

# Proline Promass O 500 Coriolis flowmeter

Robust high-pressure flowmeter, as remote version with up to 4 I/Os



More information and current pricing:

[www.apsc.endress.com/805B](http://www.apsc.endress.com/805B)

## Benefits:

- Maximum safety – highest resistance to stress corrosion cracking
- Fewer process measuring points – multivariable measurement (flow, density, temperature)
- Space-saving installation – no in/outlet run needs
- Full access to process and diagnostic information – numerous, freely combinable I/Os and fieldbuses
- Reduced complexity and variety – freely configurable I/O functionality
- Integrated verification – Heartbeat Technology

## Specs at a glance

- **Max. measurement error** Mass flow (liquid):  $\pm 0.10\%$  (standard),  $0.05\%$  (option) Volume flow (liquid):  $\pm 0.10\%$  Mass flow (gas):  $\pm 0.35\%$  Density (liquid):  $\pm 0.0005\text{ g/cm}^3$
- **Measuring range** 0 to 800 000 kg/h (0 to 29 400 lb/min)
- **Medium temperature range**  $-40$  to  $+205\text{ }^\circ\text{C}$  ( $-40$  to  $+401\text{ }^\circ\text{F}$ )
- **Max. process pressure** PN 250, Class 1500
- **Wetted materials** Measuring tube: 25Cr duplex (Super Duplex), 1.4410 (UNS S32750) Connection: 25Cr duplex (Super Duplex), 1.4410 (F53)

**Field of application:** Promass O is designed for premium accuracy of liquids and gases at the highest process pressures in the oil and gas industry. The sensor is fully suitable for offshore conditions and resistant to stress corrosion cracking. With its innovative<sup>3</sup> remote transmitter Promass O 500 maximizes installation flexibility and operational safety in demanding environments. Heartbeat Technology ensures safe processes.

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## Features and specifications

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### Liquids

**Measuring principle**

Coriolis

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**Product headline**

Robust high-pressure flowmeter, as remote version with up to 4 I/Os. For premium accuracy at highest process pressures, fully suitable for offshore conditions.

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**Sensor features**

Maximum safety – highest resistance to stress corrosion cracking. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in-/outlet run needs. Measuring tube in 25Cr Duplex, 1.4410 (UNS S32750). Process pressure up to PN 250 (Class 1500). Nominal diameter: DN 80 to 250 (3 to 10").

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**Transmitter features**

Full access to process and diagnostic information – numerous, freely combinable I/Os and fieldbuses. Reduced complexity and variety – freely configurable I/O functionality. Integrated verification – Heartbeat Technology.

Remote version with up to 4 I/Os. Backlit display with touch control and WLAN access. Standard cable between sensor and transmitter.

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**Nominal diameter range**

DN 80 to 250 (3 to 10")

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**Wetted materials**

Measuring tube: 25Cr duplex (Super Duplex), 1.4410 (UNS S32750)

Connection: 25Cr duplex (Super Duplex), 1.4410 (F53)

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**Measured variables**

Mass flow, density, temperature, volume flow, corrected volume flow (API tables), reference density, concentration

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## Liquids

**Max. measurement error**

Mass flow (liquid):  $\pm 0.10$  % (standard), 0.05 % (option)

Volume flow (liquid):  $\pm 0.10$  %

Mass flow (gas):  $\pm 0.35$  %

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

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**Measuring range**

0 to 2 200 000 kg/h (0 to 80 850 lb/min)

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**Max. process pressure**

PN 250, Class 1500

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**Medium temperature range**

-40 to +205 °C (-40 to +401 °F)

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**Ambient temperature range**

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

Option: -50 to +60 °C (-58 to +140 °F)

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**Sensor housing material**

1.4404 (316L), highest corrosion resistance

Sensor connection housing (standard): AlSi10Mg, coated

Sensor connection housing (option): 1.4301 (304); 1.4404 (316L);

1.4409 (CF3M) similar to 316L

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**Transmitter housing material**

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; Polycarbonat

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**Degree of protection**

Sensor remote version (standard): IP66/67, type 4X enclosure

Sensor remote version (option): IP69. Transmitter remote version:

IP66/67, 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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## Liquids

### Outputs

4 outputs:

4-20 mA HART (active/passive)

4-20 mA WirelessHART

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

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### Inputs

Status input

4-20 mA input

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### Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus  
RS485, Profinet, Ethernet/IP, OPC-UA

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### Power supply

DC 24 V

AC 100 to 230 V

AC 100 to 230 V / DC 24 V (non-hazardous area)

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### Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

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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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## Liquids

### **Metrological approvals and certificates**

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

Heartbeat Technology complies with the requirements for measurement traceability according to ISO 9001:2015 – Section 7.1.5.2 a (TÜV SÜD attestation)

MI-005 Liquids other than water (Hydrocarbons)

MI-002, PTB

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### **Marine approvals and certificates**

LR approval, DNV GL approval, ABS approval, BV approval, CCS approval

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### **Pressure approvals and certificates**

PED, CRN, AD 2000

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### **Material certificates**

3.1 material

NACE MR0175/MR0103, PMI; welding test acc. to EN ISO, ASME, NORSOK

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## Gas

### **Measuring principle**

Coriolis

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### **Product headline**

Robust high-pressure flowmeter, as remote version with up to 4 I/Os. For premium accuracy at highest process pressures, fully suitable for offshore conditions.

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### **Sensor features**

Maximum safety – highest resistance to stress corrosion cracking. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in-/outlet run needs. Measuring tube in 25Cr Duplex, 1.4410 (UNS S32750). Process pressure up to PN 250 (Class 1500). Nominal diameter: DN 80 to 250 (3 to 10").

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## Gas

**Transmitter features**

Full access to process and diagnostic information – numerous, freely combinable I/Os and fieldbuses. Reduced complexity and variety – freely configurable I/O functionality. Integrated verification – Heartbeat Technology.

Remote version with up to 4 I/Os. Backlit display with touch control and WLAN access. Standard cable between sensor and transmitter.

**Nominal diameter range**

DN 80 to 250 (3 to 10")

**Wetted materials**

Measuring tube: 25Cr duplex (Super Duplex), 1.4410 (UNS S32750)

Connection: 25Cr duplex (Super Duplex), 1.4410 (F53)

**Measured variables**

Mass flow, density, temperature, volume flow, corrected volume flow (API tables), reference density, concentration

**Max. measurement error**

Mass flow (liquid):  $\pm 0.10$  % (standard), 0.05 % (option)

Volume flow (liquid):  $\pm 0.10$  %

Mass flow (gas):  $\pm 0.35$  %

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

**Measuring range**

0 to 2 200 000 kg/h (0 to 80 850 lb/min)

**Max. process pressure**

PN 250, Class 1500

**Medium temperature range**

-40 to +205 °C (-40 to +401 °F)

**Ambient temperature range**

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

Option: -50 to +60 °C (-58 to +140 °F)

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**Gas****Sensor housing material**

1.4404 (316L), highest corrosion resistance

Sensor connection housing (standard): AlSi10Mg, coated

Sensor connection housing (option): 1.4301 (304); 1.4404 (316L);  
1.4409 (CF3M) similar to 316L

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**Transmitter housing material**

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; Polycarbonat

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**Degree of protection**

Sensor remote version (standard): IP66/67, type 4X enclosure

Sensor remote version (option): IP69. Transmitter remote version:  
IP66/67, 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 outputs:

4-20 mA HART (active/passive)

4-20 mA WirelessHART

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

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**Inputs**

Status input

4-20 mA input

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**Digital communication**

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus  
RS485, Profinet, Ethernet/IP, OPC-UA

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**Gas****Power supply**

DC 24 V

AC 100 to 230 V

AC 100 to 230 V / DC 24 V (non-hazardous area)

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**Hazardous area approvals**

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

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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)

Heartbeat Technology complies with the requirements for measurement traceability according to ISO 9001:2015 – Section 7.1.5.2 a (TÜV SÜD attestation)

MI-005 Liquids other than water (Hydrocarbons)

MI-002, PTB

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**Marine approvals and certificates**

LR approval, DNV GL approval, ABS approval, BV approval, CCS approval

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**Pressure approvals and certificates**

PED, CRN, AD 2000

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**Material certificates**

3.1 material

NACE MR0175/MR0103, PMI; welding test acc. to EN ISO, ASME, NORSOK

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**Steam****Measuring principle**

Coriolis



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## Steam

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### Product headline

Robust high-pressure flowmeter, as remote version with up to 4 I/Os. For premium accuracy at highest process pressures, fully suitable for offshore conditions.

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### Sensor features

Maximum safety – highest resistance to stress corrosion cracking. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in-/outlet run needs. Measuring tube in 25Cr Duplex, 1.4410 (UNS S32750). Process pressure up to PN 250 (Class 1500). Nominal diameter: DN 80 to 250 (3 to 10").

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### Transmitter features

Full access to process and diagnostic information – numerous, freely combinable I/Os and fieldbuses. Reduced complexity and variety – freely configurable I/O functionality. Integrated verification – Heartbeat Technology.

Remote version with up to 4 I/Os. Backlit display with touch control and WLAN access. Standard cable between sensor and transmitter.

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### Nominal diameter range

DN 80 to 150 (3 to 6")

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### Wetted materials

Measuring tube: 25Cr duplex (Super Duplex), 1.4410 (UNS S32750)  
Connection: 25Cr duplex (Super Duplex), 1.4410 (F53)

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### Measured variables

Mass flow, density, temperature, volume flow, corrected volume flow (API tables), reference density, concentration

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### Max. measurement error

Mass flow (liquid):  $\pm 0.10$  % (standard), 0.05 % (option)

Volume flow (liquid):  $\pm 0.10$  %

Mass flow (gas):  $\pm 0.35$  %

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

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**Steam****Measuring range**

0 to 800 000 kg/h (0 to 29 400 lb/min)

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**Max. process pressure**

PN 250, Class 1500

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**Medium temperature range**

-40 to +205 °C (-40 to +401 °F)

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**Ambient temperature range**

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

Option: -50 to +60 °C (-58 to +140 °F)

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**Sensor housing material**

1.4404 (316L), highest corrosion resistance

Sensor connection housing (standard): AlSi10Mg, coated

Sensor connection housing (option): 1.4301 (304); 1.4404 (316L);

1.4409 (CF3M) similar to 316L

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**Transmitter housing material**

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; Polycarbonat

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**Degree of protection**

Sensor remote version (standard): IP66/67, type 4X enclosure

Sensor remote version (option): IP69. Transmitter remote version:

IP66/67, 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 outputs:

4-20 mA HART (active/passive)

4-20 mA WirelessHART

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

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**Steam**

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**Inputs**

Status input  
4-20 mA input

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**Digital communication**

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus  
RS485, Profinet, Ethernet/IP, OPC-UA

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**Power supply**

DC 24 V  
AC 100 to 230 V  
AC 100 to 230 V / DC 24 V (non-hazardous area)

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**Hazardous area approvals**

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

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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)  
Heartbeat Technology complies with the requirements for measurement traceability according to ISO 9001:2015 – Section 7.1.5.2 a (TÜV SÜD attestation)  
MI-005 Liquids other than water (Hydrocarbons)  
MI-002, PTB

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**Marine approvals and certificates**

LR approval, DNV GL approval, ABS approval, BV approval, CCS approval

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**Pressure approvals and certificates**

PED, CRN, AD 2000

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**Steam****Material certificates**

3.1 material

NACE MR0175/MR0103, PMI; welding test acc. to EN ISO, ASME, NORSOK

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

Coriolis

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**Product headline**

Robust high-pressure flowmeter, as remote version with up to 4 I/Os. For premium accuracy at highest process pressures, fully suitable for offshore conditions.

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**Sensor features**

Maximum safety – highest resistance to stress corrosion cracking. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in-/outlet run needs. Measuring tube in 25Cr Duplex, 1.4410 (UNS S32750). Process pressure up to PN 250 (Class 1500). Nominal diameter: DN 80 to 250 (3 to 10").

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**Transmitter features**

Full access to process and diagnostic information – numerous, freely combinable I/Os and fieldbuses. Reduced complexity and variety – freely configurable I/O functionality. Integrated verification – Heartbeat Technology.

Remote version with up to 4 I/Os. Backlit display with touch control and WLAN access. Standard cable between sensor and transmitter.

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**Nominal diameter range**

DN 80 to 250 (3 to 10")

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**Wetted materials**

Measuring tube: 25Cr duplex (Super Duplex), 1.4410 (UNS S32750)  
Connection: 25Cr duplex (Super Duplex), 1.4410 (F53)

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**Density/Concentration****Measured variables**

Mass flow, density, temperature, volume flow, corrected volume flow (API tables), reference density, concentration

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**Max. measurement error**

Mass flow (liquid):  $\pm 0.10$  % (standard), 0.05 % (option)

Volume flow (liquid):  $\pm 0.10$  %

Mass flow (gas):  $\pm 0.35$  %

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

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**Measuring range**

0 to 2 200 000 kg/h (0 to 80 850 lb/min)

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**Max. process pressure**

PN 250, Class 1500

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**Medium temperature range**

-40 to +205 °C (-40 to +401 °F)

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**Ambient temperature range**

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

Option: -50 to +60 °C (-58 to +140 °F)

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**Sensor housing material**

1.4404 (316L), highest corrosion resistance

Sensor connection housing (standard): AlSi10Mg, coated

Sensor connection housing (option): 1.4301 (304); 1.4404 (316L);

1.4409 (CF3M) similar to 316L

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**Transmitter housing material**

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; Polycarbonat

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**Degree of protection**

Sensor remote version (standard): IP66/67, type 4X enclosure

Sensor remote version (option): IP69. Transmitter remote version:

IP66/67, Type 4X enclosure

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**Density/Concentration****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 outputs:

4-20 mA HART (active/passive)

4-20 mA WirelessHART

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

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**Inputs**

Status input

4-20 mA input

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**Digital communication**

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus

RS485, Profinet, Ethernet/IP, OPC-UA

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**Power supply**

DC 24 V

AC 100 to 230 V

AC 100 to 230 V / DC 24 V (non-hazardous area)

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**Hazardous area approvals**

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

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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)

Heartbeat Technology complies with the requirements for measurement traceability according to ISO 9001:2015 – Section 7.1.5.2 a (TÜV SÜD attestation)

MI-005 Liquids other than water (Hydrocarbons)

MI-002, PTB

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### **Marine approvals and certificates**

LR approval, DNV GL approval, ABS approval, BV approval, CCS approval

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### **Pressure approvals and certificates**

PED, CRN, AD 2000

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### **Material certificates**

3.1 material

NACE MR0175/MR0103, PMI; welding test acc. to EN ISO, ASME, NORSOK

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More information [www.apsc.endress.com/805B](http://www.apsc.endress.com/805B)