FG4000

ELECTROMAGNETIC FLOWMETER

RS485 | RS232 | MODBUS RTU | METER-BUS | PULSE OUT. | 4-20 mA LOOP | 0-10 V LOOP | ACC. 0.5 %
SENSORS: FLANGE (EN/ASME/JIS/...) | WAFER | ASEPTIC THREAD (FOOD) | G THREAD (INCH THREAD)

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Overview:

Electromagnetic flowmeter FG4000 is designed for a wide range of industrial applications. The principle of electromagnetic inductance is utilized to measure the flow of liquid through the meter not using any mechanical parts within its metering cross section thus at virtually zero pressure drop.

This is a high dependability instrument that provides accurate measurement of flow of liquids with long-term stability. The flowmeter further covers a wide range of flow rates while maintaining measurement accuracy and featuring fast response to changes in flow, high level of ingress protection, ergonomic controls (display and membrane keys), and, last but not least, user-friendly design (with easy access to connectors, for example).

The FG4000 flowmeter advanced industrial design satisfies stringent requirements for mechanical as well as chemical resistance thus allowing to use the instrument under most rigorous conditions. The basic structure comprises a rigid aluminium casting that allows four positions of the flowtube in a horizontal or vertical pipe line while the correct operation position of the stainless steel front panel with display and membrane keys is always provided.

The FG4000 flowmeter also shows high resistance against electromagnetic interference and works reliably even under harsh conditions in heavy industries.

FG4000 flowmeter basic features:

- wafer, flanged, G threaded, aseptic threaded flowtubes
- compact or separate design (up to 40 meters)
- applicability in food industry and potable water treatment (stainless steel flowtube, aseptic thread,...)
- customizable view of quantities on display
- operation setup (flow conversion coefficient, type and rate of communication, measuring dynamics, etc.) using membrane keys or host computer software
- flowtube replaceability (each flowtube has its own constants)
- accessories – installation kit (carbon steel, stainless steel or made to customer specifications)
- Visikal operation software
- bidirectional flow measurement (separate counter for each direction)
- self-diagnostics – instrument status indicated on display
- flow monitoring on up to 5 flow rate totalizers
- monitoring of maximum flow reached within a time interval
- Empty pipe detection
- archiving of date time stamped measurement data for up to one year
- uptime records and power failure and error condition records

FG4000 flowmeter specifications:

- measuring range: 1:500
- accuracy: ±0.5% in range from Q_{min} to Q_{max}
  ±0.0015 m/s in range from Q_{init} to Q_{min}
- flowtube liner: PTFE – for wafer or aseptic threaded flowtubes,
  hard rubber or PTFE for flanged, wafer, G threaded flowtubes
- electrode material: 316L stainless steel, Hastelloy® C, titanium, tantalum
- pressure nominal: wafer design: 25 bar, flanged design: 10-40 bar
- minimum liquid conductivity: 5 µS/cm (20 µS/cm for demineralized water)
- power supply: standard: 230 V (+10/-15%) / 50-60 Hz,
  optional: 120 V/48 V/24 V (+10/-15%) / 50-60 Hz or 24 V DC
- input power: 14 VA
- ingress protection: IP 67
- IEC 536 protection class: I
- liquid temperature range: 0-150 °C (PTFE), 0-90 °C (hard rubber)
- ambient temperature range: 0-70 °C, recommended 15-55 °C
- communication modules: RS485 (Modbus RTU), RS232, Mbus
- pulse output: built-in (up to 1500 pulses/sec)
- analog output: 4-20 mA, 4-12-20mA, 0-10 V
- empty pipe detection: separate detection electrode

Flow sensor parameters	Flanged sensors (EN, DIN, ANSI, JIS,...)																			
	Wafer (flangeless) sensors																			
	Aseptic threaded (DIN11851) sensors																			
	G threaded sensors																			
G (Gas) thread [inch]	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"													
Aseptic thread DN [mm]	15	20	25	32	40	50	65	80	100											
Inner diameter DN [mm]	10	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Initial flow Q_{int} [m^3/hour]	0,01	0,02	0,03	0,04	0,07	0,11	0,17	0,3	0,4	0,7	1,1	1,5	2,7	4,2	6,1	8,3	10,9	13,7	17,0	24,4
Min. flow Q_{min} [m^3/hour]	0,08	0,19	0,34	0,53	0,87	1,36	2,12	3,56	5,43	8,48	13,2	19,1	34	53	77	104	136	172	212	305
Max. flow Q_{max} [m^3/hour]	3,39	7,63	13,6	21,2	34,7	54,3	84,8	143	217	339	530	763	1360	2120	3050	4160	5431	6867	8480	12200
Max. pulse const. [pls/dm^3]	1600	700	400	200	150	100	60	35	25	15	10	7	4	2,5	1,6	1,25	1	0,75	0,5	0,4