

## MP 400

MP400 inductive flowmeters manufactured by EESA will meet your requirements for accurate, reliable and versatile unit at an affordable price.

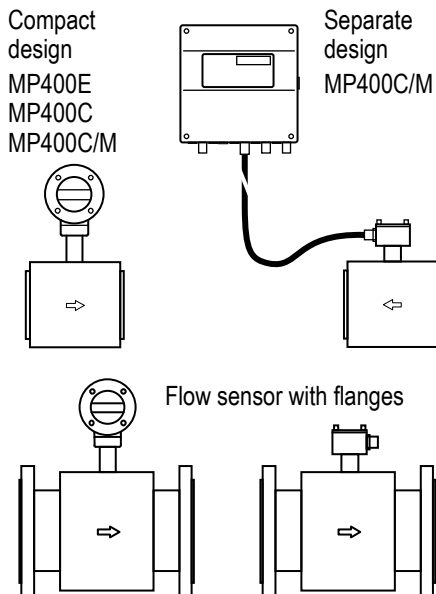
Flowmeters of MP400 series can be used for either billing or technological measurements of flow rate and flown volume in water, waste water as well as in industry including food processing. These units can also serve as measuring elements in process automation and in data retrieval systems.

The inductive flow sensor uses no parts that protrude into the measured liquid flow. This is why the inductive flowmeter can measure fluids with high degree of contamination and viscosity while causing zero pressure losses. The inductive flow sensor also uses no moving parts that are subject to wear.

The design of MP400 flowmeters ensures long-term stability of the unit's metrological properties within a wide range of flow rates and temperatures of the measured medium. Materials resistant to very aggressive chemical fluids are employed even in standard designs.

Thanks to the powerful microprocessor and its software, the flowmeter can be easily adjusted to various measuring tasks, offering high user convenience.

EESA has its own, officially approved flow test laboratory to provide official calibration of all flowmeters and heat consumption meters both initial and after legal period.



## MANUFACTURER'S ADDRESS

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## BASIC SPECIFICATION

Type approval mark:

TCM 142/94-1818, GOST 25593-03, PK 1558-04

Hygienic approval decision:

EXP 111650 ( water ), EX 413390 ( food ). EU harmonized.

The flowmeters are supplied official calibrated ( valid for 4 years in the Czech Republic ).

Rated inner diameter DN ( mm )	10	20	32	40	50	80	100	150
Threshold flow rate $Q_0$ (m <sup>3</sup> per hour)	0.007	0.03	0.07	0.11	0.17	0.43	0.68	1.52
Min. flow rate $Q_{min}$ (m <sup>3</sup> per hour)	0.085	0.34	0.87	1.36	2.12	5.43	8.48	19.1
Max. flow rate $Q_{max}$ (m <sup>3</sup> per hour)	3.39	13.6	34.7	54.3	84.8	217	339	763
Maximum $K_p$ (imp per dm <sup>3</sup> )	1600	400	150	100	60	25	15	7

Rated inner diameter DN ( mm )	200	250	300	350	400	500	600	800
Threshold flow rate $Q_0$ (m <sup>3</sup> per hour)	2.7	4.2	6.1	8.3	10.9	17	24.4	43.4
Min. flow rate $Q_{min}$ (m <sup>3</sup> per hour)	33.9	53.0	76.3	104	136	212	305	543
Max. flow rate $Q_{max}$ (m <sup>3</sup> per hour)	1360	2120	3050	4160	5430	8480	12200	21700
Maximum $K_p$ (imp per dm <sup>3</sup> )	4	2.5	1.6	1.25	1	0.5	0.4	0.25

Rated inner diameters DN 200 - DN800 have flow sensors with flanges only.

Measuring range  $Q_0$  to  $Q_{max}$ : 1 : 500

Accuracy in standard design:  $\pm 1\%$  within the range of  $Q_{min} - Q_{max}$  ( $Q_{min} = 2.5\% Q_{max}$ )

$\pm 0.003$  m per sec within the range of  $Q_0 - Q_{min}$

Flow sensor lining: PTFE - maximum fluid temperature 150 °C

Hard rubber - maximum fluid temperature 90 °C

Electrode material: 316L stainless steel, other material as an option

Rated nominal pressure PN: 10 - 25 bar <sup>5)</sup>

Minimum fluid conductivity: 5  $\mu$ S per cm

Power supply: standard: 230V (+10;-18%) / 50 - 60 Hz Power consumption: 14 VA

optional: 120V (+10;-18%) / 50 - 60 Hz or 24V DC

Enclosure class: IP 54 Protection class pursuant to IEC 536: II

Ambient temperature: 5 - 55 °C

Relative air humidity: no more than 90%

## DESIGN

● standard design, feature or service included in the basic price

○ optional design or accessories

MP400E	MP400C	MP400CM	
●	●	●	Two-line underlit alphanumeric display
		●	Button to control display and user counters
●	●	○	Compact design
○	○	●	Separate design ( the flow sensor is connected by a cable ) <sup>1)</sup>
○	○	○	Food industry design
○	○	○	Installation accessories. Stainless steel accessories.
○	○	○	Flow sensor with flanges
●	●	● + ●	Adjustable frequency / impulse flow output <sup>2)</sup>
● <sup>3)</sup>	● <sup>3)</sup>	○ <sup>4)</sup>	Adjustable analogue output 4-20mA or 0-20mA or 0-10V
		●	Impulse E input for external water meter or impulse counting <sup>2)</sup>
		○ <sup>4)</sup>	Impulse F input for external water meter or impulse counting <sup>2)</sup>
		○ <sup>4)</sup>	2 inputs for RTD temperature sensors Pt500 <sup>2)</sup>
● <sup>3)</sup>	● <sup>3)</sup>	○ <sup>4)</sup>	RS232, RS485, M-Bus, IrDA serial interface
		○	Measured data registries ( 390 days / 954 hours / 1908 min )
	●	●	Operating time registration
		●	Registration of maximum flow rates and power failures
●	●	●	Custom setting as per order <sup>5)</sup>
		●	Up to 5 user counters with start / stop / reset capability <sup>5)</sup>
		●	Bi-directional flow rate measurement <sup>5)</sup>
○	○	○	Software to interface with a flowmeter

<sup>1)</sup> Standard cable length is 6m. Other length can also be specified.

<sup>2)</sup> When specified,  $K_p$ ,  $K_E$  and  $K_F$  can be set within the range of 0.0001 to 1000 imp per dm<sup>3</sup>.

<sup>3)</sup> Only 4-20mA and RS232. The signals are not galvanically separated from the measuring circuitry.

<sup>4)</sup> These features are implemented through communication modules that can also be installed in field.

The MP400CM flowmeter in separate design can use up to two communication modules.

The galvanic separation of the signals from the MP400CM flowmeter's measuring circuitry is provided by a separate power supply source.

<sup>5)</sup> For details, please refer to the following documentation that can be found on the company web site:

" MP400C&E INSTALLATION AND OPERATION MANUAL "

" MP400CM INSTALLATION AND OPERATION MANUAL "