



کاتالوگ محصولات



Endress+Hauser

درباره شرکت Endress+Hauser

شرکت Endress+Hauser یک برند سوئیسی پیشرو و جهانی در حوزه تجهیزات ابزار دقیق و اتوماسیون صنعتی است که با بیش از هفت دهه تجربه، به عنوان یکی از بزرگترین تامین کنندگان سیستم های اندازه گیری، حسگرها، ترانسمیترها و راهکارهای هوشمند کنترل فرایند شناخته می شود. این شرکت با تمرکز بر دقت بالا، کیفیت ساخت ممتاز و نوآوری در تکنولوژی، محصولاتی را برای اندازه گیری فشار، دما، سطح، جریان، درخشندگی، کیفیت سیال و تحلیل های فرایندی ارائه می دهد که در صنایع نفت و گاز، پتروشیمی، نیروگاهی، مواد غذایی و دارویی کاربرد گسترده دارند. راهکارهای Endress+Hauser به عنوان نقطه اتکا در سیستم های کنترل فرایند، امکان پایش دقیق و بهینه سازی عملکرد خطوط تولید را فراهم می کنند.

سبد محصولات این برند شامل ترانسمیترهای پیشرفته، سنسورهای دیجیتال، ابزارهای کالیبراسیون و سیستم های ارتباطی هوشمند است که با استفاده از فناوری های IoT و ارتباطات صنعتی، امکان پایش لحظه ای، تحلیل داده و بهینه سازی انرژی و بهره وری فرایندها را در سطوح مختلف عملیاتی فراهم می آورد. حضور جهانی، پشتیبانی فنی گسترده و شبکه خدمات حرفه ای، Endress+Hauser را به انتخابی مطمئن و استراتژیک برای پروژه های صنعتی پیچیده تبدیل کرده است.

مرجع تجهیزات انرژی، تأسیسات و اتوماسیون صنایع

انرژی تجهیز ملل، فروشگاه تخصصی تأمین تجهیزات انرژی، تأسیسات و احتراق است. از مشعل و کنترلر تا شیرآلات کنترلی و سیستم های هوشمند موتورخانه، هر آنچه برای راه اندازی، نگهداری و بهینه سازی سیستم های انرژی نیاز دارید، در یک مجموعه مهندسی شده در دسترس شماست.

تلفن ثابت: (+98) 21 8280 1045

همراه: (+98) 910 888 1045 - (+98) 910 888 1035

وب سایت: www.energy-tajhiz.com

ایمیل: info@energy-tajhiz.com

تلفن ثابت:

همراه:

وب سایت:

ایمیل:

Proline Prowirl R 200 vortex flowmeter

Flowmeter with best-in-class accuracy despite pipe reduction



More information and current pricing:

www.endress.com/7R2C

Benefits:

- Easy energy management – integrated temperature and pressure measurement for steam and gases
- Cost and time savings – no pipework modifications needed for line size reduction
- 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, various Ethernet options
- Safe operation – no need to open the device
- 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 (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: 0.2 to 540 m³/h (0.15 to 320 ft³/min) depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68 °F) Steam, gas: 1.5 to 7260 m³/h (0.9 to 4270 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: 1.4404/F316/F316L Process connection: 1.4404/F316/F316L

Field of application: Prowirl R was designed for low flows and is thus the particularly dependable solution for energy management. Additionally its calibration option PremiumCal guarantees excellent measuring accuracy for maximum plant availability. With genuine loop-powered technology, Prowirl R 200 enables cost-effective and seamless integration into existing infrastructures. It offers highest operational safety in hazardous areas. Heartbeat Technology enables process safety at all times.

Features and specifications

Liquids

Measuring principle

Vortex

Product headline

Flowmeter with best-in-class accuracy despite pipe reduction.

Easy energy management – integrated temperature and pressure measurement for steam and gases.

Dedicated to applications with very low flow or reduced flow.

Sensor features

Cost and time savings – no pipework modifications needed for line size reduction. Same accuracy down to Re 10 000 – most linear Vortex meter body. Long-term stability – robust drift-free capacitive sensor. Integrated diameter reduction by 1 or 2 line sizes. Nominal diameter (mating pipe) up to DN 250 (10").

Liquids

Transmitter features

Cost and time savings – no pipework modifications needed for line size reduction. Same accuracy down to Re 10 000 – most linear Vortex meter body. Long-term stability – robust drift-free capacitive sensor. Integrated diameter reduction by 1 or 2 line sizes. Nominal diameter (mating pipe) up to DN 250 (10"). Flexible positioning of pressure cell.

Nominal diameter range

DN 25 to 250 (1 to 10")

Wetted materials

Measuring tube: 1.4408 (CF3M)

DSC sensor: 1.4404/F316/F316L

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: 0.2 to 540 m³/h (0.15 to 320 ft³/min)

depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68 °F)

Steam, gas: 1.5 to 7260 m³/h (0.9 to 4270 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

Liquids

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

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, PROFINET over Ethernet-APL, Modbus TCP over Ethernet-APL

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, EAC, UK Ex, KC

Product safety

CE, C-tick, 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)

Marine approvals and certificates

ABS, LR, BV, DNV, CCS

Pressure approvals and certificates

PED, CRN, AD 2000

Material certificates

3.1 material

NACE MR0175/MR0103, PMI (on request); welding test acc. to ISO 15614-1, similar to ASME IX (on request)

Gas

Measuring principle

Vortex

Product headline

Flowmeter with best-in-class accuracy despite pipe reduction.

Easy energy management – integrated temperature and pressure measurement for steam and gases.

Dedicated to applications with very low flow or reduced flow.

Sensor features

Cost and time savings – no pipework modifications needed for line size reduction. Same accuracy down to Re 10 000 – most linear Vortex meter body. Long-term stability – robust drift-free capacitive sensor. Integrated diameter reduction by 1 or 2 line sizes. Nominal diameter (mating pipe) up to DN 250 (10").

Transmitter features

Cost and time savings – no pipework modifications needed for line size reduction. Same accuracy down to Re 10 000 – most linear Vortex meter body. Long-term stability – robust drift-free capacitive sensor. Integrated diameter reduction by 1 or 2 line sizes. Nominal diameter (mating pipe) up to DN 250 (10"). Flexible positioning of pressure cell.

Nominal diameter range

DN 25 to 250 (1 to 10")

Wetted materials

Measuring tube: 1.4408 (CF3M)

DSC sensor: 1.4404/F316/F316L

Process connection: 1.4404/F316/F316L

Measured variables

Volume flow, mass flow, corrected volume flow, energy flow, heat flow difference, temperature

Gas

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): ± 1.5 (temperature/pressure compensated); $\pm 1.7\%$ (temperature compensated + external pressure compensation)

Mass flow (liquid): $\pm 0.85\%$

Measuring range

Liquid: 0.2 to 540 m³/h (0.15 to 320 ft³/min)

depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68 °F)

Steam, gas: 1.5 to 7260 m³/h (0.9 to 4270 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)

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, PROFINET over Ethernet-APL, Modbus TCP over Ethernet-APL

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, KC

Product safety

CE, C-tick, EAC

Functional safety

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

Gas

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, CCS

Pressure approvals and certificates

PED, CRN, AD 2000

Material certificates

3.1 material

NACE MR0175/MR0103, PMI (on request); welding test acc. to ISO 15614-1, similar to ASME IX (on request)

Steam

Measuring principle

Vortex

Product headline

Flowmeter with best-in-class accuracy despite pipe reduction.

Easy energy management – integrated temperature and pressure measurement for steam and gases.

Dedicated to applications with very low flow or reduced flow.

Sensor features

Cost and time savings – no pipework modifications needed for line size reduction. Same accuracy down to Re 10 000 – most linear Vortex meter body. Long-term stability – robust drift-free capacitive sensor. Integrated diameter reduction by 1 or 2 line sizes. Nominal diameter (mating pipe) up to DN 250 (10").

Steam

Transmitter features

Cost and time savings – no pipework modifications needed for line size reduction. Same accuracy down to Re 10 000 – most linear Vortex meter body. Long-term stability – robust drift-free capacitive sensor. Integrated diameter reduction by 1 or 2 line sizes. Nominal diameter (mating pipe) up to DN 250 (10"). Flexible positioning of pressure cell.

Nominal diameter range

DN 25 to 250 (1 to 10")

Wetted materials

Measuring tube: 1.4408 (CF3M)

DSC sensor: 1.4404/F316/F316L

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: 0.2 to 540 m³/h (0.15 to 320 ft³/min)

depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68 °F)

Steam, gas: 1.5 to 7260 m³/h (0.9 to 4270 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

Steam

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

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, PROFINET over Ethernet-APL, Modbus TCP over Ethernet-APL

Steam

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, KC

Product safety

CE, C-tick, 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)

Marine approvals and certificates

ABS, LR, BV, DNV, CCS

Pressure approvals and certificates

PED, CRN, AD 2000

Material certificates

3.1 material

NACE MR0175/MR0103, PMI (on request); welding test acc. to ISO 15614-1, similar to ASME IX (on request)

More information www.endress.com/7R2C



ENERGY TAJHIZ MELAL
تجهيزات انرژی، تأسیسات و اتوماسیون صنایع

CONTACT US:

	Tel: (+98) 21 8280 1045 Mob: (+98) 910 888 1045 Mob: (+98) 910 888 1035		Web: www.energy-tajhiz.com Email: Info@energy-tajhiz.com Email: energytajhiz.co@gmail.com
---	---	---	---