

Proline Prowirl D 200 / 7D2B



More information and current pricing:

www.endress.com/7D2B

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 vibration, temperature shocks and water hammer
- No maintenance – lifetime calibration
- Convenient device wiring thanks to a 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 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 measuring tube is a disc/wafer model. The flowmeter is installed between flanges and mainly used for light duty applications. The proven and patented capacitive DSC sensor ensures high precision measured values. Prowirl D 200 offers industry-

compliant two-wire technology for seamless integration into existing infrastructures and control systems, as well as high operational safety in hazardous areas thanks to an intrinsically safe design, and a familiar installation procedure.

Features and specifications

Liquids

Measuring principle

Product headline

std_productprofile_product_usp_8119_1511861002.

std_productprofile_product_usp2_38907_1511797452.

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. std_productprofile_product_benefits_8115.

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")

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

Liquids

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 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)

Max. process pressure

PN 40, Class 300, 20K

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)

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

Liquids

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, EAC

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)

Liquids**Pressure approvals and certificates**PED, CRN

Material certificates

3.1 material

NACE MR0175/MR0103, PMI (on request)

Gas**Measuring principle**

Product headline

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Sensor features

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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 rangeDN 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

Gas

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)

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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

Gas

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

Other approvals and certificates**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)

Pressure approvals and certificates

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Gas**Material certificates**

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Steam**Measuring principle**

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Nominal diameter rangeDN 15 to 150 (½ to 6")

Wetted materials

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DSC sensor: 1.4435 (316/316L)

Measured variablesVolume flow, mass flow, corrected volume flow, energy flow, heat flow difference, temperature

Steam

Max. measurement errorVolume 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 rangeLiquid: 0.16 to 625 m³/h (0.09 to 368 ft³/min)

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

Transmitter housing materialAlSi10Mg, 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

Steam**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)

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PED, CRN

Steam

Material certificates

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