

# Proline Promass F 100 Coriolis flowmeter

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



More information and current pricing:

[www.endress.com/8F1B](http://www.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  $\pm 0.05$  % (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

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### 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):  $\pm 0.0005$  g/cm<sup>3</sup>

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### Measuring range

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

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### Max. process pressure

PN 100, Class 600, 63K

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### Medium temperature range

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

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

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### Ambient temperature range

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

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

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### Sensor housing material

1.4301/1.4307 (304L), corrosion resistant

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### Transmitter housing material

Compact: AlSi10Mg, coated

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

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### Degree of protection

Standard: IP66/67, type 4X enclosure

Option: IP69

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### Display/Operation

4-line backlit display available (no local operation)

Configuration via web browser and operating tools possible

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## Liquids

### Outputs

4-20 mA HART (active)

Pulse/frequency/switch output (passive)

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### Inputs

None

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### Digital communication

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

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### Power supply

DC 20 to 30 V

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### Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

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### Product safety

CE, C-Tick, EAC marking

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### 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)

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### Marine approvals and certificates

ABS (American Bureau of Shipping)

BV (Bureau Veritas)

LR (Lloyds Register)

BV approval

CCS approval

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### Pressure approvals and certificates

PED, CRN, AD 2000

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## Liquids

### Material certificates

3.1 material

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

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### Hygienic approvals and certificates

3-A, EHEDG, cGMP

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## Gas

### Measuring principle

Coriolis

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### Product headline

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

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

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### 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").

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### 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.

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### Nominal diameter range

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

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## 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):  $\pm 0.1$  % (standard), 0.05 % (option)

Volume flow (liquid):  $\pm 0.1$  %

Mass flow (gas):  $\pm 0.25$  %

Density (liquid):  $\pm 0.0005$  g/cm<sup>3</sup>

**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)

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

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**Gas****Pressure approvals and certificates**

PED, CRN, AD 2000

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**Material certificates**

3.1 material

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

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**Hygienic approvals and certificates**

3-A, EHEDG, cGMP

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**Steam****Measuring principle**

Coriolis

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**Product headline**

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

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

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**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").

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**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.

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## Steam

**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)

**Measured variables**

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

**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):  $\pm 0.0005$  g/cm<sup>3</sup>**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)

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**Steam****Degree of protection**

Standard: IP66/67, type 4X enclosure

Option: IP69

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**Display/Operation**

No local operation

Configuration via web browser and operating tools possible

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**Outputs**

4-20 mA HART (active)

Pulse/frequency/switch output (passive)

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**Inputs**None

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**Digital communication**HART, Modbus RS485, EtherNet/IP, PROFIBUS DP, PROFINET

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**Power supply**DC 20 to 30 V

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**Hazardous area approvals**ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

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**Product safety**CE, C-Tick, EAC marking

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**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)

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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

### 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  $+240\text{ °C}$  ( $+464\text{ °F}$ ). Nominal diameter: DN 8 to 250 ( $\frac{3}{8}$  to 10").

## Density/Concentration

### 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.

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### Nominal diameter range

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

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### 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)

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### Measured variables

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

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### 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):  $\pm 0.0005$  g/cm<sup>3</sup>

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### Measuring range

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

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### Max. process pressure

PN 100, Class 600, 63K

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### Medium temperature range

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

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

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### Ambient temperature range

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

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

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**Density/Concentration****Sensor housing material**

1.4301/1.4307 (304L), corrosion resistant

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**Transmitter housing material**

Compact: AlSi10Mg, coated

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

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**Degree of protection**

Standard: IP66/67, type 4X enclosure

Option: IP69

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**Display/Operation**

4-line backlit display available (no local operation)

Configuration via web browser and operating tools possible

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**Outputs**

4-20 mA HART (active)

Pulse/frequency/switch output (passive)

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**Inputs**

None

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**Digital communication**

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

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**Power supply**

DC 20 to 30 V

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**Hazardous area approvals**

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

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**Product safety**

CE, C-Tick, EAC marking

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## Density/Concentration

### **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)

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### **Marine approvals and certificates**

ABS (American Bureau of Shipping)

BV (Bureau Veritas)

LR (Lloyds Register)

BV approval, CCS approval

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### **Pressure approvals and certificates**

PED, CRN, AD 2000

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### **Material certificates**

3.1 material

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

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### **Hygienic approvals and certificates**

3-A, EHEDG, cGMP

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