MehrFlow Design & Engineering Company

Magnetic Flowmeter FLOMAG 3000

Magnetic flowmeter FLOMAG 3000 is a volume flow rate meter for conductive fluids in pipelines. It allows measurement of flow rates in both directions, with high accuracy and in wide range of flow rates (0.1 – 12 m/s). The microprocessor controlled transmitter offers a wide variety of binary, analog and digital inputs and outputs suitable for all applications. Absence of moving parts and digital calibration ensures long-term accuracy and stability. The main benefit of FLOMAG 3000 type series instruments is their versatility. As a standard, the flowmeter transmitter includes a power supply and basic circuits enabling its measuring functions. All other inputs, outputs and display units can be added as plug -in modules. Thus, the customer only pays for the function actually required. This design also permits various inputs and outputs according to the specific needs of the customer.

Versions equipped with display and keyboard provide a wide variety of displayable operating data on a readable two-line display with large characters. Also all adjustable parameters can be comfortably changed during operation, using a four-key keyboard.

Sensors are obtainable in wide range of options and designs:

- ✓ Manufactured dimensions are from DN10 up to DN1200, for PN6 up to PN40 (64) and temperatures for the measured liquid up to 150 °C. Ambient temperature -20°C to 70°C. According to the connection we manufacture flanged sensors, wafer or with threads.
- ✓ For different measured liquids we use sensors with lining from soft rubber, hard rubber, special rubber or PTFE.
- ✓ Measured electrodes are manufactured from stainless steel, Hastelloy, Pt or Ti. Transmitter can be integral part of the sensor – compact version or it can be as remote version.

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TECHNICAL PARAMETERS

Transmeter

Power supply	85..240 VAC, 10..18VDC, 18..36VDC, 24VAC
Consumption	5..8 VA
Analog output	selectable - **A1** - 0(4)..20mA (12bit), **A2** - 0(4)..20mA (16bit), **A3** - 4..20mA (16bit) - all active, all galvanically isolated,selectable - **B1** - 0..1kHz passive, **B2** - 0..10kHz passive, **B4 -** 0..10kHz active (5, 12, 24V), **B5** - relay – all galvanically isolated
Binary Output	selectable - **C1-** RS232, **D1** - RS485 (MODBUS), **D2** - 0/20mA loop, **D3** - M-Bus - all galvanically isolated,selectable - **V1** –
Display	LCD and keyboard module – 2x16 charcters (9,6 mm high)
Electrode cleaning and pipeline full indication	selectable - **F1 -** electrochemical electrode cleaning module, **F2** - pipeline full indication module, **F3** = F1+F2
Protection	IP67
Min Conductivity of Liquid	20µS/cm (for some liquids from 5µS/cm)

Sensors

Nominal Diameter	DN10..DN1200
Nominal Pressure	PN6, PN10, PN16, PN25, (PN40, PN64), 150lb, 300lb
Connection	Flanged P(DIN**,** ANSI, ASA), Wafer **B,** Sanitary fittings (DIN11851) **V,** Thread **G**
Electrode material	Stainless steel, Hastelloy C-276, Pt, Ti
Lining	Hard rubber (TG) Soft rubber (MG), Special rubber (NG), PTFE (T)
Liquid temperature	0 - 80°C (TG, MG), 0 - 90°C (NG), 0 - 150°C (T)
Protection	IP67, IP68
Installation	Compact or remote version

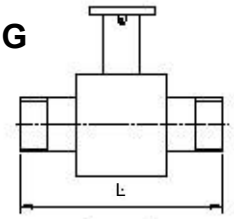
Installation Length

Installation lengths are different according to the design of the sensor and the lining material.

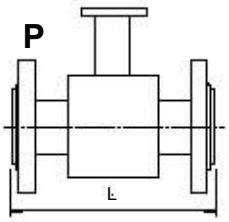
Flanged version - L [mm]

P DN	Lining TG, MG	Lining T, NG
15, 20	138	134
25 - 100	215	213
125, 150	305	301
200, 250	380	376
300 - 500	515	511
600	615	611
700	715	711
800, 900	815	811
1000, 1200	1015	1011

G



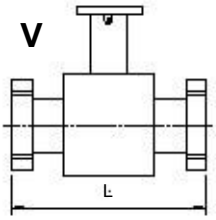
P



Thread version - L [mm]

V, G DN	Lining TG, MG	Lining T, NG
15, 20, 1/2“, 3/4“	150	150
25 - 100, 1“ - 4“	215	213
125, 150, 5“, 6“	305	301

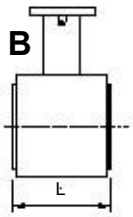
V



Wafer version - L [mm]

B DN	Lining TG, MG	Lining NG, T
10	-	62
15, 20	72	70
25 - 100	102	100
125, 150	132	130

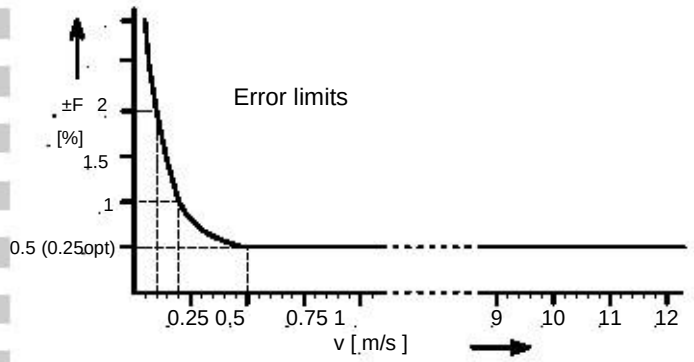
B



Manufactured dimensions, flow rate ranges and measurement error limits

DN		Flow rate l/s		Flow rate m3/h	
Mm	inch	Q_{min}	Q_{max}	Q_{min}	Q_{max}
10	3/8"	0.0078	0.9424	0.0282	3.392
15	1/2"	0.0176	2.120	0.0636	7.634
20	3/4“	0.0314	3.769	0.1130	13.57
25	1"	0.0490	5.890	0.1767	21.20
32	1 1/4“	0.0804	9.650	0.2895	334.74
40	1 1/2"	0.1256	15.07	0.4523	54.282.5
50	2"	0.1963	23.56	0.7068	84.82
65	2 1/2“	0.3318	39.81	1.194	143.3
80	3"	0.5026	60.31	1.809	217.1
100	4"	0.7853	94.24	2.827	339.2
125	5“	1.227	147.2	4.417	530.1
150	6"	1.767	212.0	6.361	763.4
200	8"	3.141	376.9	11.30	1357
250	10"	4.908	589.0	17.67	2120
300	12"	7.068	848.2	25.44	3053
350	14“	9.621	1154	34.63	4156
400	16"	12.56	1507	45.23	5428
450	18“	15.90	1908	57.25	6870
500	20"	19.63	2356	70.68	8482
600	24"	28.27	3392	101.7	12214
700	28"	38.48	4618	138.5	16625
800	32"	50.26	6031	180.9	21714
900	39"	63.61	7634	229.0	27482
1000	40"	78.53	9424	282.7	33929
1200	48“	113.0	13571	407.1	48858

Selected sensor range has to be in the flow velocity interval 0,1 up to 12 m/s. Volume flow rate limits for the single dimensions are shown in the table. It is suitable to choose the operational sensor range between 0,5 and 5 m/s. The limits for the max measurement error from the measured value depending on the liquid flow velocity are shown on the graph



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