Proline Promass F 300
Coriolis flowmeter

Flowmeter with premium accuracy, robustness and a compact, easily accessible transmitter

Meer informatie en actuele prijzen:
www.nl.endress.com/8F3B

Voordelen:

- 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
- Full access to process and diagnostic information – numerous, freely combinable I/Os and Ethernet
- Reduced complexity and variety – freely configurable I/O functionality
- Integrated verification – Heartbeat Technology

Overzicht specificaties

- **Max. meetfout** 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
- **Measuring range** 0 to 2 200 000 kg/h (0 to 80 840 lb/min)
- **Medium temperature range** 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)
- **Max. process pressure** PN 100, Class 600, 63K
- **Wetted materials** 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)

Toepassingsgebied: Promass F has a long-standing reputation as a highly accurate sensor. Immune to fluctuating and harsh environments, it is suited for the broadest range of applications. With its compact

transmitter Promass F 300 offers high flexibility in terms of operation and system integration: access from one side, remote display and improved connectivity options. Heartbeat Technology enables measurement reliability and extension of recalibration cycles.

Kenmerken en specificaties

Liquids

Meetprincipe

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.

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). Nominal diameter: DN 8 to 250 (⅜ to 10").

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. Remote display available.

Nominal diameter range

DN 8 to 250 (⅜ to 10")

Liquids

Wetted materials

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)

Measured variables

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

Max. meetfout

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

Measuring range

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

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

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)

Ambient temperature range

Standard: −40 to +60 °C (−40 to +140 °F)
Option: −50 to +60 °C (−58 to +140 °F)

Sensor housing material

Standard: 1.4301 (304)
Option: 1.4404 (316/316L)

Transmitter housing material

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

Liquids

Degree of protection

Compact version: IP66/67, type 4X enclosure.
External WLAN antenna: IP67
IP69

Display/Operation

4-line backlit display with touch control (operation from outside)
Configuration via local display and operating tools possible
Remote display available

Outputs

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

Inputs

Status input
4-20 mA input

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, PROFINET, PROFINET over Ethernet-APL, Ethernet/IP, OPC-UA

Power supply

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

Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC, UK Ex, KC

Product safety

CE, C-tick, EAC marking

Liquids

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, gases, cryogenic liquids)
MI-002, PTB

Marine approvals and certificates

LR approval, DNV approval, ABS approval, BV approval, CCS 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

Gas

Meetprincipe

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.

Gas

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). Nominal diameter: DN 8 to 250 (⅜ to 10").

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. Remote display available.

Nominal diameter range

DN 8 to 250 (⅜ to 10")

Wetted materials

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)

Measured variables

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

Max. meetfout

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

Measuring range

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

Gas

Max. process pressure
PN 100, Class 600, 63K

Medium temperature range
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)

Ambient temperature range
Standard: –40 to +60 °C (–40 to +140 °F)
Option: –50 to +60 °C (–58 to +140 °F)

Sensor housing material
Standard: 1.4301 (304)
Option: 1.4404 (316/316L)

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

Degree of protection
Compact version: IP66/67, type 4X enclosure.
External WLAN antenna: IP67
IP69

Display/Operation
4-line backlit display with touch control (operation from outside)
Configuration via local display and operating tools possible
Remote display available

Gas

Outputs

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

Inputs

Status input
4-20 mA input

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, PROFINET, PROFINET over Ethernet-APL, Ethernet/IP, OPC-UA

Power supply

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

Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC, UK Ex, KC

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

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)
MI-005 (Liquids other than water, Hydrocarbons, LPG, cryogenic liquids)
NTEP (Liquids other than water, LPG, cryogenic liquids)
MC (Liquids other than water, gases, cryogenic liquids)
MI-002, PTB

Marine approvals and certificates

LR approval, DNV approval, ABS approval, BV approval, CCS 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

Steam

Meetprincipe

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.

Steam

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). Nominal diameter: DN 8 to 250 (⅜ to 10").

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. Remote display available.

Nominal diameter range

DN 8 to 250 (⅜ to 10")

Wetted materials

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)

Measured variables

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

Max. meetfout

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

Measuring range

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

Steam

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

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)

Ambient temperature range

Standard: –40 to +60 °C (–40 to +140 °F)
Option: –50 to +60 °C (–58 to +140 °F)

Sensor housing material

Standard: 1.4301 (304)
Option: 1.4404 (316/316L)

Transmitter housing material

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

Degree of protection

Compact version: IP66/67, type 4X enclosure.
External WLAN antenna: IP67
IP69

Display/Operation

4-line backlit display with touch control (operation from outside)
Configuration via local display and operating tools possible
Remote display available

Steam

Outputs

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

Inputs

Status input
4-20 mA input

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, PROFINET, PROFINET over Ethernet-APL, Ethernet/IP, OPC-UA

Power supply

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

Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC, UK Ex, KC

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

Steam

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, gases, cryogenic liquids)
MI-002, PTB

Marine approvals and certificates

LR approval, DNV approval, ABS approval, BV approval, CCS 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

Meetprincipe

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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.

Density

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). Nominal diameter: DN 8 to 250 (⅜ to 10").

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. Remote display available.

Nominal diameter range

DN 8 to 250 (⅜ to 10")

Wetted materials

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)

Measured variables

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

Max. meetfout

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

Measuring range

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

Density

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

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)

Ambient temperature range

Standard: –40 to +60 °C (–40 to +140 °F)
Option: –50 to +60 °C (–58 to +140 °F)

Sensor housing material

Standard: 1.4301 (304)
Option: 1.4404 (316/316L)

Transmitter housing material

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

Degree of protection

Compact version: IP66/67, type 4X enclosure.
External WLAN antenna: IP67
IP69

Display/Operation

4-line backlit display with touch control (operation from outside)
Configuration via local display and operating tools possible
Remote display available

Density

Outputs

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

Inputs

Status input
4-20 mA input

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, PROFINET, PROFINET over Ethernet-APL, Ethernet/IP, OPC-UA

Power supply

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

Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC, UK Ex, KC

Density/Concentration

Meetprincipe

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.

Density/Concentration

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). Nominal diameter: DN 8 to 250 (⅜ to 10").

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. Remote display available.

Nominal diameter range

DN 8 to 250 (⅜ to 10")

Wetted materials

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)

Measured variables

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

Max. meetfout

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

Measuring range

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

Density/Concentration

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

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)

Ambient temperature range

Standard: –40 to +60 °C (–40 to +140 °F)
Option: –50 to +60 °C (–58 to +140 °F)

Sensor housing material

Standard: 1.4301 (304)
Option: 1.4404 (316/316L)

Transmitter housing material

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

Degree of protection

Compact version: IP66/67, type 4X enclosure.
External WLAN antenna: IP67
IP69

Display/Operation

4-line backlit display with touch control (operation from outside)
Configuration via local display and operating tools possible
Remote display available

Density/Concentration

Outputs

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

Inputs

Status input
4-20 mA input

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, PROFINET, PROFINET over Ethernet-APL, Ethernet/IP, OPC-UA

Power supply

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

Hazardous area approvals

ATEX, IECEx, cCSAus, NEPSI, INMETRO, EAC, UK Ex, KC

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

Density/Concentration

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, gases, cryogenic liquids)
MI-002, PTB

Marine approvals and certificates

LR approval, DNV approval, ABS approval, BV approval, CCS 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

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