

Proline Prowirl O 200

Przepływomierz wirowy

Przepływomierz wirowy do pracy w instalacjach wysokociśnieniowych z opcjonalną kompensacją od ciśnienia i temperatury



Korzyści:

- Lepsza kontrola procesu – wbudowane czujniki temperatury i ciśnienia pary wodnej i gazów
- Zwiększona odporność mechaniczna – specjalna konstrukcja czujnika przepływu
- Czujnik o liniowej charakterystyce niepewności pomiaru dla płynów o liczbie Reynoldsa minimum 10 000
- Stabilność długoterminowa – trwała konstrukcja czujnika: zerowy dryft
- Wygodne połączenie elektryczne - oddzielny przedział połączeniowy
- Bezpieczna obsługa za pomocą przycisków "Touch control" - brak konieczności otwierania obudowy, podświetlenie tła wyświetlacza
- Funkcje zaawansowanej autodiagnostyki i weryfikacji poprawności działania - Technologia Heartbeat

Więcej informacji i aktualne ceny:

www.pl.endress.com/702C

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 1700 m³/h (0.061 to 1000 ft³/min) depending on medium: water with 1 bar a, 20 °C (14.5 psi a, 68° F) Steam, gas: 0.52 to 22000 m³/h (0.31 to 13000 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)

- **Zakres temperatury medium** Standard: -40 to +260 °C (-40 to +500 °F) High/low temperature (option): -200 to +400 °C (-328 to +752 °F)
- **Maks. ciśnienie procesu** PN 250, Class 1500, 40K
- **Materiały w kontakcie z medium** Measuring tube: 1.4408 (CF3M) DSC sensor: UNS N07718 similar to Alloy 718, 2.4668 Process connection: 1.4404/F316/F316L

Zastosowanie: Prowirl O jest przeznaczony w szczególności do kontroli procesu w wymagających aplikacjach pomiarowych gazu i pary, w których występują wysokie ciśnienia medium. 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 optimized for requirements of high-pressure mating pipes. Better process control – integrated temperature and pressure measurement for steam and gases. The specialist for applications with high process pressure.

Sensor features

Increased mechanical integrity for flow measurement – special sensor design. Same accuracy down to Re 10 000 – most linear Vortex meter body. Long-term stability – robust drift-free capacitive sensor. Saturated steam mass flow up to PN 250 (Class 1500). Full compliance with NACE (MR0175/MR0103).

Ciecze**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 15 to 300 (½ to 12")

Materiały w kontakcie z medium

Measuring tube: 1.4408 (CF3M)

DSC sensor: UNS N07718 similar to Alloy 718, 2.4668

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 1700 m³/h (0.061 to 1000 ft³/min)

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

Steam, gas: 0.52 to 22000 m³/h (0.31 to 13000 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)

Maks. ciśnienie procesu

PN 250, Class 1500, 40K

Ciecze

Zakres temperatury medium

Standard: -40 to +260 °C (-40 to +500 °F)

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

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

Ciecze**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

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

Pressure approvals and certificates

PED, CRN

Material certificates

3.1 material

NACE MR0175/MR0103, PMI (on request); only Class 900/1500: welding test acc. to ISO 15614 - 1, similar to ASME IX (on request)

Gaz

Zasada pomiaru

Vortex

Product headline

Flowmeter optimized for requirements of high-pressure mating pipes. Better process control – integrated temperature and pressure measurement for steam and gases. The specialist for applications with high process pressure.

Sensor features

Increased mechanical integrity for flow measurement – special sensor design. Same accuracy down to Re 10 000 – most linear Vortex meter body. Long-term stability – robust drift-free capacitive sensor. Saturated steam mass flow up to PN 250 (Class 1500). Full compliance with NACE (MR0175/MR0103).

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 15 to 300 (½ to 12")

Materiały w kontakcie z medium

Measuring tube: 1.4408 (CF3M)

DSC sensor: UNS N07718 similar to Alloy 718, 2.4668

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): ± 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 1700 m³/h (0.061 to 1000 ft³/min)

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

Steam, gas: 0.52 to 22000 m³/h (0.31 to 13000 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)

Maks. ciśnienie procesu

PN 250, Class 1500, 40K

Zakres temperatury medium

Standard: -40 to +260 °C (-40 to +500 °F)

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

Material certificates

3.1 material

NACE MR0175/MR0103, PMI (on request); only Class 900/1500: welding test acc. to ISO 15614 - 1, similar to ASME IX (on request)

Para

Zasada pomiaru

Vortex

Product headline

Flowmeter optimized for requirements of high-pressure mating pipes. Better process control – integrated temperature and pressure measurement for steam and gases. The specialist for applications with high process pressure.

Sensor features

Increased mechanical integrity for flow measurement – special sensor design. Same accuracy down to Re 10 000 – most linear Vortex meter body. Long-term stability – robust drift-free capacitive sensor. Saturated steam mass flow up to PN 250 (Class 1500). Full compliance with NACE (MR0175/MR0103).

Para

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 15 to 300 (½ to 12")

Materiały w kontakcie z medium

Measuring tube: 1.4408 (CF3M)

DSC sensor: UNS N07718 similar to Alloy 718, 2.4668

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): ± 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 1700 m³/h (0.061 to 1000 ft³/min)

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

Steam, gas: 0.52 to 22000 m³/h (0.31 to 13000 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)

Maks. ciśnienie procesu

PN 250, Class 1500, 40K

Para

Zakres temperatury medium

Standard: -40 to +260 °C (-40 to +500 °F)

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

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

Para

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

Pressure approvals and certificates

PED, CRN

Material certificates

3.1 material

NACE MR0175/MR0103, PMI (on request); only Class 900/1500: welding test acc. to ISO 15614 - 1, similar to ASME IX (on request)

Więcej informacji www.pl.endress.com/702C