

Proline Promass F 500 Przepływomierz masowy Coriolisa

Przepływomierz o najwyższej dokładności pomiaru i wysokiej odporności, w wersji rozdzielnej z maksymalnie 4 wejściami / wyjściami.



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
- Uniwersalność i elastyczność – swoboda w konfiguracji i funkcjonalności modułów We/Wy
- Wbudowane funkcje weryfikacji i diagnostyki – Heartbeat Technology

Więcej informacji i aktualne ceny:

www.pl.endress.com/8F5B

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 $+150\text{ }^{\circ}\text{C}$ ($-58\text{...}+302\text{ }^{\circ}\text{F}$) Option: -50 to $+240\text{ }^{\circ}\text{C}$ ($-58\text{...}+464\text{ }^{\circ}\text{F}$) High temperature option: -50 to $+350\text{ }^{\circ}\text{C}$ ($-58\text{...}+662\text{ }^{\circ}\text{F}$) 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 znany od lat czujnik, który odznacza się bardzo wysoką dokładnością pomiarową. Odporny na zmienne i trudne warunki pracy znajduje zastosowanie w najszerszym zakresie aplikacji. Z innowacyjnym, rozdzielnym przetwornikiem pomiarowym, Promass F 500 oferuje swobodę w zakresie montażu oraz podnosi bezpieczeństwo obsługi w trudnych warunkach otoczenia. Funkcja Heartbeat Technology zapewnia niezawodność pomiaru oraz wydłuża czas między kolejnymi kalibracjami.

Funkcje i specyfikacja

Para

Zasada pomiaru

Coriolis

Product headline

Flowmeter with premium accuracy and robustness, as remote version with up to 4 I/Os. Highest measurement performance for liquids and gases under varying, demanding process conditions.

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 $\pm 0.05\%$ (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. Remote version with up to 4 I/Os. Backlit display with touch control and WLAN access.

Para

Średnica nominalnaDN 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 pomiaruMass 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

Zakres temperatury medium

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

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

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

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

Para**Temperatura otoczenia**

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

Option: -60 to +60 °C (-76 to +140 °F)

Materiał obudowy czujnika

Standard: 1.4301 (304), corrosion resistant

Option: 1.4404 (316L)

Sensor connection housing (standard): AlSi10Mg, coated

Sensor connection housing (option): 1.4301 (304); 1.4404 (316L); 1.4409 (CF3M) similar to 316L

Materiał obudowy przetwornika

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; Polycarbonat

Stopień ochrony

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

Sensor remote version (option): IP69.

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

External WLAN antenna: IP67

Wyświetlacz

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

Configuration via local display and operating tools possible

Para**Wyjścia**

4 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

Functional safety

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

Para**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

cGMP

Ciecze**Zasada pomiaru**

Coriolis

Product headline

Flowmeter with premium accuracy and robustness, as remote version with up to 4 I/Os. 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. Remote version with up to 4 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 procesu

PN 100, Class 600, 63K

Zakres temperatury medium

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

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

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

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Temperatura otoczenia

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

Option: -60 to +60 °C (-76 to +140 °F)

Materiał obudowy czujnika

Standard: 1.4301 (304), corrosion resistant

Option: 1.4404 (316L)

Sensor connection housing (standard): AlSi10Mg, coated

Sensor connection housing (option): 1.4301 (304); 1.4404 (316L);
1.4409 (CF3M) similar to 316L

Materiał obudowy przetwornika

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; Polycarbonat

Ciecze

Stopień ochrony

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

Sensor remote version (option): IP69.

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

Wyjścia

4 outputs:

4-20 mA HART (active/passive)

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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

Ciecze

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

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

Density/Concentration

Zasada pomiaru

Coriolis

Density/Concentration

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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 %

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Density (liquid): ± 0.0005 g/cm³

Density/Concentration**Zakres pomiarowy**

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

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PN 100, Class 600, 63K

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Sensor connection housing (option): 1.4301 (304); 1.4404 (316L);
1.4409 (CF3M) similar to 316L

Materiał obudowy przetwornika

AlSi10Mg, coated; 1.4409 (CF3M) similar to 316L; Polycarbonat

Stopień ochrony

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Sensor remote version (option): IP69.

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Wyświetlacz

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

Configuration via local display and operating tools possible

Density/Concentration**Wyjścia**

4 outputs:

4-20 mA HART (active/passive)

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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 wybuchemATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC

Product safetyCE, C-tick, EAC marking

Functional safety

Functional safety according to IEC 61508, applicable in safety-relevant
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Density/Concentration

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

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

Gaz

Zasada pomiaru

Coriolis

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Gaz

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Wielkości mierzone

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Gaz

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Maks. ciśnienie procesu

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Zakres temperatury medium

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Sensor connection housing (option): 1.4301 (304); 1.4404 (316L);
1.4409 (CF3M) similar to 316L

Materiał obudowy przetwornika

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Stopień ochrony

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

Sensor remote version (option): IP69.

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

External WLAN antenna: IP67

Gaz**Wyświetlacz**

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

Configuration via local display and operating tools possible

Wyjścia

4 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)

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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

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Metrological approvals and certificates

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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

Gęstość

Zasada pomiaru

Coriolis

Product Headline

The flowmeter with premium accuracy and robustness, as remote version with up to 4 I/Os. Highest measurement performance for liquids and gases under varying, demanding process conditions.

Więcej informacji www.pl.endress.com/8F5B