

## Proline Prowirl O 200 vortex flowmeter

Flowmeter optimized for requirements of high-pressure mating pipes



More information and current pricing:

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

### Benefits:

- Better process control – integrated temperature and pressure measurement for steam and gases
- 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
- 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

### Specs at a glance

- **Max. measurement error** 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

**Field of application:** Prowirl O is ideally suited for reliable process control in demanding gas and steam applications with high process pressure. Moreover, its design ensures maximum safety in main and ancillary processes. With genuine loop-powered technology, Prowirl O 200 enables cost-effective and seamless integration into existing infrastructures. It offers highest operational safety in hazardous areas. Heartbeat Technology ensures process safety at all times.

## Features and specifications

### Liquids

#### Measuring principle

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.

#### 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).

## Liquids

**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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**Max. measurement error**

Volume flow (liquid): ±0.75 %

Volume flow (steam, gas): ±1.00 %

Mass flow (saturated steam): ±1.7% (temperature compensated); ±1.5% (temperature/pressure compensated)

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

Mass flow (liquid): ±0.85%

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**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)

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**Max. process pressure**

PN 250, Class 1500, 40K

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**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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## Liquids

### 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)

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## Steam

### Measuring principle

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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## Steam

**Max. measurement error**

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):  $\pm 0.85\%$

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**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);  
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**Max. process pressure**

PN 250, Class 1500, 40K

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

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**Transmitter housing material**

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**Outputs**

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**Digital communication**

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**Power supply**

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

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**Hazardous area approvals**

ATEX, IECEx, cCSAus, JPN, EAC, UK Ex

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**Product safety**

CE, C-TICK, EAC

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**Functional safety**

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## Steam

### **Metrological approvals and certificates**

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### **Marine approvals and certificates**

ABS, LR, BV, DNV GL

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### **Pressure approvals and certificates**

PED, CRN

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### **Material certificates**

3.1 material

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## Gas

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Vortex

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