



# FLOWWIZ®

*The new generation  
of battery flowmeters*



wireless communication – alkaline batteries – flow/level/pressure – encrypted data – 4-20 mA output

**ISOMAG®**  
*The friendly magmeter*

## THE FLOWIZ® FAMILY

The **MV series of FLOWIZ®** is the **third generation of battery powered converters for ISOMAG® electromagnetic flow sensors**, deriving the benefits from fifteen years of experience in development and constant improvement since the first introduction of FLOWIZ® in 2004.

The result is a converter with **excellent performance**, able to **integrate pressure and/or temperature sensors**, with **ultra-efficient power management** guaranteeing an unparalleled operating duration from the **integrated alkaline or lithium batteries**.

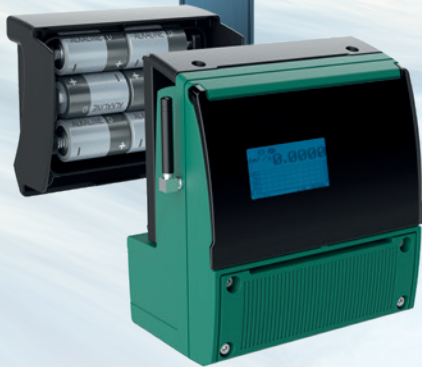
The new series of converters has numerous **process outputs** to interface with acquisition or control systems, including **Modbus or 3G modem** for wireless communication via Email or FTP.

The converters of the MV series can be used with any **ISOMAG® electromagnetic sensor both insertion and full bore up to DN1800**. Legal metrological use is possible as the converters combined with the MS2500 flanged meter are **MID MI-001 and OIML R49 certified**.

### WORLD FIRST BATTERY POWERED ELECTROMAGNETIC FLOWMETER

# Number

# 1



## by nature

- 2006** INTEGRATED DATA LOGGER AND GPRS COMMUNICATIONS
- 2010** BUILT IN DOUBLE PRESSURE INPUT
- 2011** INTEGRATED ANTITHEFT ALARM
- 2013** INCORPORATED CATHODIC PROTECTION MONITORING

THIRD GENERATION

**2019** WORKING WITH INTEGRATED ALKALINE BATTERY UP TO 10 YEARS

## FLOWIZ® EVOLUTION

FIRST GENERATION

### FLOWIZ

**ML250 FLOWIZ®**  
Field test, battery converter with integrated GPRS



**2004**

**2006**

**ML250**  
Official launch of battery powered converter for electromagnetic flowmeter with integrated datalogger and GPRS



**ML252**  
Official launch of blind battery converter without GPRS

**2008**

**2009**

**ML150**  
Official launch of battery powered datalogger with GPRS

SECOND GENERATION



**ML255**  
Evolution of ML250 with new graphic display and efficient power management. Built in double pressure input

**2010**

**2011**

**ML155 Official launch**  
Evolution of ML150 with new graphic display, efficient power and Pressure/Temperature management. ML255 integration of Antitheft alarm

**ML145**  
Official launch of battery converter without GPRS. ML255 integration of incorporated cathodic protection monitoring

**2013**

THIRD GENERATION

**2019**

**MV255 / MV145**  
Official launch of the new generation of ML255 and ML145 with LCD display, alkaline or lithium batteries, 3G, 4/20 mA out, BIV



## FLOWIZ® KEY FEATURES



**3G wireless** communication protocol



**Battery powered**  
(also with alkaline Type D batteries)



**BIV:** Built In Vericator to monitor and store sensor and converter status

**Modbus** Protocol over RS485



**Encrypted data file**



**OIML R49 & MID MI-001**

**4...20 output either passive or active**

## THE RIGHT SOLUTION FOR YOUR APPLICATION



### WATER



- Distribution and leak detection
- District metering (DMAs, SMAs, Zones)
- Commercial metering
- Non revenue water (NRW)
- Well water metering
- Supply management



### IRRIGATION



- Irrigation monitoring
- Dosing of fertilizers
- Water billing

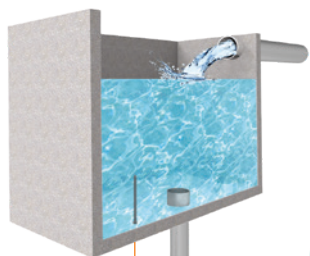


### OTHER



- Clean fluid
- When main power is not available
- When wireless communication is required
- Integrated flow, temperature and pressure

Flow, pressure and level measure



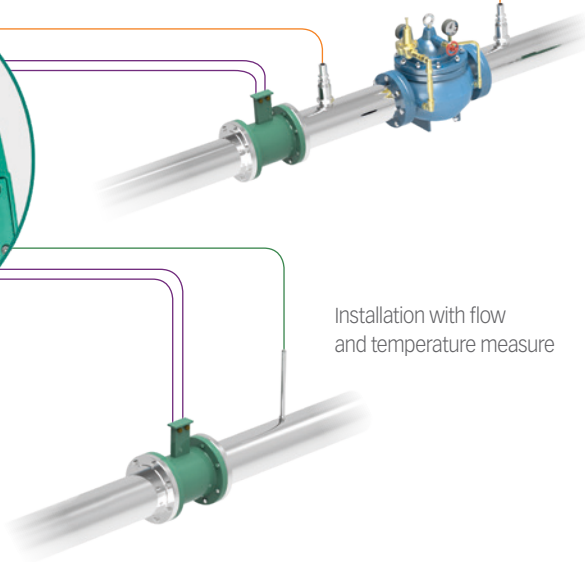
INPUT:  
up to 3 digital on/off input

Typical installation including flow and pressure measurements to control PRV valve

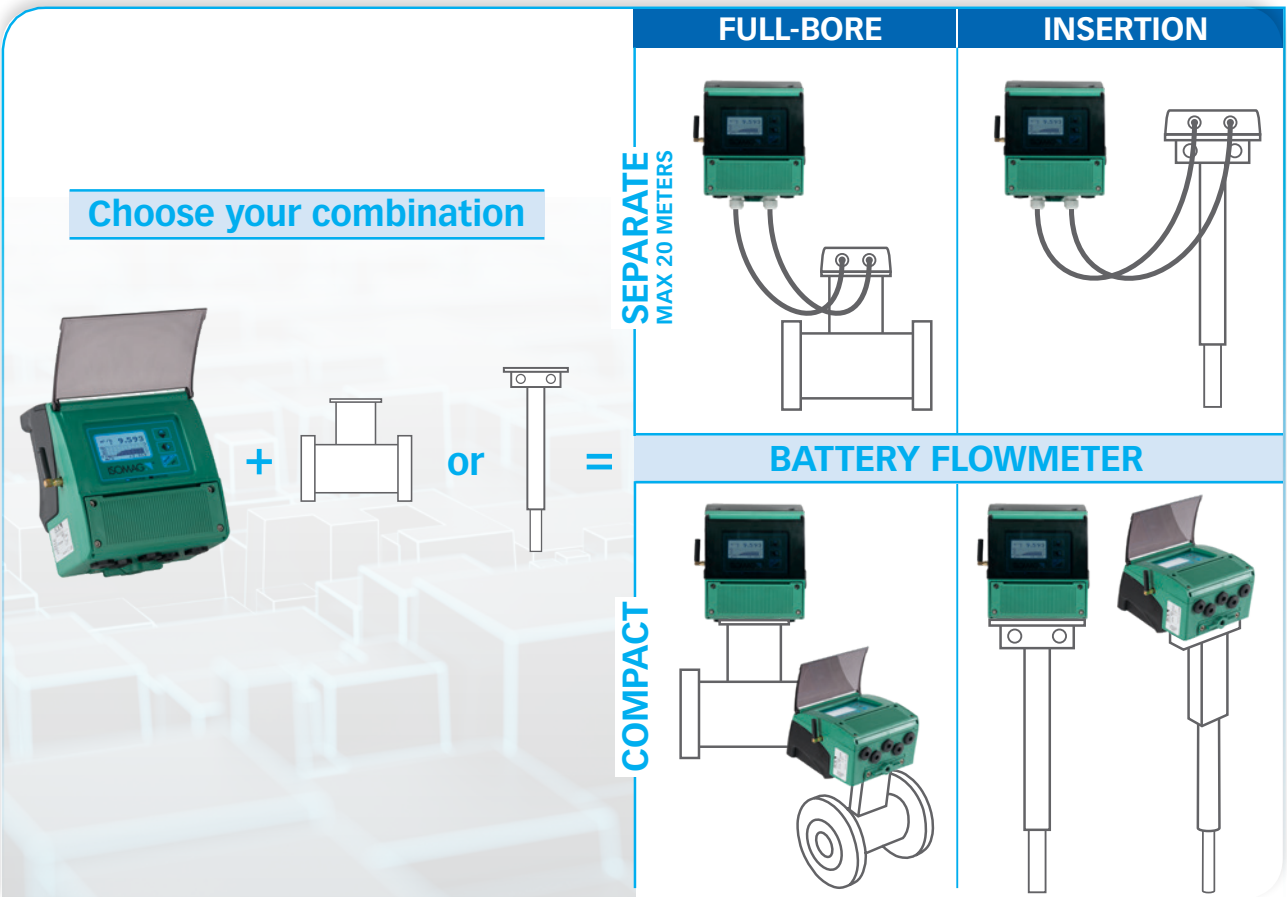


OUTPUT:  
alarms  
pulses  
4..20mA  
Modbus®  
3G

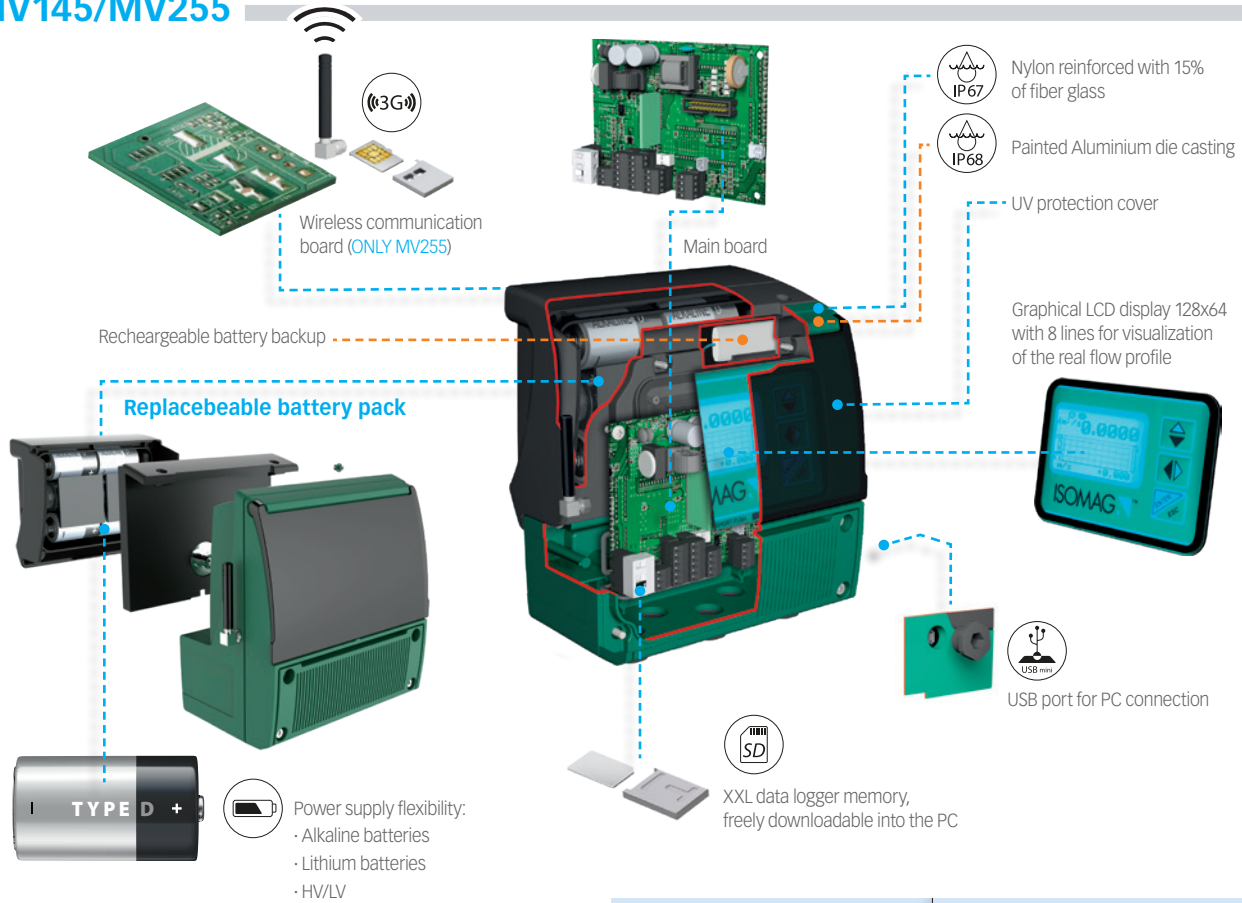
Installation with flow and temperature measure



# INSTALLED SOLUTION



# MV145/MV255



KEY

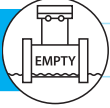

	Standard		Optional
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	MV145	MV255

## MAIN FEATURES

Nylon 15% fiber glass housing (optional Aluminium or AISI 304)	✓	✓
UV protection shield	✓	✓
Graphic LCD display	✓	✓
IP67 or IP68	✓	✓
Front or Top view	✓	✓
Empty pipe detection	✓	✓
Non rechargeable Alkaline batteries	✓	✓
3G communication (encrypted data via email or FTP)		✓
Accuracy 0,4 (up to 0.25% on request)	✓	✓
Datalogger with SD card	✓	✓
HV or LV power supply	✓	
HV or LV power supply + Lithium battery backup		✓
Non rechargeable Lithium batteries	✓	✓
BIV: Built In verifactor	✓	✓
Meter data memory (including totalizer)	✓	✓
Up to 4 digital outputs or 3 digital inputs	✓	✓
Up to 2 pressure or temperature inputs	✓	✓
One analogue output 4...20 mA either active or passive	✓	✓
Modbus over RS485	✓	
MID MI-001 and OIML R49 (pending)	✓	✓

## INTEGRATED DIAGNOSYS

<b>Empty pipe detection</b> 	Using the resistance between electrodes to define if the pipe is empty
<b>BIV: Integrated Built In Verificator</b> 	Logs 22 parameters defining sensor and converter health

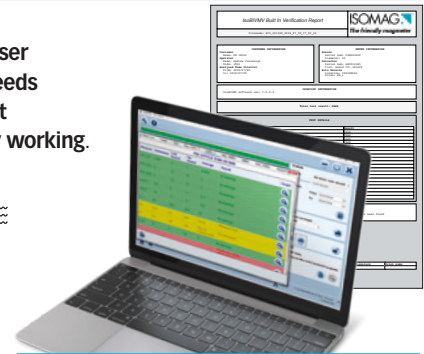
## BIV and IsoBIV

**Built In Verificator (BIV)** consists in a **tool, integrated in the converter**, if required, that **automatically and periodically makes a check of vital electrical characteristics of the sensor and converter** (22 parameters on converter conditions, flow-tube signal, electronic measuring circuit and sensor magnetic field formation).

**IsoBIV tool**, instead, **allows onsite verification of flowmeter with or without integrated BIV**.

Through the use of IsoBIV software the data collected by BIV or IsoBIV are automatically compared with reference data to define the "health" of the system also by color codes.

This feature fullfills user requirements that needs to have evidence that the meter is properly working.



## EFFICIENT POWER MANAGEMENT & CONFIGURATIONS






Flowiz® family takes advantage from years of improvements in battery powered flowmeter. It results in a perfect mix of high measuring accuracy, performance and power management efficiency:

- **Internal set of batteries to reach the following maximum lifetime:**

	BATTERY TYPE	MV145	MV255 WITH DAILY TRANSMISSION
Non rechargeable	Lithium	>15 years	>15 years
	Alkaline	Up to 10 years	Up to 5 years

Above data are estimated using well stored industrial batteries at ambient temperature.

- **Battery replacement without stopping the measure;**
- **4 different settings to configure sampling frequency and optimize battery consumption** (Continuous mode 10Hz, 1 sec. sampling mode, 2 sec. sampling mode, 5 sec. sampling mode);
- **Different configurations of battery type and main power**

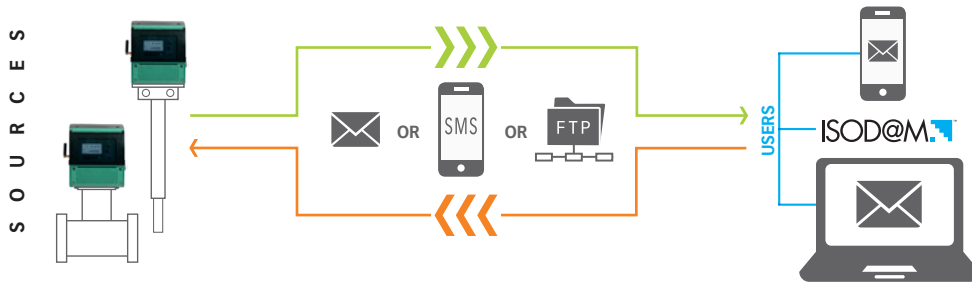
	BATTERY TYPE	WITHOUT MAIN POWER	100...240 VAC	12...48 VDC
Non rechargeable	2 Lithium 	MV145/MV255	MV145	MV145
	4 Lithium 	MV145/MV255	MV145	MV145
	6 Lithium 	MV145/MV255	MV145	MV145
	6 Alkaline 	MV145/MV255	MV145	MV145
Rechargeable	Lithium 		MV255	MV255



## COMMUNICATION

MV255 allows to receive commands and send data, alarms and events via wireless connection to USERS or to ISOD@M.

It is equipped with a micro SD memory to record data (measurements) and events, which are stored in directories.



## DATA SECURITY



### Encrypted data file



- Password protection for files sent in compressed format
- Secure connection protocol SMTP-POP3 «SSL/TLS»
- Secure connection server certified check

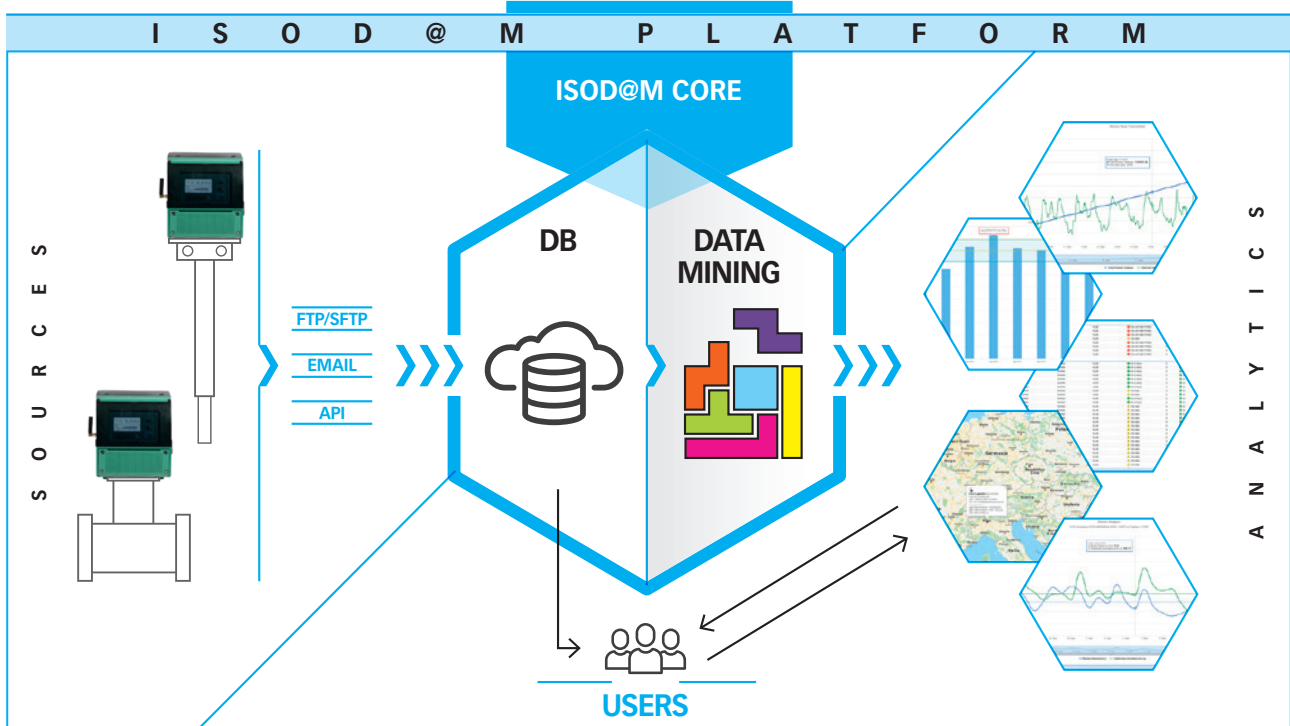
### Antitheft alarm



The instrument is able to generate an alarm signal in case of intrusion and a separate alarm in case of flooding

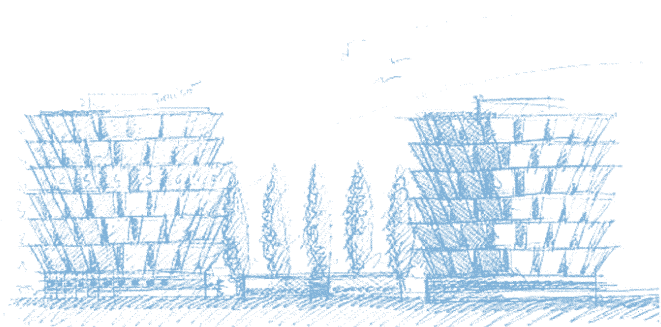
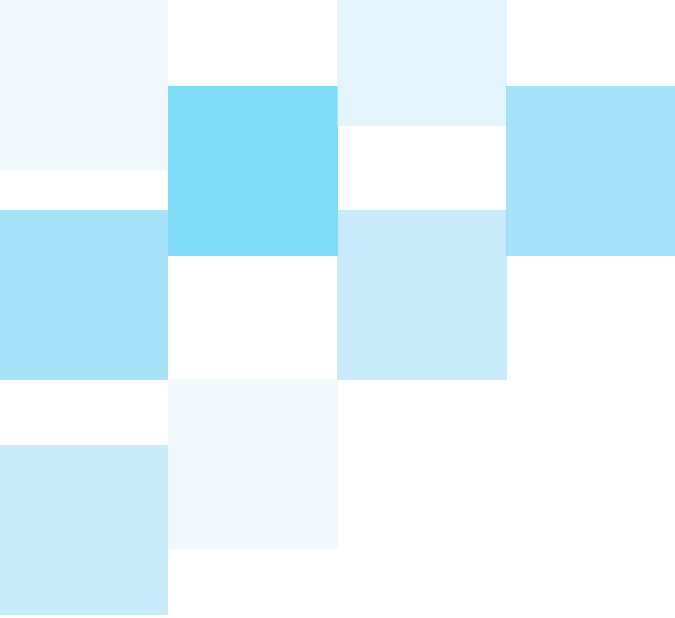
## ISOD@M: DATA ACQUISITION AND MANAGEMENT SOFTWARE

ISOD@M allows users to **easily retrieve data from field devices**, reducing time and efforts for data analysis. Based on the latest technological architecture, the platform provides high level results thanks to **advanced data mining capabilities**. Users can create their own target to improve system knowledge and control, **enhancing accuracy and diagnostic**.



### ISOD@M Key features

- Acquisition Platform System (SaaS)
- Cloud and Local installation
- Responsive software
- Multi User and Multi Level Access
- Full Data Protection
- Water Loss and District Analysis
- Preventive Maintenance Management
- Geo-Localization
- Graphic and Analytic Data Analysis



*Isoil Industria is a worldwide leading supplier of electromagnetic flowmeters. On the market since 1958, the company has been concentrating its efforts and expertise through the years towards the evolution of the electromagnetic flowmeters technology. It is worldwide recognized and present in all Countries through distributors and agents, and with branch offices in Brazil and Hong Kong.*

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