

Proline t-mass T 150

For simple liquid flow monitoring

Robust and reliable operation

- Wide variety of applications: measuring, monitoring and controlling liquid flows
- Measurement independent of the electrical conductivity
- Ideally suited for utilities with cooling and heating water or condensate
- Compact, space-saving insertion version for pipelines DN 40 to 1000 (1½ to 40")
- High repeatability thanks to integrated temperature compensation
- Fast commissioning with easy-to-understand local display and guided configuration in 17 display languages
- Hygienic version certified in accordance with 3A and EHEDG
- High temperature resistance during SIP cleaning processes
- Cost-effective operation:
 - Simple installation
 - Factory preconfigured (option)
 - Maintenance-free, no moving parts
 - Negligible pressure loss
 - High operable flow range (100:1)



Proline simply clever

Process monitoring is becoming more demanding and the need for maximum product quality is steadily increasing. This is why Endress+Hauser continues to provide industry-specific flow measurement solutions optimized for future technology requirements.

The new generation of our Proline flowmeters is based on a uniform device concept. This means time and cost savings, as well as maximum safety over the entire plant life cycle.

Optimal application solutions Proline incorporates all modern flow measuring technologies, thus optimizing plant up-time – true to our motto: “The industry-optimized flowmeter for your application”.

Innovative and proven in use Proline is based on a versatile, continually updated technology concept, guaranteeing that you are always implementing state-of-the-art technology.

Perfect integration Proline can be integrated seamlessly into your plant asset management, providing reliable information for optimizing production and business processes.



t-mass T 150

A single device for many applications

Many industrial processes and utilities require reliable measurement, monitoring and control of liquid flows. Proline t-mass T 150 works according to the thermal measuring principle and measures all aqueous fluids, regardless of the electrical conductivity:

- Cooling water
- Heating water
- Demineralized water (condensate)
- Industrial water
- Irrigation water
- Fluids in the wastewater area, etc.

The robust insertion version without moving parts guarantees reliable measurement results with long-term stability, even under tough process conditions. The hygienic device version enables SIP cleaning at temperatures up to +130 °C (+266 °F). The t-mass T 150 requires no maintenance and is suitable for a wide variety of measurement tasks:

- Measuring flow rates (quantity, internal cost allocation, etc.)
- Output of warning messages when values exceed or fall below limits (e.g. for pump protection)
- Monitoring filters, cleaning processes, coolants or hot water circuits
- Switching function (e.g. for valves)
- Detecting pipe breaks
- Use in energy management systems
- Monitoring pump performance (preventive maintenance in case of wear)



“Hot tap” mounting tool for inserting or removing the device under process conditions



Standard version



Hygienic version (3A, EHEDG)

Easy integration and configuration

As a Proline flowmeter, t-mass T 150 possesses a user-friendly local display. The menu-guided parameterization enables quick and efficient commissioning. Additionally, t-mass T 150 distinguishes itself through the following features:

- 17 available display languages
- Automatic partially filled pipe detection
- Quick restoration of device data in case of service (HistoROM data storage concept)
- High measurement repeatability
- Integrated temperature compensation
- Multivariable measurement (flow, temperature)
- Seamless integration via 4–20 mA HART or pulse/frequency/switch outputs

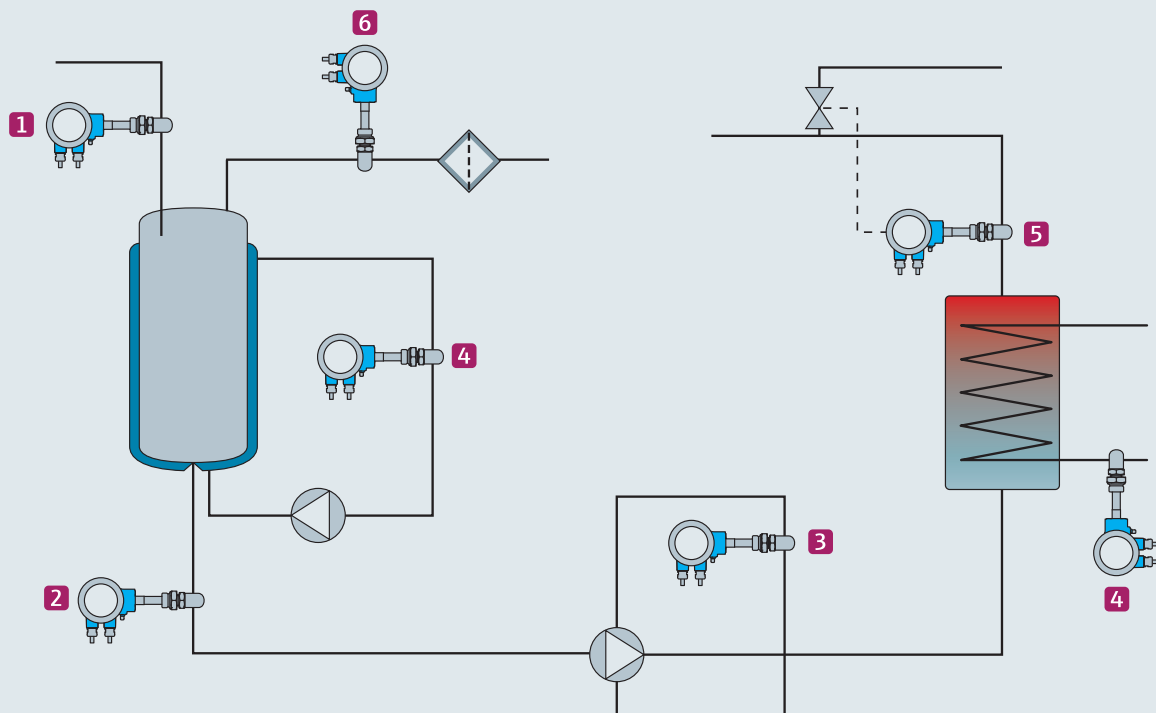
In situ adjustment (“Teach Function“)

A special device parameter, the in situ adjustment, allows t-mass T 150 to be adapted to fit the actual process conditions on site. This feature is especially significant in the following situations:

- For the measurement of fluids other than water
- For suboptimal installations in which the necessary inlet run requirements cannot be met



Measurement tasks and application areas



- 1 Flow measurement, 2 Dry-run protection (pumps)/pump performance monitoring, 3 Coolant monitoring for pumps, 4 Monitoring of cooling/heating circuits, 5 Switching/control function (e.g. for valves), 6 Filter monitoring (clogged: yes/no)

Technical data

t-mass 150 (transmitter)		t-mass T (sensor)	
Display	4-line display with push buttons	Diameters	DN 40 to 1000 (1½...40")
Operation	<ul style="list-style-type: none"> – Via local display – Via operating tools, e.g. "FieldCare" from Endress+Hauser – Via HART handheld 	Process connections	<ul style="list-style-type: none"> – Standard sensor: G ¾", ¾" NPT – Hygienic version: Tri-Clamp (ISO 2852), DIN 11851, DIN 11864-1
Power supply	DC 18 to 30 V	Min./max. flowrate	226 to 14 100 000 kg/h (497 to 31 100 000 lb/h) 226 to 14 100 000 l/h (60 to 3 730 000 gal/h)
Ambient temperature	-40 to +60 °C (-40 to +140 °F)	Process pressure	max. 40 bar g
Degree of protection	Compact design IP66 and IP67 (Type 4X enclosure)	Process temperature	-20 to +100 °C (-4 to +212 °F)
Galvanic isolation	All circuits for outputs and power supply are galvanically isolated from each other	SIP cleanability	up to +130 °C (+266 °F)
Output/Input	Current output (4–20 mA, HART), pulse/frequency/switch output; status input	Degree of protection	IP66 and IP67 (Type 4X enclosure)
Communication	HART	Max. measured error	±5.0% o.f.s.
Ex approvals	ATEX 3G, IECEx, cCSAus Cl. I Div. 2	Turndown	100:1
Subject to modification		Materials	1.4404 (316/316L), 2.4602 (N06022)
		Pressure loss	Negligible
		Approvals	<ul style="list-style-type: none"> – Ex zones: ATEX 3G, IECEx, cCSAus Cl. I Div. 2 – Hygiene: 3A, EHEDEG – Pressure: CRN (Canadian Registration Number)

The t-mass T 150 measuring system fulfills the EMC requirements according to IEC/EN 61326. It also conforms to the requirements of the EU and ACMA directives and thus carries the **CE** and **UL** mark.

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