

Proline Promass I 300 Coriolis flowmeter

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



More information and current pricing:

www.sg.endress.com/813B

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

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

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

Measured variables

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

Liquids

Max. measurement errorMass 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)

Max. process pressure

PN 100, Class 600, 63K

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

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)

Liquids

Pressure approvals and certificates

PED, CRN

Material certificates

3.1 material

Hygienic approvals and certificates

3-A, EHEDG, cGMP

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

Density/Concentration

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

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 certificates3-A, EHEDG, cGMP

Gas**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 rangeDN 8 to 80 ($\frac{3}{8}$ to 3")

Wetted materials

Measuring tube: 1.4539 (904L)

Connection: 1.4404 (316/316L)

Gas

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

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

Gas**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

Gas**Material certificates**

3.1 material

Hygienic approvals and certificates3-A, EHEDG, cGMP

Density**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.

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): $\pm 0.10\%$
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)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

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

Ambient temperature range

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

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

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

Material certificates

3.1 material

Hygienic approvals and certificates

3-A, EHEDG, cGMP

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