

Proline t-mass 65F

Thermal mass flowmeter



©Endress+Hauser

Robust flowmeter with adaptation to changing process conditions

The t-mass 65F inline device is specially designed for the direct mass flow measurement of industrial gases and compressed air. With a turndown of typically 100:1 it can measure accurately operational flow rates and off line leakage. The integrated gas engine allows the customer to configure the device for 20 freely selectable gases.

• **Benefits**

- Measurement of gases and gas mixtures in small line sizes
- Plant safety – high accuracy and repeatability for a wide range of utility and process gases
- Cost-effective measurement – easy installation, negligible pressure loss and maintenance-free
- Reliable flow trending – multivariable measurement
- Fast and efficient commissioning – guided operating menus
- High plant availability – self-diagnostics and error monitoring
- Automatic recovery of data for servicing

• **Field of application**

- Measuring principle is characterized by a high operable flow range and direct mass flow measurement
- Measurement of gases and gas mixtures in small line sizes.

Device properties

- Inline version: nominal diameter DN 15 to 100 (1/2 to 4")
- Process pressure up to PN 40, Class 300
- High accuracy: ± 1.5 % o.r. (10 to 100 % o.f.s.)
- Device as compact or remote version
- 4-20 mA HART, PROFIBUS PA/DP, Modbus RS485, FF
- Worldwide approvals (Hazardous areas)

Features and specifications

- [Gas](#)
- [Measuring principle](#)

Thermal

- [Product headline](#)

High-performing flowmeter with intelligent and dynamic adaptation to changing process conditions. Measurement of gases and gas mixtures in small line sizes.

- [Sensor features](#)

Plant safety – high accuracy and repeatability for a wide range of utility and process gases. Cost-effective measurement – easy installation, negligible pressure loss and maintenance-free. Reliable flow trending – multivariable measurement. Inline version: nominal diameter DN 15 to 100 (1/2 to 4"). Process pressure up to PN 40, Class 300.

- Transmitter features

Flexible device configuration to suit the application – integrated “Gas Engine” functionality. For demanding applications – user-definable gas mixtures, high repeatability and accuracy. Automatic recovery of data for servicing. Device as compact or remote version. 4-20 mA HART, PROFIBUS PA/DP, Modbus RS485, FF.

- Nominal diameter range

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

- Wetted materials

Transducer: 1.4404 (316L); Alloy C22, 2.4602 (UNS N06022)
Process connections: 1.4404 (316L/316)

Sensor body:

DN 15 to 25 (1/2" to 1"): CF3M-A351

DN 40 to 100 (1-1/2" to 4"): 1.4404 (316/316L)

Bushing: PEEK GF30, PVDF

O-ring seals: EPDM, Kalrez 6375, Viton FKM

- Measured variables

Mass flow, temperature, volume flow, energy flow

- Max. measurement error

Gas: 1.5% o.r. (10 to 100% o.f.s.), 0.15% 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 +100 °C (-40 °F to +212 °F)

- Ambient temperature range

-20 °C to +60 °C (-4 °F to +140 °F)

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

- Transmitter housing material

Transmitter housing:

Compact: powder coated die-cast aluminium

Wall-mount: powder coated die-cast aluminium

Remote field: powder coated die-cast aluminium

Connection housing (remote version): powder coated die-cast aluminium

- Degree of protection

IP 67

NEMA 4x

- Display/Operation

Liquid crystal: back-lit, two lines with 16 characters per line

Configuration via local display and operating tools possible

- Outputs

4-20mA HART (active/passive selectable), pulse, frequency, status

- Inputs

4-20mA, status input

- Digital communication

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

- Power supply

85 to 260 VAC, 45 to 65 Hz

20 to 55 VAC, 45 to 65 Hz

16 to 62 VDC

- Hazardous area approvals

ATEX, FM, CSA, NEPSI

- Product safety

CE, C-tick, EAC marking

- Pressure approvals and certificates

PED, CRN

- Hygienic approvals and certificates

Oxygen service (certified acc. To BS IEC 60877)