

# Proline Prowirl D 200 vortex flowmeter

Cost-effective wafer flowmeter, available as compact or remote version



More information and current pricing:

[www.in.endress.com/7D2C](http://www.in.endress.com/7D2C)

## Benefits:

- Integrated temperature measurement for mass/energy flow of saturated steam
- Easy alignment of the sensor – included centering rings
- High availability – proven robustness, resistance to vibrations, temperature shocks & water hammer
- 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 (liquid):  $\pm 0.85\%$  Mass flow (steam, gas):  $\pm 1.7\%$
- **Measuring range** Liquid: 0.16 to 625 m<sup>3</sup>/h (0.09 to 368 ft<sup>3</sup>/min) depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F) Steam, gas: 2 to 8342 m<sup>3</sup>/h (1.18 to 4910 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) High/low temperature (on request): -200 to +450 °C (-328 to +842 °F)
- **Max. process pressure** PN 40, Class 300, 20K
- **Wetted materials** Measuring tube: 1.4408 (C3FM) DSC sensor: 1.4435 (316/316L)

**Field of application:** The Prowirl D sensor can be installed directly between flanges and thus serves as the functional device for applications in ancillary processes at little installation cost. With genuine loop-powered technology, Prowirl D 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

### Gas

#### Measuring principle

Vortex

#### Product headline

Cost-effective wafer flowmeter, available as compact or remote version. Integrated temperature measurement for mass/energy flow of saturated steam.

For all basic applications and for 1-to-1 replacement of orifice plates.

#### Sensor features

Easy alignment of the sensor – included centering rings. High availability – proven robustness, resistance to vibrations, temperature shocks & water hammer. Long-term stability – robust drift-free capacitive sensor. Face-to-face length of 65 mm (2.56 in). No flanges. Low weight.

#### 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 150 (½ to 6")

## Gas

**Wetted materials**

Measuring tube: 1.4408 (C3FM)

DSC sensor: 1.4435 (316/316L)

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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):  $\pm 0.75$  %

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

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**Max. process pressure**

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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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## Gas

**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**

Current input 4 - 20 mA (passive)

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**Digital communication**

HART, PROFIBUS PA, FOUNDATION Fieldbus

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**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)

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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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**Gas****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)

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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

NACE MR0175/MR0103, PMI (on request)

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**Steam****Measuring principle**

Vortex

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**Product headline**

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**Sensor features**

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## Steam

### 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 150 (½ to 6")

### Wetted materials

Measuring tube: 1.4408 (C3FM)

DSC sensor: 1.4435 (316/316L)

### Measured variables

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

### Max. measurement error

Volume flow (liquid): ±0.75 %

Volume flow (steam, gas): ±1.00 %

Mass flow (liquid): ±0.85%

Mass flow (steam, gas): ±1.7 %

### Measuring range

Liquid: 0.16 to 625 m<sup>3</sup>/h (0.09 to 368 ft<sup>3</sup>/min)

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

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## Steam

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**Liquids****Measuring principle**

Vortex

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## Liquids

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