

Proline Promass F 100 Coriolis flowmeter

The flowmeter with premium accuracy,
robustness and an ultra-compact transmitter



More information and current pricing:

www.th.endress.com/8F1B

Benefits:

- Highest process safety – immune to fluctuating and harsh environments
- Fewer process measuring points – multivariable measurement (flow, density, temperature)
- Space-saving installation – no in/outlet run needs
- Space-saving transmitter – full functionality on smallest footprint
- Time-saving local operation without additional software and hardware – integrated web server
- Integrated verification – Heartbeat Technology

Specs at a glance

- **Max. measurement error** Mass flow (liquid): $\pm 0.1\%$ (standard), 0.05% (option) Volume flow (liquid): $\pm 0.1\%$ Mass flow (gas): $\pm 0.25\%$ Density (liquid): $\pm 0.0005\text{ g/cm}^3$
- **Measuring range** 0 to 2 200 000 kg/h (0 to 80 840 lb/min)
- **Medium temperature range** Standard: -50 to $+150\text{ }^\circ\text{C}$ (-58 to $+302\text{ }^\circ\text{F}$) Option: -50 to $+240\text{ }^\circ\text{C}$ ($-58\text{...}+464\text{ }^\circ\text{F}$)
- **Max. process pressure** PN 100, Class 600, 63K
- **Wetted materials** Measuring tube: 1.4539 (904L); 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022) Connection: 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022)

Field of application: Promass F has a long standing reputation as a highly accurate device under varying process conditions. It is suited for broadest range of applications. Combined with the smallest transmitter housing available today it delivers full performance on the smallest footprint. Promass F 100 will be the preferred choice for system integrators, skid builders and equipment manufacturers. Available with

an extra-compact stainless steel hygienic housing it can be placed even into the most compact rigs.

Features and specifications

Liquids

Measuring principle

Coriolis

Product headline

Flowmeter with premium accuracy, robustness and an ultra-compact transmitter.

Highest measurement performance for liquids and gases under varying, demanding process conditions.

Sensor features

Highest process safety – immune to fluctuating and harsh environments. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in-/outlet run needs.

Mass flow: measurement error ± 0.05 % (PremiumCal). Medium temperature up to $+240$ °C ($+464$ °F). Nominal diameter: DN 8 to 250 ($\frac{3}{8}$ to 10").

Transmitter features

Space-saving transmitter – full functionality on the smallest footprint. Time-saving local operation without additional software and hardware – integrated web server. Integrated verification – Heartbeat Technology. Robust, ultra-compact transmitter housing. Highest degree of protection: IP69. Local display available.

Nominal diameter range

DN 8 to 250 ($\frac{3}{8}$ to 10")

Wetted materials

Measuring tube: 1.4539 (904L); 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022)

Connection: 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022)

Liquids

Measured variables

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

Max. measurement error

Mass flow (liquid): ± 0.1 % (standard), 0.05 % (option)

Volume flow (liquid): ± 0.1 %

Mass flow (gas): ± 0.25 %

Density (liquid): ± 0.0005 g/cm³

Measuring range

0 to 2 200 000 kg/h (0 to 80 840 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

Standard: -50 to $+150$ °C (-58 to $+302$ °F)

Option: -50 to $+240$ °C (-58 ... $+464$ °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

Compact: AlSi10Mg, coated

Compact/ultra-compact: 1.4301 (304), 1.4404 (316L)

Degree of protection

Standard: IP66/67, type 4X enclosure

Option: IP69

Display/Operation

4-line backlit display available (no local operation)

Configuration via web browser and operating tools possible

Liquids

Outputs

4-20 mA HART (active)

Pulse/frequency/switch output (passive)

Inputs

None

Digital communication

HART, Modbus RS485, EtherNet/IP, PROFIBUS DP, PROFINET

Power supply

DC 20 to 30 V

Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

Product safety

CE, C-Tick, EAC marking

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)

Marine approvals and certificates

ABS (American Bureau of Shipping)

BV (Bureau Veritas)

LR (Lloyds Register)

BV approval

CCS approval

Pressure approvals and certificates

PED, CRN, AD 2000

Liquids

Material certificates

3.1 material

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

Hygienic approvals and certificates

3-A, EHEDG, cGMP

Gas

Measuring principle

Coriolis

Product headline

Flowmeter with premium accuracy, robustness and an ultra-compact transmitter.

Highest measurement performance for liquids and gases under varying, demanding process conditions.

Sensor features

Highest process safety – immune to fluctuating and harsh environments. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in-/outlet run needs.

Mass flow: measurement error $\pm 0.05\%$ (PremiumCal). Medium temperature up to $+240\text{ }^{\circ}\text{C}$ ($+464\text{ }^{\circ}\text{F}$). Nominal diameter: DN 8 to 250 ($\frac{3}{8}$ to 10").

Transmitter features

Space-saving transmitter – full functionality on the smallest footprint. Time-saving local operation without additional software and hardware – integrated web server. Integrated verification – Heartbeat Technology. Robust, ultra-compact transmitter housing. Highest degree of protection: IP69. Local display available.

Nominal diameter range

DN 8 to 250 ($\frac{3}{8}$ to 10")

Gas

Wetted materials

Measuring tube: 1.4539 (904L); 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022)

Connection: 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022)

Measured variables

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

Max. measurement error

Mass flow (liquid): ± 0.1 % (standard), 0.05 % (option)

Volume flow (liquid): ± 0.1 %

Mass flow (gas): ± 0.25 %

Density (liquid): ± 0.0005 g/cm³

Measuring range

0 to 2 200 000 kg/h (0 to 80 840 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

Standard: -50 to $+150$ °C (-58 to $+302$ °F)

Option: -50 to $+240$ °C (-58 ... $+464$ °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

Compact: AlSi10Mg, coated

Compact/ultra-compact: 1.4301 (304), 1.4404 (316L)

Degree of protection

Standard: IP66/67, type 4X enclosure

Option: IP69

Gas

Display/Operation

4-line backlit display available (no local operation)

Configuration via web browser and operating tools possible

Outputs

4-20 mA HART (active)

Pulse/frequency/switch output (passive)

Inputs

None

Digital communication

HART, Modbus RS485, EtherNet/IP, PROFIBUS DP, PROFINET

Power supply

DC 20 to 30 V

Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

Product safety

CE, C-Tick, EAC marking

Metrological approvals and certificates

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

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Marine approvals and certificates

ABS (American Bureau of Shipping)

BV (Bureau Veritas)

LR (Lloyds Register)

BV approval

CCS approval

Gas**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

Hygienic approvals and certificates

3-A, EHEDG, cGMP

Steam**Measuring principle**

Coriolis

Product headline

Flowmeter with premium accuracy, robustness and an ultra-compact transmitter.

Highest measurement performance for liquids and gases under varying, demanding process conditions.

Sensor features

Highest process safety – immune to fluctuating and harsh environments. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in-/outlet run needs.

Mass flow: measurement error ± 0.05 % (PremiumCal). Medium temperature up to $+240$ °C ($+464$ °F). Nominal diameter: DN 8 to 250 ($\frac{3}{8}$ to 10").

Transmitter features

Space-saving transmitter – full functionality on the smallest footprint.

Time-saving local operation without additional software and hardware – integrated web server. Integrated verification – Heartbeat Technology.

Robust, ultra-compact transmitter housing. Highest degree of protection: IP69. Local display available.

Steam

Nominal diameter rangeDN 8 to 250 ($\frac{3}{8}$ to 10")**Wetted materials**

Measuring tube: 1.4539 (904L); 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022)

Connection: 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022)

Measured variables

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

Max. measurement errorMass flow (liquid): ± 0.1 % (standard), 0.05 % (option)Volume flow (liquid): ± 0.1 %Mass flow (gas): ± 0.25 %Density (liquid): ± 0.0005 g/cm³**Measuring range**

0 to 2 200 000 kg/h (0 to 80 840 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature rangeStandard: -50 to $+150$ °C (-58 to $+302$ °F)Option: -50 to $+240$ °C (-58 ... $+464$ °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

Compact: AlSi10Mg, coated

Compact/ultra-compact: 1.4301 (304), 1.4404 (316L)

Steam**Degree of protection**

Standard: IP66/67, type 4X enclosure

Option: IP69

Display/Operation

No local operation

Configuration via web browser and operating tools possible

Outputs

4-20 mA HART (active)

Pulse/frequency/switch output (passive)

InputsNone

Digital communicationHART, Modbus RS485, EtherNet/IP, PROFIBUS DP, PROFINET

Power supplyDC 20 to 30 V

Hazardous area approvalsATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

Product safetyCE, C-Tick, EAC marking

Metrological approvals and certificates

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

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Steam

Marine approvals and certificates

ABS (American Bureau of Shipping)
 BV (Bureau Veritas)
 LR (Lloyds Register)
 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

Hygienic approvals and certificates

3-A, EHEDG, cGMP

Density/Concentration

Measuring principle

Coriolis

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Density/Concentration

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Max. measurement error

Mass flow (liquid): ± 0.1 % (standard), 0.05 % (option)

Volume flow (liquid): ± 0.1 %

Mass flow (gas): ± 0.25 %

Density (liquid): ± 0.0005 g/cm³

Measuring range

0 to 2 200 000 kg/h (0 to 80 840 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

Standard: -50 to $+150$ °C (-58 to $+302$ °F)

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Density/Concentration**Sensor housing material**

1.4301/1.4307 (304L), corrosion resistant

Transmitter housing material

Compact: AlSi10Mg, coated

Compact/ultra-compact: 1.4301 (304), 1.4404 (316L)

Degree of protection

Standard: IP66/67, type 4X enclosure

Option: IP69

Display/Operation

4-line backlit display available (no local operation)

Configuration via web browser and operating tools possible

Outputs

4-20 mA HART (active)

Pulse/frequency/switch output (passive)

Inputs

None

Digital communication

HART, Modbus RS485, EtherNet/IP, PROFIBUS DP, PROFINET

Power supply

DC 20 to 30 V

Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

Product safety

CE, C-Tick, EAC marking

Density/Concentration

Metrological approvals and certificates

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

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ABS (American Bureau of Shipping)

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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

Hygienic approvals and certificates

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