

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.

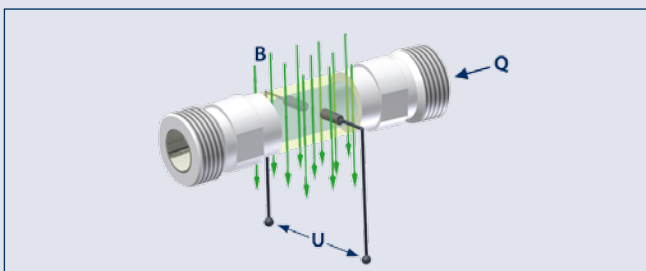
> Description

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 5 cost-optimized plastic models 0,1 .. 2 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
- ◆ 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-Q Series

Performance						
Model	MVM-	002-Q	005-Q	050-Q	100-Q	250-Q
Flow range (l/min)		0.1...2	0.25...5	2.5...50	5...100	12.5...250
Max. flow rate (l/min)		2.5	6	60	120	300
Accuracy*		±1 %RD				
Repeatability		1 %				
Rangeability		1:20				
Signal output starting from (l/min)		~ 0.05	~ 0,1	~ 1	~ 2	~ 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 °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 8	DN 15	DN 20	DN 25
Process connection (male thread)		¾" BSP	½" BSP	¾" BSP	1" BSP	1¼" BSP
Flow indication		red led is power, green led pulsing is flow				
Response time		< 100 ms				

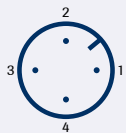
Mechanical specifications

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 (pulses/l)	10000	4000	400	200	80
Resolution (ml/pulse)	0.1	0.25	2.5	5	12.5
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	0.6 W				
Electrical protection measures	short-circuit proof, protected against polarity reversal				

Pin assignment



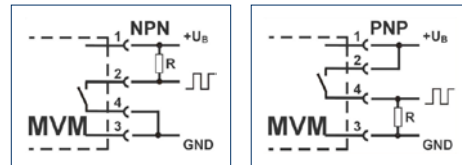
PIN 1: +U
PIN 3: GND
PIN 2/4: frequency output NPN/PNP

All information is subject to change without notice.

* Test conditions: Water 23 °C.

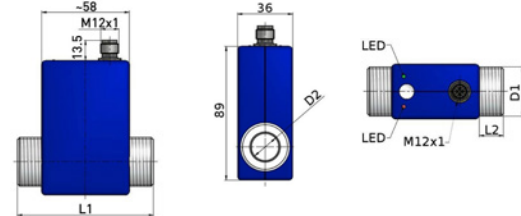
> Electrical connection NPN or PNP

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

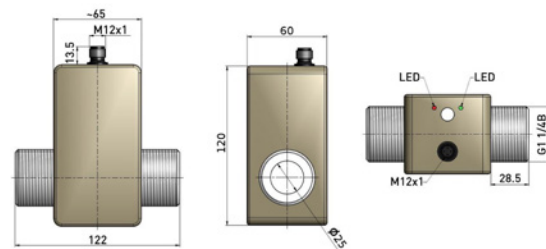


> Dimensional drawing (mm)

MVM - 002 / 005 / 050 / 100 - Q

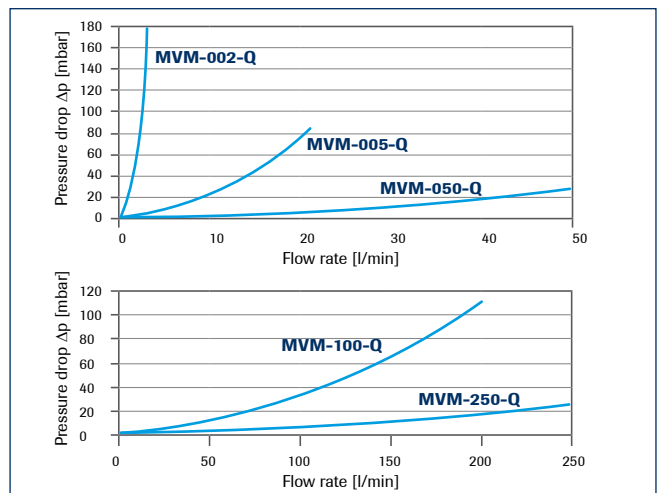


MVM-250-Q



Type	L1	L2	D1	D2
MVM-002-Q	85	13.3	G¾ B	ø 3
MVM-005-Q	85	13.3	G½ B	ø 8
MVM-050-Q	90	15.5	G¾ B	ø 14
MVM-100-Q	90	15,5	G1 B	ø 18

> Pressure drop



> Model number identification

MVM - N N N - A

Max flow		Output
002	2 l/min	PN output pulse, no analog
005	5 l/min	PA output pulse + 4...20 mA
030	30 l/min	Q output pulse, no analog
050	50 l/min	
060	60 l/min	
100	100 l/min	
250	250 l/min	

> 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		
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	5...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		

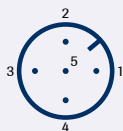
Mechanical specifications

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

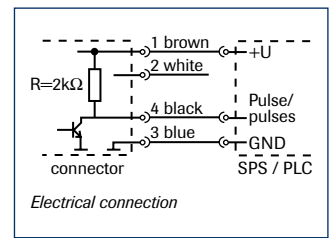
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> Connection to a Programmable Logic Controller (PLC)

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.

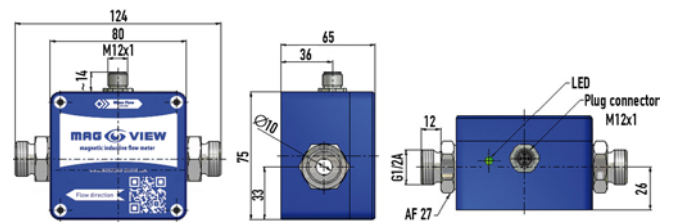
Thus, operating a MVM with a PLC should not present any problems. The frequency output of the MVM should be attached to a digital input of the PLC.

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

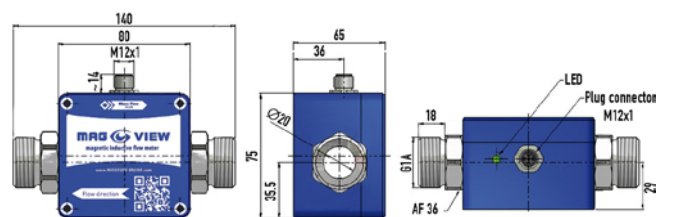


> Dimensional drawing (mm)

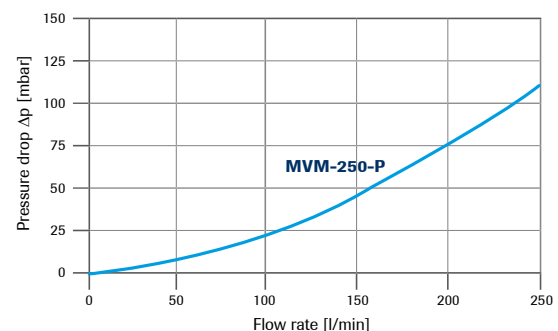
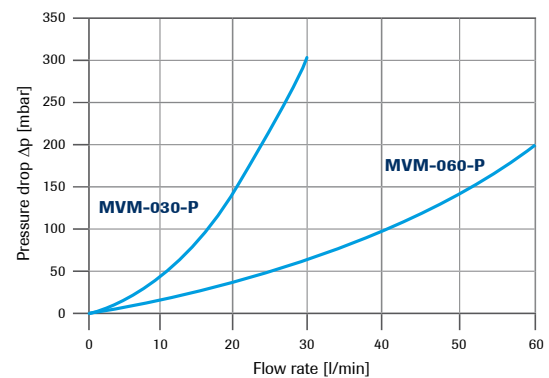
MVM-030-P and MVM-060-P



MVM-250-P



> Pressure drop

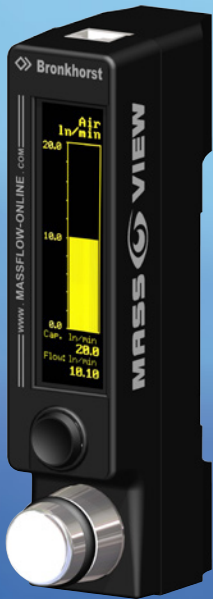


Mass Flow ONLINE

Flow Meters / Regulators / Controllers

MASS VIEW

Thermal Mass Flow Meters, Regulators & Controllers for gases



- > Bright, wide-angle OLED display
- > Flow ranges:
 - from 10 ... 200 ml_n/min (sccm)
 - up to 2 ... 200 l_n/min (SLM) (air equivalent)
- > Output: RS232, Modbus/RS485 or analog
- > Multi Gas / Multi Range (10 pre-installed gases)

MAG VIEW

Electromagnetic flowmeters for liquids



- > Insensitive to contaminated liquids
- > No mechanical wear
- > Fast response
- > Flow ranges from 0.1 ... 2 l/min up to 5 ... 250 l/min

SONIC VIEW

Ultrasonic flow sensor for measuring water and aqueous solutions



- > No mechanical wear
- > Just one chemically resistant wetted part (stainless steel)
- > Flow ranges from 1,5 ... 30 l/h up to 5 ... 110 l/min

FUEL VIEW

Fuel consumption and operating time meter with electronic counter



- > Built-in fuel filter
- > Suitable for Diesel, heating fuel, engine oil and other comparable liquids
- > Flow ranges from 1 ... 50 l/h up to 10 ... 500 l/h

FLOW ADJUST

Standard and high resolution manual control valves for extremely precise control in low flow

Standard Resolution

- > Compact needle valve in aluminium housing
- > 7-turn standard resolution flow adjustment
- > Valve knob included for easy adjustment
- > Two M4 female threads for solid fixation
- > Suitable for gases and liquids
- > Leak-free valve



High Resolution (additional to SR)

- > Non-rotating stainless steel valve pin
- > Valve pin o-ring guarantees positive shut-off without stem damage
- > Self-lubricating orifice liner assures long life
- > smooth, non-reversing flow characteristics and 15-turn high resolution

LIQUI VIEW Base

Vortex meter for monitoring low viscosity, water-like liquids



- > No moving parts
- > Smart and lightweight
- > Low pressure drop
- > Wide flow ranges
- > Fast response
- > Suitable for dirty water
- > Sustainable product design

Bronkhorst distributor



MASS-FLOW ONLINE BV
www.massflow-online.com