Proline Prowirl D 200 vortex flowmeter

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

More information and current pricing:
www.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): ±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 m³/h (0.09 to 368 ft³/min) depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F) Steam, gas: 2 to 8342 m³/h (1.18 to 4910 ft³/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

Liquids

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")

Liquids

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^3/h (0.09 to 368 ft^3/min)
depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F)
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Max. process pressure

PN 40, Class 300, 20K

Medium temperature range

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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)

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)

Sensor housing material

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

Liquids

Transmitter housing material
AlSi10Mg, coated; 1.4404 (316L)

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

Display/Operation
4-line backlit display with touch control (operation from outside)
Configuration via local display and operating tools possible
Remote display available

Outputs
4-20 mA HART (passive)
4-20 mA (passive)
Pulse/frequency/switch output (passive)

Inputs
Current input 4-20 mA (passive)

Digital communication
HART, PROFIBUS PA, FOUNDATION Fieldbus

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, EAC, UK Ex

Product safety
CE, C-TICK, EAC

Liquids

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)

Gas

Measuring principle

Vortex

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Steam

Measuring principle

Vortex

Steam

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Steam

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