OIML R117 Liquids other than water, Cryogenic Liquids, LPG

MI-002, PTB

Marine approvals and certificates

LR approval, DNV approval, ABS approval, BV approval, CCS approval

Pressure approvals and certificates

PED, CRN, AD 2000

Material certificates

3.1 material

NACE MR0175/MR0103, PMI; welding test acc. to EN ISO, ASME, NORSOK

Steam

Measuring principle

Coriolis

Product headline

Robust high-pressure flowmeter, as remote version with up to 4 I/Os. For premium accuracy at highest process pressures, fully suitable for offshore conditions.

Sensor features

Maximum safety – highest resistance to stress corrosion cracking. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in-/outlet run needs. Measuring tube in 25Cr Duplex, 1.4410 (UNS S32750). Process pressure up to PN 250 (Class 1500). Nominal diameter: DN 80 to 250 (3 to 10").

Transmitter features

Full access to process and diagnostic information – numerous, freely combinable I/Os and fieldbuses. Reduced complexity and variety – freely configurable I/O functionality. Integrated verification – Heartbeat Technology.

Remote version with up to 4 I/Os. Backlit display with touch control and WLAN access. Standard cable between sensor and transmitter.

Nominal diameter range

DN 80 to 150 (3 to 6")

Wetted materials

Measuring tube: 25Cr duplex (Super Duplex), 1.4410 (UNS S32750)
Connection: 25Cr duplex (Super Duplex), 1.4410 (F53)

Measured variables

Mass flow, density, temperature, volume flow, corrected volume flow (API tables), reference density, concentration

Steam

Max. measurement error

Mass flow (liquid): ± 0.10 % (standard), 0.05 % (option)

Volume flow (liquid): ± 0.10 %

Mass flow (gas): ± 0.35 %

Density (liquid): ± 0.0005 g/cm³

Measuring range

0 to 800 000 kg/h (0 to 29 400 lb/min)

Max. process pressure

PN 250, Class 1500

Medium temperature range

-40 to +205 °C (-40 to +401 °F)

Ambient temperature range

Standard: -40 to +60 °C (-40 to +140 °F)

Option: -50 to +60 °C (-58 to +140 °F)

Sensor housing material

1.4404 (316L), highest corrosion resistance

Sensor connection housing (standard): AlSi10Mg, coated

Sensor connection housing (option): 1.4301 (304); 1.4404 (316L);
1.4409 (CF3M) similar to 316L

Transmitter housing material

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; Polycarbonat

Degree of protection

Sensor remote version (standard): IP66/67, type 4X enclosure

Sensor remote version (option): IP69. Transmitter remote version:
IP66/67, Type 4X enclosure

Display/Operation

4-line backlit display with touch control (operation from outside)

Configuration via local display and operating tools possible

Steam

Outputs

4 outputs:

4-20 mA HART (active/passive)

4-20 mA WirelessHART

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

Inputs

Status input

4-20 mA input

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, PROFINET, PROFINET over Ethernet-APL, Ethernet/IP, OPC-UA

Power supply

DC 24 V

AC 100 to 230 V

AC 100 to 230 V / DC 24 V (non-hazardous area)

Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC, KC

Product safety

CE, C-tick, EAC marking

Functional safety

Functional safety according to IEC 61508, applicable in safety-relevant applications in accordance with IEC 61511

Steam

Metrological approvals and certificates

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OIML R117 Liquids other than water, Cryogenic Liquids, LPG

MI-002, PTB

Marine approvals and certificates

LR approval, DNV approval, ABS approval, BV approval, CCS approval

Pressure approvals and certificates

PED, CRN, AD 2000

Material certificates

3.1 material

NACE MR0175/MR0103, PMI; welding test acc. to EN ISO, ASME, NORSOK

Density/Concentration

Measuring principle

Coriolis

Product headline

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For premium accuracy at highest process pressures, fully suitable for offshore conditions.

Sensor features

Maximum safety – highest resistance to stress corrosion cracking. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in-/outlet run needs.

Measuring tube in 25Cr Duplex, 1.4410 (UNS S32750). Process pressure up to PN 250 (Class 1500). Nominal diameter: DN 80 to 250 (3 to 10").

Density/Concentration

Transmitter features

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Remote version with up to 4 I/Os. Backlit display with touch control and WLAN access. Standard cable between sensor and transmitter.

Nominal diameter range

DN 80 to 250 (3 to 10")

Wetted materials

Measuring tube: 25Cr duplex (Super Duplex), 1.4410 (UNS S32750)

Connection: 25Cr duplex (Super Duplex), 1.4410 (F53)

Measured variables

Mass flow, density, temperature, volume flow, corrected volume flow (API tables), reference density, concentration

Max. measurement error

Mass flow (liquid): ± 0.10 % (standard), 0.05 % (option)

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Density (liquid): ± 0.0005 g/cm³

Measuring range

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Max. process pressure

PN 250, Class 1500

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Density/Concentration**Sensor housing material**

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Transmitter housing material

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; Polycarbonat

Degree of protection

Sensor remote version (standard): IP66/67, type 4X enclosure

Sensor remote version (option): IP69. Transmitter remote version: IP66/67, Type 4X enclosure

Display/Operation

4-line backlit display with touch control (operation from outside)

Configuration via local display and operating tools possible

Outputs

4 outputs:

4-20 mA HART (active/passive)

4-20 mA WirelessHART

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

Inputs

Status input

4-20 mA input

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, PROFINET, PROFINET over Ethernet-APL, Ethernet/IP, OPC-UA

Density/Concentration**Power supply**

DC 24 V

AC 100 to 230 V

AC 100 to 230 V / DC 24 V (non-hazardous area)

Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC, KC

Product safety

CE, C-tick, EAC marking

Functional safety

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Metrological approvals and certificates

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OIML R117 Liquids other than water, Cryogenic Liquids, LPG

MI-002, PTB

Marine approvals and certificates

LR approval, DNV approval, ABS approval, BV approval, CCS approval

Pressure approvals and certificates

PED, CRN, AD 2000

Material certificates

3.1 material

NACE MR0175/MR0103, PMI; welding test acc. to EN ISO, ASME,

NORSOK



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