

Promass 83E



More information and current pricing:

www.de.endress.com/83E

Benefits:

- Cost-effective – multi-purpose device; an alternative to conventional volumetric flowmeters
- 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): $\pm 0.15\%$ (standard), 0.10% (option) Volume flow (liquid): $\pm 0.15\%$ Mass flow (gas): $\pm 0.75\%$ Density (liquid): $\pm 0.0005 \text{ g/cm}^3$
- **Measuring range** 0 to 180 000 kg/h (0 to 6600 lb/min)
- **Medium temperature range** -40 to $+140 \text{ }^\circ\text{C}$ (-40 to $+284 \text{ }^\circ\text{F}$)
- **Max. process pressure** PN 100, Class 600, 63K
- **Wetted materials** Measuring tube: 1.4539 (904L) Connection: 1.4404 (316/316L)

Field of application: Promass E has a long standing reputation as a cost efficient solution for Coriolis applications. 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 83E offers highly accurate measurement of liquids and gases for a wide range of applications.

Features and specifications

Liquids

Measuring principle

Coriolis

Product headline

The flowmeter for minimized cost of ownership with extended transmitter functionality. Highly accurate measurement of liquids and gases for a wide range of standard applications.

Sensor features

Cost-effective – multi-purpose device; an alternative to conventional volumetric flowmeters. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in/outlet run needs. Compact dual-tube system. Medium temperature up to +140 °C (+284 °F).

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 80 (3/8 to 3")

Wetted materials

Measuring tube: 1.4539 (904L)

Connection: 1.4404 (316/316L)

Measured variables

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

Max. measurement error

Mass flow (liquid): ±0.15 % (standard), 0.10 % (option)

Volume flow (liquid): ±0.15 %

Mass flow (gas): ±0.75 %

Density (liquid): ±0.0005 g/cm³

Liquids

Measuring range

0 to 180 000 kg/h (0 to 6600 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

-40 to +140 °C (-40 to +284 °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, marine

PED, CRN

3-A

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

Marine approvals and certificates

Marine approval

Pressure approvals and certificates

PED, CRN

Material certificates

3.1 material

Gas

Measuring principle

Coriolis

Product headline

The flowmeter for minimized cost of ownership with extended transmitter functionality. Highly accurate measurement of liquids and gases for a wide range of standard applications.

Sensor features

Cost-effective – multi-purpose device; an alternative to conventional volumetric flowmeters. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in/outlet run needs. Compact dual-tube system. Medium temperature up to +140 °C (+284 °F).

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 80 (3/8 to 3")

Wetted materials

Measuring tube: 1.4539 (904L)

Connection: 1.4404 (316/316L)

Measured variables

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

Max. measurement error

Mass flow (liquid): ±0.15 % (standard), 0.10 % (option)

Volume flow (liquid): ±0.15 %

Mass flow (gas): ±0.75 %

Density (liquid): ±0.0005 g/cm³

Gas

Measuring range

0 to 180 000 kg/h (0 to 6600 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

-40 to +140 °C (-40 to +284 °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)

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)

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, marine

PED, CRN

3-A

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

Marine approvals and certificates

Marine approval

Pressure approvals and certificates

PED, CRN

Material certificates

3.1 material

Gas

Hygienic approvals and certificates

3-A

Density

Measuring principle

Coriolis

Characteristic / Application

An alternative to conventional volumetric flowmeters, this flowmeter has a low "cost of ownership".

Ambient temperature

-20...+65°C
(-4...+140°F)

Process temperature

-40...+125°C
(-40...+257°F)

Process pressure

PN 40...100
CI150...600
JIS 10...63K

Wetted parts

904L/1.4539

Output

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

Certificates / Approvals

ATEX
FM
CSA

Density/Concentration

Measuring principle

Coriolis

Product headline

The flowmeter for minimized cost of ownership with extended transmitter functionality. Highly accurate measurement of liquids and gases for a wide range of standard applications.

Sensor features

Cost-effective – multi-purpose device; an alternative to conventional volumetric flowmeters. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in/outlet run needs. Compact dual-tube system. Medium temperature up to +140 °C (+284 °F).

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 80 (3/8 to 3")

Wetted materials

Measuring tube: 1.4539 (904L)

Connection: 1.4404 (316/316L)

Measured variables

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

Max. measurement error

Mass flow (liquid): ±0.15 % (standard), 0.10 % (option)

Volume flow (liquid): ±0.15 %

Mass flow (gas): ±0.75 %

Density (liquid): ±0.0005 g/cm³

Density/Concentration**Measuring range**

0 to 180 000 kg/h (0 to 6600 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

-40 to +140 °C (-40 to +284 °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)

Density/Concentration**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

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

Marine approvals and certificates

Marine approval

Pressure approvals and certificates

PED, CRN

Material certificates

3.1 material

More information www.de.endress.com/83E