MAG VIEW

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

> Introduction

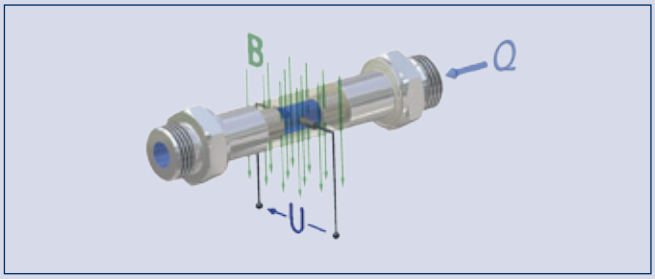
Mass Flow ONLINE B.V., sells flow measuring and controlling products through the internet. From the website www.massflow-online.com flow meters or controllers can be ordered 24 hours a day 7 days a week. Most products are on stock and will be shipped world wide within two working days.

> 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 µS/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 1 .. 20 l/min, 2 .. 40 l/min and 10 .. 200 l/min and 4 cost-optimized plastic models 0,25 .. 5 l/min, 2,5 .. 50l/min, 5 .. 100 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

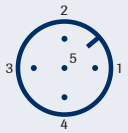
- Make liquid flows visible by:
  - Pulse output
  - Analog output (4 .. 20 mA, option on metal models only)
  - Blinking LED (red/green)
- No mechanical wear
- No moving parts
- Ease of mounting and operation
- Free pipe cross section
- No additional pressure drop
- Fast response (< 100 ms)
- Insensitive 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

Mass Flow ONLINE

> Technical specifications

Performance	MVM-020	MVM-040	MVM-200
Flow range	1...20 l/min	2...40 l/min	10...200 l/min
Accuracy	±2 %RD		
Reproducibility	1 %		
Rangeability	1:20		
Signal output starting from	~ 0,5 l/min	~ 1 l/min	~ 5 l/min
Medium	Water and other conductive liquids		
min. conductivity of the medium	50 µS/cm (lower conductivity affects the accuracy)		
Operating temperature	0...90 °C (not freezing)		
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	< 500 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 Victrex 450GL30 Gasket: EPDM		
Electrical specifications			
Frequency output			
Pulse rate / K-factor	855 pulses/l	855 pulses/l	200 pulses/l
Resolution	1,2 ml/pulse	1,2 ml/pulse	5 ml/pulse
Signal shape	Square wave signal • duty cycle 50:50		
Signal current	max. 20 mA, current limited		
Analog output (optional)			
Signal current	4…20 mA		
max. signal current	~ 26 mA		
max. load	250 Ω to GND		
Electrical connection	4-pin-plug M12x1		
Power supply	24 VDC ±10 %		
Power consumption	max. 80 mA		
Electrical protection measures	short-circuit proof (up to 30 V) polarity protection (up to -30 V)		

Pin assignment



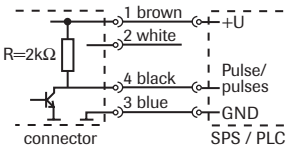
PIN 1: +U
PIN 2: analog output 4...20 mA (optional)
PIN 3: GND
PIN 4: frequency output ⎍⎍
PIN 5: do not connect

All information is subject to change without notice.

> 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.

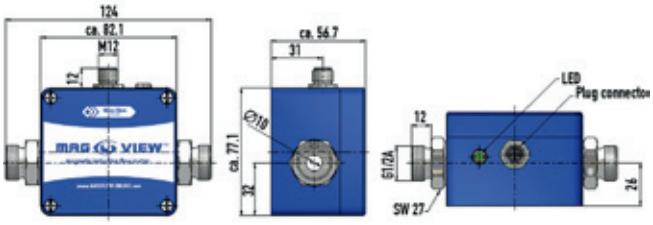
Important! Please ensure that your PLC is able to process the high frequencies of the MVM output signal.



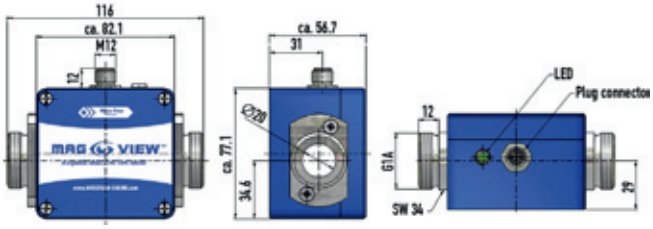
Electrical connection

> Dimensional drawings

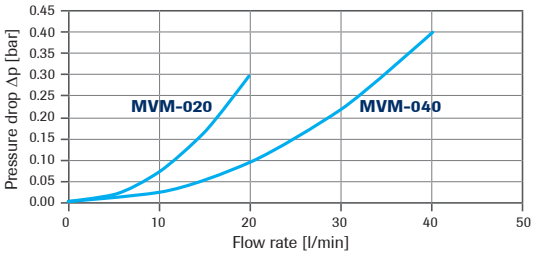
MVM-020 and MVM-040

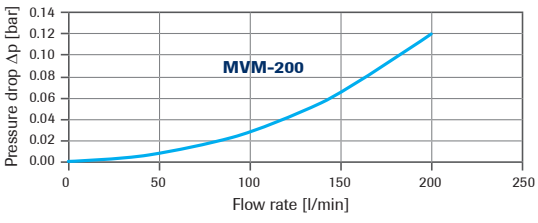


MVM-200



> Pressure drop

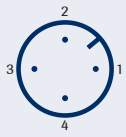




> Technical specifications MVM-Q Series

Performance	MVM-005-Q	MVM-050-Q	MVM-100-Q	MVM-250-Q
Flow range	0,25...5 l/min	2,5...50 l/min	5...100 l/min	12,5...250 l/min
Max. flow rate	6 l/min	60 l/min	120 l/min	300 l/min
Accuracy	±1 %RD			
Repeatability	1 %			
Rangeability	1:20			
Signal output starting from	~ 0,1 l/min	~ 1 l/min	~ 2 l/min	~ 5 l/min
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 °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 8	DN 15	DN 20	DN 25
Process connection	½" BSP male thread	¾" BSP male thread	1" BSP male thread	1¼" BSP male thread
Flow indication	red led is power, green led pulsing is flow			
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	4000 pulses/l	400 pulses/l	200 pulses/l	80 pulses/l
Resolution	0,25 ml/pulse	2,5 ml/pulse	5 ml/pulse	12,5 ml/pulse
Signal shape	PNP or NPN open collector			
Signal current	max. 25 mA			
Electrical connection	4-pin-plug M12x1			
Power supply	24 VDC ±10 %			
Power consumption	max. 80 mA, 0,6 W			
Electrical protection measures	short-circuit proof, protected against polarity reversal			

Pin assignment

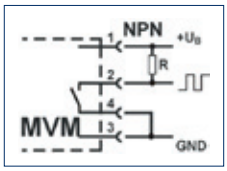


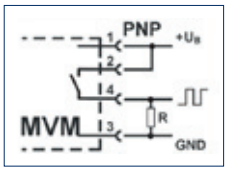
PIN 1: +U
PIN 3: GND
PIN 2/4: frequency output NPN/PNP

All information is subject to change without notice.

> Electrical connection NPN or PNP

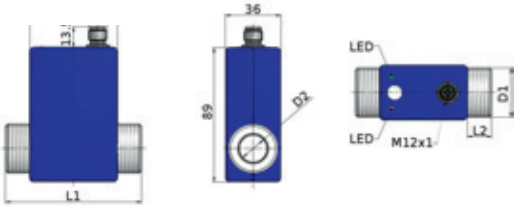
The MAG-VIEW™ has an NPN or PNP frequency signal depending on the configuration outlined below.



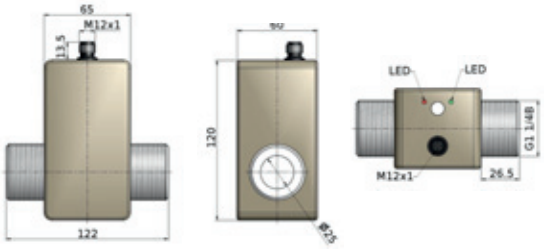


> Dimensional drawings

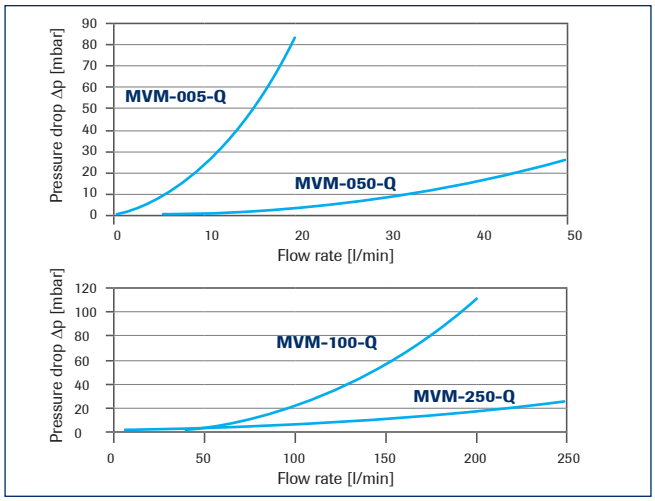
MVM - 005 / 050 / 100 - Q



MVM-250-Q



> Pressure drop



> Model number identification

MVM - N N N - A

Max flow				Output	
005	5 l/mln	100	100 l/min	PN	output pulse, no analog
020	20 l/min	200	200 l/min	PA	output pulse + 4...20 mA
040	40 l/min	250	250 l/min	Q	output pulse, no analog
050	50 l/min				

Bronkhorst distributor