

Promass 83A



More information and current pricing:

www.fr.endress.com/83A

Benefits:

- Highest process safety – self-drainable measuring tube design
- 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): $\pm 0.1\%$ Volume flow (liquid): $\pm 0.1\%$ Mass flow (gas): $\pm 0.5\%$ Density (liquid): $\pm 0.0005 \text{ g/cm}^3$
- **Measuring range** 0 to 450 kg/h (0 to 16.5 lb/min)
- **Medium temperature range** -50 to $+200$ °C (-58 to $+392$ °F)
- **Max. process pressure** PN 40, Class 300, 20K, 400 bar (5800 psi)
- **Wetted materials** Measuring tube: 1.4539 (904L); Alloy C22, 2.4602 (UNS N06022) Connection: 1.4539 (904L); Alloy C22, 2.4602 (UNS N06022); 1.4404 (316/316L)

Field of application: Promass A is known for its highly accurate measurement of small quantities of liquids and gases for high pressure and low pressure. Combined with the Promass 83 transmitter with touch control, four line display and extended functionality like software options for filling and dosing, concentration measurement or advanced diagnostics, Promass 83A measures accurately smallest quantities of liquids and gases for a wide range of very demanding applications.

Features and specifications

Liquids

Measuring principle

Coriolis

Product headline

The single - tube flowmeter for smallest quantities with extended transmitter functionality. Measuring accurately smallest quantities of liquids and gases for continuous process control.

Sensor features

Highest process safety – self - drainable measuring tube design. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space - saving installation – no in/outlet run needs. Nominal diameter: DN 1 to 4 ($\frac{1}{24}$ to $\frac{1}{8}$ "). Process pressure up to 400 bar (5800 psi).

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 1 to 4 ($\frac{1}{24}$ to $\frac{1}{8}$ ")

Wetted materials

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

Liquids

Measuring range

0 to 450 kg/h (0 to 16.5 lb/min)

Max. process pressure

PN 40, Class 300, 20K, 400 bar (5800 psi)

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)

Liquids

Digital communication

HART, PROFIBUS PA/DP, FOUNDATION Fieldbus, Modbus RS485, EtherNet/IP

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

CRN

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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

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Pressure approvals and certificates

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Material certificates

3.1 material

Hygienic approvals and certificates

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Gas

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Volume flow (liquid): ± 0.1 %

Mass flow (gas): ± 0.5 %

Density (liquid): ± 0.0005 g/cm³

Gas

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Hygienic approvals and certificates

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Density

Measuring principle

Coriolis

Characteristic / Application

The single-tube system for highest measuring accuracy with minimal flow rates.

Ambient temperature

-20...+65°C
(-4...+140°F)

Process temperature

-50...+200°C
(-58...+392°F)

Process pressure

PN 16...400
CI 150...600
JIS 10...63K

Wetted parts

904L/1.4539
Alloy C22/2.4602

Output

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

Certificates / Approvals

ATEX
FM
CSA

Density/Concentration

Measuring principle

Coriolis

Density/Concentration

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