

# Proline Prowirl O 200

## Vortex-flowmeter

Flowmeter ideaal voor eisen van hogedruk-leidingwerk



### Voordelen:

- Betere procesbewaking – geïntegreerde temperatuur- en drukmeting voor stoom en gas
- Verhoogde mechanische integriteit voor flowmeting – speciaal sensorontwerp
- Gelijke nauwkeurigheid tot Re 10 000 – uiterst lineair Vortex-meterlichaam
- Langdurige stabiliteit – robuuste capacatieve sensor zonder afwijking
- Handige instrumentbedrading – gescheiden aansluitcompartiment
- Veilige bediening – geen noodzaak om het instrument te openen dankzij display met aanraakbediening en achtergrondverlichting
- Geïntegreerde verificatie – Heartbeat Technology

Meer informatie en actuele prijzen:

[www.be.endress.com/702C](http://www.be.endress.com/702C)

### Overzicht specificaties

- **Max. meetfout** Volume flow (liquid):  $\pm 0.75\%$  Volume flow (steam, gas):  $\pm 1.00\%$  Mass flow (saturated steam):  $\pm 1.7\%$  (temperature compensated);  $\pm 1.5\%$  (temperature/pressure compensated) Mass flow (superheated steam, gas):  $\pm 1.5$  (temperature/pressure compensated);  $\pm 1.7\%$  (temperature compensated + external pressure compensation) Mass flow (liquid):  $\pm 0.85\%$
- **Measuring range** Liquid: 0.1 to 1700 m<sup>3</sup>/h (0.061 to 1000 ft<sup>3</sup>/min) depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F) Steam, gas: 0.52 to 22000 m<sup>3</sup>/h (0.31 to 13000 ft<sup>3</sup>/min) depending on medium: steam with 180 °C, 10 bar a (356 °F, 145 psi a); air with 25 °C, 4.4 bar a (77 °F, 63.8 psi a)

**Medium temperature range** Standard: -40 to +260 °C (-40 to +500 °F) High/low temperature (option): -200 to +400 °C (-328 to +752 °F)

- **Max. process pressure** PN 250, Class 1500, 40K
- **Wetted materials** Measuring tube: 1.4408 (CF3M) DSC sensor: UNS N07718 similar to Alloy 718, 2.4668 Process connection: 1.4404/F316/F316L

**Toepassingsgebied:** Prowirl O is uiterst geschikt voor betrouwbare procesregeling in veeleisende gas- en stoomtoepassingen met hoge procesdruk. Bovendien zorgt het ontwerp voor maximale veiligheid in de hoofd- en hulpprocessen. Dankzij de echte lusgevoede technologie zorgt de Prowirl O 200 voor een kosteneffectieve en naadloze integratie in bestaande infrastructuren. Deze biedt maximale operationele veiligheid in gevaarlijke omgevingen. Heartbeat Technology waarborgt te allen tijde de procesveiligheid.

## Kenmerken en specificaties

### Liquids

#### Meetprincipe

Vortex

#### Product headline

Flowmeter optimized for requirements of high-pressure mating pipes. Better process control – integrated temperature and pressure measurement for steam and gases.

The specialist for applications with high process pressure.

#### Sensor features

Increased mechanical integrity for flow measurement – special sensor design. Same accuracy down to Re 10 000 – most linear Vortex meter body. Long-term stability – robust drift-free capacitive sensor.

Saturated steam mass flow up to PN 250 (Class 1500). Full compliance with NACE (MR0175/MR0103). Flexible positioning of pressure cell.

## Liquids

### Transmitter features

Convenient device wiring – separate connection compartment. Safe operation – no need to open the device due to display with touch control, background lighting. Integrated verification – Heartbeat Technology. Display module with data transfer function. Robust dual-compartment housing. Plant safety: worldwide approvals (SIL, Haz. area).

### Nominal diameter range

DN 15 to 300 (½ to 12")

### Wetted materials

Measuring tube: 1.4408 (CF3M)

DSC sensor: UNS N07718 similar to Alloy 718, 2.4668

Process connection: 1.4404/F316/F316L

### Measured variables

Volume flow, mass flow, corrected volume flow, energy flow, heat flow difference, temperature

### Max. meetfout

Volume flow (liquid):  $\pm 0.75\%$

Volume flow (steam, gas):  $\pm 1.00\%$

Mass flow (saturated steam):  $\pm 1.7\%$  (temperature compensated);  $\pm 1.5\%$  (temperature/pressure compensated)

Mass flow (superheated steam, gas):  $\pm 1.5\%$  (temperature/pressure compensated);  $\pm 1.7\%$  (temperature compensated + external pressure compensation)

Mass flow (liquid):  $\pm 0.85\%$

### Measuring range

Liquid: 0.1 to 1700 m<sup>3</sup>/h (0.061 to 1000 ft<sup>3</sup>/min)

depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68 °F)

Steam, gas: 0.52 to 22000 m<sup>3</sup>/h (0.31 to 13000 ft<sup>3</sup>/min)

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PN 250, Class 1500, 40K

## Liquids

### Medium temperature range

Standard: -40 to +260 °C (-40 to +500 °F)

High/low temperature (option): -200 to +400 °C (-328 to +752 °F)

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### Ambient temperature range

Compact version (standard): -40 to +80 °C (-40 to +176 °F)

Compact version (option): -50 to +80 °C (-58 to +176 °F)

Remote version (standard): -40 to +85 °C (-40 to +185 °F)

Remote version (option): -50 to +85 °C (-58 to +185 °F)

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### Sensor housing material

Sensor connection housing: AlSi10Mg, coated; 1.4408 (CF3M)

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### Transmitter housing material

AlSi10Mg, coated; 1.4404 (316L)

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### Degree of protection

Compact version: IP66/67, type 4X enclosure

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

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

Remote display available

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### Outputs

4 - 20 mA HART (passive)

4 - 20 mA (passive)

Pulse/frequency/switch output (passive)

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### Inputs

4 - 20 mA (passive)

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### Digital communication

HART, PROFIBUS PA, FOUNDATION Fieldbus

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## Liquids

### Power supply

DC 12 to 35 V (4 - 20 mA HART with/without pulse/frequency/switch output)

DC 12 to 30 V (4 - 20 mA HART, 4 - 20 mA)

DC 12 to 35 V (4 - 20 mA HART, pulse/frequency/switch output, 4 - 20 mA input)

DC 9 to 32 V (PROFIBUS PA, pulse/frequency/switch output)

### Hazardous area approvals

ATEX, IECEx, cCSAus, JPN

### Product safety

CE, C-TICK, EAC, UK Ex

### 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)

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

### Marine approvals and certificates

ABS, LR, BV, DNV GL

### Pressure approvals and certificates

PED, CRN

### Material certificates

3.1 material

NACE MR0175/MR0103, PMI (on request); only Class 900/1500: welding test acc. to ISO 15614 - 1, similar to ASME IX (on request)

## Gas

**Meetprincipe**

Vortex

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**Product headline**

Flowmeter optimized for requirements of high-pressure mating pipes. Better process control – integrated temperature and pressure measurement for steam and gases. The specialist for applications with high process pressure.

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**Sensor features**

Increased mechanical integrity for flow measurement – special sensor design. Same accuracy down to Re 10 000 – most linear Vortex meter body. Long-term stability – robust drift-free capacitive sensor. Saturated steam mass flow up to PN 250 (Class 1500). Full compliance with NACE (MR0175/MR0103). Flexible positioning of pressure cell.

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**Transmitter features**

Convenient device wiring – separate connection compartment. Safe operation – no need to open the device due to display with touch control, background lighting. Integrated verification – Heartbeat Technology. Display module with data transfer function. Robust dual-compartment housing. Plant safety: worldwide approvals (SIL, Haz. area).

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**Nominal diameter range**

DN 15 to 300 (½ to 12")

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**Wetted materials**

Measuring tube: 1.4408 (CF3M)  
DSC sensor: UNS N07718 similar to Alloy 718, 2.4668  
Process connection: 1.4404/F316/F316L

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**Measured variables**

Volume flow, mass flow, corrected volume flow, energy flow, heat flow difference, temperature

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## Gas

**Max. meetfout**

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Mass flow (liquid):  $\pm 0.85\%$

**Measuring range**

Liquid: 0.1 to 1700 m<sup>3</sup>/h (0.061 to 1000 ft<sup>3</sup>/min)

depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68 °F)

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Standard: -40 to +260 °C (-40 to +500 °F)

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**Sensor housing material**

Sensor connection housing: AlSi10Mg, coated; 1.4408 (CF3M)

**Transmitter housing material**

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**Degree of protection**

Compact version: IP66/67, type 4X enclosure

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**Hazardous area approvals**

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**Product safety**

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**Functional safety**

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## Gas

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**Pressure approvals and certificates**

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**Material certificates**

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## Steam

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