

Proline Promass F 300

Masowy przepływomierz Coriolisa

Przepływomierz o najwyższej dokładności i jakości pomiarów, z kompaktowym, łatwo dostępnym przetwornikiem.



Korzyści:

- Bardzo wysokie bezpieczeństwo procesu – odporny na zmienne i trudne warunki pracy
- Mniej procesowych punktów pomiarowych – jednoczesny pomiar wielu parametrów (przepływu, gęstości, temperatury, stężenia)
- Minimalna długość montażowa – nie są wymagane proste odcinki rurociągu przed i za przepływomierzem
- Pełny dostęp do informacji o procesie oraz diagnostyki - liczne, swobodnie konfigurowalne kombinacje wejść/wyjść oraz protokołów komunikacyjnych
- Funkcjonalność i różnorodność – swoboda w konfiguracji i funkcjonalności modułów We/Wy
- Wbudowane funkcje weryfikacji i diagnostyki – Heartbeat Technology

More information and current pricing:

www.pl.endress.com/8F3B

Kluczowe parametry

- **Maksymalny błąd pomiaru** Mass flow (liquid): $\pm 0.10\%$ (standard), 0.05% (option) Volume flow (liquid): $\pm 0.10\%$ Mass flow (gas): $\pm 0.25\%$ Density (liquid): $\pm 0.0005\text{ g/cm}^3$
- **Zakres pomiarowy** 0 to 2 200 000 kg/h (0 to 80 840 lb/min)
- **Zakres temperatury medium** Standard: -50 to $+150\text{ }^\circ\text{C}$ (-58 to $+302\text{ }^\circ\text{F}$) Option: -50 to $+240\text{ }^\circ\text{C}$ (-58 to $+464\text{ }^\circ\text{F}$) High temperatur option: -50 to $+350\text{ }^\circ\text{C}$ (-58 to $+662\text{ }^\circ\text{F}$) Option: -196 to $+150\text{ }^\circ\text{C}$ (-320 to $+302\text{ }^\circ\text{F}$)
- **Maks. ciśnienie procesu** PN 100, Class 600, 63K
- **Materiały w kontakcie z medium** Measuring tube: 1.4539 (904L); 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022)

Connection: 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022); 1.4301 (F304)

Zastosowanie: Promass F to czujnik znany od lat z najwyższej dokładności pomiarowej. Odporny na zmienne i trudne warunki pracy znajduje zastosowanie w szerokim zakresie aplikacji przemysłowych. Kompaktowy przetwornik pomiarowy Promass 300 oferuje wysoką elastyczność obsługi oraz możliwości integracji w systemach sterowania: wygodny dostęp z jednej strony obudowy, zdalny wyświetlacz oraz ulepszone możliwości komunikacyjne. Wbudowana Technologia Heartbeat pozwala przeprowadzić diagnostykę i weryfikację bez przerywania pomiaru i demontażu przepływomierza z instalacji. Zapewnia bezpieczeństwo i zgodność z obowiązującymi przepisami.

Funkcje i specyfikacja

Gęstość

Zasada pomiaru

Coriolis

Product Headline

The flowmeter with premium accuracy, robustness and a compact, easily accessible transmitter. Highest measurement performance for liquids and gases under varying, demanding process conditions.

Gaz

Zasada pomiaru

Coriolis

Product headline

Flowmeter with premium accuracy, robustness and a compact, easily accessible transmitter. Highest measurement performance for liquids and gases under varying, demanding process conditions.

Gaz

Sensor features

Highest process safety – immune to fluctuating and harsh environments. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in/outlet run needs. Mass flow: measurement error ± 0.05 % (PremiumCal). Medium temperature: -196 to 350 °C (-320 to 662 °F).

Transmitter features

Full access to process and diagnostic information – numerous, freely combinable I/Os and fieldbuses. Reduced complexity and variety – freely configurable I/O functionality. Integrated verification – Heartbeat Technology. Compact dual-compartment housing with up to 3 I/Os. Backlit display with touch control and WLAN access.

Średnica nominalna

DN 8 to 250 ($\frac{3}{8}$ to 10")

Materiały w kontakcie z medium

Measuring tube: 1.4539 (904L); 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022)

Connection: 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022); 1.4301 (F304)

Wielkości mierzone

Mass flow, density, temperature, volume flow, corrected volume flow, reference density, concentration

Maksymalny błąd pomiaru

Mass flow (liquid): ± 0.10 % (standard), 0.05 % (option)

Volume flow (liquid): ± 0.10 %

Mass flow (gas): ± 0.25 %

Density (liquid): ± 0.0005 g/cm³

Gaz

Zakres pomiarowy

0 to 2 200 000 kg/h (0 to 80 840 lb/min)

Maks. ciśnienie procesu

PN 100, Class 600, 63K

Zakres temperatury medium

Standard: -50 to +150 °C (-58 to +302 °F)

Option: -50 to +240 °C (-58 to +464 °F)

High temperatur option: -50 to +350 °C (-58 to +662 °F)

Option: -196 to +150 °C (-320 to +302 °F)

Temperatura otoczenia

Standard: -40 to +60 °C (-40 to +140 °F)

Option: -50 to +60 °C (-58 to +140 °F)

Materiał obudowy czujnika

Standard: 1.4301 (304)

Option: 1.4404 (316/316L)

Materiał obudowy przetwornika

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; stainless steel for hygenic transmitter design

Stopień ochrony

Compact version: IP66/67, type 4X enclosure.

External WLAN antenna: IP67

IP69

Gaz**Wyświetlacz**

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

Configuration via local display and operating tools possible

Remote display available

Wyjścia

3 outputs:

4-20 mA HART (active/passive)

4-20 mA WirelessHART

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

Wejścia

Status input

4-20 mA input

Komunikacja cyfrowa

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, Profinet, Ethernet/IP, OPC-UA

Zasilacz

DC 24 V

AC 100 to 230 V

AC 100 to 230 V / DC 24 V (non-hazardous area)

Dopuszczenia do stosowania w strefach zagrożonych wybuchem

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

Product safety

CE, C-tick, EAC marking

Gaz**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)

MI-005 (Liquids other than water, Hydrocarbons, LPG, cryogenic liquids)

NTEP (Liquids other than water, LPG, cryogenic liquids)

MC (Liquids other than water, cryogenic liquids)

MI-002, PTB

Marine approvals and certificates

LR approval, DNV GL approval, ABS approval, BV approval

Pressure approvals and certificates

PED, CRN, AD 2000

Material certificates

3.1 material

NACE MR0175/MR0103, PMI; welding test acc. to EN ISO, ASME, NORSOK

Hygienic approvals and certificates

3-A, EHEDG, cGMP

Ciecze**Zasada pomiaru**

Coriolis

Product headline

Flowmeter with premium accuracy, robustness and a compact, easily accessible transmitter. Highest measurement performance for liquids and gases under varying, demanding process conditions.

Ciecze

Sensor features

Highest process safety – immune to fluctuating and harsh environments. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in/outlet run needs. Mass flow: measurement error ± 0.05 % (PremiumCal). Medium temperature: -196 to 350 °C (-320 to 662 °F).

Transmitter features

Full access to process and diagnostic information – numerous, freely combinable I/Os and fieldbuses. Reduced complexity and variety – freely configurable I/O functionality. Integrated verification – Heartbeat Technology. Compact dual-compartment housing with up to 3 I/Os. Backlit display with touch control and WLAN access.

Średnica nominalna

DN 8 to 250 ($\frac{3}{8}$ to 10")

Materiały w kontakcie z medium

Measuring tube: 1.4539 (904L); 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022)

Connection: 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022); 1.4301 (F304)

Wielkości mierzone

Mass flow, density, temperature, volume flow, corrected volume flow, reference density, concentration

Maksymalny błąd pomiaru

Mass flow (liquid): ± 0.10 % (standard), 0.05 % (option)

Volume flow (liquid): ± 0.10 %

Mass flow (gas): ± 0.25 %

Density (liquid): ± 0.0005 g/cm³

Ciecze**Zakres pomiarowy**0 to 2 200 000 kg/h (0 to 80 840 lb/min)

Maks. ciśnienie procesuPN 100, Class 600, 63K

Zakres temperatury medium

Standard: -50 to +150 °C (-58 to +302 °F)

Option: -50 to +240 °C (-58 to +464 °F)

High temperatur option: -50 to +350 °C (-58 to +662 °F)

Option: -196 to +150 °C (-320 to +302 °F)

Temperatura otoczenia

Standard: -40 to +60 °C (-40 to +140 °F)

Option: -50 to +60 °C (-58 to +140 °F)

Materiał obudowy czujnika

Standard: 1.4301 (304)

Option: 1.4404 (316/316L)

Materiał obudowy przetwornikaAlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; stainless steel for hygenic transmitter design

Stopień ochrony

Compact version: IP66/67, type 4X enclosure.

External WLAN antenna: IP67

IP69

Ciecze**Wyświetlacz**

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

Configuration via local display and operating tools possible

Remote display available

Wyjścia

3 outputs:

4-20 mA HART (active/passive)

4-20 mA WirelessHART

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

Wejścia

Status input

4-20 mA input

Komunikacja cyfrowa

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus

RS485, Profinet, Ethernet/IP, OPC-UA

Zasilacz

DC 24 V

AC 100 to 230 V

AC 100 to 230 V / DC 24 V (non-hazardous area)

Dopuszczenia do stosowania w strefach zagrożonych wybuchem

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

Product safety

CE, C-tick, EAC marking

Ciecze**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)

MI-005 (Liquids other than water, Hydrocarbons, LPG, cryogenic liquids)

NTEP (Liquids other than water, LPG, cryogenic liquids)

MC (Liquids other than water, cryogenic liquids)

MI-002, PTB

Marine approvals and certificates

LR approval, DNV GL approval, ABS approval, BV approval

Pressure approvals and certificates

PED, CRN, AD 2000

Material certificates

3.1 material

NACE MR0175/MR0103, PMI; welding test acc. to EN ISO, ASME, NORSOK

Hygienic approvals and certificates

3-A, EHEDG, cGMP

Para**Zasada pomiaru**

Coriolis

Product headline

Flowmeter with premium accuracy, robustness and a compact, easily accessible transmitter. Highest measurement performance for liquids and gases under varying, demanding process conditions.

Para**Sensor features**

Highest process safety – immune to fluctuating and harsh environments. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space-saving installation – no in/outlet run needs. Mass flow: measurement error ± 0.05 % (PremiumCal). Medium temperature: -196 to 350 °C (-320 to 662 °F).

Transmitter features

Full access to process and diagnostic information – numerous, freely combinable I/Os and fieldbuses. Reduced complexity and variety – freely configurable I/O functionality. Integrated verification – Heartbeat Technology. Compact dual-compartment housing with up to 3 I/Os. Backlit display with touch control and WLAN access.

Średnica nominalna

DN 8 to 250 ($\frac{3}{8}$ to 10")

Materiały w kontakcie z medium

Measuring tube: 1.4539 (904L); 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022)

Connection: 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022); 1.4301 (F304)

Wielkości mierzone

Mass flow, density, temperature, volume flow, corrected volume flow, reference density, concentration

Maksymalny błąd pomiaru

Mass flow (liquid): ± 0.10 % (standard), 0.05 % (option)

Volume flow (liquid): ± 0.10 %

Mass flow (gas): ± 0.25 %

Density (liquid): ± 0.0005 g/cm³

Para

Zakres pomiarowy

0 to 2 200 000 kg/h (0 to 80 840 lb/min)

Maks. ciśnienie procesu

PN 100, Class 600, 63K

Zakres temperatury medium

Standard: -50 to +150 °C (-58 to +302 °F)

Option: -50 to +240 °C (-58 to +464 °F)

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Materiał obudowy czujnika

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Materiał obudowy przetwornika

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; stainless steel for hygenic transmitter design

Stopień ochrony

Compact version: IP66/67, type 4X enclosure.

External WLAN antenna: IP67

IP69

Para**Wyświetlacz**

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

Configuration via local display and operating tools possible

Remote display available

Wyjścia

3 outputs:

4-20 mA HART (active/passive)

4-20 mA WirelessHART

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

Wejścia

Status input

4-20 mA input

Komunikacja cyfrowa

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus
RS485, Profinet, Ethernet/IP, OPC-UA

Zasilacz

DC 24 V

AC 100 to 230 V

AC 100 to 230 V / DC 24 V (non-hazardous area)

Dopuszczenia do stosowania w strefach zagrożonych wybuchem

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

Product safety

CE, C-tick, EAC marking

Para	<p>Functional safety Functional safety according to IEC 61508, applicable in safety-relevant applications in accordance with IEC 61511</p> <hr/> <p>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) MI-005 (Liquids other than water, Hydrocarbons, LPG, cryogenic liquids) NTEP (Liquids other than water, LPG, cryogenic liquids) MC (Liquids other than water, cryogenic liquids) MI-002, PTB</p> <hr/> <p>Marine approvals and certificates LR approval, DNV GL approval, ABS approval, BV approval</p> <hr/> <p>Pressure approvals and certificates PED, CRN, AD 2000</p> <hr/> <p>Material certificates 3.1 material</p> <p>NACE MR0175/MR0103, PMI; welding test acc. to EN ISO, ASME, NORSOK</p> <hr/> <p>Hygienic approvals and certificates 3-A, EHEDG, cGMP</p>
Density/Concentration	<p>Zasada pomiaru Coriolis</p> <hr/> <p>Product headline Flowmeter with premium accuracy, robustness and a compact, easily accessible transmitter. Highest measurement performance for liquids and gases under varying, demanding process conditions.</p>

Density/Concentration

Sensor features

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Transmitter features

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Connection: 1.4404 (316/316L); Alloy C22, 2.4602 (UNS N06022); 1.4301 (F304)

Wielkości mierzone

Mass flow, density, temperature, volume flow, corrected volume flow, reference density, concentration

Maksymalny błąd pomiaru

Mass flow (liquid): ± 0.10 % (standard), 0.05 % (option)

Volume flow (liquid): ± 0.10 %

Mass flow (gas): ± 0.25 %

Density (liquid): ± 0.0005 g/cm³

Zakres pomiarowy

0 to 2 200 000 kg/h (0 to 80 840 lb/min)

Maks. ciśnienie procesu

PN 100, Class 600, 63K

Density/Concentration**Zakres temperatury medium**

Standard: -50 to +150 °C (-58...+302 °F)

Option: -50 to +240 °C (-58...+464 °F)

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Materiał obudowy czujnika

Standard: 1.4301 (304)

Option: 1.4404 (316/316L)

Materiał obudowy przetwornika

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; stainless steel for hygenic transmitter design

Stopień ochrony

Compact version: IP66/67, type 4X enclosure.

External WLAN antenna: IP67

IP69

Wyświetlacz

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

Configuration via local display and operating tools possible

Remote display available

Wyjścia

3 outputs:

4-20 mA HART (active/passive)

4-20 mA WirelessHART

4-20 mA (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

Density/Concentration**Wejścia**

Status input

4-20 mA input

Komunikacja cyfrowa

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, Profinet, Ethernet/IP, OPC-UA

Zasilacz

DC 24 V

AC 100 to 230 V

AC 100 to 230 V / DC 24 V (non-hazardous area)

Dopuszczenia do stosowania w strefach zagrożonych wybuchem

ATEX, IECEX, cCSAus, NEPSI, INMETRO, EAC

Product safety

CE, C-tick, EAC marking

Functional safety

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

Metrological approvals and certificates

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NTEP (Liquids other than water, LPG, cryogenic liquids)

MC (Liquids other than water, cryogenic liquids)

MI-002, PTB

Marine approvals and certificates

LR approval, DNV GL approval, ABS approval, BV approval

Pressure approvals and certificates

PED, CRN, AD 2000

Density/Concentration

Material certificates

3.1 material

NACE MR0175/MR0103, PMI; welding test acc. to EN ISO, ASME, NORSOK

Hygienic approvals and certificates

3-A, EHEDG, cGMP

Więcej informacji www.pl.endress.com/8F3B