

Promass 83S



More information and current pricing:

www.de.endress.com/83S

Benefits:

- Increased process safety – easy cleanable and fully self-drainable 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): ± 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 $+150$ °C (-58 to $+302$ °F)
- **Max. process pressure** PN 63, Class 300, 40K
- **Wetted materials** Measuring tube: 1.4539 (904L) Connection: 1.4435 (316L); 1.4404 (316/316L)

Field of application: Promass S is at the forefront in hygienic design – Endress+Hauser's industry-optimized measurement solution meets all the hygienic requirements for installation in the Food and Beverage industry. 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 83S offers superior performance in applications requiring optimal cleanability.

Features and specifications

Liquids

Measuring principle

Coriolis

Product headline

The easy-to-clean flowmeter with self-drainable single-tube system and extended transmitter functionality. Dedicated for applications requiring optimal cleanability under hygienic conditions.

Sensor features

Reduced installation costs – fully self-drainable tube design enables compact horizontal mounting. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in/outlet run needs. Large range of hygienic process connections. 3-A and EHEDG conform.

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 ($\frac{3}{8}$ to 2")

Wetted materials

Measuring tube: 1.4539 (904L)

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

Liquids

Measuring range

0 to 70 000 kg/h (0 to 2570 lb/min)

Max. process pressure

PN 63, Class 300, 40K

Medium temperature range

-50 to +150 °C (-58 to +302 °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

PED, CRN

3-A, FDA

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

Gas

Measuring principle

Coriolis

Product headline

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Sensor features

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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.

Nominal diameter range

DN 8 to 50 ($\frac{3}{8}$ to 2")

Wetted materials

Measuring tube: 1.4539 (904L)

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

Gas

Measuring range

0 to 70 000 kg/h (0 to 2570 lb/min)

Max. process pressure

PN 63, Class 300, 40K

Medium temperature range

-50 to +150 °C (-58 to +302 °F)

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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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)

Gas

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)

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Pressure approvals and certificates

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Material certificates

3.1 material

Hygienic approvals and certificates

3-A, FDA

Density

Measuring principle

Coriolis

Characteristic / Application

Coriolis mass flow and density measurement for the food and beverage industry.

Ambient temperature

-20...+65°C
(-4...+140°F)

Process temperature

-50...+150°C
(-58...+302°F)

Process pressure

PN 16...40
CI 150...300
JIS 20...40K

Wetted parts

904L/1.4539

Output

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

Certificates / Approvals

ATEX
FM
CSA
IECEX
TIIS
NEPSI

Density/Concentration

Measuring principle

Coriolis

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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.

Nominal diameter range

DN 8 to 50 ($\frac{3}{8}$ to 2")

Wetted materials

Measuring tube: 1.4539 (904L)

Connection: 1.4435 (316L); 1.4404 (316/316L)

Measured variables

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Density/Concentration**Measuring range**

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Transmitter housing material

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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:

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)

Density/Concentration**Digital communication**

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3.1 material

Hygienic approvals and certificates

3-A, FDA

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