Вихревые расходомеры Prowirl R 200 / 7R2B

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

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Proline Prowirl R 200 / 7R2B

Benefits:

- Integrated temperature measuring for mass/ energy flow of saturated steam
- Cost and time saving – no pipework modifications needed for line size reduction
- High availability – proven robustness, resistance to vibration, temperature shocks and water hammer
- No maintenance – lifetime calibration
- 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: 0.26 to 545 m³/h (0.15 to 321 ft³/min) depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F) Steam, gas: 3.6 to 7262 m³/h (2.12 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** 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 (CF3M) DSC sensor: 1.4435 (316/316L) Connection: 1.4404 (F316/F316L)

Field of application: The reducer version Prowirl R provides an integrated reduction of the line size by 1 or 2 diameters and therefore offers an improved low flow performance. Prowirl R 200 offers industry-compliant two-wire technology for seamless integration into existing

infrastructures and control systems. Additional advantages are 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_8143.
std_productprofile_product_usp2_38906_1511797358.
Dedicated to applications with very low flow or reduced flow.

Sensor features

Cost and time savings – no pipework modifications needed for line size re
High availability – proven robustness, resistance to vibrations, temperatur
water hammer. std_productprofile_product_benefits_8115.
std_successorproducts_product_differentiating_tech_features_8153_15
Nominal diameter (mating pipe) up to DN 250 (10").
std_successorproducts_product_differentiating_tech_features_8155_15

Transmitter features

Convenient device wiring – separate connection compartment. Safe opera
need to open the device due to display with touch control, background ligl
Integrated verification – Heartbeat Technology.
Display module with data transfer function. Robust dual-compartment ho
safety: worldwide approvals (SIL, Haz. area).

Nominal diameter range

DN 25 to 250 (1 to 10")

Wetted materials

Measuring tube: 1.4408 (CF3M)
DSC sensor: 1.4435 (316/316L)
Connection: 1.4404 (F316/F316L)

Liquids

Measured variables

Volume flow, mass flow, corrected volume flow, energy flow, heat flow dif
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: 0.26 to 545 m^3/h (0.15 to 321 ft^3/min)
depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F)
Steam, gas: 3.6 to 7262 m^3/h (2.12 to 4274 ft^3/min
depending on medium: steam with 180 °C, 10 bar a (356 °F, 145 psi a); a
°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)

Liquids

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 outp
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
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 ap
in accordance with IEC 61511

Metrological approvals and certificates
Calibration performed on accredited calibration facilities (acc. to ISO/IEC 1

Pressure approvals and certificates
PED, CRN, AD 2000

Liquids

Material certificates

3.1 material
NACE MR0175/MR0103, PMI (on request); welding test acc. to ISO 156
similar to ASME IX (on request)

Gas

Measuring principle

Product headline

std_productprofile_product_usp_8143.
std_productprofile_product_usp2_38906_1511797358.
Dedicated to applications with very low flow or reduced flow.

Sensor features

Cost and time savings – no pipework modifications needed for line size re
High availability – proven robustness, resistance to vibrations, temperatur
water hammer. std_productprofile_product_benefits_8115.
std_successorproducts_product_differentiating_tech_features_8153_15
Nominal diameter (mating pipe) up to DN 250 (10").
std_successorproducts_product_differentiating_tech_features_8155_15

Transmitter features

Convenient device wiring – separate connection compartment. Safe opera
need to open the device due to display with touch control, background ligh
Integrated verification – Heartbeat Technology.
Display module with data transfer function. Robust dual-compartment ho
safety: worldwide approvals (SIL, Haz. area).

Nominal diameter range

DN 25 to 250 (1 to 10")

Wetted materials

Measuring tube: 1.4408 (CF3M)
DSC sensor: 1.4435 (316/316L)
Connection: 1.4404 (F316/F316L)

Gas

Measured variables

Volume flow, mass flow, corrected volume flow, energy flow, heat flow dif
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: 0.26 to 545 m^3/h (0.15 to 321 ft^3/min)
depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F)
Steam, gas: 3.6 to 7262 m^3/h (2.12 to 4274 ft^3/min
depending on medium: steam with 180 °C, 10 bar a (356 °F, 145 psi a); a
°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)

Gas

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 outp
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
DC 9 to 32 V (PROFIBUS PA, pulse/frequency/switch output)

Hazardous area approvals

ATEX, IECEx, cCSAus, EAC

Other approvals and certificates

Functional safety

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

Metrological approvals and certificates

Calibration performed on accredited calibration facilities (acc. to ISO/IEC 1

Gas

Pressure approvals and certificates

PED, CRN, AD 2000

Material certificates

3.1 material
NACE MR0175/MR0103, PMI (on request); welding test acc. to ISO 156
similar to ASME IX (on request)

Steam

Measuring principle

Product headline

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Dedicated to applications with very low flow or reduced flow.

Sensor features

Cost and time savings – no pipework modifications needed for line size re
High availability – proven robustness, resistance to vibrations, temperatur
water hammer. std_productprofile_product_benefits_8115.
std_successorproducts_product_differentiating_tech_features_8153_15
Nominal diameter (mating pipe) up to DN 250 (10").
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Transmitter features

Convenient device wiring – separate connection compartment. Safe opera
need to open the device due to display with touch control, background ligh
Integrated verification – Heartbeat Technology.
Display module with data transfer function. Robust dual-compartment ho
safety: worldwide approvals (SIL, Haz. area).

Nominal diameter range

DN 25 to 250 (1 to 10")

Wetted materials

Measuring tube: 1.4408 (CF3M)
DSC sensor: 1.4435 (316/316L)
Connection: 1.4404 (F316/F316L)

Steam

Measured variables

Volume flow, mass flow, corrected volume flow, energy flow, heat flow dif
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

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depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F)
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depending on medium: steam with 180 °C, 10 bar a (356 °F, 145 psi a); a
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Max. process pressure

PN 40, Class 300, 20K

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

Steam

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 outp
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
DC 9 to 32 V (PROFIBUS PA, pulse/frequency/switch output)

Hazardous area approvals

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Other approvals and certificates

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Functional safety according to IEC 61508, applicable in safety-relevant ap
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Calibration performed on accredited calibration facilities (acc. to ISO/IEC 1

Steam

Pressure approvals and certificates

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Material certificates

3.1 material

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