Proline Promass Q 500
Coriolis flowmeter

The innovative specialist for challenging applications, as remote version with up to 4 I/Os

More information and current pricing:
www.endress.com/8Q5B

Benefits:

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

Specs at a glance

- **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 550 000 kg/h (0 to 20 210 lb/min)
- **Medium temperature range** Standard: –50 to +205°C (–58 to +401 °F) Option: –196 to +150 °C (–321 to +302 °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)

Field of application: Promass Q 500 provides the highest measurement accuracy for mass flow, volume flow and density. Being the preferred choice for custody transfer applications, it has also been optimized for liquid applications where entrained gas is known to be present. With its

innovative remote transmitter Promass Q 500 maximizes installation flexibility and operational safety in demanding environments. Heartbeat Technology ensures compliance and process safety at all times.

Features and specifications

Density

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 ±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")

Density

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 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°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:−50 to +60 °C (−58 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

Density

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

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
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)
MC (Liquids other than water, Cryogenic liquids)
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

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.

Liquids

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

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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

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

Liquids

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: - 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

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

Liquids

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

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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)
MC (Liquids other than water, Cryogenic liquids)

Marine approvals and certificates

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

Liquids

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

Measuring principle
Coriolis

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Marine approvals and certificates
LR approval, DNV GL approval, ABS approval, BV approval

Density/Concentration

Measuring principle
Coriolis

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Density/Concentration

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)

Density/Concentration

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: - 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

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

Density/Concentration

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, CCS 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

Gas

Measuring principle

Coriolis

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Transmitter features

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Remote version with up to 4 I/Os. Backlit display with touch control and WLAN access. Standard cable between sensor and transmitter.

Gas

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)

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

Gas

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

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

Gas

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, 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

More information **www.endress.com/8Q5B**