

# Proline t-mass 65I thermal mass flowmeter

## Robust flowmeter with adaptation to changing process conditions



More information and current pricing:

[www.casc.endress.com/65I](http://www.casc.endress.com/65I)

### Benefits:

- Measurement of gases and gas mixtures in circular piping or rectangular ducts
- 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

### Specs at a glance

- **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** 20 to 720000 kg/h (44 to 1587328 lb/h)
- **Medium temperature range** -40 °C to +130 °C (-40 °F to +266 °F)
- **Max. process pressure** -0.5 to 20 bar gauge (-7.25 to 290 psi gauge)
- **Wetted materials** Transducer: 1.4404 (316L); Alloy C22, 2.4602 (UNS N06022) Insertion tube: 1.4404 (316/316L); Alloy C22, 2.4602 (on request) Transducer guard: 1.4404 (316L) Compression fitting: 1.4404 (316/316L) Ferrules: PEEK 450G, PVDF Bonded seals: EPDM, Kalrez 6375, Nitrile and 316/316L

**Field of application:** The t-mass 65I was 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. The t-mass 65I insertion version is suitable for large pipelines or rectangular ventilation ducts.

## 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 circular piping or rectangular ducts.

#### 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.

Insertion version for nominal diameter DN 80 to 1500 (3 to 60").

Medium temperature up to +130 °C (266 °F). High accuracy:  $\pm 1.5$  % o.r. (10 to 100 % o.f.s.).

#### 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. Worldwide approvals (Hazardous areas).

#### Nominal diameter range

DN 80 to 1500 (3 to 60")

## Gas

**Wetted materials**

Transducer: 1.4404 (316L); Alloy C22, 2.4602 (UNS N06022)  
Insertion tube: 1.4404 (316/316L); Alloy C22, 2.4602 (on request)  
Transducer guard: 1.4404 (316L)  
Compression fitting: 1.4404 (316/316L)  
Ferrules: PEEK 450G, PVDF  
Bonded seals: EPDM, Kalrez 6375, Nitrile and 316/316L

**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**

20 to 720000 kg/h (44 to 1587328 lb/h)

**Max. process pressure**

-0.5 to 20 bar gauge (-7.25 to 290 psi gauge)

**Medium temperature range**

-40 °C to +130 °C (-40 °F to +266 °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**

IP67 (NEMA 4X) for transmitter and sensor

## Gas

**Display/Operation**

Liquid crystal: back-lit, two lines with 16 characters per line  
Configuration via local display and operating tools possible

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**Outputs**

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

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**Inputs**

4-20mA, status input

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**Digital communication**

Profibus DP, Profibus PA, Foundation Fieldbus, Modbus

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**Power supply**

85 to 260 VAC, 45 to 65 Hz  
20 to 55 VAC, 45 to 65 Hz  
16 to 62 VDC

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**Hazardous area approvals**

ATEX, FM, CSA, NEPSI

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**Product safety**

CE, C-Tick, EAC marking

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