Promass 84F

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
- Quality – designed for custody transfer; featuring worldwide recognized metrological approvals
- Flexible data transfer options – numerous communication types
- Automatic recovery of data for servicing

Specs at a glance
- **Max. measurement error** Mass flow (liquid): ±0.1 % (standard), 0.05 % (option) Volume flow (liquid): ±0.1 % Mass flow (gas): ±0.35 % Density (liquid): ±0.0005 g/cm³
- **Measuring range** 0 to 2 200 000 kg/h (0 to 80 840 lb/min)
- **Medium temperature range** Standard: –50 to +200 °C (–58 to +392 °F) High temperature: –50 to +350 °C (–58 to +662 °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 Promass 84 transmitter, Promass 84F offers premium accuracy in measurement of liquids and gases. It will be the preferred solution for customers needing custody transfer measurement.

Features and specifications
Liquids

**Measuring principle**
Coriolis

**Product headline**
The flowmeter with premium accuracy, robustness and custody transfer functionality. Highest measurement performance for liquids and gases under varying, demanding process conditions.

**Sensor features**

**Transmitter features**
Quality – designed for custody transfer; featuring worldwide recognized metrological approvals. Flexible data transfer options – numerous communication types. Automatic recovery of data for servicing. 4-line backlit display with touch control. Device in compact or remote version.

**Nominal diameter range**
DN 8 to 250 (⅜ to 10")
High temperature: DN 25 (1"), DN 50 (2"), DN 80 (3")

**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
Liquids

Max. measurement error
- Mass flow (liquid): ±0.1 % (standard), 0.05 % (option)
- Volume flow (liquid): ±0.1 %
- Mass flow (gas): ±0.35 %
- 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 +200 °C (–58 to +392 °F)
- High temperature: –50 to +350 °C (–58 to +662 °F)

Ambient temperature range
- Standard: –20 to +60 °C (–4 to +140 °F)
- Option: –40 to +60 °C (–40 to +140 °F)

Sensor housing material
1.4301/1.4307 (304L), corrosion resistant

Transmitter housing material
- Powder-coated die-cast aluminium
- 1.4301 (304), sheet
- CF3M (316L), cast

Degree of protection
IP67, type 4X enclosure. Remote transmitter: IP67, 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 modular outputs:
- 0-20 mA (active)/4-20 mA (active/passive)
- Pulse/frequency/switch output (passive)
- Phase shifted pulse
- Relay

### Inputs
1 modular input: status

### Digital communication
- HART
- Modbus RS485

### Power supply
- DC 16 to 62 V
- AC 85 to 260 V (45 to 65 Hz)
- AC 20 to 55 V (45 to 65 Hz)

### Hazardous area approvals
- ATEX, IECEx, FM, CSA, NEPSI, EAC

### Other approvals and certificates
3.1 material, calibration performed on accredited calibration facilities (acc. to ISO/IEC 17025), NAMUR, custody transfer, PED, CRN, AD 2000, 3-A, FDA, NACE MR0175/MR0103, PMI; welding test acc. to EN, ASME, NORSOK

### Product safety
- CE, C-tick, EAC marking

### Metrological approvals and certificates
Calibration performed on accredited calibration facilities (acc. to ISO/IEC 17025), NAMUR
Custody transfer approvals: MI-005 (liquid), PTB 7.251 (gas), MC, NTEP

### Pressure approvals and certificates
- PED, CRN, AD 2000
Liquids

**Material certificates**
3.1 material
NACE MR0175/MR0103, PMI; welding test acc. to EN, ASME, NORSOK

**Hygienic approvals and certificates**
3-A, FDA

Gas

**Measuring principle**
Coriolis

**Product headline**
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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 ±0.05 % (PremiumCal). pressure-rated sensor housing up to 40 bar (580 psi).

**Transmitter features**
Quality – designed for custody transfer; featuring worldwide recognized metrological approvals. Flexible data transfer options – numerous communication types. Automatic recovery of data for servicing. 4-line backlight display with touch control. Device in compact or remote version.

**Nominal diameter range**
DN 8 to 250 (⅜ to 10")
High temperature: DN 25 (1"), DN 50 (2"), DN 80 (3")

**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)
**Promass 84F**

**Gas**

**Measured variables**
Mass flow, density, temperature, volume flow, corrected volume flow, reference density

**Max. measurement error**
- Mass flow (liquid): ±0.1 % (standard), 0.05 % (option)
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**Transmitter housing material**
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- 1.4301 (304), sheet
- CF3M (316L), cast

**Degree of protection**
IP67, type 4X enclosure. Remote transmitter: IP67, type 4X enclosure

**Display/Operation**
4-line backlit display with touch control
(operation from outside)
Configuration via local display and operating tools possible
Gas

**Outputs**
- 4 modular outputs:
  - 0-20 mA (active)/4-20 mA (active/passive)
  - Pulse/frequency/switch output (passive)
  - phase shifted pulse
  - Relay

**Inputs**
- 1 modular input: status

**Digital communication**
- HART
- Modbus RS485

**Power supply**
- DC 16 to 62 V
- AC 85 to 260 V (45 to 65 Hz)
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**Hazardous area approvals**
- ATEX, IECEx, FM, CSA, NEPSI

**Other approvals and certificates**
- 3.1 material, calibration performed on accredited calibration facilities (acc. to ISO/IEC 17025), NAMUR, custody transfer, PED, CRN, AD 2000, 3-A, FDA, NACE MR0175/MR0103, PMI; welding test acc. to EN, ASME, NORSOK

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

**Metrological approvals and certificates**
- Calibration performed on accredited calibration facilities (acc. to ISO/IEC 17025), NAMUR
- Custody transfer approvals: MI-005 (liquid), PTB 7.251 (gas), MC

**Pressure approvals and certificates**
- PED, CRN, AD 2000
Gas

**Material certificates**
3.1 material
NACE MR0175/MR0103, PMI; welding test acc. to EN, ASME,NORSOK

**Hygienic approvals and certificates**
3-A, FDA

Density

**Measuring principle**
Coriolis

**Characteristic / Application**
Coriolis mass flowmeter for custody transfer application.

**Ambient temperature**
-20...+65°C
(-4...+140°F)

**Process temperature**
-50...+200°C
(-58...+392°F)

**Process pressure**
PN 16...100
Cl 150...600
JIS 10...63K

**Wetted parts**
904L/1.4539
Alloy C-22/2.4602

**Output**
4...20mA
Pulse/Frequency (10KHz, 90° phase shifted, active/passive)
Relays/Status
Density

Density/Concentration

Certificates / Approvals
ATEX
FM
CSA
TIIS

Measuring principle
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Density/Concentration

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Density/Concentration

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

**Metrological approvals and certificates**
Calibration performed on accredited calibration facilities (acc. to ISO/IEC 17025), NAMUR Custody transfer approvals: MI-002 (gas), MI-005 (liquid), PTB 7.251 (gas), MC, NTEP

**Pressure approvals and certificates**
PED, CRN, AD 2000

**Material certificates**
3.1 material
NACE MR0175/MR0103, PMI; welding test acc. to EN, ASME, NORSOK
Density/Concentration

**Hygienic approvals and certificates**
3-A, FDA

More information [www.us.endress.com/84F](http://www.us.endress.com/84F)