



# Magnetic flowmeter FLOMAG<sup>®</sup> 3000



Flanged Remote Sensor



Wafer Remote Sensor



Remote Sensor with Sanitary Fittings (DIN11851)



Remote Transmitter

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Flanged Compact Version

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 micro-processor 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. 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 is connected with the sensor with a cable – remote version. Transmitters has IP67, sensor up to IP68.

# TECHNICAL PARAMETERS

## Transmitter

Power supply	85..240VAC, 10..36VDC, 24VAC
Consumption	5..8VA
Analog output	optional - <b>A5</b> - 0(4)..20mA (16bit) - active, <b>A6</b> - 4..20mA (16bit) - active, <b>A7</b> - 4..20mA (16bit) - passive, all galvanically isolated. Modules A6 and A7 are HART compatible (with module H1)
Binary output	optional - <b>B1</b> - 0..1kHz passive, <b>B2</b> - 0..10kHz passive, <b>B3</b> - 0..12kHz active (5 V), <b>B3</b> - 0..12kHz active (24 V), <b>B5</b> - relay - all galvanically isolated
Interface	optional - <b>C1</b> - RS232, <b>D1</b> - RS485 (MODBUS), <b>D2</b> - 0/20mA loop, <b>D3</b> - M-Bus, <b>G1</b> - GSM modem, <b>H1</b> - HART modem (only with module A6 or A7) - all galvanically isolated
Display	optional - <b>V1</b> - LCD and keyboard module – 2x16 charcters (9,6 mm high)
Electrode cleaning and pipeline full indication	optional - <b>F1</b> - electrochemical electrode cleaning module, <b>F2</b> - pipeline full indication module, <b>F3</b> = F1+F2
Protection	IP67
Min conductivity of the liquid	20µS/cm (for some liquids from 5µS/cm )

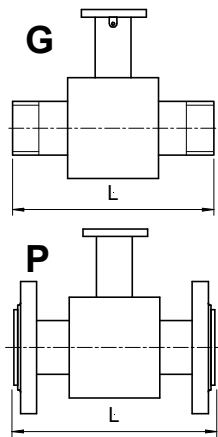
## Sensors

Nominal diameter	DN10..DN1200
Nominal pressure	PN6, PN10, PN16, PN25, (PN40, PN64), 150lb, 300lb, 600lb
Connection	Flanged <b>P</b> (DIN, ANSI, ASA), Wafer <b>B</b> , Sanitary fittings (DIN11851) <b>V</b> , Thread <b>G</b>
Electrode material	Stainless steel AISI 316 Ti, 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 (optional)
Installation	Compact or remote version

## Installation lengths

### Flanged version - L [mm]

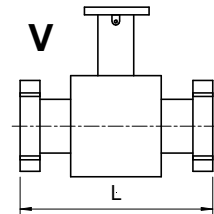
P DN	ISO 13359 EN 14154	Optional
15, 20	200	138
25, 32, 40, 50, 65, 80	200	215
100	250	215
125	250	305
150	300	305
200	350	380
250	400	380
300	500	515
350	550	515
400, 500, 600	600	615
700	700	715
800	800	815
900	900	815
1000	1000	1015
1200	1200	1015



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

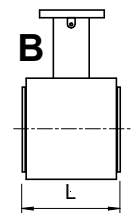
### Thread version - L [mm]

V, G DN	ISO 13359 EN 14154	Optional
15, 20, 1/2", 3/4"	200	150
25 - 80, 1" - 3"	200	215
100, 4"	250	215
125, 5"	250	305
150, 6"	300	305



### 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



## Manufactured dimensions, flow rate ranges and measurement error limits

DN		Flow rate l/s		Flow rate m³/h	
mm	inch	Q <sub>min</sub>	Q <sub>max</sub>	Q <sub>min</sub>	Q <sub>max</sub>
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	34.74
40	1 1/2"	0.1256	15.07	0.4523	54.28
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 suit-

able 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 below.

