

MAG VIEW

The high quality, economic and solid state magnetic inductive flow sensor for measuring water and aqueous solutions

> Introduction

Mass Flow ONLINE B.V., sells flow measuring and controlling products through the internet. From the website www.massflow-online.com flow meters or controllers can be ordered 24 hours a day 7 days a week. Most products are on stock and will be shipped world wide within two working days.

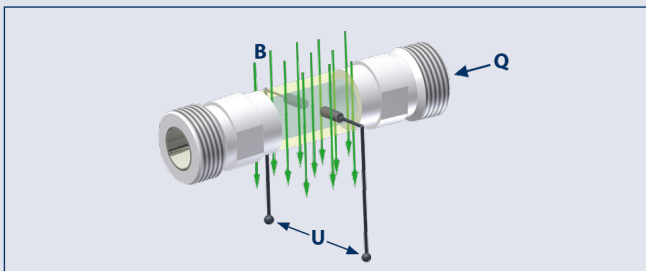
> Description

The new MAG-VIEW™ series flow meters offer a high quality, economic and solid state solution for measuring flow in areas where flow sensors with moving parts cannot be applied. Its interference free operation, combined with a long-life cycle and the wide independence to the inlet and outlet pipes makes MAG-VIEW™ the perfect solution even in compact machines with cramped confines. The meter is intended for continuously measuring of flow rates or for dosing / batching of electrically conductive liquids with a minimum conductivity of 20 $\mu\text{S}/\text{cm}$.

> MAG-VIEW™ series

The MAG-VIEW™ series operate on magnetic inductive principle. The measuring pipe is in a magnetic field (B). If an electrically conductive medium (Q) passes through the measuring pipe and thus right-angled to the magnetic field, a voltage (U) will be induced into the medium which is proportional to the average flow velocity and picked up by the two electrodes.

MAG-VIEW™ flow meters can be supplied in three metal models 0.5 .. 30 l/min, 1 .. 60 l/min and 5 .. 250 l/min and 6 cost-optimized plastic models 0,1 .. 2 l/min, 0,25...5 l/min, 1...20 l/min, 2,5 .. 50 l/min, 5 .. 200 l/min and 12,5 .. 250 l/min. The frequency of the pulse signal and the optional analog output are proportional to the flow.



> MAG-VIEW™ features

- ◆ Make liquid flows visible by:
 - Pulse output
 - Analog output
 - Blinking LED
- ◆ No mechanical wear
- ◆ No moving parts
- ◆ Ease of mounting and operation
- ◆ Free pipe cross section
- ◆ No additional pressure drop
- ◆ Fast response
- ◆ Insensitive with contaminated liquids
- ◆ Ideal solution for interference free operation combined with a long-life cycle
- ◆ Can be used in areas where flow sensors with moving parts cannot be applied
- ◆ Wide independence to the inlet and outlet pipes create the advantage to be able to install in compact machines with cramped confines.
- ◆ Lightweight and compact design
- ◆ Suitable for mobile applications
- ◆ Sustainable product design:
 - Maintenance free
 - Low power consumption

> Technical specifications MVM-P Series

Performance	MVM-030-P	MVM-060-P	MVM-250-P
Flow range	0.5...30 l/min	1...60 l/min	5...250 l/min
Accuracy	±1.5% RD, ±0.3% FS (incl. factory calibration certificate)		
Reproducibility	1 %		
Rangeability	1:60	1:60	1:50
Signal output starting from	~ 0,4 l/min	~ 0,9 l/min	~ 4 l/min
Medium	Water and other conductive liquids		
min. conductivity of the medium	50 µS/cm (lower conductivity affects the accuracy)		
Medium temperature	-20...90 °C		
Nominal pressure	PN 16		
Nominal diameter	DN 7	DN 10	DN 20
Process connection	½" BSP male thread		1" BSP male thread
Flow indication	LED green, flow proportional flashing		
Response time	frequency: < 500 ms frequency + analog (optional): < 800 ms		

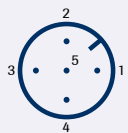
Mechanical specifications

Ingress protection	IP 65		
Materials			
Housing	Aluminium pressure diecasted		
Wetted parts	Electrodes:	Stainless Steel 1.4571	
	Process connections:	Stainless Steel 1.4571	
	Measuring pipe:	PEEK-GF30	
	Gasket:	EPDM	

Electrical specifications

Frequency output			
Pulse rate / K-factor	1000 pulses/l	500 pulses/l	100 pulses/l
Resolution	1 ml/pulse	2 ml/pulse	10 ml/pulse
Signal shape	Square wave signal • duty cycle 50:50 Push-Pull • NPN open collector [o.c.] • PNP o.c.		
Signal current	≤ 100mA, current limited		
Analog output (optional)			
Signal current	4...20 mA		
Max. load	250 Ω to GND		
Electrical connection	5-pin-plug M12x1		
Power supply	24 VDC ±10 %		
Power consumption	≤ 150 mA		

Pin assignment



PIN 1: +U
PIN 2: analog output 4...20 mA (optional)
PIN 3: GND
PIN 4: frequency output \square
PIN 5: do not connect

All information is subject to change without notice.

> Model number identification - P series

MVM - N N N - PA

Max flow

030	30 l/min
060	60 l/min
250	250 l/min

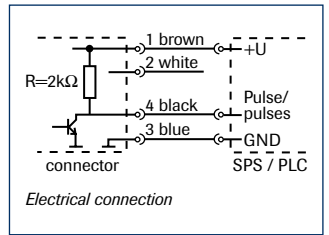
Output

PN	output pulse, no analog
PA	output pulse + 4...20 mA

> Connection to a Programmable Logic Controller (PLC)

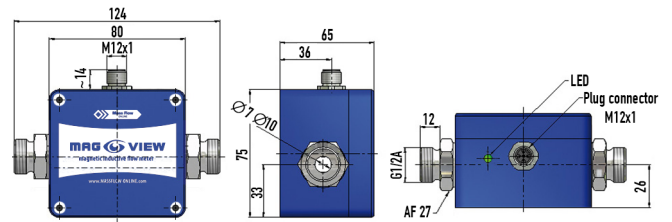
Most digital PLC inputs are designed for connection to PNP signals. The MVM has an NPN frequency signal with an integrated 2kΩ pull-up resistor. Its signal current of ~12 mA is recognised as a signal by the current PLC. Thus, operating a MVM with a PLC should not present any problems. The frequency output of the MVM should be attached to a digital input of the PLC.

Important! Please ensure that your PLC is able to process the high frequencies of the MVM output signal.

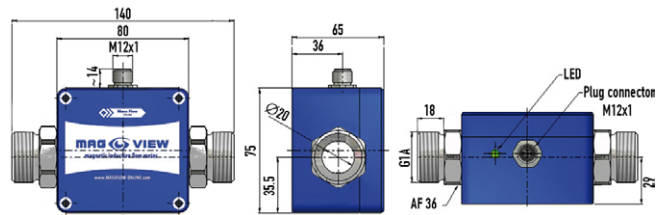


> Dimensional drawing (mm)

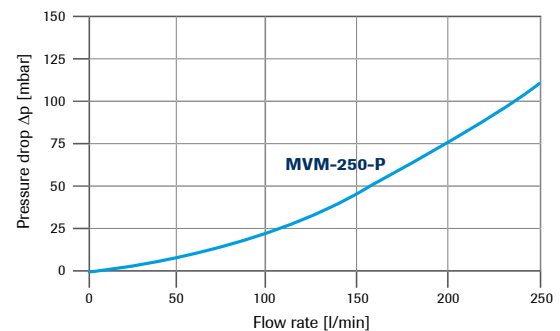
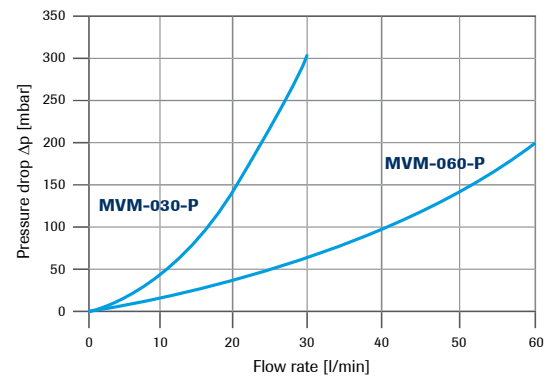
MVM-030-P and MVM-060-P



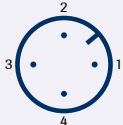
MVM-250-P



> Pressure drop



> Technical specifications MVM-QA Series

Performance						
Model MVM-xxx-QA	002	005	020	050	200	250
Flow range (l/min)	0.1...2	0.25...5	1...20	2.5...50	5...200	12.5...250
Max. flow rate (l/min)	2.5	6	25	60	240	300
Accuracy*	±1 %RD (incl. factory calibration certificate)					
Repeatability	1 %					
Rangeability	1:20	1:20	1:20	1:20	1:40	1:20
Signal output starting from (l/min)	~ 0.05	~ 0,1	~ 0,25	~ 1	~ 4	~ 5
Medium	Water and other conductive liquids					
min. conductivity of the medium	20 µS/cm (lower conductivity affects the accuracy)					
Operating temperature	Medium -10...60 °C, Ambient 5...60 °C, not freezing					
Nominal pressure	max. 10 bar at 20 °C, 8 bar at 40 °C, 6 bar at 60 °C					
Nominal diameter	DN 3	DN 6	DN 8	DN 15	DN 20	DN 25
Process connection (male thread)	3/8" BSP	1/2" BSP	1/2" BSP	3/4" BSP	1" BSP	1 1/4" BSP
Flow indication	LED green, flow proportional flashing					
Response time	< 100 ms					
Mechanical specifications						
Ingress protection	IP 65					
Materials						
Housing	ABS					
Wetted parts	Electrodes and grounding rings : Stainless Steel 316L Measuring pipe : PVDF Process connections : PVDF					
Electrical specifications						
Frequency output						
Pulse rate / K-factor (pulses/l)	10000	4000	1000	400	200	80
Resolution (ml/pulse)	0.1	0.25	1.0	2.5	5	12.5
Signal shape	Square wave signal • duty cycle 50:50 Push-Pull					
Signal current	≤ 100 mA					
Electrical connection	4-pin-plug M12x1					
Power supply	12...24 VDC (±10 %)					
Power consumption	Max. 3.6 W					
Electrical protection measures	short-circuit proof, protected against polarity reversal					
Pin assignment						
	PIN 1: +U _B PIN 2: Analogue I PIN 3: GND PIN 4: Frequency					

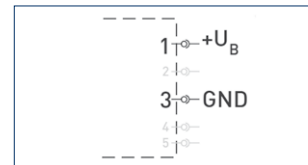
All information is subject to change without notice.

* Test conditions: Water 23 °C.

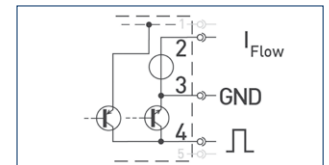


> Wirings and use of frequency/analogue output

Supply voltage

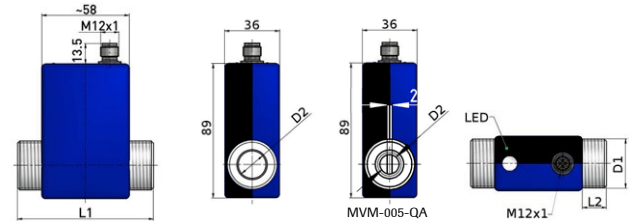


Use of frequency and analogue output



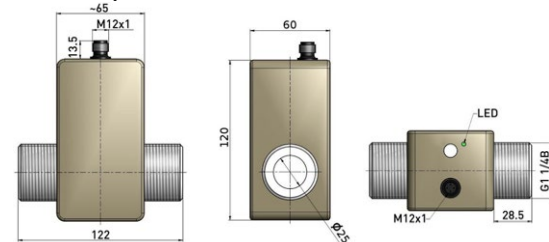
> Dimensional drawing (mm)

MVM - 002 / 005 / 020 / 050 / 200 - QA

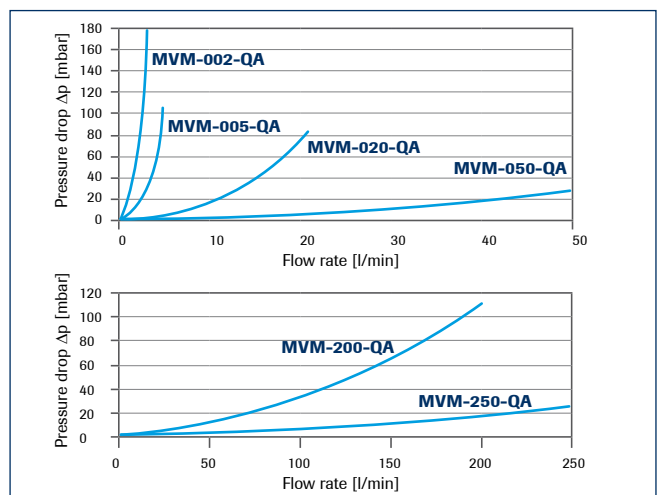


Type	L1	L2	D1	D2
MVM-002-QA	85	13.3	G 3/8 B	ø 3
MVM-005-QA	85	13.3	G 1/2 B	ø 8 x 2
MVM-020-QA	85	13.3	G 1/2 B	ø 8
MVM-050-QA	90	15.5	G 3/4 B	ø 14
MVM-200-QA	90	15,5	G 1 B	ø 18

MVM-250-QA



> Pressure drop



> Model number identification - QA series

MVM - N N N - QA

Max flow	Output
002 2 l/min	QA output pulse + 4..20mA analog
005 5 l/min	
020 20 l/min	
050 50 l/min	
200 200 l/min	
250 250 l/min	