

# Proline Prowirl R 200

## Przepływomierz wirowy

Przepływomierz wirowy z wewnętrznym przewężeniem czujnika oraz opcjonalną kompensacją od ciśnienia i temperatury.



Więcej informacji i aktualne ceny:

[www.pl.endress.com/7R2C](http://www.pl.endress.com/7R2C)

### Korzyści:

- Łatwe zarządzanie zużyciem energii – wbudowane czujniki temperatury i ciśnienia pary wodnej i gazów
- Oszczędność czasu i kosztów – wbudowana redukcja średnicy, brak konieczności przeróbek rurociągu w celu redukcji średnicy odcinka rurociągu
- Czujnik o liniowej charakterystyce niepewności pomiaru dla płynów o liczbie Reynoldsa minimum 10 000
- Stabilność długoterminowa – trwała konstrukcja czujnika: zerowy dryft
- Wygodne podłączenie elektryczne - oddzielny przedział podłączeniowy
- Bezpieczna obsługa za pomocą przycisków "Touch control" - brak konieczności otwierania obudowy, podświetlenie tła wyświetlacza
- Funkcje zaawansowanej autodiagnostyki i weryfikacji poprawności działania - Technologia Heartbeat

### Kluczowe parametry

- **Maksymalny błąd pomiaru** 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):  $\pm 0.85\%$
- **Zakres pomiarowy** Liquid: 0.1 to 540 m<sup>3</sup>/h (0.061 to 320 ft<sup>3</sup>/min) depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F) Steam, gas: 0.52 to 7300 m<sup>3</sup>/h (0.31 to 4300 ft<sup>3</sup>/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)

- **Zakres temperatury medium** 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)
- **Maks. ciśnienie procesu** PN 40, Class 300, 20K
- **Materiały w kontakcie z medium** Measuring tube: 1.4408 (CF3M) DSC sensor: 1.4404/F316/F316L Process connection: 1.4404/F316/F316L

**Zastosowanie:** Prowirl R to niezawodne rozwiązanie dla systemów zarządzania zużyciem energii przenoszonej przez parę, gazy i ciecze w procesach pomocniczych. Konstrukcja czujnika jest przystosowana do pracy w aplikacjach o bardzo niskich wartościach przepływu. Przepływomierz Prowirl R 200 jest zasilany z pętli sygnałowej, ekonomiczny, pełna integracja z istniejącą infrastrukturą. Zapewnia najwyższe bezpieczeństwo pracy w obszarach zagrożonych wybuchem. Technologia Heartbeat zapewnia bezpieczeństwo procesu przez cały cykl życia.

## Funkcje i specyfikacja

### Ciecze

#### Zasada pomiaru

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 or reduced flow.

## Ciecze

### 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

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.

### Średnica nominalna

DN 25 to 250 (1 to 10")

### Materiały w kontakcie z medium

Measuring tube: 1.4408 (CF3M)

DSC sensor: 1.4404/F316/F316L

Process connection: 1.4404/F316/F316L

### Wielkości mierzone

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

### Maksymalny błąd pomiaru

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):  $\pm 0.85\%$

## Ciecze

### Zakres pomiarowy

Liquid: 0.1 to 540 m<sup>3</sup>/h (0.061 to 320 ft<sup>3</sup>/min)

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

Steam, gas: 0.52 to 7300 m<sup>3</sup>/h (0.31 to 4300 ft<sup>3</sup>/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)

### Maks. ciśnienie procesu

PN 40, Class 300, 20K

### Zakres temperatury medium

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)

### Temperatura otoczenia

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)

### Materiał obudowy czujnika

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

### Materiał obudowy przetwornika

AlSi10Mg, coated; 1.4404 (316L)

### Stopień ochrony

Compact version: IP66/67, type 4X enclosure

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

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

### Wyświetlacz

4 - line backlit display with touch control (operation from outside)

Configuration via local display and operating tools possible

Remote display available

---

**Ciecze****Wyjścia**

4 - 20 mA HART (passive)

4 - 20 mA (passive)

Pulse/frequency/switch output (passive)

---

**Wejścia**

4 - 20 mA (passive)

---

**Komunikacja cyfrowa**

HART, PROFIBUS PA, FOUNDATION Fieldbus

---

**Zasilacz**

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)

---

**Dopuszczenia do stosowania w strefach zagrożonych wybuchem**

ATEX, IECEX, cCSAus, JPN, EAC

---

**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

---

---

**Ciecze****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)

---

**Para****Zasada pomiaru**

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 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**

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.

---

**Średnica nominalna**

DN 25 to 250 (1 to 10")

---

## Para

**Materiały w kontakcie z medium**

Measuring tube: 1.4408 (CF3M)

DSC sensor: 1.4404/F316/F316L

Process connection: 1.4404/F316/F316L

**Wielkości mierzone**

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

**Maksymalny błąd pomiaru**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):  $\pm 0.85\%$ **Zakres pomiarowy**Liquid: 0.1 to 540 m<sup>3</sup>/h (0.061 to 320 ft<sup>3</sup>/min)

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

Steam, gas: 0.52 to 7300 m<sup>3</sup>/h (0.31 to 4300 ft<sup>3</sup>/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)**Maks. ciśnienie procesu**

PN 40, Class 300, 20K

**Zakres temperatury medium**

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)

---

**Para****Temperatura otoczenia**

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)

---

**Materiał obudowy czujnika**

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

---

**Materiał obudowy przetwornika**

AlSi10Mg, coated; 1.4404 (316L)

---

**Stopień ochrony**

Compact version: IP66/67, type 4X enclosure

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

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

---

**Wyświetlacz**

4 - line backlit display with touch control (operation from outside)

Configuration via local display and operating tools possible

Remote display available

---

**Wyjścia**

4 - 20 mA HART (passive)

4 - 20 mA (passive)

Pulse/frequency/switch output (passive)

---

**Wejścia**

4 - 20 mA (passive)

---

**Komunikacja cyfrowa**

HART, PROFIBUS PA, FOUNDATION Fieldbus

---



---

<b>Para</b>	<b>Zasilacz</b> 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)
	<hr/> <b>Dopuszczenia do stosowania w strefach zagrożonych wybuchem</b> ATEX, IECEx, cCSAus, JPN, EAC
	<hr/> <b>Product safety</b> CE, C-tick, EAC
	<hr/> <b>Functional safety</b> Functional safety according to IEC 61508, applicable in safety-relevant applications in accordance with IEC 61511
	<hr/> <b>Metrological approvals and certificates</b> 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)
	<hr/> <b>Marine approvals and certificates</b> ABS, LR, BV
	<hr/> <b>Pressure approvals and certificates</b> PED, CRN, AD 2000
	<hr/> <b>Material certificates</b> 3.1 material NACE MR0175/MR0103, PMI (on request); welding test acc. to ISO 15614 - 1, similar to ASME IX (on request)

---

## Gaz

**Zasada pomiaru**

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 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**

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.

**Średnica nominalna**

DN 25 to 250 (1 to 10")

**Materiały w kontakcie z medium**

Measuring tube: 1.4408 (CF3M)

DSC sensor: 1.4404/F316/F316L

Process connection: 1.4404/F316/F316L

**Wielkości mierzone**

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

## Gaz

**Maksymalny błąd pomiaru**

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):  $\pm 0.85\%$

---

**Zakres pomiarowy**

Liquid: 0.1 to 540 m<sup>3</sup>/h (0.061 to 320 ft<sup>3</sup>/min)

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

Steam, gas: 0.52 to 7300 m<sup>3</sup>/h (0.31 to 4300 ft<sup>3</sup>/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)

---

**Maks. ciśnienie procesu**

PN 40, Class 300, 20K

---

**Zakres temperatury medium**

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)

---

**Temperatura otoczenia**

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)

---

**Materiał obudowy czujnika**

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

---

**Materiał obudowy przetwornika**

AlSi10Mg, coated; 1.4404 (316L)

---

**Gaz****Stopień ochrony**

Compact version: IP66/67, type 4X enclosure

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

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

---

**Wyświetlacz**

4 - line backlit display with touch control (operation from outside)

Configuration via local display and operating tools possible

Remote display available

---

**Wyjścia**

4 - 20 mA HART (passive)

4 - 20 mA (passive)

Pulse/frequency/switch output (passive)

---

**Wejścia**

4 - 20 mA (passive)

---

**Komunikacja cyfrowa**

HART, PROFIBUS PA, FOUNDATION Fieldbus

---

**Zasilacz**

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)

---

**Dopuszczenia do stosowania w strefach zagrożonych wybuchem**

ATEX, IECEx, cCSAus, JPN, EAC

---

**Product safety**

CE, C-tick, EAC

---

**Functional safety**

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

---

## Gaz

### **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

---

### **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)

---

Więcej informacji [www.pl.endress.com/7R2C](http://www.pl.endress.com/7R2C)