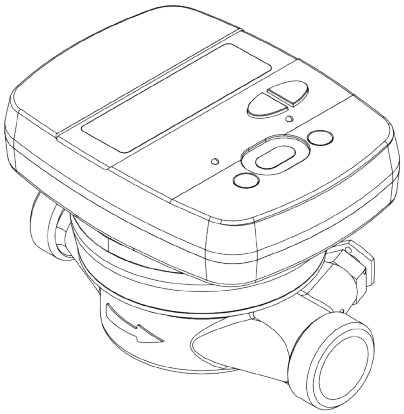

HYDROCAL-M4

MAN018

IT Manuale d'installazione - Contatore di energia termica compatto
EN Installation manual - Compact thermal energy meter
FR Manuel d'installation - Compteur d'énergie thermique compact
ES Manual de instalación - Contador de energía térmica compacto
DE Installationsanleitung - Kompakter Wärmemengenzähler

EN 1434

MID
Measuring Instrument Directive
2014/32/UE - Approved

18/02/2025 v1.4

1. Introduction

The HYDROCAL-M4 is a compact thermal energy meter that measures the energy consumption of heating and cooling systems. The meter allows to measure the thermal energy passing into a hydraulic circuit used for heating and\or for cooling, it also lets the acquisition through external module, of the volume measured by up to 2 device (water, heat, gas, electricity, HCA) equipped with pulse emitter. The meter can also be connected to a consumption reading network based on the wired M-BUS (IR-MB-PULSE), Wireless M-BUS and LoraWan protocols.

WARNING

⚠	The first configuration chosen during installation (supply or return pipe) can't be modified!
⚠	The top calculation/electronic unit must not be separated from the bottom brass case.
⚠	This meter contains dangerous batteries, handle it with caution and do not disperse in the environment.
⚠	The installation must be carried out by qualified personnel only. The manufacturer doesn't assume any responsibility for improper installation or damages caused by third parties.

STORAGE CONDITIONS

The product must be stored in a dry place at temperatures between -20 °C and +70 °C (even during transport). The duration of the storage should not exceed 1 year.
Combined heating or cooling meters are precision devices and must be protected from shock and vibration.

GENERAL INFORMATION

- Before proceeding with the installation and configuration of the product, carefully read the instructions in this manual. For further technical clarification, please contact Customer Service.
- Installation should be carried out exclusively by qualified personnel.
- The reference standard for the instrument is EN 1434 and Directive 2014/32/EU (Annex MI-004).
- Any tampering of the meter or removal of the seals will void the warranty provided.
- For proper energy accounting, always respect the mounting type prescribed (inlet pipe installation/ return pipe installation).
- The configuration of installation version and unit of measurement can be done with the buttons or an Android device with NFC connectivity.
- Respect the installation point (input or output) of the instrument.

PACKAGING CONTENT: HYDROCAL-M4, installation manual, antifraud kit.

2. Safety information

☞ Warning: highlights the instructions to be followed scrupulously for the correct functioning of the meter.
⚠ Danger: highlights important precautions to follow in order to avoid dangerous situations.
ⓘ Notes: highlights important information for a proper experience while using the device.

⚠	Read all instructions carefully before proceeding with the installation! Failure to comply with one or more of the procedures contained in the manual can be dangerous and cause damage to property and people. It is recommended to comply with all applicable laws on safety and accident prevention.

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ⓘ	Observe national regulations relating to the measurement of cooling.
ⓘ	Observe the technical requirements relating to the installation of electrical equipment.
ⓘ	The instrument complies with the requirements of Directive 2014/30/EU of the European Council on electromagnetic compatibility, Directive 2014/35/EU on electrical safety and Directive RED 2014/53/EU.
ⓘ	If more than one instrument is installed in a unit, the installation conditions must be the same for all instruments to ensure that consumption is as equal as possible.
☞	The warranty and validity of the verification become void if the identification plate or the seals applied to the instrument are removed or damaged.
☞	Remove the device from the package only at the time of installation to protect it from damage and dirt.
⚠	The air transport of active radio devices is prohibited.
⚠	Carefully observe the instructions in the data sheet, instruction manual, application notes and lid. Failure to comply with the operating conditions may result in situations of danger and forfeiture of all claims of liability for defects as well as liability based on any guarantees expressly granted. For more information visit the website www.bmeters.com.
⚠	Dispose of replaced devices and defective components in accordance with current environmental regulations.
⚠	Store out of the reach of children.
⚠	Wear protective gloves and pay attention to the sharp protrusions in the threads, flanges and measuring tube.
⚠	The device shall be used in such a way as to minimize the potential for human contact during normal operation. To avoid the possibility of exceeding radio frequency exposure limits, human proximity to receivers with integrated antenna should not be less than 20 cm (8 inches) during normal operation.
⚠	Do not expose the meter to the sun and heat sources. Do not attempt to burn the device.
⚠	In case of danger of frost, empty the system and, if necessary, remove the meter.
⚠	To clean the device externally use a soft cloth and moistened with water. Do not wash with high-pressure jets or soak the device in water. Avoid contact with oils and solvent. Do not use alcohol or detergents.
⚠	Do not damage the casing of the device. In the event of collisions of blunt objects on the front of the display, it can be irreparably damaged and lose the IP65 degree of protection. Install in areas protected against impacts. If the protective casing breaks, contact customer service.
ⓘ	The display stays inactive. To activate it, press the button on the device. The display remains active for 60 seconds.
ⓘ	The meter is not suitable for drinking water but is suitable for circulating water in central heating systems.
☞	Do not twist, wrap, extend or shorten the cables of the temperature probes and the cable that connects the electronic unit to the part of the lower-case body.
☞	The thermal energy meter can be installed only in areas protected from frost.
☞	The thermal energy meter must be protected against pressure shocks in the pipeline.
☞	Slowly fill the pipe with water at the end of the installation.
☞	After installing the meter perform a leak test of the system.
☞	Assemble or disassemble the meter only after depressurization of the system.
☞	The meter does not have lightning protection.
☞	Thermal energy meters do not require special protection against electrical interference; however, electromagnetic interference must be avoided.

ⓘ	Observe national regulations relating to the measurement of cooling.
ⓘ	Observe the technical requirements relating to the installation of electrical equipment.
ⓘ	The instrument complies with the requirements of Directive 2014/30/EU of the European Council on electromagnetic compatibility, Directive 2014/35/EU on electrical safety and Directive RED 2014/53/EU.
ⓘ	If more than one instrument is installed in a unit, the installation conditions must be the same for all instruments to ensure that consumption is as equal as possible.
☞	The warranty and validity of the verification become void if the identification plate or the seals applied to the instrument are removed or damaged.
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⚠	The air transport of active radio devices is prohibited.
⚠	Carefully observe the instructions in the data sheet, instruction manual, application notes and lid. Failure to comply with the operating conditions may result in situations of danger and forfeiture of all claims of liability for defects as well as liability based on any guarantees expressly granted. For more information visit the website www.bmeters.com.
⚠	Dispose of replaced devices and defective components in accordance with current environmental regulations.

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TROUBLESHOOTING

Problem	Cause	Solution
Display off, pressing buttons does not respond	The battery may be damaged or discharged	Inform Customer Service
Damaged container, or leakage	Possible external impact or fall to the ground	
Lower case brass separated by electronic unit	Tampering by third party or strong external impacts	
Open and visible electronic unit		
No consumption is accounted	Tampering by third party, strong external shocks or damage to the flow detection sensor	
Error 12 always present	Damaged temperature probes	
Error 18 or 19 always present	Damaged temperature probes or out of system temperatures limits	
Does not transmit via radio	Failure to pass 5 absolute liters or the batteries may be damaged or discharged	

3. Installation

BEFORE INSTALLATION

Before the thermal energy meter installation make sure that the two ends of the inlet and outlet pipe are perfectly aligned, clean them with the utmost care. Moreover, make sure there is a suitable filter placed at the inlet and that clean and undamaged gaskets are inserted on both sides. The thermal energy meters must be installed as specified by the CEN-TR 13582 regulation. Upstream and downstream the meter install an appropriate water flow interception and regulation devices suitable to allow inspection and maintenance of the meter, control of the water flow and eventual sealing of the system.

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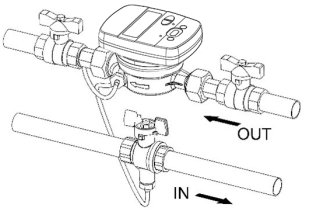
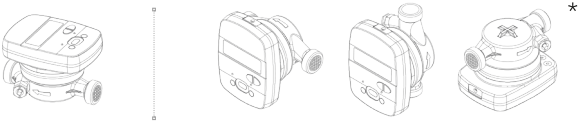
☞	Attention should be paid to the direction of flow. Install the thermal energy meter so that the passage of water takes place in the direction indicated by the arrow in relief on the brass body and respecting the prescribed position.
☞	To ensure proper measurement, make sure that there is no air inside the pipe and that the flow is clean and free of debris (potentially harmful to the meter turbine).
☞	It is mandatory to comply with the prescribed type of assembly (return pipe\supply pipe). Always refer to what is on the meter menu 3 level 06. The figure below refers to a standard version of the device installation (mounting on return pipe) and positioned horizontally.



All versions of the thermal energy meter can be installed both horizontally and vertically. For a better performance it is preferable, however, the horizontal installation with the turbine axis perpendicular to the ground and the reading mechanism facing upwards.



Ideal position

Additional allowed positions

* This position is not suggested for cooling meters and for instances where moisture can enter the electronic casing due to condensation (e.g. during an interruption of the plant in the summer)

TEMPERATURE SENSOR INSTALLATION

The meter is equipped with two digital probes compliant with: MID 2014/32/EU directive and EN1434 standard.

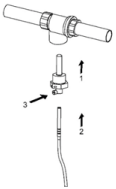
☞	For a correct installation, always proceed in compliance with the directives prescribed by current regulations.

In the standard version (e.g mounting on return pipe), the return probe is already incorporated inside the brass case. The supply probe must be installed in a ball valve or in a socket mounted on the flow pipe and complies with the requirements of the sensor itself.

Vice versa, the version for installation on the inlet pipe the probe inserted inside the brass case will be the flow, the return probe will need to be installed in a valve or a socket on the return pipe.

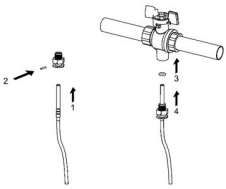
⚠	Before installing the 'free' probe (the one not inserted in the meter case), it is necessary to intercept the flow (close the ball valve or the appropriate shutters).

INSTALLATION IN A SOCKET



1. Screw the socket in the pipe
2. Insert the temperature sensor
3. Tighten the screw

BALL VALVE INSTALLATION



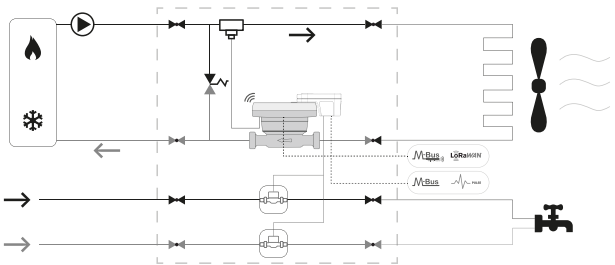
1. Insert the probe into the threaded nut
2. Insert the closing pin
3. Unscrew the valve closing screw, and place the seal
4. Insert the probe by screwing it on the thread

☞	For a correct temperature measurement, the tip of the probe must be in the center of the pipe. In addition, the axis of the probe must be perpendicular to the pipe axis (see figure).
☞	The temperature sensor must be sealed when the installation is complete.

4. Functionality

The HYDROCAL-M4 is equipped with dedicated sections for the measurement of thermal energy of a heating/ cooling circuit and the volume measurement given by the domestic hot and cold-water meters. The meter is suitable for domestic applications with two-pipe systems, in a thermal power plant or any other compatible application.

In residential systems, usually with two pipes systems, the measurement of thermal energy takes place on a single section both in heating and cooling cycle. The picture below reports a typical connection diagram (installation on return pipe):



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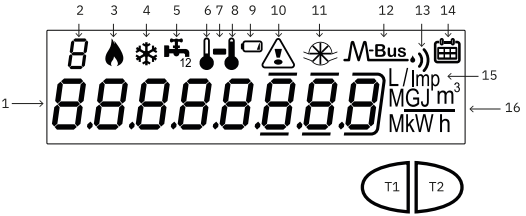
5. Display and buttons

The device is equipped at the front with an LCD and two buttons (T1 and T2), useful for device initialization and readings.



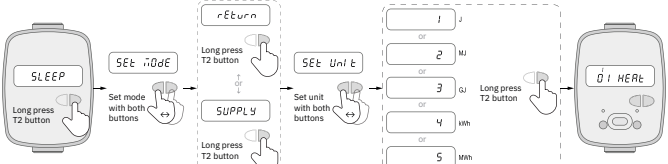
1) Eight-digit numeric field;
2) Single-digit numeric index (menu level);
3) Heating data index;
4) Cooling data index;
5) Circuit 1-2 pulse emitter (external module);
6) Return temperature index;
7) Indicator of sub level presence;
8) Supply temperature index;
9) Battery level indicator;
10) Faults or NFC/IR active communication indicator;
11) Flow presence indicator;
12) M-Bus wired communication data index;
12+13) Wireless M-Bus data index;
13) LoRaWAN communication data index;
14) Historical index;
15) Pulse value index (k);
16) Measurement unit index;
T1) Levels selection button;
T2) Scroll button within the selected level.

6. Commissioning

Premise: before a functional tests, the procedures indicated in this paragraph must be performed for completing the physical installation phases including the connections.

⚠ The device is delivered in sleep mode and it must be configured if not requested during the ordering phase.

⚠ The first configuration chosen during installation (supply or return pipe) can't be modified!

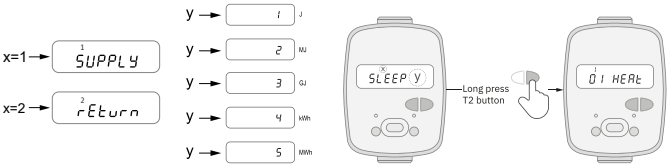


If the activation takes place with buttons, the items in the menu will be two:

1. Installation version (**set Mode**): select, through the left/right button (T1/T2), the type of installation (supply or return). Holding down the right button for 3 seconds can temporarily confirm the choice made by switching to level 2 (unit of measurement). If the T1 button is pressed for 3 seconds the device will return to stock mode showing 'SLEEP' on display.
2. Units of measurement (**set Unit**): select through the left/right button (T1/T2), one of the following items: 1 (Joule), 2 (MJ), 3 (GJ), 4 (kWh), 5 (MWh).
   Holding down the right button for 3 seconds can temporarily confirm the choice made by switching to level 2 (unit of measurement). If the T1 button is pressed for 3 seconds the device will return to stock mode showing 'set Mode' on display.
   NOTE: after confirmation the thermal energy meter will perform the initialization for heating and cooling accounting. The unit of measurement can be changed later via NFC through the BMetering NFC Config app for Android operating systems.

INITIALIZATION (Installation version and measuring unit already configured)

⚠ Press T2 button for three seconds to initialize the device, if the installation version and the unit of measurement have already been configured as requested during the order.



PROCEDURE FOR COMMISSIONING

1) Check that the mounting position of the thermal energy meter and all electrical wiring are carried out correctly
2) Check if the device is configured, otherwise set the installation version and the unit of measurement
3) Check at level 3 that all configured parameters are correct (heating and cooling data)
4) Check that the thermal energy meter, pulse devices, probes etc. are installed correctly (refer to the specific installation manuals for each product)
5) Start the heating/cooling system:
   → Check the consistency of the reported values (energy and volume)
   → Check in level 2 the instant data
6) Check for errors
7) Apply installation seals. It's recommended to lock the device with a password set through the BMETERING NFC Config android app (downloadable from the Google Play Store).

7. Consultation menu

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The consultation menu is divided into 9 levels by a numerical index always visible at the top left of the display. By pressing the T1 button you can choose the desired level, while pressing the T2 button you can view the sublevels of the preset level. After 60 seconds without iteration the display turns off. If no button is pressed within 20 seconds (with the display off) the display cycle will start again from level 1. If a button is pressed within 20 seconds (with the display off) the last level consulted will be displayed. In any level or sublevel, holding down the T1 button for 3 seconds will direct the index to level 1. To access to a sublevels, where present (indicate by the symbol '–'), it is necessary to hold down the T2 button for 3 seconds. To return to a main level from a sublevel it's necessary to hold down the T2 button again for 3 seconds. Each level consists of a brief indication in letters of the data that will be shown after a few seconds in a second screen.

1		
1.1	HEAT	J, MJ, GJ, kWh, MWh
1.2	COOL	J, MJ, GJ, kWh, MWh
1.3	HEAT	m³
1.4	COOL	m³
1.5	ABSOLUTE	m³
1.6	FORWARD	m³
1.7	REVERSE	m³
1.8	IN 1	J, MJ, GJ, kWh, MWh, Unit
1.9	IN 2	J, MJ, GJ, kWh, MWh, Unit
1.10	LOST	m³

2		
2.1	POWER H	kW
2.2	POWER S	W
2.3	HEAT	J, Wh
2.4	FLOW	m³/h
2.5	TEMP. SUPPLY	°C
2.6	TEMP. RETURN	°C
2.7	TEMP.DIFFERENCE	°C
2.8	TEMP. AMBIENT.	°C

3		
3.1	SERIAL NUMBER	
3.2	CRC FW	
3.3	MAIN FW	
3.4	RADIO FW	
3.5	DISPLAY FW	
3.6	INSTALL TYPE	Supply, Return
3.7	DATE	
3.8	TIME	
3.9	UNIT	1,2,3,4,5
3.10	MODULE	On, Off
3.10.1	SERIAL	Module's serial number
3.10.2	FIRMWARE	Module's firmware
3.10.3	DATE	
3.10.4	TIME	
3.10.5	POLLING	Synchronization interval
3.10.6	NEXT	Next synchronization
3.10.7	LOST	Missed communications
3.11	IN 1-2	
3.11.1	IN 1	On, Off
3.11.2	PULSE RATE	Type of pulse
3.11.3	START VALUE	Type of pulse
3.11.4	MEDIUM	Type of pulse
3.11.5	IN 2	On, Off
3.11.6	PULSE RATE	Type of pulse
3.11.7	START VALUE	Type of pulse
3.11.8	MEDIUM	Type of pulse
3.12	MBUS	On, Off
3.12.1	PRIMARY ADDRESS	
3.12.2	SECONDARY ADDRESS	
3.12.3	BAUD RATE	BPS
3.13	MONTHLY SAVE DAY	
3.14	BIWEEKLY SAVE DAY	
3.15	DATE SAVE MEM1	
3.16	DATE SAVE MEM2	
3.17	DATE SAVE ANNUAL	
3.18	WMBUS TYPE	WB, AMR, AMR CUSTOM, Off
3.19	LORAWAN	On, Off
3.20	DISPLAY TEST	

4		
4.1	MEMORY DAY 1	
4.1.1	HEAT	J, MJ, GJ, kWh, MWh
4.1.2	COOL	J, MJ, GJ, kWh, MWh
4.1.3	IN 1	Type of pulse
4.1.4	IN 2	Type of pulse
4.2	MEMORY DAY 2	
4.2.1	HEAT	J, MJ, GJ, kWh, MWh
4.2.2	COOL	J, MJ, GJ, kWh, MWh
4.2.3	IN 1	Type of pulse
4.2.4	IN 2	Type of pulse

5		
5.1	METER LIFE	h
5.2	START COUNTING	h
5.3	HEATING HOURS	h
5.4	COOLING HOURS	h
5.5	NO DELTA HOURS	h
5.6	NO ERRORS HOURS	h

6		
6.xx*	MONTHLY MEMORY 1	
6.xx.1	HEAT	J, MJ, GJ, kWh, MWh
6.xx.2	COOL	J, MJ, GJ, kWh, MWh
6.xx.3	IN 1	Type of pulse
6.xx.4	IN 2	Type of pulse
6.xx.5	AVG. FLOW TEMP	°C
6.xx.6	AVG. RET. TEMP	°C
6.xx.7	AVG. CPU TEMP	°C
6.xx.8	AVG. HEAT	W
6.xx.9	AVG. FLOW	m³/h

7		
7.xx*	ANNUAL MEMORY 1	
7.xx.1	HEAT	J, MJ, GJ, kWh, MWh
7.xx.2	COOL	J, MJ, GJ, kWh, MWh
7.xx.3	IN 1	Type of pulse
7.xx.4	IN 2	Type of pulse
7.xx.5	AVG. FLOW TEMP	°C
7.xx.6	AVG. RET. TEMP	°C
7.xx.7	AVG. CPU TEMP	°C
7.xx.8	AVG. HEAT	W
7.xx.9	AVG. FLOW	m³/h

8		
8.1	ACTIVE ERRORS	
8.xx*	ERRORS CODE	

9		
9.xx*	LOG MEM ERRORS	
9.xx.1	ERROR DATA	
9.xx.2	ERROR TIME	
9.xx.3	ERROR COUNT	

* xx equals an incremental index

NOTE: in absence of historical data, levels 6-7-9 will show - - (text).

8. Operating mode – Radio activation

This section describes the radio communication management implemented. The WMBUS or LoRaWAN radio will activate after the passage of ±5 litres. Pre-configured radio parameters (wM-Bus): AMR, 200s , everyday from 0 to 24h, encryption disabled, no historical data, standard package (standard data (heating energy, heating volume, errors, battery value as a percentage). For more details see the specific wM-Bus or LoRaWAN documentation obtainable by contacting the customer support.

9. Operating mode - M-Bus and pulse inputs activation

For wired M-Bus transmission or pulse inputs activation see the separated wired M-Bus or IR-MB-PULSE documentation. ⓘ **Note**: module compatible from Hydrocal-M4 serial number 05053000.

RADIO INDICATOR ON DISPLAY

During the JOIN to the network procedure, if the LoRaWAN transmission has been activated, the radio symbol will flash ·)) quickly on the display (at a period of 1 second) until the device reaches the JOINED state and then remains always active. In the case of a failed JOIN the radio symbol turns off. In the case of WMBUS mode only after switching +/- 5 liters the M-Bus icon will remain permanently active. In the case of wired M-BUS mode only after switching +/- 5 liters the icon M-Bus will remain permanently active. The radio icon ·)) will flash quickly during a transmission (LoRaWAN or wM-Bus) in cases where the device has reached the JOINED state or when only wM-Bus mode is active.

During the wM-Bus and/or LoRaWAN test procedures, after starting the procedure via NFC app, the following

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cases will be handled:

WMBUS_TEST_MSG: the icon M-Bus will remain active for 1 minutes and will flash quickly on the display (at a period of 1 second) with each wM-Bus package sent. After that time the icon will turn off.

LORA_TEST_JOIN: the radio icon will start flashing quickly on the display (at a period of 1 second).

If the join operation was successful, the icon will remain stable for 1 minute and then turn off otherwise it will continue to flash until all join attempts are concluded. In the case of a forced join procedure, after the passage of ±5 liters, the icon will flash throughout the 6 minutes cycle to various SFx and then remain on or off depending on the outcome of the join request.

In the case of wired M-Bus mode only (after installing the module) the icon M-Bus will remain permanently active (if the M-Bus module is connected). If the module is installed and impulsive inputs are active, the icon will activate permanently. If the module is momentarily disconnected, the icons and M-Bus will start flashing on the display (1 second intervals) up to a maximum of 4 attempts (based on the default) or on the first successful reconnection. If the module is disconnected both icons described above will be deactivated. The message 'Mod ON' Mod on will be shown on the display (for 10 seconds) when the communication procedure between the meter and the module is concluded correctly.

10. Errors and anomalies

When one or more anomalies occur, the thermal energy meter will report the recorded error and show the following icon on the display ⚠. If the NFC or IR interface is used, the icon will blink for the duration of the communication. The register of all the anomalies present is shown at level 8 of the consultation menu, where the abbreviation Ern followed by two digits identifies the anomaly.*

Error	Name	Description
03	Qmax Overflow	The device operates at a flow rate greater than Qs for 10 consecutive minutes.
06	Reverse installation	Occurs during first installation only, when the absolute count (forward counter - reverse counter) is equal to 0 and a reverse flow (>10 Liters) is detected.
08-09-10	Reserved	Inform Customer Service
11	End of battery life	The remaining battery life is less than 1 year. Permanent error, the icon is shown on display.
12	Probe failure	Failure, short circuit or tampering on supply or return probe(s).
13-14-15-16	Reserved	Inform Customer Service
17	Wrong Real Time Clock	Is recorded when a sudden reset of date and time is detected.
18	Supply Measurement out of range	Measurement of the supply probe over the measuring range.
19	Return measurement out of range	Measurement of the return probe over the measuring range.
21	Delta T non-compliant	24 continuous hours without flow and Delta T (temperature difference) > 10°C.
25	Display Overflow	The energy digits, based on the selected unit, exceed the display's capacity
26-27	Reserved	Inform Customer Service
35	MBUS disconnected	The M-Bus communication is not detected for 2 consecutive hours.
36	Wrong module	The external module has been removed and a second module is mounted.

37	Module removal	The module is not detected for 5 consecutive failed communications.
38	End of battery life module	The remaining battery life of the external module is less than 1 year.
39	Module magnetic fraud	The error is activated when a magnetic field is detected for an extended period of time.
40	NFC Fraud	The error is activated when am NFC field is detected for more than some minutes.

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* For optional alarms that can be activated via NFC or further details refer to the User Manual at www.bmeters.com

11. Battery and replacement procedures

The thermal energy meter constantly monitors the status of the battery (**maximum life: 10 years***) and signals the imminent discharge by showing the icon on display . Reporting takes place one year before full discharge. For more details see the separated WMBUS specification document. For replacement, contact the manufacturer.

☞	The thermal energy meter uses non-rechargeable batteries that, if misused, can be potentially dangerous. To reduce the risks, you should take the following precautions.

⚠	Do not recharge or replace the battery.
⚠	Do not open, puncture or damage the batteries.
⚠	Do not short-circuit the battery.
⚠	Do not expose the battery to temperatures above 85° C.
⚠	Do not expose the battery to an extremely low pressure environment which could cause an explosion or a leak of gases or flammable liquids.

⚠	Do not use naked flames near the device.
⚠	Do not put in contact with water.
⚠	Always use original spare parts authorized by the manufacturer.
⚠	Do not insert into ovens, crush or cut: these actions could cause an explosion or leakage of flammable gases or liquids.

*The battery life strongly depends on the working time window, set during the configuration process, and on the environmental conditions. Estimation of the battery life is given by the configuration software.

12. Technical data

Model	Hydrocal-M4
Power supply	Batteries
Battery type	LiMnO2, 2 x 3.0V
Battery life	Maximum 10 years
Use temperature range	+5 to +55°C
Storage temperature range	-20 to +70°C
Dimensions	110 x 78 x 73 mm (DN15); 130 x 78 x 76 mm (DN20)
Degree of protection	IP65
Weight	575g (DN15); 700g (DN20)
Liquid supported	Water
Accuracy class	2
Environmental class	A (E1, M1)
Display	LCD, 8 digits + icons
Units of measurement	J, MJ, GJ, KWh, MWh

Measurement temperature range (heating)	Θ: +1 °C - +90°C
Temperature range difference (heating)	ΔΘ: 3 K - 90 K
Measuring temperature range (cooling)*	Θ: +0.2 °C - +90°C
Temperature range difference (cooling)*	ΔΘ: 0.2 K - 90K
Counting operating conditions (start)	Heating: ΔΘ≥1K (counting enabling conditions) Cooling: ΔΘ≥0.2K
Max. measurable power	650 kW
Pulse input (external module)	2 for impulsive device
Max. pulse input frequency	25 Hz

* The thermal energy calculation for heating application is MID certified. The cooling energy calculation is not compliant with the MID regulation.

EN

Installation	Selectable by the customer, flow or return on request
Temperature probes	Digital

Homologation	2014/32/EU MID (Module B) - EN1434
Probe cable length	1.5 m free probe 1 m internal probe

	Size	qp (m³/h)	Ratio	qi (l/h)
qp\qi ratio	DN15	0.6	50:1	12
	DN15	1.5	50:1**	30
	DN20	2.5	50:1**	50

**On request 100:1

13. Information for the correct disposal of the product

This product falls within the scope of Directive 2012/19/EU on the management of waste electrical and electronic equipment (WEEE). The appliance should not be disposed of with household waste as it is composed of different materials that can be recycled at the appropriate facilities. Inquire through the municipal authority regarding the location of the ecological platforms suitable for receiving the product for disposal and its subsequent correct recycling. The product is not potentially dangerous to human health and the environment, but if abandoned in the environment it negatively impacts the ecosystem. The symbol of the crossed-out bin, present on the label placed on the appliance, indicates the compliance of this product with the legislation on waste electrical and electronic equipment. The abandonment of the equipment in the environment or the abusive disposal of the same are punishable by law.

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For the complete manual, please refer to the product page on our website →

E-mail (sales/info): info@bmeters.com
E-mail (support): ticket@bmeters.com
Web: www.bmeters.com

EU DECLARATION OF CONFORMITY

dichiarazione di conformità CE

Water meter product type/model: *Modello di contatore per acqua:*	**HYDROCAL M4**
Name and address of the manufacturer: *Nome e indirizzo del fabbricante*	**BMETERS S.r.l.** Via del Friuli, 3 – 33050 Gonars (UDINE) ITALY

This declaration of conformity is issued under the sole responsibility of the manufacturer.
La presente dichiarazione di conformità è emessa sotto la responsabilità del fabbricante.

Object of declaration: *Oggetto della dichiarazione:*	Heat energy meter single jet *Contatore di energia termica getto singolo*
Above mentioned object is in conformity with relevant EU harmonization legislation: *L'oggetto sopra menzionato è conforme alla normativa di armonizzazione dell'UE pertinente:*	Directive No. 2014/32/EU (MID) and 2014/30/EU (EMC) and 2014/35/EU (LVD) and 2014/53/EU (RED) and 2011/65/EU (RoHS) *Direttiva No. 2014/32/UE (MID) e 2014/30/UE (EMC) e 2014/35/UE (LVD) e 2014/53/UE (RED) e 2011/65/UE (RoHS)*

Relevant harmonized standards and normative documents and references to the other technical specifications used for declaration:
Norme armonizzate pertinenti e documenti normativi e riferimenti alle altre specifiche tecniche utilizzate per la dichiarazione:

EN 1434-1:2015+A1:2018	OIML R75-1:2002	ETSI EN 301 489-3 V2.1.1
EN 1434-2:2015+A1:2018	OIML R75-2:2002	IEC 62386-1:2020+AC:2020+A11:2020
EN 1434-4:2015+A1:2018	OIML D11:2013 Par. 11.1	EN 300-220-1 V3.1.1
EN 1434-5:2015+A1:2019	EN 55032:2015+AC:2016+A11:2020+A2:2020	EN 300-220-2 V3.2.1
EN 1434-6:2015+A1:2019	ETSI EN 301 489-1 V2.2.3	Welmec 7.2 rev.5

Name and number of notified body: *Nome e numero dell' organismo notificato:*	Parco Scientifico e Tecnologico del Lazio Meridionale scarl Via Casilina Nord 246 km 68 03013 – Ferentino (FR) Italy
Certificate issued: *Certificato emesso:*	EU type certification in accordance with Module B of Directive No. 2014/32/EU *Certificazione UE di tipo in conformità al Modulo B della Direttiva n. 2014/32/UE*
Issue the Certificate No: *Numero del certificato emesso:*	035-22-2213

Name and number of notified body: *Nome e numero dell' organismo notificato:*	Parco Scientifico e Tecnologico del Lazio Meridionale scarl Via Casilina Nord 246 km 68 03013 – Ferentino (FR) Italy
Certificate issued: *Certificato emesso:*	Certification of production, final product inspection and testing in accordance with Module D of Directive No. 2014/32/EU *Certificazione della produzione, ispezione del prodotto finito e collaudo in conformità al Modulo D della Direttiva n. 2014/32/UE*
Issue the Certificate No: *Numero del certificato emesso:*	IT-030-21-2213

Signed by the General Manager
on behalf of BMETERS S.r.l.:
Firma del Direttore generale
Per conto di BMETERS S.r.l.:

Mr. Mauro Budai

B. METERS s.r.l.
Via Friuli, 3
33050 GONARS (UD)
C.F. e P.IVA 01750...

Place and date of declaration issue: *Luogo e data di emissione della dichiarazione:*	Gonars, Italy, January 07, 2025 *Gonars, Italia, 07 Gennaio 2025*

Questo prodotto rientra nel campo di applicazione della Direttiva 2012/19/UE riguardante la gestione dei rifiuti di apparecchiature elettriche ed elettroniche (RAEE). L'apparecchio non deve essere eliminato con gli scarti domestici in quanto composto da diversi materiali che possono essere riciclati presso le strutture adeguate. Informarsi attraverso l'autorità comunale per quanto riguarda l'ubicazione delle piattaforme ecologiche atte a ricevere il prodotto per lo smaltimento ed il suo successivo corretto riciclaggio.
Il prodotto non è potenzialmente pericoloso per la salute umana e l'ambiente, ma se abbandonato nell'ambiente impatta negativamente sull'ecosistema. Il simbolo del bidone barrato, presente sull'etichetta posta sull'apparecchio, indica la rispondenza di tale prodotto alla normativa relativa ai rifiuti di apparecchiature elettriche ed elettroniche.
L'abbandono nell'ambiente dell'apparecchiatura o lo smaltimento abusivo della stessa sono puniti dalla legge.

This product falls within the scope of Directive 2012/19/EU on the management of waste electrical and electronic equipment (WEEE). The appliance should not be disposed of with household waste as it is composed of different materials that can be recycled at the appropriate facilities. Inquire through the municipal authority regarding the location of the ecological platforms suitable for receiving the product for disposal and its subsequent correct recycling. The product is not potentially dangerous to human health and the environment, but if abandoned in the environment it negatively impacts the ecosystem. The symbol of the crossed-out bin, present on the label placed on the appliance, indicates the compliance of this product with the legislation on waste electrical and electronic equipment. The abandonment of the equipment in the environment or the abusive disposal of the same are punishable by law.

Ce produit relève du champ d'application de la directive 2012/19/UE relative à la gestion des déchets d'équipements électriques et électroniques (DEEE). L'appareil ne doit pas être jeté avec les ordures ménagères car il est composé de différents matériaux qui peuvent être recyclés dans les installations appropriées. Se renseigner auprès de l'autorité communale sur l'emplacement des plates-formes écologiques aptes à recevoir le produit pour élimination et son recyclage correct ultérieur.
Le produit n'est pas potentiellement dangereux pour la santé humaine et l'environnement, mais s'il est abandonné dans l'environnement, il a un impact négatif sur l'écosystème. Le symbole de la poubelle barrée, présent sur l'étiquette apposée sur l'appareil, indique la conformité de ce produit à la législation sur les déchets d'équipements électriques et électroniques.
L'abandon de l'équipement dans l'environnement ou l'élimination abusive de celui-ci sont punis par la loi.

Este producto entra en el ámbito de aplicación de la Directiva 2012/19/UE sobre la gestión de residuos de aparatos eléctricos y electrónicos (RAEE). El aparato no debe eliminarse con la basura doméstica, ya que está compuesto por diferentes materiales que pueden reciclarse en las instalaciones adecuadas. Infórmese a través de la autoridad municipal sobre la ubicación de las plataformas ecológicas adecuadas para recibir el producto para su eliminación y su posterior reciclaje correcto.
El producto no es potencialmente peligroso para la salud humana y el medio ambiente, pero si se abandona en el entorno impacta negativamente en el ecosistema. El símbolo del contenedor tachado, presente en la etiqueta colocada en el aparato, indica la conformidad de este producto con la legislación sobre residuos de aparatos eléctricos y electrónicos.
El abandono del aparato en el medio ambiente o la eliminación abusiva del mismo están penados por la ley.

Dieses Produkt fällt in den Geltungsbereich der Richtlinie 2012/19/EU über die Entsorgung von Elektro- und Elektronik-Altgeräten (WEEE). Das Gerät darf nicht mit dem Hausmüll entsorgt werden, da es aus verschiedenen Materialien besteht, die in den entsprechenden Einrichtungen recycelt werden können. Erkundigen Sie sich bei der Stadtverwaltung nach dem Standort der ökologischen Plattformen, die geeignet sind, das Produkt zur Entsorgung und anschließenden fachgerechten Verwertung entgegenzunehmen. Das Produkt ist nicht potenziell gefährlich für die menschliche Gesundheit und die Umwelt, aber wenn es in der Umwelt zurückgelassen wird, wirkt es sich negativ auf das Ökosystem aus. Das Symbol der durchgestrichenen Mülltonne, das sich auf dem Etikett des Geräts befindet, weist darauf hin, dass dieses Produkt den Rechtsvorschriften über Elektro- und Elektronik-Altgeräte entspricht. Das Zurücklassen der Geräte in der Umwelt oder die missbräuchliche Entsorgung derselben sind strafbar.

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