

Proline Promass A 500 Coriolis flowmeter

Accurate single-tube flowmeter for lowest flow rates, as remote version with up to 4 I/Os



Benefits:

- Space-saving installation – compact, lightweight sensor
- Highest product quality – self-drainable measuring tube in all line sizes
- Optimum process safety – resistant to corrosive ambient conditions and internal clogging
- 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): ± 0.1 % Volume flow (liquid): ± 0.1 % Mass flow (gas): ± 0.35 % Density (liquid): ± 0.0005 g/cm³
- **Measuring range** 0 to 450 kg/h (0 to 16.54 lb/min)
- **Medium temperature range** -50 to 205 °C (-58 to 401 °F)
- **Max. process pressure** 430.9 bar (6250 psi)
- **Wetted materials** Measuring tube: stainless steel, 1.4435 (316/316L); Alloy C22

Field of application: The compact Promass A is ideal for continuous process control in very demanding applications. Its unique self-drainable single-tube system enables accurate measurement of liquids and gases at lowest flow rates and high pressure. With its innovative remote transmitter Promass A 500 maximizes installation flexibility and operational safety in demanding environments. Heartbeat Technology enables measurement reliability and compliant verification.

Features and specifications

Liquids

Measuring principle

Coriolis

Product headline

Accurate single-tube flowmeter for lowest flow rates, as remote version with up to 4 I/Os.

Suitable for applications with smallest flow quantities in all industries.

Sensor features

Space-saving installation – compact, lightweight sensor. Highest product quality – self-drainable measuring tube design in all line sizes. Optimum process safety – resistant to corrosive ambient conditions and internal clogging.

Nominal diameter: DN 1 to 4 ($\frac{1}{24}$ to $\frac{1}{8}$ "). Process pressure up to 430.9 bar (6250 psi). Medium temperature up to +205 °C (+401 °F).

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 1 to 4 ($\frac{1}{24}$ to $\frac{1}{8}$ ")

Wetted materials

Measuring tube: stainless steel, 1.4435 (316/316L); Alloy C22

Measured variables

Mass flow, density, temperature, volume flow, corrected volume flow, reference density

Max. measurement error

Mass flow (liquid): ± 0.1 %

Volume flow (liquid): ± 0.1 %

Mass flow (gas): ± 0.35 % Density (liquid): ± 0.0005 g/cm³

Liquids

Measuring range

0 to 450 kg/h (0 to 16.54 lb/min)

Max. process pressure

430.9 bar (6250 psi)

Medium temperature range

-50 to 205 °C (-58 to 401 °F)

Ambient temperature range

-40 to 60 °C (-40 to +140 °F)

Sensor housing material

Stainless steel, 1.4404 (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

Liquids

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, Profinet, 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, INMETRO, NEPSI

Product safety

CE, C-TICK

Functional safety

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

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)

Pressure approvals and certificates

CRN

Material certificates

3.1 material

Hygienic approvals and certificates

3-A, cGMP

Gas

Measuring principle

Coriolis

Gas

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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.

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Volume flow (liquid): ± 0.1 %

Mass flow (gas): ± 0.35 % Density (liquid): ± 0.0005 g/cm³

Measuring range

0 to 450 kg/h (0 to 16.54 lb/min)

Gas

Max. process pressure

430.9 bar (6250 psi)

Medium temperature range

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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

Gas

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, Profinet, 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)

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3-A, cGMP

Density/Concentration

Measuring principle

Coriolis

Density/Concentration

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Measuring range

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Density/Concentration**Max. process pressure**430.9 bar (6250 psi)

Medium temperature range-50 to 205 °C (-58 to 401 °F)

Ambient temperature range-40 to 60 °C (-40 to +140 °F)

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Transmitter housing materialAlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; Polycarbonat

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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)

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Double pulse output (active/passive)

Relay output

Inputs

Status input

4-20 mA input

Density/Concentration

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, Profinet, Ethernet/IP, OPC-UA

Power supply

DC 24 V

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Pressure approvals and certificates

PED, CRN

Material certificates

3.1 material

Hygienic approvals and certificates

3-A, cGMP



info@lenntech.com Tel. +31-152-610-900

www.lenntech.com Fax. +31-152-616-289