

MAG VIEW

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

> Introduction

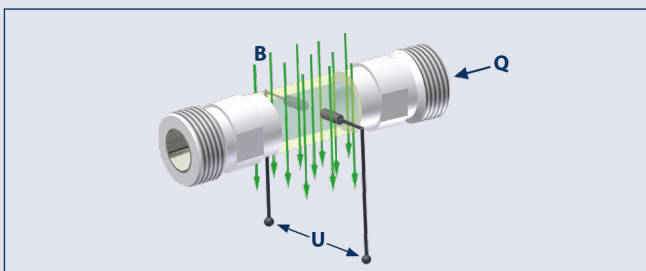
Mass Flow ONLINE B.V., sells flow measuring and controlling products through the internet. From the website www.massflow-online.com flow meters or controllers can be ordered 24 hours a day 7 days a week. Most products are on stock and will be shipped world wide within two working days.

> Description

The 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 five metal models 0.0083 .. 1 l/min, 0.05 .. 2 l/min, 0.1 .. 30 l/min, 0.2 .. 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

Model MVM-xxx-P	001	002	030	060	250
Flow range (l/min)	0.0083...1	0.05...2	0.1...30	0.2...60	5...250
Accuracy	001 & 002	± 1% FS for < 50% of full scale range; ± 2% FS for > 50% of full scale range			
	030 & 060	± 0.7 % of reading + 0.3 % of range			
	250	±1.5 % of reading + 0.3 % of range			
	(incl. factory calibration certificate)				
Reproducibility	1 %				
Rangeability	1:120	1:40	1:300	1:300	1:50
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 3	DN 3	DN 10	DN 10	DN 20
Process connection	¼" BSP male thread		½" BSP male thread		1" BSP male thread
Flow indication	LED green, flow proportional flashing				
Response time	frequency: < 500 ms				

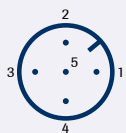
Mechanical specifications

Ingress protection	IP65				
Materials	Aluminium pressure diecast				
Housing	Aluminium pressure diecast				
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	10,000 pulses/l	10,000 pulses/l	1000 pulses/l	500 pulses/l	100 pulses/l
Resolution	0.1 ml/pulse	0.1 ml/pulse	1 ml/pulse	2 ml/pulse	10 ml/pulse
Signal shape	Square wave signal • duty cycle 50:50 • Push-Pull				
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	12...24 VDC (±10 %)				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 Δf
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

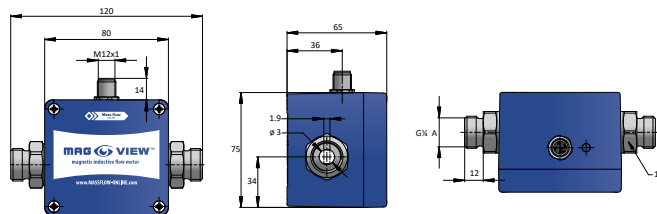
001	1 l/min
002	2 l/min
030	30 l/min
060	60 l/min
250	250 l/min

Output

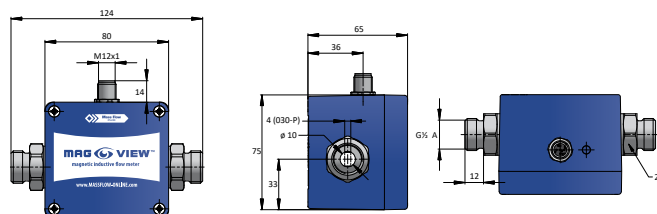
PN	output pulse, no analog
PA	output pulse + 4...20 mA

> Dimensional drawing (mm)

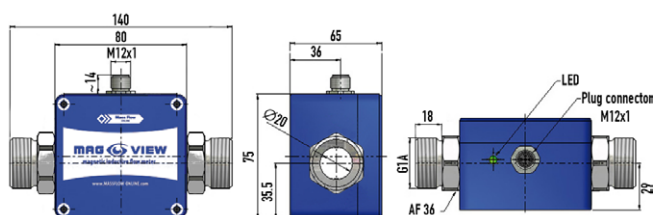
MVM-001-P and MVM-002-P



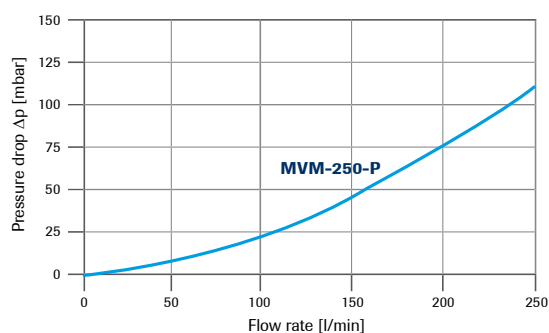
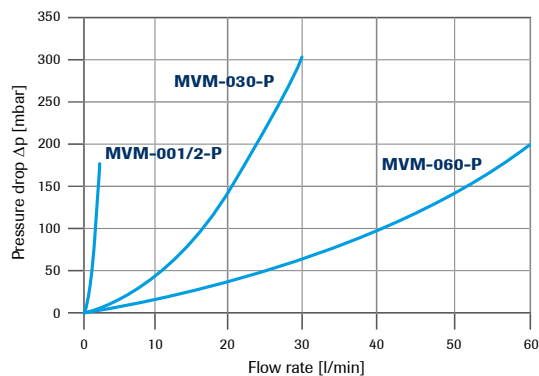
MVM-030-P and MVM-060-P



MVM-250-P



> Pressure drop



> Technical specifications MVM-QA(H) Series

Performance

Model MVM-xxx-QA(H)	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*	±0.7 % of reading ±0.3 % of range (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 -15...80 °C, Ambient -15...60 °C, not freezing					
Nominal pressure	max. 10 bar at 20 °C, 8 bar at 40 °C, 6 bar at 60 °C, 5 bar at 80 °C					
Nominal diameter	DN 3	DN 8	DN 8	DN 14	DN 18	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					

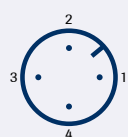
Mechanical specifications

Ingress protection	IP 65					
Materials						
Housing	ABS					
Wetted parts	Electrodes and grounding rings : Stainless Steel 316L Measuring pipe : PVDF Process connections : PVDF O-Rings : EPDM					
Wetted parts (H)	Electrodes and grounding rings : Hastelloy C® Measuring pipe : PVDF Process connections : PVDF O-Rings : FKM					

Electrical specifications

Frequency output						
Pulse rate / K-factor (pulses/l)	10,000	4,000	1,000	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

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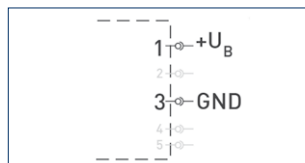
* Test conditions: Water 23 °C.



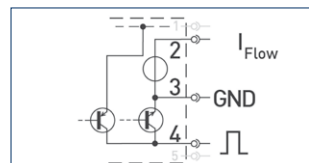
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> Wirings and use of frequency/analogue output

Supply voltage

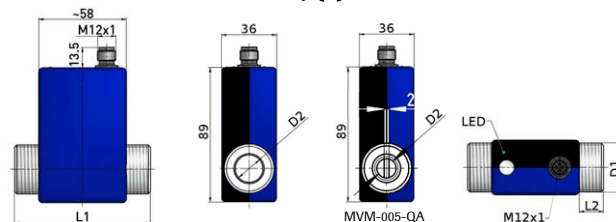


Use of frequency and analogue output



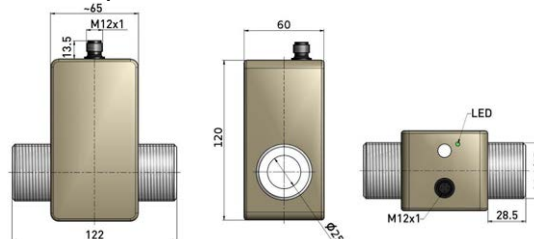
> Dimensional drawing (mm)

MVM - 002 / 005 / 020 / 050 / 200 - QA(H)

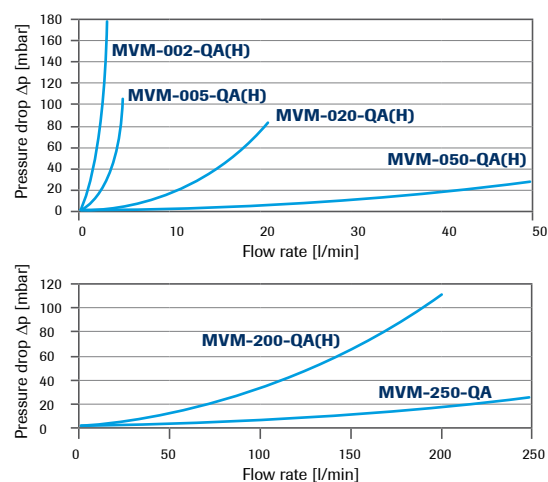


Type (H)	L1	L2	D1	D2
MVM-002-QA(H)	85	13.3	G 3/8 B	ø 3
MVM-005-QA(H)	85	13.3	G 1/2 B	ø 8 x 2
MVM-020-QA(H)	85	13.3	G 1/2 B	ø 8
MVM-050-QA(H)	90	15.5	G 3/4 B	ø 14
MVM-200-QA(H)	90	15.5	G 1 B	ø 18

MVM-250-QA



> Pressure drop



> Model number identification - QA series

MVM - N N N - QA - (H)

Max flow	Output	Material
002 2 l/min	QA output pulse + 4...20mA analog	Stainless Steel 316L (non-H models)
005 5 l/min		Hastelloy C®
020 20 l/min		
050 50 l/min		