Proline Promass I 500
Coriolis flowmeter

Combines in-line viscosity and flow measurement with a transmitter remote version with up to 4 I/Os

More information and current pricing:
www.endress.com/8I5B

Benefits:

- Energy-saving – full bore design enables minimal pressure loss
- 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 % Volume flow (liquid): ±0.10 % Mass flow (gas): ±0.50 % Density (liquid): ±0.0005 g/cm³
- **Measuring range** 0 to 180 000 kg/h (0 to 6600 lb/min)
- **Medium temperature range** −50 to +150 °C (−58 to +302 °F)
- **Max. process pressure** PN 100, Class 600, 63K
- **Wetted materials** Measuring tube: Titanium grade 9 Connection: Titanium grade 2

Field of application: The straight single-tube design of Promass I provides in-line viscosity measurement in addition to mass flow, density and temperature measurement. With its innovative remote transmitter Promass I 500 maximizes installation flexibility and operational safety in demanding environments. Heartbeat Technology ensures compliance and process safety at all times.

Features and specifications

Gas

Measuring principle

Coriolis

Product headline

Combines in-line viscosity and flow measurement with a transmitter remote version with up to 4 I/Os.
Measuring liquids and gases in applications requiring low pressure loss and gentle fluid treatment.

Sensor features

Energy - saving – full-bore design enables minimal pressure loss. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space - saving installation – no in-/outlet run needs. Straight, easy-to-clean single-tube system. TMB technology. Measuring tube made of Titanium.

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 8 to 80 (⅜ to 3")

Wetted materials

Measuring tube: Titanium grade 9
Connection: Titanium grade 2

Measured variables

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

Gas

Max. measurement error
Mass flow (liquid): ±0.10 %
Volume flow (liquid): ±0.10 %
Mass flow (gas): ±0.50 %
Density (liquid): ±0.0005 g/cm³

Measuring range
0 to 180 000 kg/h (0 to 6600 lb/min)

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

Medium temperature range
−50 to +150 °C (−58 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
1.4301 (304), corrosion resistant
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

Gas

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

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)

Gas

Pressure approvals and certificates
PED, CRN

Material certificates
3.1 material

Hygienic approvals and certificates
3-A, EHEDG, cGMP

Density/Concentration

Measuring principle
Coriolis

Product headline
Combines in-line viscosity and flow measurement with a transmitter remote version with up to 4 I/Os.
Measuring liquids and gases in applications requiring low pressure loss and gentle fluid treatment.

Sensor features
Energy - saving – full-bore design enables minimal pressure loss. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space - saving installation – no in-/outlet run needs. Straight, easy-to-clean single-tube system. TMB technology. Measuring tube made of Titanium.

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 8 to 80 (⅜ to 3")

Density/Concentration

Wetted materials
Measuring tube: Titanium grade 9
Connection: Titanium grade 2

Measured variables
Mass flow, density, temperature, volume flow, corrected volume flow, reference density, concentration, viscosity

Max. measurement error
Mass flow (liquid): ±0.10 %
Volume flow (liquid): ±0.10 %
Mass flow (gas): ±0.50 %
Density (liquid): ±0.0005 g/cm³

Measuring range
0 to 180 000 kg/h (0 to 6600 lb/min)

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

Medium temperature range
−50 to +150 °C (−58 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
1.4301 (304), corrosion resistant
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/Concentration

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

Product safety

CE, C-tick, EAC marking

Density/Concentration

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)

Pressure approvals and certificates

PED, CRN

Material certificates

3.1 material

Hygienic approvals and certificates

3-A, EHEDG, cGMP

Density

Measuring principle

Coriolis

Product Headline

Combines in-line viscosity and flow measurement with a transmitter remote version with up to 4 I/Os.
Measuring liquids and gases in applications requiring low pressure loss and gentle fluid treatment.

Sensor features

Energy - saving – full-bore design enables minimal pressure loss. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space - saving installation – no in-/outlet run needs. Straight, easy-to-clean single-tube system. TMB technology. Measuring tube made of Titanium.

Density

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

Measuring principle

Coriolis

Product headline

Combines in-line viscosity and flow measurement with a transmitter remote version with up to 4 I/Os.
Measuring liquids and gases in applications requiring low pressure loss and gentle fluid treatment.

Sensor features

Energy - saving – full-bore design enables minimal pressure loss. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space - saving installation – no in-/outlet run needs. Straight, easy-to-clean single-tube system. TMB technology. Measuring tube made of Titanium.

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 8 to 80 (⅜ to 3")

Liquids

Wetted materials
Measuring tube: Titanium grade 9
Connection: Titanium grade 2

Measured variables
Mass flow, density, temperature, volume flow, corrected volume flow, reference density, concentration, viscosity

Max. measurement error
Mass flow (liquid): ±0.10 %
Volume flow (liquid): ±0.10 %
Mass flow (gas): ±0.50 %
Density (liquid): ±0.0005 g/cm³

Measuring range
0 to 180 000 kg/h (0 to 6600 lb/min)

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

Medium temperature range
−50 to +150 °C (−58 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
1.4301 (304), corrosion resistant
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

Liquids

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

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)

Pressure approvals and certificates

PED, CRN

Material certificates

3.1 material

Hygienic approvals and certificates

3-A, EHEDG, cGMP

Viscosity

Measuring principle

Coriolis

Product headline

Combines in-line viscosity and flow measurement with a transmitter remote version with up to 4 I/Os.
Measuring liquids and gases in applications requiring low pressure loss and gentle fluid treatment.

Sensor features

Energy - saving – full-bore design enables minimal pressure loss. Fewer process measuring points – multivariable measurement (flow, density, temperature). Space - saving installation – no in-/outlet run needs. Straight, easy-to-clean single-tube system. TMB technology. Measuring tube made of Titanium.

Viscosity

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 8 to 80 (⅜ to 3")

Wetted materials

Measuring tube: Titanium grade 9
Connection: Titanium grade 2

Measured variables

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

Max. measurement error

Mass flow (liquid): ±0.10 %
Volume flow (liquid): ±0.10 %
Mass flow (gas): ±0.50 %
Density (liquid): ±0.0005 g/cm³

Measuring range

0 to 180 000 kg/h (0 to 6600 lb/min)

Max. process pressure

PN 100, Class 600, 63K

Medium temperature range

−50 to +150 °C (−58 to +302 °F)

Ambient temperature range

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

Viscosity

Sensor housing material

1.4301 (304), corrosion resistant
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

Inputs

Status input
4-20 mA input

Digital communication

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

Viscosity

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)

Pressure approvals and certificates
PED, CRN

Material certificates
3.1 material

Hygienic approvals and certificates
3-A, EHEDG, cGMP

More information **www.endress.com/8I5B**