

Proline Promass I 300 Coriolis flowmeter

Combines in-line viscosity and flow measurement with a compact, easily accessible transmitter



F L E X

Benefits:

- Energy-saving – full bore design enables minimal pressure loss
- 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 fieldbuses
- Reduced complexity and variety – freely configurable I/O functionality
- Integrated verification – Heartbeat Technology

Specs at a glance

- **Max. measurement error** Mass flow (liquid): $\pm 0.10\%$ Volume flow (liquid): $\pm 0.10\%$ Mass flow (gas): $\pm 0.50\%$ Density (liquid): $\pm 0.0005 \text{ g/cm}^3$
- **Measuring range** 0 to 180 000 kg/h (0 to 6600 lb/min)
- **Medium temperature range** -50 to $+150 \text{ }^\circ\text{C}$ (-58 to $+302 \text{ }^\circ\text{F}$)
- **Max. process pressure** PN 100, Class 600, 63K
- **Wetted materials** Measuring tube: Titanium grade 9 Connection: Titanium grade 2

More information and current pricing:

www.apsc.endress.com/8I3B

Field of application: The straight single-tube design of Promass I provides in-line viscosity measurement in addition to mass flow, density and temperature measurement. With its compact transmitter Promass I 300 offers high flexibility in terms of operation and system integration: access from one side, remote display and improved connectivity options. Heartbeat Technology ensures compliance and process safety at all times.

Features and specifications

Density/Concentration

Measuring principle

Coriolis

Product headline

Combines in-line viscosity and flow measurement with a compact, easily accessible transmitter. Measuring liquids and gases in applications requiring low pressure loss and gentle fluid treatment.

Sensor features

Energy-saving – full bore design enables minimal pressure loss. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in/outlet run needs. Straight, easy-to-clean single-tube system. TMB technology.

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. Compact dual-compartment housing with up to 3 I/Os. Backlit display with touch control and WLAN access.

Nominal diameter range

DN 8 to 80 ($\frac{3}{8}$ to 3")

Wetted materials

Measuring tube: Titanium grade 9

Connection: Titanium grade 2

Measured variables

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

Density/Concentration**Max. measurement error**Mass flow (liquid): $\pm 0.10\%$ Volume flow (liquid): $\pm 0.10\%$ Mass flow (gas): $\pm 0.50\%$ Density (liquid): $\pm 0.0005\text{ g/cm}^3$

Measuring range0 to 180 000 kg/h (0 to 6600 lb/min)

Max. process pressurePN 100, Class 600, 63K

Medium temperature range -50 to $+150\text{ }^\circ\text{C}$ (-58 to $+302\text{ }^\circ\text{F}$)

Ambient temperature rangeStandard: -40 to $+60\text{ }^\circ\text{C}$ (-40 to $+140\text{ }^\circ\text{F}$)Option: -50 to $+60\text{ }^\circ\text{C}$ (-58 to $+140\text{ }^\circ\text{F}$)

Sensor housing material1.4301/1.4307 (304L), corrosion resistant

Transmitter housing materialAlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; stainless steel for hygenic transmitter design

Degree of protection

IP66/67, type 4X enclosure

IP69

Display/Operation

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

Configuration via local display and operating tools possible

Remote display available

Density/Concentration**Outputs**

3 outputs:

4-20 mA HART (active/passive)

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Relay output

Inputs

Status input

4-20 mA input

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, NEPSI, INMETRO, EAC

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

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

PED, CRN

Density/Concentration

Material certificates

3.1 material

Hygienic approvals and certificates

3-A, EHEDG, cGMP

Liquids

Measuring principle

Coriolis

Product headline

Combines in-line viscosity and flow measurement with a compact, easily accessible transmitter. Measuring liquids and gases in applications requiring low pressure loss and gentle fluid treatment.

Sensor features

Energy-saving – full bore design enables minimal pressure loss. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in/outlet run needs. Straight, easy-to-clean single-tube system. TMB technology.

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. Compact dual-compartment housing with up to 3 I/Os. Backlit display with touch control and WLAN access.

Nominal diameter range

DN 8 to 80 ($\frac{3}{8}$ to 3")

Wetted materials

Measuring tube: Titanium grade 9

Connection: Titanium grade 2

Liquids

Measured variables

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

Max. measurement error

Mass flow (liquid): ± 0.10 %

Volume flow (liquid): ± 0.10 %

Mass flow (gas): ± 0.50 %

Density (liquid): ± 0.0005 g/cm³

Measuring range

0 to 180 000 kg/h (0 to 6600 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

-50 to +150 °C (-58 to +302 °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

1.4301/1.4307 (304L), corrosion resistant

Transmitter housing material

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; stainless steel for hygienic transmitter design

Degree of protection

IP66/67, type 4X enclosure

IP69

Display/Operation

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

Configuration via local display and operating tools possible

Remote display available

Liquids

Outputs

3 outputs:

4-20 mA HART (active/passive)

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Relay output

Inputs

Status input

4-20 mA input

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, NEPSI, INMETRO, EAC

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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Liquids

Pressure approvals and certificatesPED, CRN

Material certificates3.1 material

Hygienic approvals and certificates3-A, EHEDG, cGMP

Density

Measuring principleCoriolis

Product Headline

Combines in-line viscosity and flow measurement with a compact, easily accessible transmitter. Measuring liquids and gases in applications requiring low pressure loss and gentle fluid treatment.

Gas

Measuring principleCoriolis

Product headline

Combines in-line viscosity and flow measurement with a compact, easily accessible transmitter. Measuring liquids and gases in applications requiring low pressure loss and gentle fluid treatment.

Sensor features

Energy-saving – full bore design enables minimal pressure loss. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in/outlet run needs. Straight, easy-to-clean single-tube system. TMB technology.

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. Compact dual-compartment housing with up to 3 I/Os. Backlit display with touch control and WLAN access.

Nominal diameter range

DN 8 to 80 ($\frac{3}{8}$ to 3")

Wetted materials

Measuring tube: 1.4539 (904L)

Connection: 1.4404 (316/316L)

Measured variables

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

Max. measurement error

Mass flow (liquid): ± 0.15 % (standard), ± 0.10 % (option)

Volume flow (liquid): ± 0.15 %

Mass flow (gas): ± 0.75 %

Density (liquid): ± 0.0005 g/cm³

Measuring range

0 to 180 000 kg/h (0 to 6615 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

-40 to +150 °C (-40 to +302 °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

1.4301 (304), corrosion resistant

Gas

Transmitter housing material

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; stainless steel for hygienic transmitter design

Degree of protection

Standard: IP66/67, Type 4X enclosure
Option: IP69

Display/Operation

4-line backlit display with touch control (operation from outside)
Configuration via local display and operating tools possible
Remote display available

Outputs

3 outputs:
4-20 mA HART (active/passive)
4-20 mA (active/passive)
Pulse/frequency/switch output (active/passive)
Relay output

Inputs

Status input
4-20 mA input

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, NEPSI, INMETRO, EAC

Product safety

CE, C-tick, EAC marking

Gas**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)

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Pressure approvals and certificates

PED, CRN

Material certificates

3.1 material

Hygienic approvals and certificates

3-A, EHEDG, cGMP

Viscosity**Measuring principle**

Coriolis

Product headline

Combines in-line viscosity and flow measurement with a compact, easily accessible transmitter. Measuring liquids and gases in applications requiring low pressure loss and gentle fluid treatment.

Sensor features

Energy-saving – full bore design enables minimal pressure loss. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in/outlet run needs. Straight, easy-to-clean single-tube system. TMB technology.

Viscosity

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
Compact dual-compartment housing with up to 3 I/Os
Backlit display with touch control and WLAN access

Nominal diameter range

DN 8 to 80 ($\frac{3}{8}$ to 3")

Wetted materials

Measuring tube: Titanium grade 9
Connection: Titanium grade 2

Measured variables

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

Max. measurement error

Mass flow (liquid): ± 0.10 %
Volume flow (liquid): ± 0.10 %
Mass flow (gas): ± 0.50 %
Density (liquid): ± 0.0005 g/cm³

Measuring range

0 to 180 000 kg/h (0 to 6600 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

-50 to +150 °C (-58 to +302 °F)

Ambient temperature range

Standard: -40 to +60 °C (-40 to +140 °F)
Option: -50 to +60 °C (-58 to +140 °F)

Viscosity

Sensor housing material

1.4301/1.4307 (304L), corrosion resistant

Transmitter housing material

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; stainless steel for hygienic transmitter design

Degree of protection

"IP66/67, type 4X enclosure
IP69"

Display/Operation

4-line backlit display with touch control (operation from outside)
Configuration via local display and operating tools possible
Remote display available

Outputs

3 outputs:
4-20 mA HART (active/passive)
4-20 mA (active/passive)
Pulse/frequency/switch output (active/passive)
Relay output

Inputs

Status input 4-20 mA input

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, NEPSI, INMETRO, EAC

Viscosity

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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Pressure approvals and certificates

PED, CRN

Material certificates

3.1 material

Hygienic approvals and certificates

3-A, EHEDG, cGMP

More information www.apsc.endress.com/8I3B