Proline Prowirl O 200 vortex flowmeter

Flowmeter optimized for requirements of high-pressure mating pipes

More information and current pricing:
www.de.endress.com/7O2C

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): ±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%
- **Measuring range** Liquid: 0.1 to 1700 m³/h (0.061 to 1000 ft³/min) depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F) Steam, gas: 0.52 to 22000 m³/h (0.31 to 13000 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)

- **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")

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. measurement error

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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)
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depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F)
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PN 250, Class 1500, 40K

Medium temperature range

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

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)

Sensor housing material

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

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

4 - 20 mA (passive)

Digital communication

HART, PROFIBUS PA, FOUNDATION Fieldbus

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)

Steam

Measuring principle

Vortex

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