

Electromagnetic amplifier type B-MAG | M5000



Features

- Up to 20 years battery life span
- Accuracy better than $\pm 0,4\%$
- Measuring range of 0,03 to 10 m/s
- Sizes from DN 15 to DN 600
- LCD display
- IP 67 / IP 68 protection class
- RS232, IrDA, Modbus[®], M-Bus interfaces, RS 485
- Verification Device
- OIML and MID approved



Description

The B-MAG | M5000 is a battery-powered electromagnetic flow meter with a very high accuracy even at very low flows. The excellent repeatability as well as the above-average battery life makes this innovative water meter indispensable for the water market. Typical applications are leak detection in water networks, water consumption measurements and irrigation plants.

The meter is best suited for applications without a power supply where exact consumption or flow rates are required. Of course, the B-MAG | M5000 can also be used with an available power supply. The meter can be powered with main voltage and in case of a main failure, it is powered by an internal battery. Important data are consequently saved.

The B-MAG | M5000 has been designed for very harsh environmental measurement conditions. The meter has no moving parts and can be used to measure water containing particles like sand or gravel. The B-MAG | M5000 is encased in an IP67 housing (optional IP68), which makes it a reliable meter even when submerged.

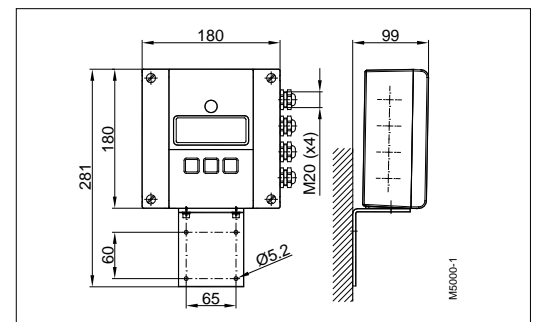
The standard meter is equipped with an internal datalogger which can read-out via an IrDA or RS232 interface with ModBus[®] RTU protocol. The collected data can also be retrieved via radio frequency or GSM/GPRS. The data can thus be centrally compiled and evaluated.

B-MAG | M5000 can be checked without process interruption with the Verification Device.

Measuring principle

The operating principle of the electromagnetic flow meter is based on Faraday's law of magnetic induction: The voltage induced across any conductor, as it moves at right angles through a magnetic field, is proportional to the velocity of that conductor. The voltage induced within the fluid is measured by two diametrically opposed internally mounted electrodes. The induced signal voltage is proportional to the product of the magnetic flux density, the distance between the electrodes and the average flow velocity of the fluid.

Dimensions



Technical data

Power supply	Internal Lithium batteries 3,6 V Optional battery back-up model (100 - 240 VAC or 9 - 36 VDC)
Sizes	DN 15 to DN 600 (PTFE / hard rubber)
Battery life span	10 years (with one battery pack), optional up to 20 years (with two battery packs)
Display	LCD, 2 lines
Programming	3 keys
Measuring range	0,03 – 10 m/s
Accuracy	±0,4% of m.v. ± 2 mm/s
Repeatability	0.1%
Minimum fluid conductivity	≥ 20 µs/cm
Flow direction	Bidirectional
Low-flow detection	Separate electrode
Digital outputs	4 x open collector, passive 30 VDC/20 mA, max. 100 Hz
Status outputs	Min./max. alarm, flow direction, failure report
Serial communication	RS232, ModBus® RTU, IRDA, M-Bus, RS 485 External AMR or GSM/GPRS module (optional)
Datalogger	Integrated
Low-flow cut off	0-10%
Pulse width	Programmable up to 500 ms.
Housing	Powder coated cast aluminium
Protection class	IP67 (IP68 optional)
Cable entry	Signal cable (outputs) M20
Signal cable	From detector M20
Remote version	Max. 30 m
Ambient temperature	-20°C to 60°C
Approvals	OIML R49-1, MID MI-001

Detector type VI

Flange process connection



Lined measuring pipes with materials approved for drinking water: KTW/DVGW, NSF-61, WRAS, ACS.

Technical data

Size	DN 15 – 600 (1/2" ... 24")		
Process connection	Flange: DIN, ANSI, JIS, AWWA, etc.		
Nominal pressure	Up to PN 100		
Protection class	IP67, optional IP68		
Min. conductivity	≥20 µS/cm		
Liner materials	Hard rubber	from DN 25	0°C up to +80°C
	PTFE	DN 15 – 20	-40°C up to +150°C
Electrodes materials	Hastelloy C (Standard), Tantalum Platinum / Gold plated, Platinum / Rhodium		
Housing	Steel / Optional stainless steel		
Lay length	DN 15 – 20	170 mm	
	DN 25 – 50	225 mm	
	DN 65 – 100	280 mm	
	DN 125 – 200	400 mm	
	DN 250 – 350	500 mm	
	DN 400 – 600	600 mm	

