Proline Prowirl C 200 vortex flowmeter

Sensor enabling primary element corrosion inspection. Only available for North America

More information and current pricing:
www.mx.endress.com/7C2B

Benefits:

- Compliance to AER – enables customer to fulfill inspection requirements
- Higher process control – unique inspection concept allows visual assessment of primary element
- High process safety - resistant to intergranular stress corrosion cracking
- 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: 0.99 to 545 m³/h (0.58 to 321 ft³/min) depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F) Steam, gas: 13.8 to 7262 m³/h (8.12 to 4274 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** –40 to +400 °C (–40 to +752 °F)
- **Max. process pressure** Class 900
- **Wetted materials** Measuring tube: SA-106 grade B/SA-333 grade 6 Bluff body, inspection ports: SA-105/SA-350 LF2 DSC sensor: UNS N07718 similar to Alloy 718, 2.4668 Connection: SA-105/SA-350 LF2

Field of application: Prowirl C 200 is a product line of carbon steel vortex meters dedicated to the Canadian and American market. The carbon steel sensor offers higher resistance to inter-granular stress corrosion cracking, especially in steam systems for SAGD applications. Prowirl C 200 is only available with cCSAus hazardous area approvals. It is NOT available with CE mark, AD2000 or PED. It is available as compact or remote device version.

Features and specifications

Liquids

Measuring principle
Vortex

Product headline
The sensor enabling primary element corrosion inspection, available as compact or remote device version. For steam applications with high chloride content (SAGD) aligned with AER Directive 017 Guidelines.

Sensor features
Compliance to AER – enables customer to fulfil inspection requirements. Higher process control – unique inspection concept allows visual assessment of primary element. High process safety – resistant to intergranular stress corrosion cracking. Sensor made of carbon steel. Material for low medium temperatures

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 two-chamber housing.

Nominal diameter range
DN 50 to 150 (2 to 6")

Liquids

Wetted materials

Measuring tube: SA-106 grade B/SA-333 grade 6
Bluff body, inspection ports: SA-105/SA-350 LF2
DSC sensor: UNS N07718 similar to Alloy 718, 2.4668
Connection: SA-105/SA-350 LF2

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: 0.99 to 545 m^3/h (0.58 to 321 ft^3/min)
depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F)
Steam, gas: 13.8 to 7262 m^3/h (8.12 to 4274 ft^3/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

Class 900

Medium temperature range

–40 to +400 °C (–40 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)

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

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

cCSAus

Functional safety

Functional safety according to IEC 61508, applicable in safety-relevant applications in accordance with IEC 61511

Liquids

Metrological approvals and certificates

Calibration performed on accredited calibration facilities (acc. to ISO/IEC 17025)

Pressure approvals and certificates

CRN

Material certificates

3.1 material
NACE MR0175, welding test acc. to ASME IX (on request)

Gas

Measuring principle

Vortex

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Nominal diameter range

DN 50 to 150 (2 to 6")

Gas

Wetted materials

Measuring tube: SA-106 grade B/SA-333 grade 6
Bluff body, inspection ports: SA-105/SA-350 LF2
DSC sensor: UNS N07718 similar to Alloy 718, 2.4668
Connection: SA-105/SA-350 LF2

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Gas

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Configuration via local display and operating tools possible
Remote display available

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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

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Inputs
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