

IZAR RC 868 i WATERBOX G4

User guide



Table of contents

1	Product description	3
1.1	Brief description	3
1.2	Compatibility with Diehl Metering meters.....	3
1.3	Configuring IZAR RC 868 i W G4.....	4
2	Operation.....	4
2.1	Operating principle	4
2.1.1	Communication.....	4
2.1.2	Operation.....	4
2.1.3	Integration of backflow	5
2.2	Technical specifications.....	5
2.3	Dimensions.....	7
2.4	Details of the functions and alarms	5
2.4.1	Functions details	5
2.4.2	Alarms details.....	5
3	Installation precautions	7
3.1	Identification	7
3.2	Installation	7
3.3	Securing system.....	8
4	Maintenance.....	8
5	Regulations	9
5.1	Conformity	9
5.2	Recycling.....	9

1 PRODUCT DESCRIPTION

1.1 BRIEF DESCRIPTION

IZAR RC 868 i W G4 is a unidirectional radio transmitter that collects the data coming from a Diehl Metering water meter and transmits in real time the index and other operating information every 12 seconds in R3 mode and every 15 minutes in long-range fixed network R4 mode.

There is also an "extended historical values" mode in which 31 daily historical values or 29 hourly historical values are available. In this mode the information is sent every 30 seconds in R3 mode and every 15 minutes in R4 fixed wide area network mode.

Mobile reading in walk-by / drive-by / passive drive-by:

The data sent by IZAR RC 868 i W G4 is collected using either a handheld computer or tablet equipped with an IZAR RECEIVER BT in walk-by or drive-by mode or with an IZAR RDC VEHICLE in passive drive-by mode. Data is then transferred directly to a centralized monitoring system.

Fixed network:

A fixed receiver IZAR RDC STANDARD/IZAR RDC BATTERY (fixed network R3) or IZAR RDC PREMIUM (long-range fixed network R4) installed in a fixed location will collect the data and send it at predefined intervals, via GPRS or LAN, to a centralized server. Reading through M-Bus application with an IZAR CENTER associated to an IZAR RECEIVER M-BUS and IZAR@NET 2 software is also possible.

Logger functions:

IZAR RC 868 i W G4 has an integrated data logger that registers consumption at regular intervals. In case of consumer dispute or for analysis purposes, the data is available via the IrDA interface of the module and is transferred to the handheld or computer/tablet via a dedicated application. The consumption backup interval is programmable between 1 to 40 minutes. This interval can be modified thanks to the same dedicated application.

1.2 COMPATIBILITY WITH DIEHL METERING METERS

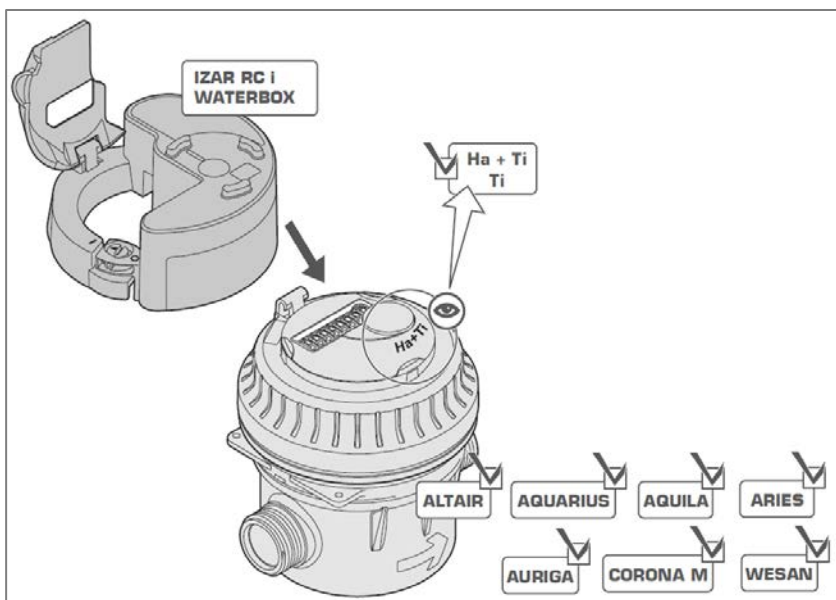


fig.1

IZAR RC 868 i W G4 is compatible with all the water meters of the Diehl Metering modular range equipped with a grey or red ring and marked "Ha+Ti" or "Ti".

1.3 CONFIGURING IZAR RC 868 I W G4

IZAR RC 868 i W G4 is configured with an IZAR OH RS232 or IZAR OH BT optical head.

The optical head must be positioned in front of the diode on the top of the radio and resting on the boss (fig.2).

Data required during configuration:

- Meter serial number
- Pulse weight (unit/value)
- Index (unit/value)
- Profile

The choice of mode (normal or extended historical values) is made during factory or on-site configuration.

The software recognizes automatically the module type. For more details on the configuration and the “logger” function, refer to the software user guide.

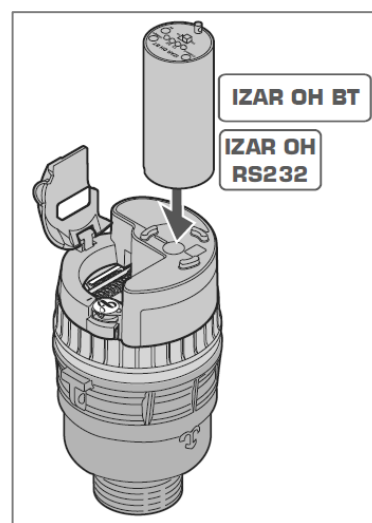


fig.2

2 OPERATION

2.1 OPERATING PRINCIPLE

2.1.1 COMMUNICATION

IZAR RC 868 i W G4 sends data in R3 mode using the OMS standard version 3: OMS is a communication protocol developed within the framework of the CEN TC 294 recommendations of the EN 13757-3/-4 standard regarding the use of the 868 MHz frequency band for radio reading of metering devices.

2.1.2 OPERATION

IZAR RC 868 i W G4 radio module contains an electronic circuit that collects information coming from a Diehl Metering water meter (current index, 11 historical index values, detailed leaks information and alarms).

In “**normal**” mode, information is emitted:

- Every 12 seconds with the OMS protocol at the 868.95 MHz frequency in R3 mode for the index and alarms. Detailed information regarding leaks and historic of consumptions are transmitted every 6 sendings.
- Every 15 minutes at the 868.30 MHz frequency in R4 long range fixed network mode.

In “**extended historical values**” mode, information is emitted:

- Every 30 seconds in R3 mode at the 868.95 MHz frequency
- Every 15 minutes at the 868.30 MHz frequency in R4 long range fixed network mode

Important notes regarding the “**extended historical values**” mode:

- In this “extended historical values” mode, detailed leakage information is not sent
- In this mode, the current index is not sent. Only historical values are present in the frame. The most recent index sent in the frame is the one from the previous day at 23:59.
- Since no current index is sent, this mode is not OMS certified, despite the fact that the data in the frame is OMS compatible.
- In this mode it is recommended not to activate the reception of the very long frame in the IZAR@MOBILE 2 software for mobile tours because this frame is not sent.

2.1.3 INTEGRATION OF BACKFLOW

IZAR RC 868 i W G4 has a flow direction detection feature and a special algorithm enabling it to take into account a backflow situation. The index transmitted by IZAR RC 868 i W G4 is a “real time” index -> backflows are registered immediately.

2.2 TECHNICAL SPECIFICATIONS

Communication protocol	OMS V 3.0.1
Frequency	868.95 MHz in R3 mode 868.30 MHz in R4 mode
Frequency modulation	FSK
Transmission power	16 mW
Standards	EN 300 220, CE, EN 13757-3/-4, RED directive
Battery	1 fixed 3.6V lithium battery
Battery lifetime	up to 15 years *
Sensor	inductive technology
Ambient operating temperature	-15°C ... +55°C
Storage temperature	-20°C ... +70°C
Protection index	IP68
Configuration interface	Infrared

* Under standard conditions of use and temperature. Theoretical lifetime, not guaranteed.

2.3 DETAILS OF THE FUNCTIONS AND ALARMS

2.3.1 FUNCTIONS DETAILS

Current index*	Real time index transmitted by the radio.
11 historical index values*	Indexes recorded on specific dates. Either daily, weekly, monthly (i.e. the first of each month) or yearly (i.e. 1st day of each year).
Detailed leaks information*	The following detailed information is provided: <ul style="list-style-type: none"> • Number of leaks • Date of the last leak • Leak duration in days • Estimated volume of the leak in m³ • Cumulated duration of the leak(s) in days • Estimated cumulated volume of the leak(s) in m³
Integrated data logging function	By default, the backup interval is 30 minutes allowing the recording of the last months of consumption. IZAR LOGGER software can be used to access the data and to change parameters via the IrDA interface.

* Information not available in “extended historical values” mode: 31 daily historical values or 29 hourly historical values, no current index, no detailed leakage information in the frame.

2.3.2 ALARMS DETAILS

Leak detection	Alarm triggered: - if there is a continuous consumption over a programmable period of time, usually several days.								
Low battery	<p>The alarm is set when the remaining lifetime of the battery is lower than 1 year. The typical lifetime is up to 15 years when the temperatures are distributed evenly within the ranges given below:</p> <table border="1"> <thead> <tr> <th>Temperature range</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>-15°C to +5°C</td> <td>10% of the time</td> </tr> <tr> <td>+5°C to +30°C</td> <td>80% of the time</td> </tr> <tr> <td>+30°C to +55°C</td> <td>10% of the time</td> </tr> </tbody> </table> <p>NB: an extended use at high temperatures will cause a loss of battery autonomy. If, for example, the module is permanently at +55 °C, the life expectancy of the radio will be reduced to 10 years.</p>	Temperature range	%	-15°C to +5°C	10% of the time	+5°C to +30°C	80% of the time	+30°C to +55°C	10% of the time
Temperature range	%								
-15°C to +5°C	10% of the time								
+5°C to +30°C	80% of the time								
+30°C to +55°C	10% of the time								
Meter stopped or blocked	Alarm triggered: - if no consumption has been recorded over a programmable period of time, usually several weeks.								
Meter sizing : under calibrated	<p>Detection of undersized meter compared to the need, leading to a meter overflow.</p> <p>Alarm triggered: - if a Q1 programmable flowrate is exceeded during a D1 programmable duration.</p>								
Meter sizing : over calibrated	<p>Detection of oversized meter compared to the need, leading to a meter underflow.</p> <p>Alarm triggered: - if a Q2 programmable flowrate is never reached during a D2 programmable period.</p>								
Radio disconnected	Alarm triggered: - if the radio is disconnected from its meter.								
Backflow	Alarm triggered : - if a backflow is greater than a programmable value, usually a few tens of litres.								

Alarm reset: alarms are reset automatically after a programmable period. This period must be compatible with the frequency of reading.



Any radio module delivered already clipped on a meter has a predefined profile. Any modification may affect the operation of the product. Diehl Metering shall not be held liable for any malfunctioning of the product following a modification of configuration.

2.4 DIMENSIONS

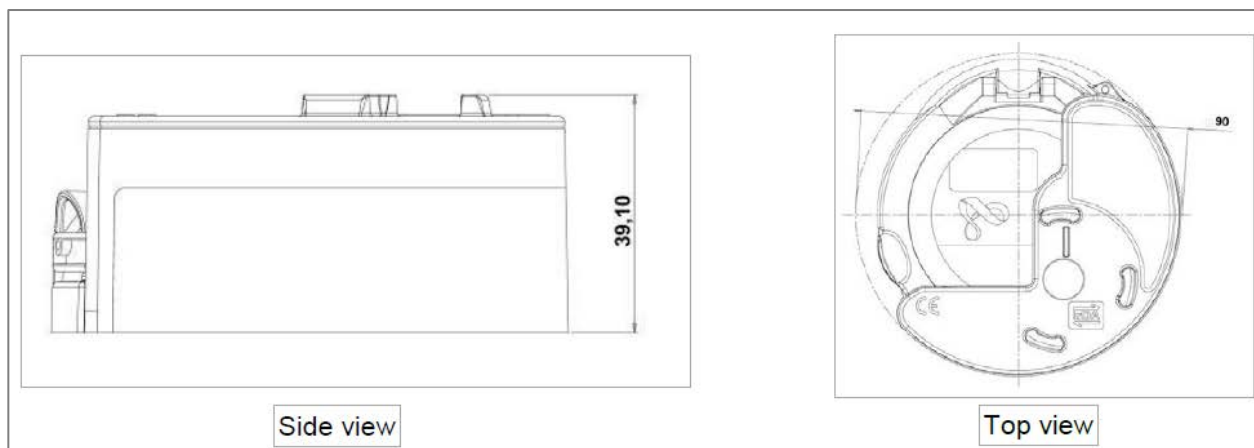


fig.3

3 INSTALLATION PRECAUTIONS

3.1 IDENTIFICATION

Make sure that IZAR RC 868 i W G4 is compatible with the meter on which it is clipped (marked "Ti" or "Ha + Ti").

3.2 INSTALLATION

If there is a cover on the meter, take it off by pushing out the hinge pin (fig.4). If the cover does not have a metal hinge, remove it by hand.

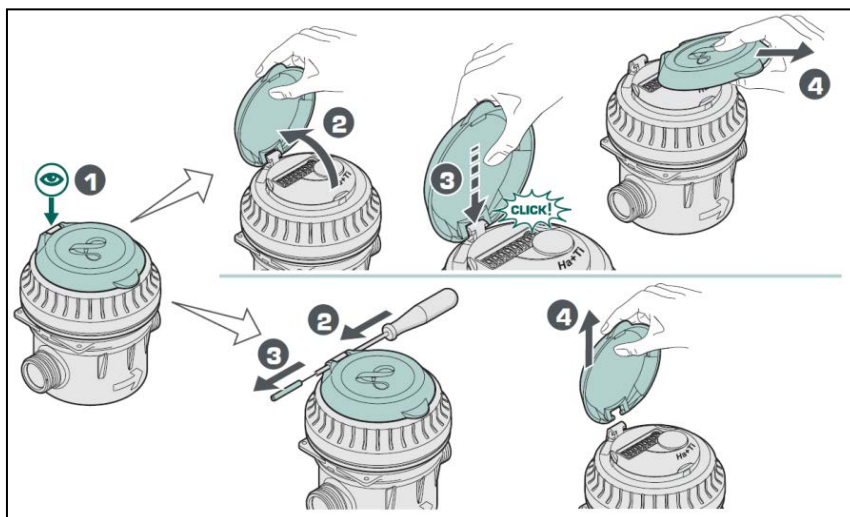


fig.4

Carefully clean the top of the register to remove any traces of soiling.

Position the IZAR RC 868 i W G4 by aligning the hinges up with each other (fig.5).

Press the ring onto the module with your hand only, until it clicks into place. Do not use a mallet or hammer. This is an electronic component to be handled with care.

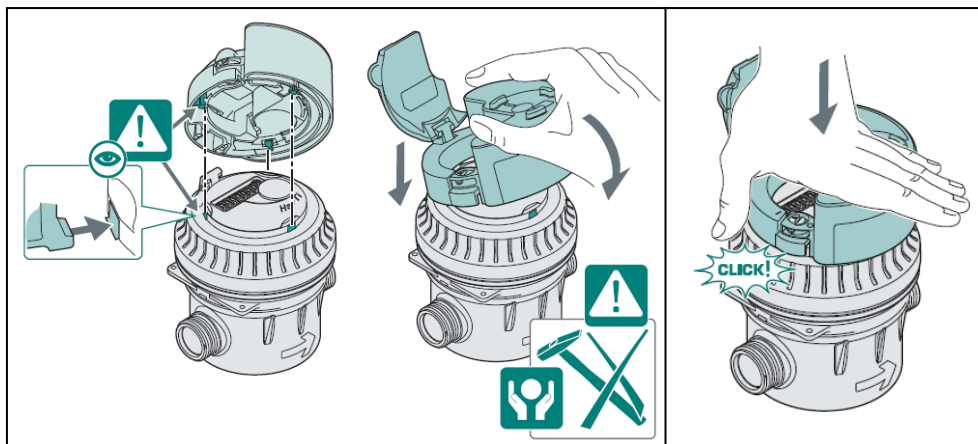


fig.5

3.3 SECURING SYSTEM

A screw tightens and loosens the ring on the meter (fig.6). This system secures the assembly and ensures pullout resistance. In open position, it is possible to remove the ring without damaging the hooks.

Put the sealing label (delivered with the radio module) on the locking screw.

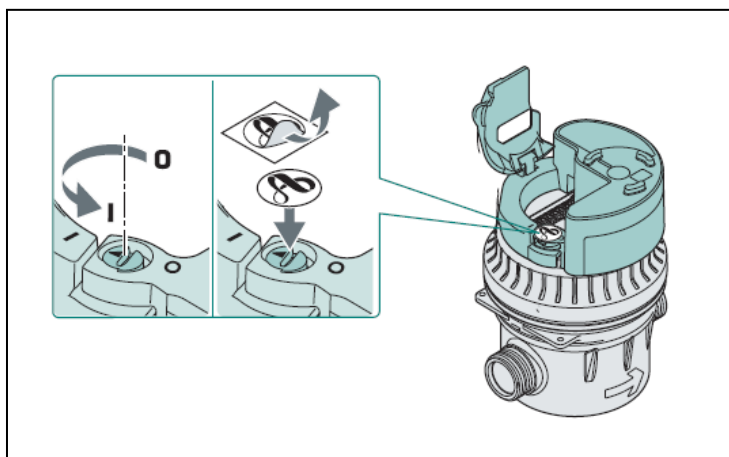


fig.6

4 MAINTENANCE

<p>Maintenance</p>	<p>IZAR RC 868 i W G4 requires no specific maintenance.</p> <p>Do not clean it with solvents or abrasive cleaners, as these would damage the plastic shell. If necessary, use a damp cloth or sponge.</p>
<p>Storage</p>	<p>The product may be stored in a dry place at temperatures between -20°C and +70°C.</p> <p>Prolonged storage at high temperatures may cause a significant loss of autonomy.</p>

5 REGULATIONS

5.1 CONFORMITY

The product complies with the European Directives as indicated on the EU Declaration of conformity delivered with the product and available at:

<https://www.diehl.com/metering/en/support-center/download-center/>

5.2 RECYCLING



The transposed European Directives on waste batteries and waste electrical and electronic equipment supervise the actions necessary to limit the negative impact of the product end of life.

This product is subject to special collection and disposal. It should be deposited at an appropriate facility to enable recovery and recycling. For further details about recycling this product, please contact your Diehl Metering agency.

Diehl Metering S.A.S.
67 rue du Rhône
68300 Saint-Louis
France
Tel: +33 (0)3 89 69 54 00
Fax: +33 (0)3 89 69 72 20
E-Mail: info-dmfr@diehl.com

www.diehl.com/metering