Promass 83P

Benefits:
- Highest process quality – fully compliant to industry requirements
- Fewer process measuring points – multivariable measurement (flow, density, temperature)
- Space-saving installation – no in/outlet run needs
- Quality – software for filling & dosing, density & concentration, advanced diagnostics
- 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 % Volume flow (liquid): ±0.1 % Mass flow (gas): ±0.5 % Density (liquid): ±0.0005 g/cm³
- **Measuring range** 0 to 70 000 kg/h (0 to 2570 lb/min)
- **Medium temperature range** –50 to +200 °C (–58 to +392 °F)
- **Max. process pressure** PN 63, Class 300, 40K
- **Wetted materials** Measuring tube: 1.4435 (316L) Connection: 1.4435 (316L); 1.4404 (316/316L)

Field of application: Promass P offers the enhanced performance of a bent tube meter and the drainability of a straight tube meter without any compromise. Combined with the Promass 83 transmitter with touch control, and extended functionality like software options for filling and dosing, concentration measurement or advanced diagnostics, Promass 83P offers highly accurate measurement for demanding applications in sterile environments in the life sciences industry.

Features and specifications

**Liquids**

**Measuring principle**
Coriolis
Liquids

**Product headline**
The specialist for life sciences with extended transmitter functionality. Dedicated for applications under sterile conditions in the life sciences industry.

**Sensor features**

**Transmitter features**
Quality – software for filling & dosing, density & concentration, advanced diagnostics. 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 50 (⅜ to 2")

**Wetted materials**
Measuring tube: 1.4435 (316L)
Connection: 1.4435 (316L); 1.4404 (316/316L)

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

**Max. measurement error**
Mass flow (liquid): ±0.1 %
Volume flow (liquid): ±0.1 %
Mass flow (gas): ±0.5 %
Density (liquid): ±0.0005 g/cm³

**Measuring range**
0 to 70 000 kg/h (0 to 2570 lb/min)
**Liquids**

**Max. process pressure**  
PN 63, Class 300, 40K

**Medium temperature range**  
−50 to +200 °C (−58 to +392 °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 (304), 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)  
Relay

**Inputs**  
2 modular inputs:  
Status  
0-20 mA (active)/4-20 mA (active/passive)

**Digital communication**  
HART, PROFIBUS PA/DP, FOUNDATION Fieldbus, Modbus  
RS485, EtherNet/IP
**Liquids**

**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

**Other approvals and certificates**
3.1 material, calibration performed on accredited calibration facilities (acc. to ISO/IEC 17025), NAMUR, SIL  
PED, CRN  
3-A, FDA, ASME BPE, ISPE

**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), NAMUR

**Pressure approvals and certificates**
PED, CRN

**Material certificates**
3.1 material

**Hygienic approvals and certificates**
3-A, FDA, ASME BPE, ISPE

**Gas**

**Measuring principle**
Coriolis
Gas

**Product headline**
The specialist for life sciences with extended transmitter functionality. Dedicated for applications under sterile conditions in the life sciences industry.

**Sensor features**

**Transmitter features**
Quality – software for filling & dosing, density & concentration, advanced diagnostics. 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 50 (⅜ to 2")

**Wetted materials**
Measuring tube: 1.4435 (316L)
Connection: 1.4435 (316L); 1.4404 (316/316L)

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

**Max. measurement error**
Mass flow (liquid): ±0.1 %
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Mass flow (gas): ±0.5 %
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**Measuring range**
0 to 70 000 kg/h (0 to 2570 lb/min)
Gas

**Max. process pressure**
PN 63, Class 300, 40K

**Medium temperature range**
−50 to +200°C (−58 to +392°F)

**Ambient temperature range**
Standard: −20 to +60°C (−4 to +140°F)
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**Sensor housing material**
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**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)
Relay

**Inputs**
2 modular inputs:
Status
0-20 mA (active)/4-20 mA (active/passive)

**Digital communication**
HART, PROFIBUS PA/DP, FOUNDATION Fieldbus, Modbus
RS485, EtherNet/IP
Gas

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DC 16 to 62 V  
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**Pressure approvals and certificates**
PED, CRN

**Material certificates**
3.1 material

**Hygienic approvals and certificates**
3-A, FDA, ASME BPE, ISPE

Density

**Measuring principle**
Coriolis
Density

**Characteristic / Application**
Coriolis mass flowmeter complying with ASME BPE, ISPE, FDA, 3-A

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

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

**Process pressure**
PN 16...40  
Cl 150...300  
JIS 20...40K

**Wetted parts**
316L/1.4435

**Output**
4...20mA  
Pulse/Frequency (10KHz, active/passive)  
Relays/Status

**Certificates / Approvals**
ATEX  
FM  
CSA IECEx TIIS NEPSI

Density/Concentration

**Measuring principle**
Coriolis

**Product headline**
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Dedicated for applications under sterile conditions in the life sciences industry.
Sensor features

Transmitter features
Quality – software for filling & dosing, density & concentration, advanced diagnostics. 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
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Wetted materials
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Density/Concentration

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

**Outputs**
4 modular outputs:
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### Density/Concentration

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More information [www.endress.com/83P](http://www.endress.com/83P)