

# Кориолисовые массовые расходомеры

## Promass 80H, 80P

### Технические характеристики

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## Promass 80H



### 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
- Cost-effective – dedicated design for standard applications
- Safe operation – display provides easy readable process information
- Fully industry compliant – IEC/EN/NAMUR

### Specs at a glance

- **Max. measurement error** Mass flow (liquid):  $\pm 0.15\%$  Volume flow (liquid):  $\pm 0.15\%$  Mass flow (gas, Tantalum only):  $\pm 0.5\%$  Density (liquid):  $\pm 0.0005 \text{ g/cm}^3$
- **Measuring range** 0 to 70 000 kg/h (0 to 2570 lb/min)
- **Medium temperature range** Tantalum:  $-50$  to  $+150 \text{ }^\circ\text{C}$  ( $-58$  to  $+302 \text{ }^\circ\text{F}$ ) Zirconium:  $-50$  to  $+200 \text{ }^\circ\text{C}$  ( $-58$  to  $+392 \text{ }^\circ\text{F}$ )
- **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 provides highly accurate measurement of liquids and gases in applications requiring highest corrosion resistance. Combined with the proven Promass 80 transmitter with push buttons, Promass 80H offers a cost effective solution for these kind of applications.

## Features and specifications

### Liquids

#### Measuring principle

Coriolis

## Liquids

### Product headline

The chemically resistant single-tube flowmeter with a compact or remote transmitter. 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

Cost-effective – dedicated design for standard applications. Safe operation – display provides easy readable process information. Fully industry compliant – IEC/EN/NAMUR. 2-line backlit display with push buttons. 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

### Max. measurement error

Mass flow (liquid):  $\pm 0.15$  %  
Volume flow (liquid):  $\pm 0.15$  %  
Mass flow (gas, Tantalum only):  $\pm 0.5$  %  
Density (liquid):  $\pm 0.0005$  g/cm<sup>3</sup>

### Measuring range

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

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## Liquids

**Max. process pressure**

PN 40, Class 300, 20K

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**Medium temperature range**

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

Zirconium: -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**

2-line backlit display with push buttons

Configuration via local display and operating tools possible

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**Outputs**

3 outputs:

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

Pulse/frequency/switch output (passive)

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**Inputs**

Status input

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**Digital communication**

HART

PROFIBUS PA

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## 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)

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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  
PED, CRN

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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

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

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### Pressure approvals and certificates

PED, CRN

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### Material certificates

3.1 material

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## Gas

### Measuring principle

Coriolis

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### Product headline

The chemically resistant single-tube flowmeter with a compact or remote transmitter. Highly accurate measurement of liquids and gases in applications requiring highest corrosion resistance.

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## Gas

**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").

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**Transmitter features**

Cost-effective – dedicated design for standard applications. Safe operation – display provides easy readable process information. Fully industry compliant – IEC/EN/NAMUR. 2-line backlit display with push buttons. Device in compact or remote version.

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**Nominal diameter range**

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

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**Wetted materials**

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

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**Measured variables**

Mass flow, density, temperature, volume flow, corrected volume flow, reference density

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**Max. measurement error**

Mass flow (liquid):  $\pm 0.15$  %  
Volume flow (liquid):  $\pm 0.15$  %  
Mass flow (gas, Tantalum only):  $\pm 0.5$  %  
Density (liquid):  $\pm 0.0005$  g/cm<sup>3</sup>

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**Measuring range**

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

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**Max. process pressure**

PN 40, Class 300, 20K

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**Medium temperature range**

Tantalum:  $-50$  to  $+150$  °C ( $-58$  to  $+302$  °F)  
Zirconium:  $-50$  to  $+200$  °C ( $-58$  to  $+392$  °F)

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## Gas

**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**

2-line backlit display with push buttons

Configuration via local display and operating tools possible

**Outputs**

3 outputs:

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

Pulse/frequency/switch output (passive)

**Inputs**

Status input

**Digital communication**

HART

PROFIBUS PA

**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

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**Gas****Other approvals and certificates**

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

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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**

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

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**Pressure approvals and certificates**

PED, CRN

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**Material certificates**

3.1 material

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**Density****Measuring principle**

Coriolis

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**Characteristic / Application**

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

Design:

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

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**Ambient temperature**

-20...+65°C  
(-4...+140°F)

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## Density

**Process temperature**

-50...+200°C  
(-58...+392°F)

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**Process pressure**

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

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**Wetted parts**

Zirconium 702/R60702

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**Output**

4...20 mA  
Pulse/Frequency  
Status

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**Certificates / Approvals**

ATEX  
FM  
CSA

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## Density/Concentration

**Measuring principle**

Coriolis

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**Product headline**

The chemically resistant single-tube flowmeter with a compact or remote transmitter. Highly accurate measurement of liquids and gases in applications requiring highest corrosion resistance.

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**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").

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## Density/Concentration

### Transmitter features

Cost-effective – dedicated design for standard applications. Safe operation – display provides easy readable process information. Fully industry compliant – IEC/EN/NAMUR. 2-line backlit display with push buttons. 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

### Max. measurement error

Mass flow (liquid):  $\pm 0.15$  %

Volume flow (liquid):  $\pm 0.15$  %

Mass flow (gas, Tantalum only):  $\pm 0.5$  %

Density (liquid):  $\pm 0.0005$  g/cm<sup>3</sup>

### 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

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## Density/Concentration

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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

2-line backlit display with push buttons  
Configuration via local display and operating tools possible

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### Outputs

3 outputs:  
0-20 mA (active)/4-20 mA (active/passive)  
Pulse/frequency/switch output (passive)

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### Inputs

Status input

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### Digital communication

HART  
PROFIBUS PA

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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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### 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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Density/Concentration

**Metrological approvals and certificates**

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

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**Pressure approvals and certificates**

PED, CRN

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**Material certificates**

3.1 material

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## Promass 80P



### 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
- Cost-effective – dedicated design for standard applications
- Safe operation – display provides easy readable process information
- Fully industry compliant – IEC/EN/NAMUR

### Specs at a glance

- **Max. measurement error** Mass flow (liquid):  $\pm 0.15\%$  Volume flow (liquid):  $\pm 0.15\%$  Mass flow (gas):  $\pm 0.5\%$  Density (liquid):  $\pm 0.0005 \text{ g/cm}^3$
- **Measuring range** 0 to 70 000 kg/h (0 to 2570 lb/min)
- **Medium temperature range**  $-50$  to  $+200 \text{ }^\circ\text{C}$  ( $-58$  to  $+392 \text{ }^\circ\text{F}$ )
- **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, between accuracy and drainability. Combined with the proven Promass 80 transmitter with push buttons, Promass 80P offers a cost effective solution for applications in sterile environments in the life sciences industry.

## Features and specifications

### Liquids

### Measuring principle

Coriolis

## Liquids

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### Product headline

The specialist for life sciences with a compact or remote transmitter. Dedicated for applications under sterile conditions in the life sciences industry.

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### Sensor features

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. ASME BPE, 3-A and EHEDG conform & low delta ferrite. Electropolished measuring tube in 1.4435 (316L).

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### Transmitter features

Cost-effective – dedicated design for standard applications. Safe operation – display provides easy readable process information. Fully industry compliant – IEC/EN/NAMUR. 2-line backlit display with push buttons. Device in compact or remote version.

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### Nominal diameter range

DN 8 to 50 (3/8 to 2")

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### Wetted materials

Measuring tube: 1.4435 (316L)

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

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### Measured variables

Mass flow, density, temperature, volume flow, corrected volume flow, reference density

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### Max. measurement error

Mass flow (liquid):  $\pm 0.15$  %

Volume flow (liquid):  $\pm 0.15$  %

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

Density (liquid):  $\pm 0.0005$  g/cm<sup>3</sup>

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### Measuring range

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

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## Liquids

**Max. process pressure**

PN 63, Class 300, 40K

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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**

2-line backlit display with push buttons

Configuration via local display and operating tools possible

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**Outputs**

3 outputs:

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

Pulse/frequency/switch output (passive)

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**Inputs**

Status input

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**Digital communication**

HART

PROFIBUS PA

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## 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)

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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

PED, CRN

3-A, FDA, ASME BPE, ISPE

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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**

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

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**Pressure approvals and certificates**

PED, CRN

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**Material certificates**

3.1 material

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**Hygienic approvals and certificates**

3-A, FDA, ASME BPE, ISPE

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## Gas

**Measuring principle**

Coriolis

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## Gas

**Product headline**

The specialist for life sciences with a compact or remote transmitter. Dedicated for applications under sterile conditions in the life sciences industry.

**Sensor features**

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. ASME BPE, 3-A and EHEDG conform & low delta ferrite. Electropolished measuring tube in 1.4435 (316L).

**Transmitter features**

Cost-effective – dedicated design for standard applications. Safe operation – display provides easy readable process information. Fully industry compliant – IEC/EN/NAMUR. 2-line backlit display with push buttons. Device in compact or remote version.

**Nominal diameter range**

DN 8 to 50 (3/8 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

**Max. measurement error**

Mass flow (liquid):  $\pm 0.15$  %

Volume flow (liquid):  $\pm 0.15$  %

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

Density (liquid):  $\pm 0.0005$  g/cm<sup>3</sup>

**Measuring range**

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

## Gas

**Max. process pressure**

PN 63, Class 300, 40K

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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**

2-line backlit display with push buttons

Configuration via local display and operating tools possible

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**Outputs**

3 outputs:

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

Pulse/frequency/switch output (passive)

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**Inputs**

Status input

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**Digital communication**

HART

PROFIBUS PA

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## Gas

**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

## Density

**Measuring principle**

Coriolis

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**Density****Characteristic / Application**

Coriolis mass flowmeter complying with ASME BPE, ISPE, FDA, 3-A

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**Ambient temperature**

-20...+65°C  
(-4...+140°F)

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**Process temperature**

-50...+200°C  
(-58...+392°F)

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**Process pressure**

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

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**Wetted parts**

316L/1.4435

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**Output**

4...20mA  
Pulse/Frequency  
Status

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**Certificates / Approvals**

ATEX  
FM  
CSA IECEx TIIS NEPSI

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**Density/Concentration****Measuring principle**

Coriolis

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**Product headline**

The specialist for life sciences with a compact or remote transmitter. Dedicated for applications under sterile conditions in the life sciences industry.

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## Density/Concentration

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### Sensor features

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. ASME BPE, 3-A and EHEDG conform & low delta ferrite. Electropolished measuring tube in 1.4435 (316L).

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### Transmitter features

Cost-effective – dedicated design for standard applications. Safe operation – display provides easy readable process information. Fully industry compliant – IEC/EN/NAMUR. 2-line backlit display with push buttons. Device in compact or remote version.

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### Nominal diameter range

DN 8 to 50 (3/8 to 2")

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### Wetted materials

Measuring tube: 1.4435 (316L)

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

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### Measured variables

Mass flow, density, temperature, volume flow, corrected volume flow, reference density

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### Max. measurement error

Mass flow (liquid):  $\pm 0.15\%$

Volume flow (liquid):  $\pm 0.15\%$

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

Density (liquid):  $\pm 0.0005 \text{ g/cm}^3$

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### Measuring range

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

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### Max. process pressure

PN 63, Class 300, 40K

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### Medium temperature range

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

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**Density/Concentration****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**

2-line backlit display with push buttons

Configuration via local display and operating tools possible

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**Outputs**

3 outputs:

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

Pulse/frequency/switch output (passive)

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**Inputs**Status input

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**Digital communication**

HART

PROFIBUS PA

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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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Density/Concentration

**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**

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

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**Pressure approvals and certificates**

PED, CRN

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**Material certificates**

3.1 material

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**Hygienic approvals and certificates**

3-A, FDA, ASME BPE, ISPE

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