

볼텍스 유량계 Proline Prowirl O 200

고압 결합용 관의 요건에 최적화된 유량계



추가 정보 및 현재 가격:

www.kr.endress.com/702C

장점:

- 향상된 프로세스 제어 - 증기 및 기체의 통합 온도 및 압력 측정
- 유량 측정을 위해 향상된 기계적 무결성 - 특수한 센서 설계
- Re 10,000까지 동일한 정확도 유지 - 가장 선형인 와류식 계측기 바디
- 장기적인 안정성 - 편차가 없는 견고한 정전용량 센서
- 편리한 계기 배선 - 분리된 연결 구역
- 안전한 작동 - 터치 동작과 배경 조명 표시로 계기 개폐가 불필요
- 통합/자가 검증 - 하트비트 기술(Heartbeat Technology)

사양 정보

- **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 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

적용 분야: Prowirl O는 프로세스 압력이 높은 까다로운 기체 및 증기 어플리케이션에서 신뢰할 수 있는 프로세스 제어를 보장하고 프로세스에서 안전성을 극대화하도록 설계되었습니다. 루프 전력 기술이 탑재된 Prowirl O 200은 비용 효율적인 방식으로 기존 인프라에 완벽히 통합됩니다. 방폭 지역에서 최고의 작동 안전성을 제공할 뿐만 아니라 하트비트 기술(Heartbeat Technology)을 통해 지속적으로 프로세스 안전을 보장합니다.

특징 및 사양

Liquids

측정 원리

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).

Nominal diameter range

DN 15 to 300 (½ to 12")

Liquids

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

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 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)

Max. process pressure

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)

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)

Liquids

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

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

Liquids

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

측정 원리

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.

Steam

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

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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

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 %

Steam**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)

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

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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

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

Display/Operation

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Configuration via local display and operating tools possible

Remote display available

Steam**Outputs**

4 - 20 mA HART (passive)

4 - 20 mA (passive)

Pulse/frequency/switch output (passive)

Inputs

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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

Functional safety

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Gas**측정 원리**Vortex

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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 featuresConvenient 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 rangeDN 15 to 300 (½ to 12")

Gas

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

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