

Promass 83H



More information and current pricing:

www.dk.endress.com/83H

Benefits:

- Maximum safety for chemically aggressive fluids – corrosion-resistant wetted parts
- 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, Tantalum only): ± 0.5 % Density (liquid): ± 0.0005 g/cm³
- **Measuring range** 0 to 70 000 kg/h (0 to 2570 lb/min)
- **Medium temperature range** Tantalum: -50 to $+150$ °C (-58 to $+302$ °F) Zirconium: -50 to $+200$ °C (-58 to $+392$ °F)
- **Max. process pressure** PN 40, Class 300, 20K
- **Wetted materials** Measuring tube: Tantalum 2.5W; 702 (UNS R60702) Connection: Tantalum; 702 (UNS R60702)

Field of application: The chemically resistant single-tube design of the Promass H is destined for applications requiring highest corrosion resistance. 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 83H offers premium accuracy in measurement of liquids and gases.

Features and specifications

Liquids

Measuring principle

Coriolis

Product headline

The chemically resistant single-tube flowmeter with extended transmitter functionality. Highly accurate measurement of liquids and gases in applications requiring highest corrosion resistance.

Sensor features

Maximum safety for chemically aggressive fluids – corrosion-resistant wetted parts. Fewer process measuring points – multivariable measurement (flow, density, temperature). Spacesaving installation – no in/outlet run needs. Measuring tube made of Tantalum, Zirconium. Nominal diameter: DN 8 to 50 ($\frac{3}{8}$ to 2").

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: Tantalum 2.5W; 702 (UNS R60702)
Connection: Tantalum; 702 (UNS R60702)

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, Tantalum only): ± 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 40, Class 300, 20K

Medium temperature range

Tantalum: -50 to +150 °C (-58 to +302 °F)

Zirconium: -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

PED, CRN

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

Gas

Measuring principle

Coriolis

Gas

Product headline

The chemically resistant single-tube flowmeter with extended transmitter functionality. Highly accurate measurement of liquids and gases in applications requiring highest corrosion resistance.

Sensor features

Maximum safety for chemically aggressive fluids – corrosion-resistant wetted parts. Fewer process measuring points – multivariable measurement (flow, density, temperature). Spacesaving installation – no in/outlet run needs. Measuring tube made of Tantalum, Zirconium. Nominal diameter: DN 8 to 50 ($\frac{3}{8}$ to 2").

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: Tantalum 2.5W; 702 (UNS R60702)
Connection: Tantalum; 702 (UNS R60702)

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, Tantalum only): ± 0.5 %
Density (liquid): ± 0.0005 g/cm³

Measuring range

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

Gas

Max. process pressure

PN 40, Class 300, 20K

Medium temperature range

Tantalum: -50 to +150 °C (-58 to +302 °F)

Zirconium: -50 to +200 °C (-58 to +392 °F)

Ambient temperature range

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

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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)

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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Material certificates

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Density

Measuring principle

Coriolis

Density

Characteristic / Application

Balanced single-tube system, "Fit-and-Forget" installation

Design:

Easy to clean, hygienic, careful handling of the medium
- chemically resistant material

Ambient temperature

-20...+65°C
(-4...+140°F)

Process temperature

-50...+200°C
(-58...+392°F)

Process pressure

PN 40
CI 150...300
JIS 10...20K

Wetted parts

Zirconium/R60702

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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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: Tantalum 2.5W; 702 (UNS R60702)
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Density/Concentration**Max. process pressure**PN 40, Class 300, 20K

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Sensor housing material1.4301 (304), corrosion resistant

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Degree of protectionIP67, 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:

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Relay

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2 modular inputs:

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Density/Concentration

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3.1 material

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