

Proline Prosonic Flow G 500 ultrasonic flowmeter

Highly robust gas specialist for fluctuating process conditions as remote version with up to 4 I/Os



Benefits:

- Flexible device with user-definable gas mixtures for demanding measuring tasks
- Maximum reliability even with humid or wet gas – sensor design insensitive to condensate
- High-performance process control – real-time pressure- and temperature-compensated values
- Efficient solution – multivariable, no pressure loss
- Full access to process and diagnostic information – numerous, freely combinable I/Os
- Reduced complexity and variety – freely configurable I/O functionality
- Integrated verification – Heartbeat Technology

Specs at a glance

- **Max. measurement error** Volume flow (standard): - ± 1.0 % o.r. for 3 to 40 m/s (9.84 to 131.23 ft/s) - ± 2 % o.r. for 0.3 to 3 m/s (0.98 to 9.84 ft/s) Volume flow (optional calibration): - ± 0.5 % o.r. for 3 to 40 m/s (9.84 to 131.23 ft/s) - ± 1.0 % o.r. for 0.3 to 3 m/s (0.98 to 9.84 ft/s) Corrected volume flow (standard): - ± 1.5 % o.r. for 3 to 40 m/s (9.84 to 131.23 ft/s) - ± 2.5 % o.r. for 0.3 to 3 m/s (0.98 to 9.84 ft/s) Corrected volume flow (optional calibration): - ± 1.0 % o.r. for 3 to 40 m/s (9.84 to 131.23 ft/s) - ± 1.5 % o.r. for 0.3 to 3 m/s (0.98 to 9.84 ft/s) Sound Velocity: ± 0.2 % o.r.
- **Measuring range** Gas: 0.3 m/s to 40 m/s
- **Medium temperature range** -50 to 150 °C (-58 to +302°F) -50 to 100 °C (-58 to +212°F) with integrated pressure cell

- **Max. process pressure** 0.7 to 101 bar a (10.15 to 1464.88 psi a)
- **Wetted materials** Measuring tube: 1.4408/1.4409 (CF3M)
Transducer: 1.4404 (316, 316L, Titan Grade 2)

Field of application: For a wide range of gas applications Prosonic Flow G provides reliable flow measurement, even with wet gas and changing gas properties and compositions. A pressure-rated sensor housing with rupture disc limits safety risks. The innovative remote transmitter maximizes installation flexibility and operational safety in demanding environments. Heartbeat Technology enables compliance and process safety at all times.

Features and specifications

Gas

Measuring principle

Ultrasonic flow

Product headline

Highly robust gas specialist for fluctuating process conditions as remote version with up to 4 I/Os.

Flexible device with user-definable gas mixtures for demanding measuring tasks.

Accurate measurement of natural and process gas in the chemical as well as oil and gas industries.

Sensor features

Maximum reliability even with humid or wet gas – sensor design insensitive to condensate. High-performance process control – real-time pressure- and temperature-compensated values. Efficient solution – multivariable, no pressure loss.

Direct measurement: flow, pressure & temperature. Wetted parts: titanium / 316L. Maximum measuring accuracy: 0.5 %.

Gas

Transmitter features

Full access to process and diagnostic information – numerous, freely combinable I/Os. 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 300 (1 to 12")

Wetted materials

Measuring tube: 1.4408/1.4409 (CF3M)

Transducer: 1.4404 (316, 316L, Titan Grade 2)

Measured variables

Volume flow, corrected volume flow, mass flow, flow velocity, speed of sound, pressure, temperature, density, dynamic viscosity, energy flow, Wobbe index, methane fraction, calorific value, molar mass

Max. measurement error

Volume flow (standard):

- ± 1.0 % o.r. for 3 to 40 m/s (9.84 to 131.23 ft/s)

- ± 2 % o.r. for 0.3 to 3 m/s (0.98 to 9.84 ft/s)

Volume flow (optional calibration):

- ± 0.5 % o.r. for 3 to 40 m/s (9.84 to 131.23 ft/s)

- ± 1.0 % o.r. for 0.3 to 3 m/s (0.98 to 9.84 ft/s)

Corrected volume flow (standard):

- ± 1.5 % o.r. for 3 to 40 m/s (9.84 to 131.23 ft/s)

- ± 2.5 % o.r. for 0.3 to 3 m/s (0.98 to 9.84 ft/s)

Corrected volume flow (optional calibration):

- ± 1.0 % o.r. for 3 to 40 m/s (9.84 to 131.23 ft/s)

- ± 1.5 % o.r. for 0.3 to 3 m/s (0.98 to 9.84 ft/s)

Sound Velocity: ± 0.2 % o.r.

Measuring range

Gas: 0.3 m/s to 40 m/s

Gas

Max. process pressure

0.7 to 101 bar a (10.15 to 1464.88 psi a)

Medium temperature range

-50 to 150 °C (-58 to +302°F)

-50 to 100 °C (-58 to +212°F) with integrated pressure cell

Ambient temperature range

-40 to 60 °C (-40 to +140 °F)

Optional: -50 to 60 °C (-58 to +140 °F)

Sensor housing material

Stainless Steel, 1.4404(316/316L), 1.4408/1.4409 (CF3M)

Transmitter housing material

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

Polycarbonate

Degree of protection

Sensor remote version: 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 (active/passive)

Pulse/frequency/switch output (active/passive)

Double pulse output (active/passive)

Relay output

Inputs

Status input

4-20 mA input

Gas

Digital communication

HART, Modbus RS485

Power supply

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

Hazardous area approvals

ATEX, IECEx, cCSAus, JPN, EAC, UK Ex, KC

Product safety

CE, C-tick

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

Pressure approvals and certificates

PED, CRN

Material certificates

3.1 material

NACE MR0175/MR0103



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