Residential Use

MID
MI-001

MVM Positive displacement water meter

MVM is the latest range of positive displacement magnetic drive water meters by Maddalena designed to meet the strict requirements of Directive 2014/32/EU on measuring instruments and European Standard ISO 4064.

As a positive displacement water meter MVM ensures high metrological performance and flexibility within a wide range of flow rates.

MVM meters may be equipped with the ARROW MVM compact radio module for remote reading or FlowPulse and FlowPulse M-BUS inductive pulsers.

MVM is guaranteed by Maddalena: manufacturer of high quality measuring instruments for the past century.

maddalena®
METERING EXPERTISE

POSITIVE DISPLACEMENT MAGNETIC DRIVE WATER METER

MVM is a positive displacement rotary piston magnetic drive water meter. The measuring chamber has been designed to achieve high metrological performance in terms of measuring range and accuracy.
MVM ensures high sensitivity to very low flow rates **(lower than 1 liter/hour.)**
Special high-grade compound polymer components obtained with the latest injection technologies as well as their dimensional precision minimize the friction between the measuring chamber and the piston providing high metrological performance.
A strainer fitted in the measuring chamber prevents meter stoppage thus ensuring operation even with suspended particles present in water.
MVM water meters are certified in accordance with Directive 2014/32/EU, Annex MI-001, and have undergone conformity assessment procedure B + D. The **maximum measuring range Q_3/Q_1(R) certified is 800** (Q_3 16 m^3/h: R500) and lower measuring range options (400, 320, 200, 160, etc.) are also available. Performance is ensured in any mounting position.
The mechanical design ensures insensitivity to magnetic fields and exceeds the requirements of the Directive 2004/22/EC.
MVM meters are designed for insensitivity to the strongest magnets on the market (N52, 125 kg).
MVM meters may be retrofitted with a new generation **bidirectional inductive pulser.** The pulsed version retains the standard meter features. MVM water meters are certified for use with potable water.

MANIFOLD design

Technical Specifications

- Cast brass body (OT58); DZR-brass body available upon request
- Manifold version also available (see picture)
- The measuring chamber is made of high performance self-lubricating materials with a high content of graphite. Internal parts are made of non-magnetic, anti-scaling and wear resistant materials
- Special polymer piston designed for minimum weight and long service life
- Insensitive to external magnetic fields
- Hermetically sealed dial, IP-68 rated version also available.
  The dial can be supplied with numbered drums at 45 degrees.
- Tamper detection
- Different arrangement options of the numbered drums and pointers for the indication of volume are available.
- The water meter comes with a removable plastic cover as an option which makes it resealable.
- Effective internal strainer. Inlet strainer available upon request
- Nominal working pressure: 16 bar
- Upstream or downstream straight lengths are not required
- Maximum water temperature: 50 °C
- MID inscriptions and markings are on the cover. They do not come into contact with the water being measured and are protected by a lid, therefore resulting always legible
- The dial can be customized with a **bar code representing the water meter serial number**, and a **QR code**
- Hydraulic tests are carried out at three flow rates (Q_1, Q_2, Q_3) on 100% of the production. Our testing benches comply with standards ISO 4064/3 and ISO 4185 (EN 14154/3) and are approved by a European notified body
- The meter may be provided with an optional non-return valve

HYDRAULIC PERFORMANCE

Size	mm	15 - 20	20	25	32	40
	in	½ - ¼"	¾"	1"	1 ¼"	1 ½"
Module B no.				TCM 142/10-4742		
Module D no.				0119-SJ-A010-08		
Metrological class MID		**R (Q3 / Q1) ≤ 800**	**R (Q3 / Q1) ≤ 800**	**R (Q3 / Q1) ≤ 800**	**R (Q3 / Q1) ≤ 800**	**R (Q3 / Q1) ≤ 500**
Q_3	**m^3/h**	2.5	4	6.3	10	16
Q_4	**m^3/h**	3.2	5	7.9	12.5	20
R		**400**	**400**	**400**	**400**	**315**
Q_1	**l/h**	6.2	10	15.7	25	50.8
Q_2	**l/h**	10	16	25.2	40	81.3
R		**200**	**200**	**200**	**200**	**160**
Q_1	**l/h**	12.5	20	31.5	50	100
Q_2	**l/h**	20	32	50.4	80	160

Other values of R available upon request.
The above metrological performances are also valid for the manifold version

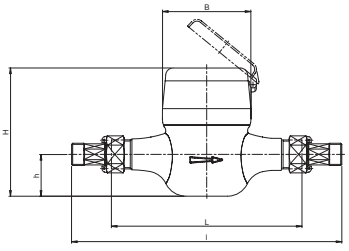
TECHNICAL DATA

Thread	in	G ¾ B - G1 B	1"	1 ¼"	G1 ½" B	G2" B
Maximum permissible error between Q_1 and Q_2 (excluded)				+/- 5%		
Maximum permissible error between Q_2 (included) and Q_4				+/- 2% with water temperature ≤ 30 °C +/- 3% with water temperature > 30 °C		
Temperature class				T30 and T50		
Flow profile sensitivity classes				U0 - D0 (upstream or downstream straight lengths not required)		
Starting flow rate	**l/h**	0.5	1	2.5	4.5	7
Pressure loss class (ΔP @ Q_3)				ΔP 63		
Nominal pressure	**bar**	16	16	16	16	16
Maximum reading	**m^3**	10,000/ 100,000	10,000/ 100,000	100,000/ 1,000,000	100,000/ 1,000,000	1,000,000/ 10,000,000
Minimum reading	**l**	0.01	0.02	0.02	0.02	0.2
Volume/cycle		38.31	44.291	21.270	11.500	6.480
Weight	**kg**	0.875	1.230	3.019	4.605	6.480

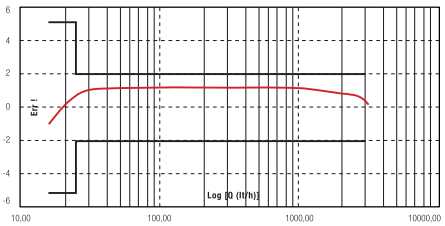
DIMENSIONS

Length *	mm	110-115-142** 145-165-170	165 - 190	198 - 260	260	300
Length with couplings	**mm**	190-195-142** 165-170	263 - 288	294 - 356	378	438
H	**mm**	116	126	135	166	176
h	**mm**	37	44	63	77	88
B	**mm**	89	92	129	150	172

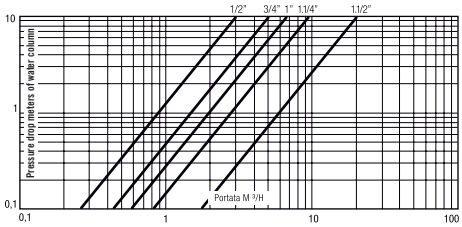
*** Other length options available upon request**
**** "Manifold" design**



Typical Error Curve



Head Loss Diagram



ACCESSORIES

ARROW^{WAN} MVM 169 MHz

Compact multi-protocol radio module with inductive sensor. Wireless M-Bus, AFNOR E17Z and LoRa™ compatible.

ARROW^{WAN} MVM 868 MHz

Compact multi-protocol radio module with inductive sensor. Wireless M-Bus, LoRaWAN™ and SigFox compatible.

ARROW MVM

Compact radio module with built-in inductive sensor. 868 MHz wireless M-Bus radio. It mounts on all meters of the MVM - MVM PLUS C series.

PULSER

FlowPulse: bidirectional inductive pulser with alarm management.
FlowPulse M-Bus: bidirectional inductive pulser with alarm management and direct M-Bus output.

SINGLE REED SWITCH PULSER

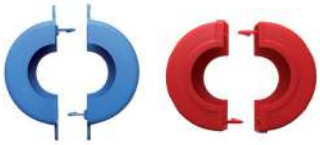
Designed for industrial batching.

NON-RETURN VALVE

Mounted in the meter outlet to protect it from backflow.

COUPLING KIT

It comprises two brass nuts, two brass tail pieces and two gaskets.



SEALS

Designed to secure the water meter to the pipe.

For more information on the accessories please refer to the relevant data sheet.

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METERING EXPERTISE

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ICIM UNI EN ISO 9001:2015 CERTIFIED MANAGEMENT SYSTEM

Rev. 6 02/18 I Subject to technical change