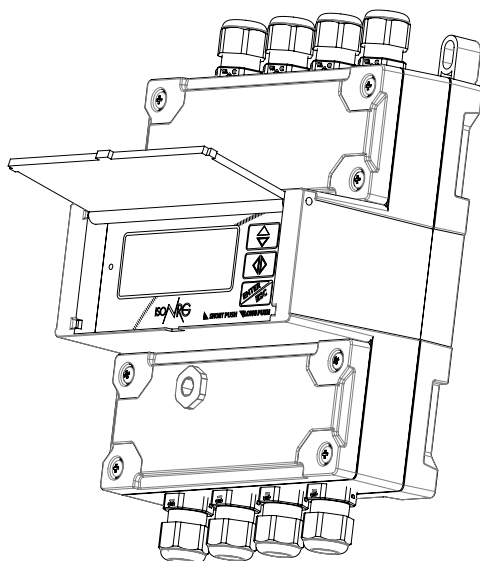




# ISOMAG

*The friendly magmeter*

## OPERATING MANUAL



**MV311**

**NOTICE:** The complete user manual is available at the following address:

XXXXXXXXXXXXXXXXXXXXX





Release number: **311\_QUICK\_EN\_IT\_IS\_R1\_1.04.0X** -

The characters of file name in bolt type indicate the software version which the manual refers to; it is visualized at the instrument start up, or by specific function on DIAGNOSTIC menu.

## TECHNICAL CHARACTERISTICS



Converter classification: class I, IP65 for housing in self-extinguishing pc / abs, overvoltage category II, degree 2 of nominal pollution.

Power supply versions	Power supply voltage	Power supply frequency	Min Power	Max power
<b>HV</b>	100-240V~	45-66HZ	1.6w (Solo Misuratore)	6w (Con tutti i carichi)
<b>LV</b>	24-36V	//		
	24-36V~	45-66HZ		
<b>LLV (+POE)</b>	12-48V	//		

- ☐ The variations in the mains voltage must not exceed  $\pm 10\%$  of the nominal voltage.
- ☐ Inputs and outputs are isolated from each other up to 500 V \*.
- ☐ \*\* The 4-20mA output (optional) is electrically connected to the outputs ON / OFF and to the supply voltage (24V ) of the outputs.
- ☐ Version LV / LLV: inrush current <20A  
Version HV : inrush current < 25A

\* Isolation on the digital inputs is excluded using the battery power supply

\*\* The 4-20mA outputs (optional) are electrically connected with the ON / OFF outputs, with the supply voltage (24V) of the outputs and with the power supply of the RS485 network (where present).

## INPUTS / OUTPUTS INSULATION



Inputs \* and outputs are isolated from each other up to 500V

The 4-20mA outputs, the digital outputs and the RS485 bus share the same 24V references (they are not isolated from each other). Note \*: 3V power supply for using the battery inputs is not isolated.

## ENVIRONMENTAL CONDITIONS OF USE

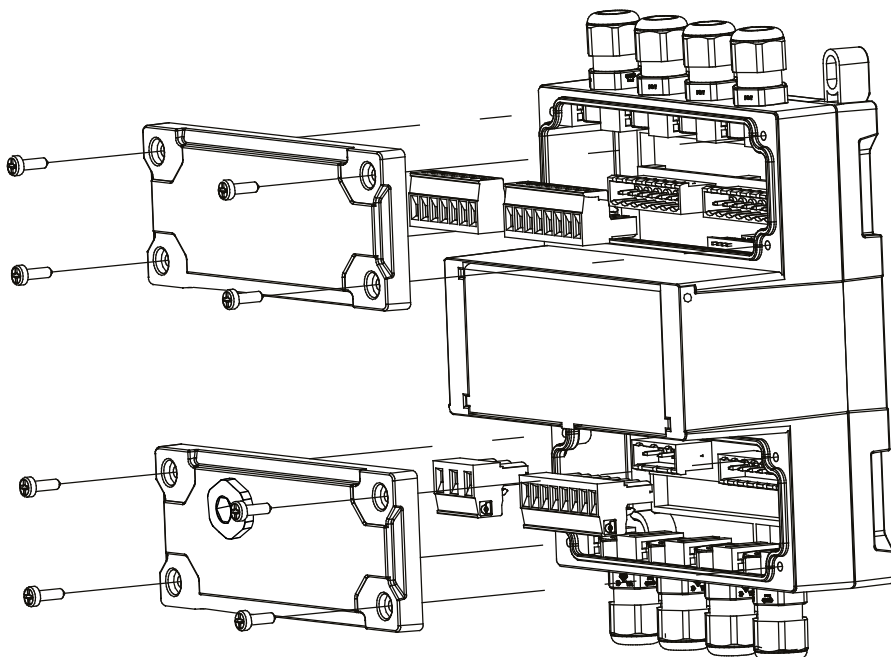


- ☐ The instrument is suitable for indoor and outdoor climatic conditions
- ☐ Altitude: from -200m to 5000m
- ☐ Humidity range: 0-98%, 0-85% without condensation (IP65)

## ACCESS TO THE TERMINALS

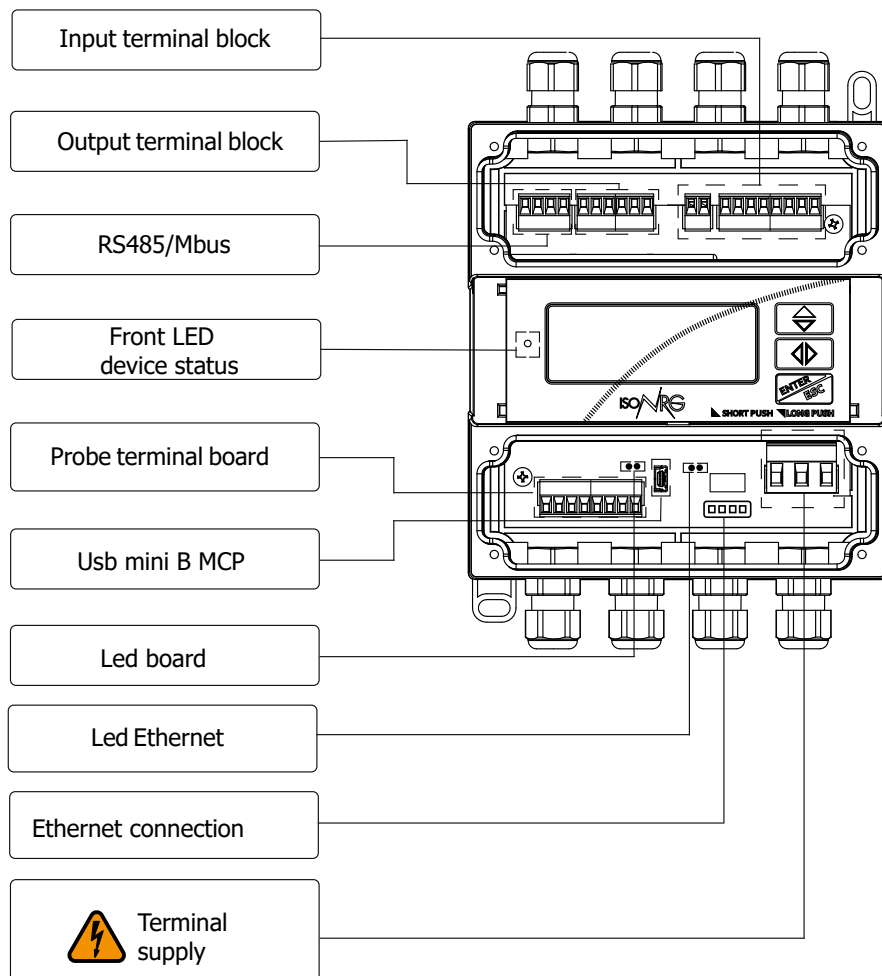


To access the terminal blocks, remove the terminal covers.  
**Only qualified personnel can remove the terminal covers**



TORQUES Nm	
Cover screws	0.8
Cable glands	1.5

## FRONT VIEW



**All cables used for the connections must be of a shielded type; the screen must be connected to the ground.**

The length of the cables must be between 3m and 30m.

The flow measurement can be done in 2 ways:

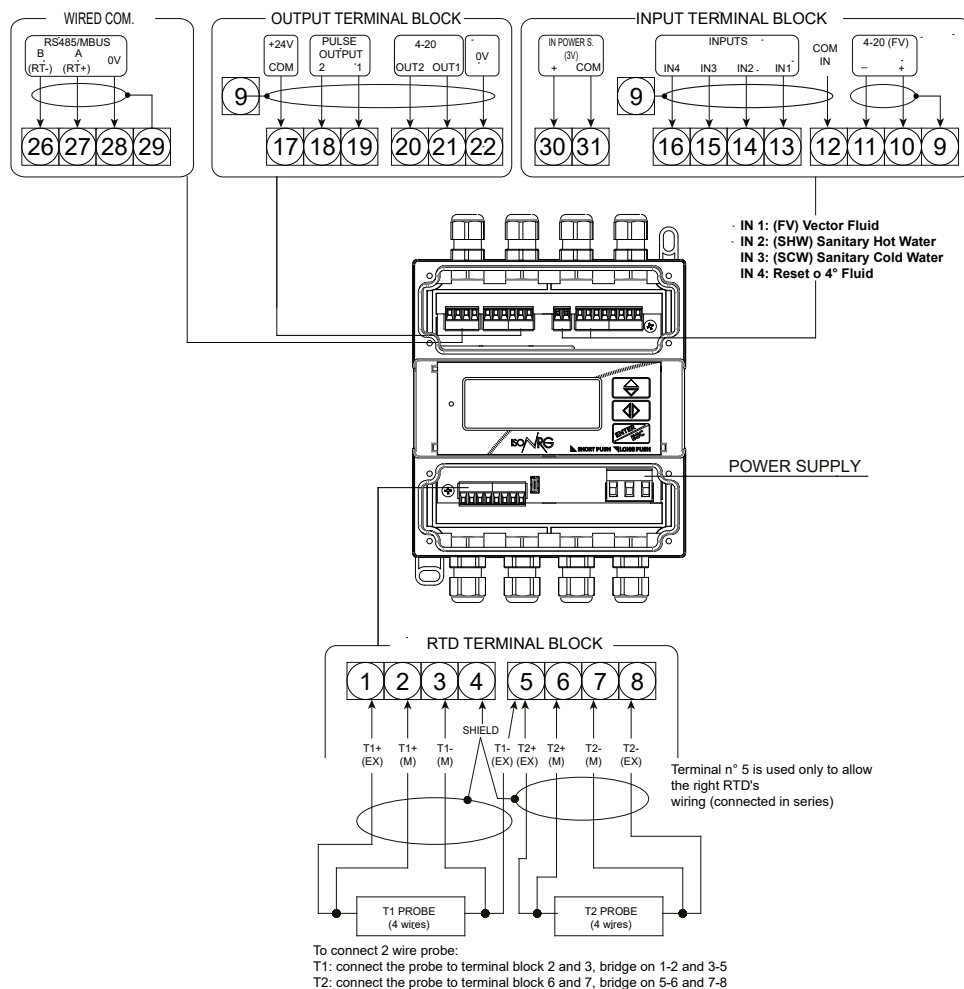
- ☐ analog: through a 4-20mA signal.
- ☐ factorized volume pulses (frequency).

The temperature is measured by means of a pair of PT thermoresistances (RTD), preferably with 4 wires (MANDATORY version for MID instruments); the selectable values are: PT100, PT500 and PT1000.

## ELECTRICAL CONNECTION



**WARNING:** secure the cables with an additional fastening system placed near the clamp.

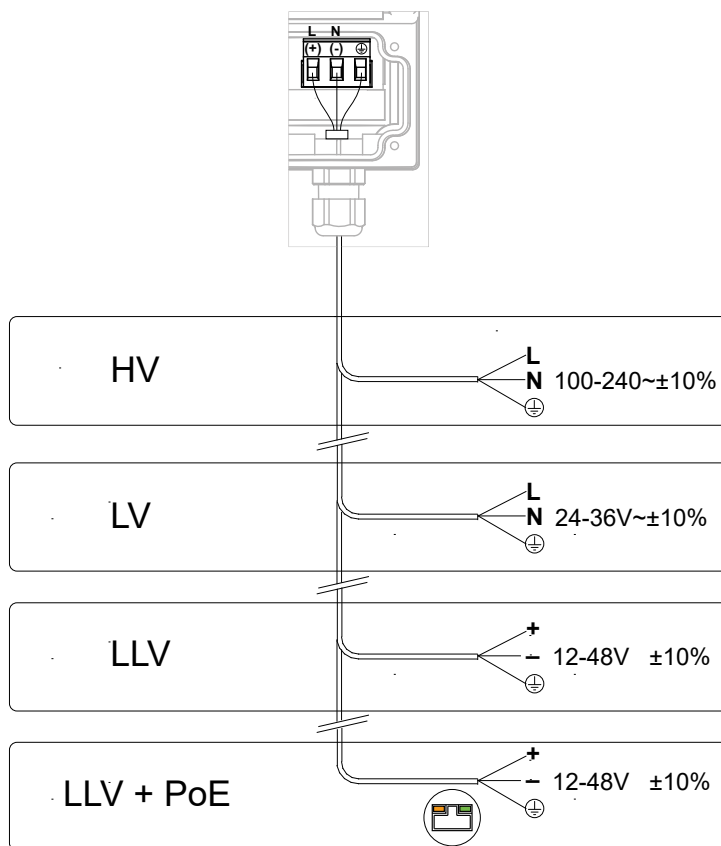


Cable gland PG7: Allowed diameter cables 3-6.5 mm.



## ELECTRICAL CONNECTIONS POWER

- ❑ Before connecting the power supply, check that the power supply voltage is within the limits indicated on the nameplate.
- ❑ For the connection use only approved cables with fireproof properties.
- ❑ The power supply line must be equipped with an external protection against over currents (fuse or magneto thermal).
- ❑ In close proximity to the instrument, install an easily accessible and clearly identified switch to cut off the power supply.



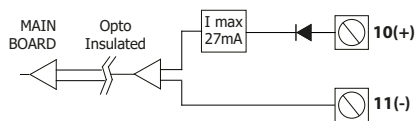
If the PoE energy version, to guarantee the isolation required by IEEE for ethernet, the external power supply must be protected at least 1500Vac with respect to a ground and any other connection.

**The options above are also available with a rechargeable backup battery.**



## INPUTS ELECTRICAL DIAGRAMS

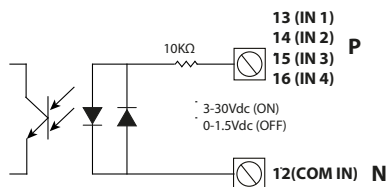
### INPUT 4-20mA



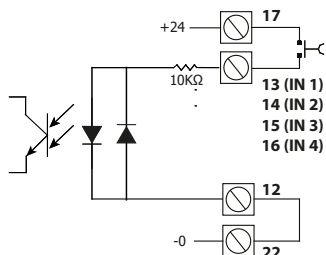
- ☐ Minimum voltage: 8.5V
- ☐ Maximum continuous voltage: 30V
- ☐ Maximum input current 27mA

## CONNECTIONS WITH POLARITY 'TYPE "P" (POSITIVE)

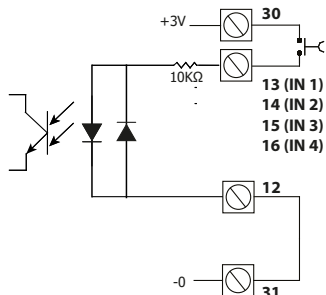
### ☐ ISOLATED DIGITAL INPUT WITH EXTERNAL POWER SUPPLY



### ☐ ISOLATED DIGITAL INPUT WITH + 24V INTERNAL POWER SUPPLY



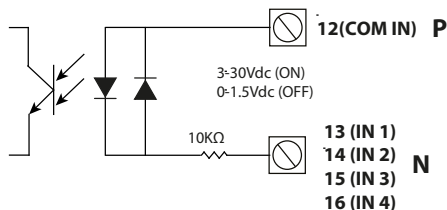
### ☐ NON-ISOLATED DIGITAL INPUT WITH INTERNAL BATTERY POWER SUPPLY



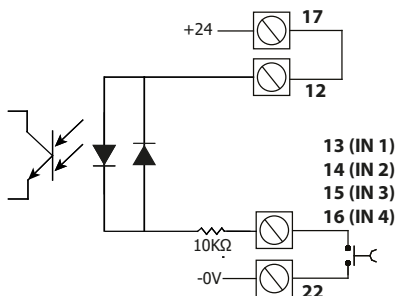


## CONNECTIONS WITH POLARITY 'TYPE "N" (NEGATIVE)

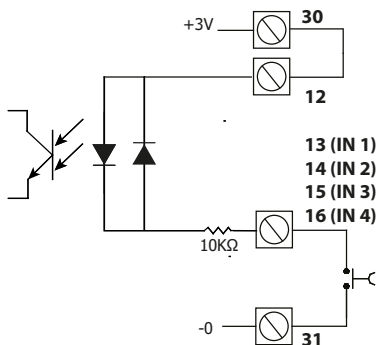
### ISOLATED DIGITAL INPUT WITH EXTERNAL POWER SUPPLY



### DIGITAL INPUT WITH + 24V INTERNAL POWER SUPPLY



### NON-ISOLATED DIGITAL INPUT WITH INTERNAL BATTERY POWER SUPPLY

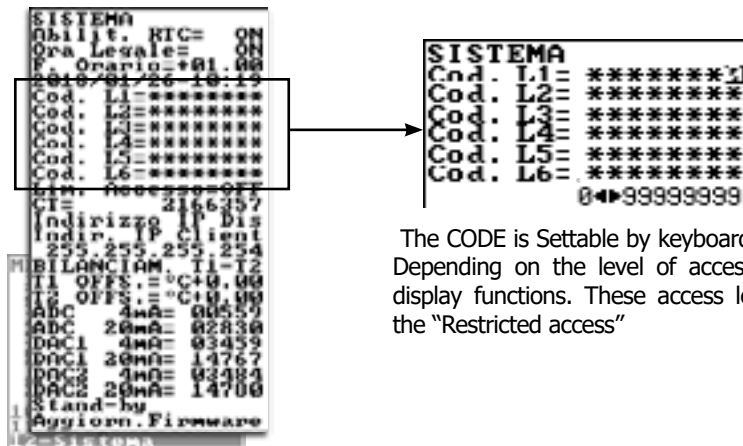


## CONVERTER ACCESS CODE

The access for programming the instrument is regulated by six access levels logically grouped. Every level is protected by a different access code.

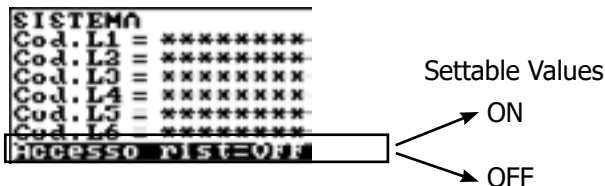
*Access Level 1-2-3-4 are freely programmable by user*

### ACCESS CODE SET : MENU 12 - SYSTEM



The CODE is Settable by keyboard or MCP interface. Depending on the level of access will be visualize display functions. These access levels interact with the "Restricted access"

### RESTRICTED ACCESS SET MENU SYSTEM 12



**Restrict = ON:** Access permitted only to functions provided for a specific level; Example: If the operator has a code of access level 3, after having set it, he will can change only the functions provided for a access level 3.

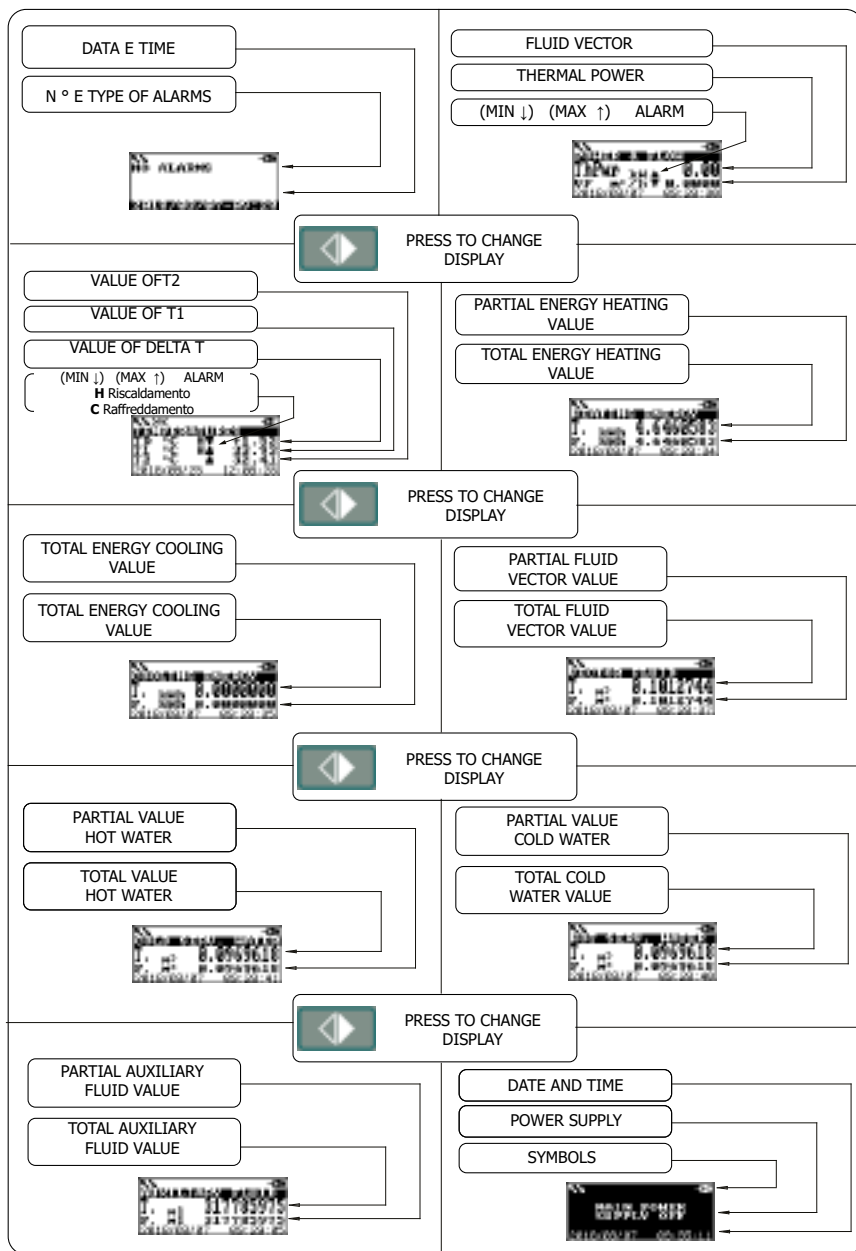
**Restict = OFF:** It enables to change functions for the selected level and ALL the functions with lower access level. Example: If the operator has the code of level 3, after having set it, he will can change all the functions at level 3 and those at lower level.

**WARNING:** take careful note of the customized code, since there is no way for the user to retrieve or reset it if lost. Factory preset access codes:

- ☐ **L1: 10000000**
- ☐ **L2: 20000000**
- ☐ **L3: 30000000**
- ☐ **L4: 40000000**




code **00000000** allows access to level 0 functions only

## START VISUALIZATION PAGES



The maximum number that can be represented by the totalizers is (9) 999999999 regardless of the number of decimals selected. When this value is reached, the counters are reset.

## KEYBOARD OPERATIONS

DEVICE KEYS		KEYS MCP	SCREEN ALARMS [0]	MENU E SUB MENU	MODIFICATION THE PARAMETERS
	SHORT PRESSURE	↑	Scroll the alarms displayed upwards.	Scrolls the entries upward	Increment of the numerical digit or of the parameter indicated by the cursor.
	PROLONGED PRESSURE	↓	Scroll the alarms displayed downwards	Scrolls the entries downward.	Decrease of the numerical digit or of the parameter indicated by the cursor.
	SHORT PRESSURE	→	Scroll through the screens in the order 0, 1, 2, 3, 4, 5, 6, 7, 8, 0, ...	Scrolls the entries downward.	Move to the right of the cursor.
	PROLONGED PRESSURE	←	Scroll through the screens in the order 8, 7, 6, 5, 4, 3, 2, 1, 0, 8, ...	Flows voices towards the High.	Move to the left of the cursor.
	SHORT PRESSURE	<b>Enter</b>	Access the Menus.	Accesses the submenu / accesses the modification of the value or execution of the function.	Confirm the entered / selected value.
	PROLONGED PRESSURE	<b>Esc/ Del</b>	Inactive	Exit the Submenu / return to the Work screens.	Cancel the entered / selected value.

At the end of its lifetime, this product shall be disposed of in full compliance with the environmental regulations of the state in which it is located.

**MANUAL REVIEWS**

<b>REVIEW</b>	<b>DATE</b>	<b>DESCRIPTION</b>
MV311_QUICK_EN_IT_R0_1.00.0	09/07/18	First edition
MV311_QUICK_EN_IT_R1_1.04.0	09/07/18	update to firmware 1.04.0x



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[http://www.isoil.com/u\\_vendita.asp](http://www.isoil.com/u_vendita.asp)

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contact our SERVICE at the e-mail address:  
[isomagservice@isoil.com](mailto:isomagservice@isoil.com)**



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