

## Promass 83A



More information and current pricing:

[www.at.endress.com/83A](http://www.at.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  $+200 \text{ }^\circ\text{C}$  ( $-58$  to  $+392 \text{ }^\circ\text{F}$ )
- **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

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### 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.

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### 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).

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### 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.

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### Nominal diameter range

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

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### 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)

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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):  $\pm 0.1$  %  
Volume flow (liquid):  $\pm 0.1$  %  
Mass flow (gas):  $\pm 0.5$  %  
Density (liquid):  $\pm 0.0005$  g/cm<sup>3</sup>

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## Liquids

**Measuring range**

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

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**Max. process pressure**

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

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**Medium temperature range**

-50 to +200 °C (-58 to +392 °F)

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**Ambient temperature range**

Standard: -20 to +60 °C (-4 to +140 °F)

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

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**Sensor housing material**

1.4301 (304), corrosion resistant

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**Transmitter housing material**

Powder-coated die-cast aluminium

1.4301 (304), sheet

CF3M (316L), cast

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**Degree of protection**

IP67, type 4X enclosure. Remote transmitter: IP67, type 4X enclosure

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**Display/Operation**

4-line backlit display with touch control (operation from outside)

Configuration via local display and operating tools possible

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**Outputs**

4 modular outputs:

0-20 mA (active)/4-20 mA (active/passive)

Pulse/frequency/switch output (passive)

Relay

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**Inputs**

2 modular inputs:

Status

0-20 mA (active)/4-20 mA (active/passive)

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## Liquids

### Digital communication

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

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### 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)

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### Hazardous area approvals

ATEX, IECEX, FM, CSA, NEPSI

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### Other approvals and certificates

3.1 material, calibration performed on accredited calibration facilities (acc. to ISO/IEC 17025), NAMUR, SIL

CRN

3-A

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### Product safety

CE, C-tick, EAC marking

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### Functional safety

Functional safety according to IEC 61508, applicable in safety-relevant applications in accordance with IEC 61511

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### Metrological approvals and certificates

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### Pressure approvals and certificates

CRN

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### Material certificates

3.1 material

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### Hygienic approvals and certificates

3-A

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## Gas

**Measuring principle**

Coriolis

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

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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).

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**Nominal diameter range**

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

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**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

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

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

Mass flow (gas):  $\pm 0.5$  %

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## Gas

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2 modular inputs:

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## Gas

**Digital communication**

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

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**Power supply**

DC 16 to 62 V

AC 85 to 260 V (45 to 65 Hz)

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**Hazardous area approvals**

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**Other approvals and certificates**

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**Pressure approvals and certificates**

CRN

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**Material certificates**

3.1 material

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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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**Density/Concentration****Max. process pressure**

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## Density/Concentration

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3-A

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