

Medidor de vazão Coriolis Proline Promass Q 500

Especialista inovador para aplicações desafiadoras, como versão remota com até 4 E/Ss



Mais informações e preço atual:

www.br.endress.com/8Q5B

Benefícios:

- Qualidade de medição segura - precisão incomparável da vazão mássica, vazão volumétrica e densidade
- Desempenho otimizado para líquidos com gás arrastado - MFT (Multi-Frequency Technology)
- Menos pontos de medição do processo - medição multivariável (vazão, densidade, temperatura)
- Instalação que economiza espaço - sem necessidade de execução de entrada/saída
- Acesso total a informações de processo e diagnóstico - numerosas E/Ss livremente combináveis e fieldbus
- Reduzida complexidade e variedade - funcionalidade livremente configurável de E/S
- Verificação integrada - Tecnologia Heartbeat

Especificações resumidas

- **Max. measurement error** Mass flow (liquid): $\pm 0.10\%$ (standard), 0.05% (option) Volume flow (liquid): $\pm 0.10\%$ Mass flow (gas): $\pm 0.35\%$ Density (liquid): $\pm 0.2\text{ kg/m}^3$
- **Measuring range** 0 to 400 000 kg/h (0 to 14 697 lb/min)
- **Medium temperature range** Standard: -50 to $+205^\circ\text{C}$ (-58 to $+401^\circ\text{F}$) Option: -196 to $+150^\circ\text{C}$ (-321 to $+302^\circ\text{F}$)
- **Max. process pressure** PN 100, Class 600, 63K
- **Wetted materials** Measuring tube: 1.4404 (316/316L); stainless steel for cryogenic applications Connection: 1.4404 (316/316L)

Campo de aplicação: Promass Q 500 fornece a mais alta precisão de medição para vazão mássica, vazão volumétrica e densidade.. Sendo a escolha preferida para aplicações de transferência de custódia, que também foi otimizada para aplicações em líquidos onde se sabe que o gás arrastado está presente. Com seu inovador transmissor remoto Promass Q 500, maximiza a flexibilidade de instalação e a segurança da operação em ambientes exigentes. A tecnologia Heartbeat assegura a conformidade e a segurança do processo em todos os momentos.

Características e especificações

Steam

Measuring principle

Coriolis

Product headline

Innovative specialist for challenging applications, as remote version with up to 4 I/Os.

Secured measuring quality – unmatched accuracy of mass flow, volume flow and density.

Highest measurement performance for custody transfer, density and under tough process conditions.

Marine approvals and certificates

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

Gas

Measuring principle

Coriolis

Product headline

Innovative specialist for challenging applications, as remote version with up to 4 I/Os.

Secured measuring quality – unmatched accuracy of mass flow, volume flow and density.

Highest measurement performance for custody transfer, density and under tough process conditions.

Gas**Sensor features**

Optimized performance for liquids with entrained gas – MFT (Multi-Frequency Technology). Fewer process measuring points – multivariable measurement (flow, density, temperature). Space - saving installation – no in-/outlet run needs.

Mass flow: measurement error ± 0.05 % (PremiumCal). Density: measurement error ± 0.2 kg/m³. High turndown due to low pressure loss/zero point.

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. Standard cable between sensor and transmitter.

Nominal diameter range

DN 25 to 100 (1 to 4")

Wetted materials

Measuring tube: 1.4404 (316/316L); stainless steel for cryogenic applications

Connection: 1.4404 (316/316L)

Measured variables

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

Max. measurement error

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

Volume flow (liquid): ± 0.10 %

Mass flow (gas): ± 0.35 %

Density (liquid): ± 0.2 kg/m³

Measuring range

0 to 400 000 kg/h (0 to 14 697 lb/min)

Gas

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

Standard: -50 to +205°C (-58 to +401 °F)

Option: -196 to +150 °C (-321 to +302 °F)

Ambient temperature range

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

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

Sensor housing material

1.4404 (316L), highest corrosion resistance

Sensor connection housing (standard): AlSi10Mg, coated

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

Transmitter housing material

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

Degree of protection

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

Display/Operation

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

Configuration via local display and operating tools possible

Outputs

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

Gas

Inputs

Status input

4-20 mA input

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, Profinet, 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

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, Liquified gases, Cryogenic liquids)

OIML R117 (Liquids other than water, Liquified gases, Cryogenic liquids)

NTEP (Liquids other than water, Cryogenic liquids)

Marine approvals and certificates

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

Pressure approvals and certificates

PED, CRN, AD 2000

Gas

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

Liquids

Measuring principle

Coriolis

Product headline

Innovative specialist for challenging applications, as remote version with up to 4 I/Os.

Secured measuring quality – unmatched accuracy of mass flow, volume flow and density.

Highest measurement performance for custody transfer, density and under tough process conditions.

Sensor features

Optimized performance for liquids with entrained gas – MFT (Multi-Frequency Technology). 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). Density: measurement error $\pm 0.2\text{ kg/m}^3$. High turndown due to low pressure loss/zero point.

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. Standard cable between sensor and transmitter.

Liquids

Nominal diameter range

DN 25 to 100 (1 to 4")

Wetted materials

Measuring tube: 1.4404 (316/316L); stainless steel for cryogenic applications

Connection: 1.4404 (316/316L)

Measured variables

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

Max. measurement errorMass flow (liquid): ± 0.10 % (standard), 0.05 % (option)Volume flow (liquid): ± 0.10 %Mass flow (gas): ± 0.35 %Density (liquid): ± 0.2 kg/m³**Measuring range**

0 to 550 000 kg/h (0 to 20 210 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature rangeStandard: -50 to $+205$ °C (-58 to $+401$ °F)Option: -196 to $+150$ °C (-321 to $+302$ °F)**Ambient temperature range**Standard: -4 to $+60$ °C (-4 to $+140$ °F)Option: -60 to $+60$ °C (-76 to $+140$ °F)**Sensor housing material**

1.4404 (316L), highest corrosion resistance

Sensor connection housing (standard): AlSi10Mg, coated

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

Liquids

Transmitter housing material

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

Degree of protection

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

Sensor remote version (option): IP69. Transmitter remote version: IP66/67, Type 4X enclosure

Display/Operation

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

Configuration via local display and operating tools possible

Outputs

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

Inputs

Status input

4-20 mA input

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, Profinet, 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

Liquids

Product safety

CE, C-tick, EAC marking

Functional safety

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Metrological approvals and certificates

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OIML R117 (Liquids other than water, Liquified gases, Cryogenic liquids)

NTEP (Liquids other than water, Cryogenic liquids)

MC (Liquids other than water, Cryogenic liquids)

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

Measuring principle

Coriolis

Density/Concentration

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Mass flow: measurement error ± 0.05 % (PremiumCal). Density: measurement error ± 0.2 kg/m³. High turndown due to low pressure loss/zero point.

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. Standard cable between sensor and transmitter.

Nominal diameter range

DN 25 to 100 (1 to 4")

Wetted materials

Measuring tube: 1.4404 (316/316L); stainless steel for cryogenic applications

Connection: 1.4404 (316/316L)

Measured variables

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

Density/Concentration**Max. measurement error**

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

Volume flow (liquid): ± 0.10 %

Mass flow (gas): ± 0.35 %

Density (liquid): ± 0.2 kg/m³

Measuring range

0 to 400 000 kg/h (0 to 14 697 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

Standard: -50 to $+205$ °C (-58 to $+401$ °F)

Option: -196 to $+150$ °C (-321 to $+302$ °F)

Ambient temperature range

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Sensor housing material

1.4404 (316L), highest corrosion resistance

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1.4409 (CF3M) similar to 316L

Transmitter housing material

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

Degree of protection

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

Display/Operation

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

Configuration via local display and operating tools possible

Density/Concentration**Outputs**

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

Inputs

Status input

4-20 mA input

Digital communicationHART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus
RS485, Profinet, 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

Product safety

CE, C-tick, EAC marking

Functional safetyFunctional 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)

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MI-005 Liquids other than water (Hydrocarbons, Liquified gases, Cryogenic liquids)

OIML R117 (Liquids other than water, Liquified gases, Cryogenic liquids)

NTEP (Liquids other than water, Cryogenic liquids)

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**Measuring principle**

Coriolis

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Density

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Sensor features

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Mass flow: measurement error $\pm 0.05\%$ (PremiumCal). Density: measurement error $\pm 0.2\text{ kg/m}^3$. High turndown due to low pressure loss/zero point.

Transmitter features

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Nominal diameter range

DN 25 to 100 (1 to 4")

Wetted materials

Measuring tube: 1.4404 (316/316L); stainless steel for cryogenic applications

Connection: 1.4404 (316/316L)

Measured variables

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

Density

Max. measurement error

Mass flow (liquid): $\pm 0.10\%$ (standard), 0.05% (option)

Volume flow (liquid): $\pm 0.10\%$

Mass flow (gas): $\pm 0.35\%$

Density (liquid): $\pm 0.2\text{ kg/m}^3$

Measuring range

0 to 550 000 kg/h (0 to 20 210 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

Standard: -50 to $+205^\circ\text{C}$ (-58 to $+401^\circ\text{F}$)

Option: -196 to $+150^\circ\text{C}$ (-321 to $+302^\circ\text{F}$)

Ambient temperature range

Standard: -40 to $+60^\circ\text{C}$ (-40 to $+140^\circ\text{F}$)

Option: -50 to $+60^\circ\text{C}$ (-58 to $+140^\circ\text{F}$)

Sensor housing material

1.4404 (316L), highest corrosion resistance

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

Transmitter housing material

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

Degree of protection

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

Sensor remote version (option): IP69. Transmitter remote version:
IP66/67, Type 4X enclosure

Display/Operation

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

Configuration via local display and operating tools possible

Density

Outputs

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

Inputs

Status input

4-20 mA input

Digital communication

HART, PROFIBUS DP, PROFIBUS PA, FOUNDATION Fieldbus, Modbus RS485, Profinet, 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

Density

Other approvals and certificates

CE, C-tick, EAC marking

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

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NTEP (Liquids other than water, Cryogenic liquids)

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

PED, CRN, AD 2000

3.1 material

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

3-A, EHEDG, cGMP

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