Proline t-mass F 500
thermal mass flowmeter

Inline flowmeter with long-term stability as remote version with up to 4 I/Os

More information and current pricing:
www.apsc.endress.com/6F5B

Benefits:

- Flexible, convenient programming based on 21 standard gases or freely definable gas mixtures thereof
- High level of process control – premium measurement accuracy and repeatability
- Reliable monitoring – detection of process disturbances and reverse flow
- Easy maintenance – removable sensor
- 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** Gas: 1.0% o.r. (10 to 100% o.f.s.), 0.1% o.f.s. (1 to 10% o.f.s.)
- **Measuring range** 0.5 to 3750 kg/h (1.1 to 8250 lb/h)
- **Medium temperature range** -40 °C to +180°C (-40 °F to +356 °F)
- **Max. process pressure** PN40 / Cl. 300 / 20K
- **Wetted materials** Measuring tubes ▪ DN 15 to 50 (½ to 2"): stainless cast steel, CF3M/1.4408 ▪ DN 65 to 100 (2½ to 4"): stainless steel, 1.4404 (316/316L) Process connections Flange connections Stainless steel, 1.4404 (F316/F316L) Threaded connections Stainless steel, 1.4404 (316/316L) Sensing element Unidirectional ▪ Stainless steel, 1.4404 (316/316L) ▪ Alloy C22, 2.4602 (UNS N06022); Bidirectional Stainless steel, 1.4404 (316/316L) Reverse flow detection Stainless steel, 1.4404 (316/316L)

Field of application: The patented sensor design of t-mass F provides unprecedented measurement stability in thermal inline mass flow measurement. It compensates in real time for changes of process conditions: temperature, pressure, flow direction and gas type. The innovative remote transmitter von t-mass F 500 maximizes installation flexibility and operational safety in demanding environments. Heartbeat Technology ensures measurement reliability and compliant verification.

Features and specifications

Gas

Measuring principle

Thermal

Product headline

Inline flowmeter with long-term stability as remote version with up to 4 I/Os.
Flexible, convenient programming based on 21 standard gases or freely definable gas mixtures thereof.
Measurement of utility and process gases as well as gas mixtures in small line sizes.

Sensor features

High level of process control – premium measurement accuracy and repeatability. Reliable monitoring – detection of process disturbances and reverse flow. Easy maintenance – removable sensor.
Inline version with DN 15 to 100 (½ to 4"). Bidirectional measurement; high measuring performance. Patented drift-free sensor with SIL 2.

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.

Gas

Nominal diameter range

DN 15 to DN 100 (1/2" to 4")

Wetted materials

Measuring tubes
- DN 15 to 50 (½ to 2"): stainless cast steel, CF3M/1.4408
- DN 65 to 100 (2½ to 4"): stainless steel, 1.4404 (316/316L)

Process connections
Flange connections
Stainless steel, 1.4404 (F316/F316L)
Threaded connections
Stainless steel, 1.4404 (316/316L)
Sensing element
Unidirectional
- Stainless steel, 1.4404 (316/316L)
- Alloy C22, 2.4602 (UNS N06022);

Bidirectional
Stainless steel, 1.4404 (316/316L)
Reverse flow detection
Stainless steel, 1.4404 (316/316L)

Measured variables

Massflow, temperature, standard volume flow, volume flow, Free air delivery, velocity, heat flow, energy flow, density

Max. measurement error

Gas: 1.0% o.r. (10 to 100% o.f.s.), 0.1% o.f.s. (1 to 10% o.f.s.)

Measuring range

0.5 to 3750 kg/h (1.1 to 8250 lb/h)

Max. process pressure

PN40 / Cl. 300 / 20K

Medium temperature range

-40 °C to +180°C (-40 °F to +356 °F)

Gas

Ambient temperature range
-40 to 60°C (-40 to 140°F)
Optional:
Transmitter: -50 to 60°C (-50 to 140°F),
Sensor: -60 to 60°C (-60 to 140°F)

Transmitter housing material
Aluminium, AlSi10Mg, coated
Polycarbonate

Degree of protection
IP66/67, Type 4X enclosure Sensor: IP68, Type 6P (optional)

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)
Relay output

Inputs
Status input
4-20 mA input

Digital communication
HART, Modbus RS485

Power supply
DC 24V
AC 100 to 240V

Hazardous area approvals
ATEX, cCSAus, IECEx, NEPSI, JPN, UK Ex

Gas

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

More information **www.apsc.endress.com/6F5B**

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