



MultiSafe

Leak Detector Control Valve

Operation and maintenance guide



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1. General

1.1 Using the instructions

This instruction booklet is supplied to help you use your MultiSafe Leak Detector Control Valve in a safe and efficient manner. They form part of the scope of supply and have to be readily available at all times.

Due to technical developments, illustrations and descriptions in the instructions for use may slightly differ from the MultiSafe Leak Detector Control Valve actually supplied.

RWC will not accept any liability for loss or damage caused by installations that do not follow these instructions.

1.2 Symbols used



Danger!

The combination of the symbol and the signal word indicates direct danger and a situation which, if not avoided, could result in death or severe injury.



Warning!

The combination of the symbol and the signal word indicates a potentially dangerous situation which, if not avoided, could result in death or severe injury.



Caution!

The combination of the symbol and the signal word indicates a potentially dangerous situation which, if not avoided, could result in minor injury.



Attention!

The combination of the symbol and the signal word represents important information that helps prevent material or environmental damage.

1.3 Copyright / Standards / Warranty

The instructions for use and all the specifications supplied with the device remain intellectual property of RWC.

Please note that the MultiSafe Leak Detector Control Valve enjoys patent protection.

The following European and national standards have been applied for the development and design of the MultiSafe Leak Detector Control Valve:

- DIN EN 806
- DIN 1988
- DIN 3553

The manufacturer's warranty is subject to the sales terms and conditions of delivery. The warranty is void in case of:

- Damage due to improper operation
- Repair or conversion work performed by unauthorised persons
- Use of non-original Reliance Valves accessories or spare parts

2. Safety

2.1 Intended use

The MultiSafe Leak Detector Control Valve can be used as an effective leakage protection system according to DIN 3553 for apartments and single family homes.

Due to the nature of the system, there cannot be a 100% guarantee that no water damage will occur. The MultiSafe Leak Detector Control Valve is intended for use in cold water systems.

2.2 Fundamental hazards

In general, danger can occur when handling electrically powered devices. Therefore, please follow health and safety regulations, other generally accepted rules pertaining to safety and occupational medicine as well as health and safety regulations.

Do not modify the MultiSafe Leak Detector Control Valve. The manufacturer does not assume any liability for damage due to improper alterations.

2.3 Hazards due to electric energy

In general, danger can occur when handling electrically powered devices. Therefore, please follow health and safety regulations, other generally accepted rules pertaining to safety and occupational medicine as well as health and safety regulations.

Do not modify the MultiSafe Leak Detector Control Valve. The manufacturer does not assume any liability for damage due to improper alterations.

Please observe the prescribed values for voltage and power (see specifications).

Work on electrical installations or controls must be made by qualified electricians only. Disconnect the mains adapter and remove the batteries prior to working on the installation.

Regularly check the mains adapter and have it removed by a qualified electrician in case it is damaged.

2.4 Maintenance and repair work

Maintenance and repair work must be done by qualified and authorised specialists only. They are considered authorised specialists because of their vocational training, instruction or experience to do the required intervention, detect and prevent potential risks from occurring in pursuing their activities. They must be able to provide evidence about their knowledge of the relevant safety standards, safety regulations and the health and safety regulations and they must have read the instructions for use.

3. Installation instructions

The MultiSafe Leak Detector Control Valve operates on an ISM band of 2.4 GHz. Please make sure that the installation is not next to devices with the same channel assignment (e.g. wireless LAN devices, HF components etc.).

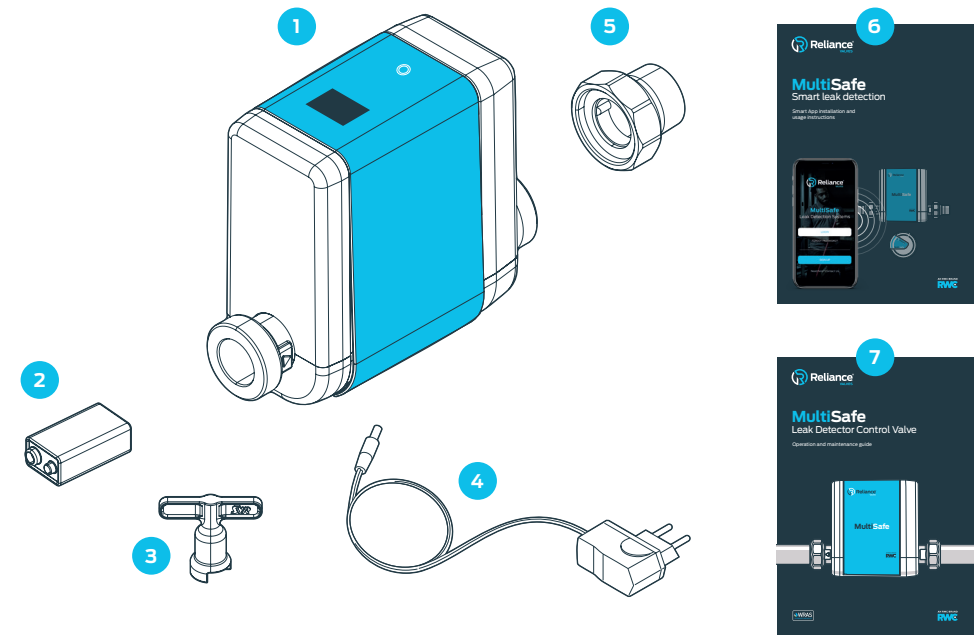
In unfavourable ambient conditions, in buildings or rooms with walls made of reinforced concrete, steel or iron frames or near metal barriers (e.g. pieces of furniture), radio reception may be impaired or interrupted. In these cases, a wireless repeater will have to be installed to increase the range of the radio signal.

The MultiSafe Leak Detector Control Valve must be installed in frost-proof, non-condensing rooms. The MultiSafe Leak Detector Control Valve must not be installed in inaccessible ducts.

To guarantee smooth operations, the MultiSafe Leak Detector Control Valve, the smartphone or tablet and possibly the computer must be connected to the Internet. A wireless LAN-enabled router is also required.

4. Design and function

4.1 Scope of supply



- 1 Main valve
- 2 9V battery
- 3 Emergency unlocking key
- 4 Mains adapter
- 5 Screw connections (2x)
- 6 Smart App installation and usage instructions
- 7 Operation and maintenance guide

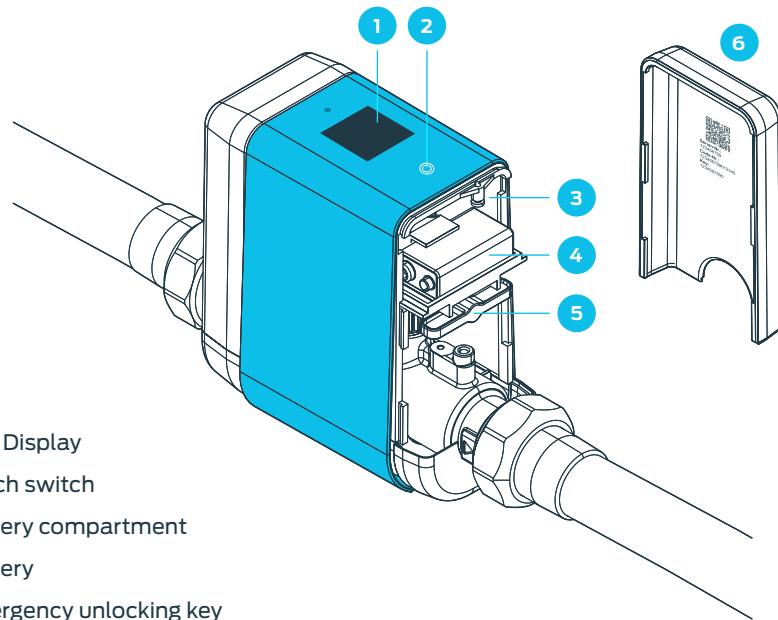
4.2 Optional accessories

The system's functionality can be extended with the following accessories:

- Reliance Valves MultiSafe Floor Leak Sensor (LEKP100050)



4.3 Design



- 1 LCD Display
- 2 Touch switch
- 3 Battery compartment
- 4 Battery
- 5 Emergency unlocking key
- 6 Cover of battery compartment with product-specific QR code

4.4 Function

The MultiSafe Leak Detector Control Valve is an efficient leakage protection system according to DIN 3553. Thanks to continuous monitoring, any leak is detected at an early stage and the risk of extensive water damage is reduced because the water supply is cut off automatically.

The MultiSafe Leak Detector Control Valve features an electronic water metering device (by means of a turbine), an electrically-driven shut-off valve, a pressure sensor to monitor the smallest leakage volumes and a multifunctional display. In addition, the device determines water hardness and indicates it in three stages.

The MultiSafe Leak Detector Control Valve can connect to the Reliance Valves App via its access point. Provided there is an active internet connection, the MultiSafe transmits the measured values from the drinking water installation, e.g. volume flow, flow rate per time, duration of volume flow, pressure drop and temperature via a secure connection.

Even if the Internet connection is down, the parameters will continue to be monitored. However, during this period, there is no communication with the server and no notification in case of deviations from set parameters. Of course, the system can also operate without Internet connection.

The mains adapter is used for power supply. The scope of delivery includes a battery for short-term protection in case of power failure.

5. Transport and storage

5.1 Transport

The device is fully assembled when delivered. It weighs approximately 1,275 g.



Attention!

Improper transport may damage the device!

The packaging serves as protection during transport.

- Do not install the device if the packaging is severely damaged.
- When submitted to hard shocks or impacts, replace the synthetic part concerned (even if it shows no visible damage).

5.2 Storage

Store the device under the following ambient conditions only:

Temperature: +4°C +60°C, relative air humidity: max. 80%.



Attention!

Improper storage may damage the device!

- Protect the valve and the electronic system against frost.




6. Installation and commissioning

6.1 Safety instructions for installation and commissioning

Only authorized, qualified personnel shall install and commission the MultiSafe Leak Detector Control Valve.

Observe the general safety instructions for drinking water installations, such as the following:

- WRAS Approval
- Rules and regulations of the local water company

	<p>Attention! Improper installation of the drinking water device may cause damage!</p> <ul style="list-style-type: none"> ▪ Follow the instructions for use to mount the MultiSafe Leak Detector Control Valve. Check that the connection is leak tight. ▪ Avoid strong water hammer, caused e.g. by downstream solenoid valves.
	<p>Attention! Drinking water pollution may cause corrosion and malfunctions of the valves.</p> <p>We recommend the use of a filter to protect the installation downstream!</p>
	<p>Attention! The device may be damaged if the electric installation is not made properly!</p> <ul style="list-style-type: none"> ▪ Use only the supplied mains adapter to connect the device to the power supply.

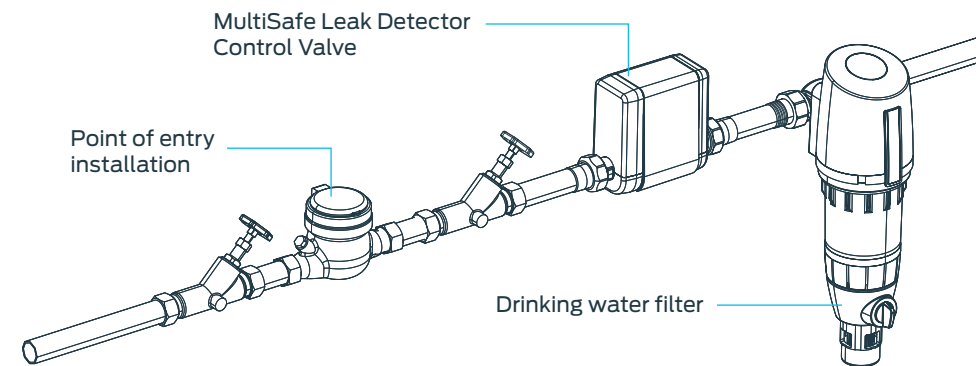
6.2 Installation

- Turn off the water supply prior to starting the installation work.

Mount the device only in drinking water installations according to UK Water Regulations, directly downstream of the water metering device. Do not apply stresses.

Please pay attention to the direction of flow which is indicated by an arrow on the housing!

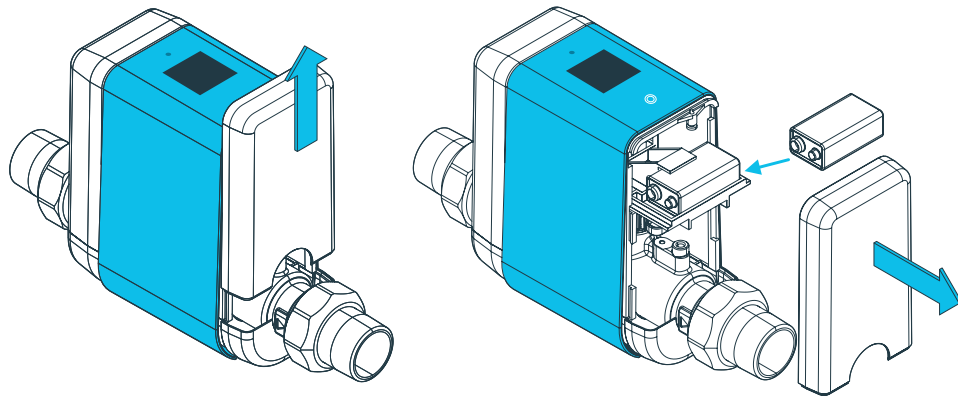
Flush the pipes before installation.



- Re-open the water supply.
- Check that the valve connections are leak tight!
- Open the battery compartment and insert the 9V block battery. Be sure to observe the polarity!

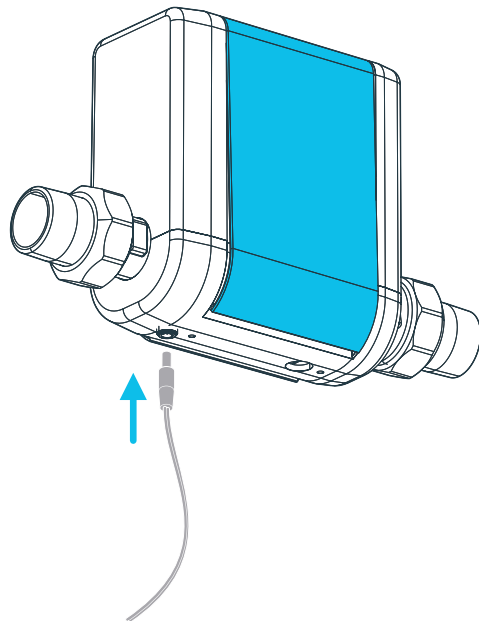
In case of continued draw-off operations (e.g. filling-up a swimming pool) there must be a separate connection installed before the MultiSafe Leak Detector Control Valve.

Insert the battery



Plug in the mains adapter

The device is now ready to use.

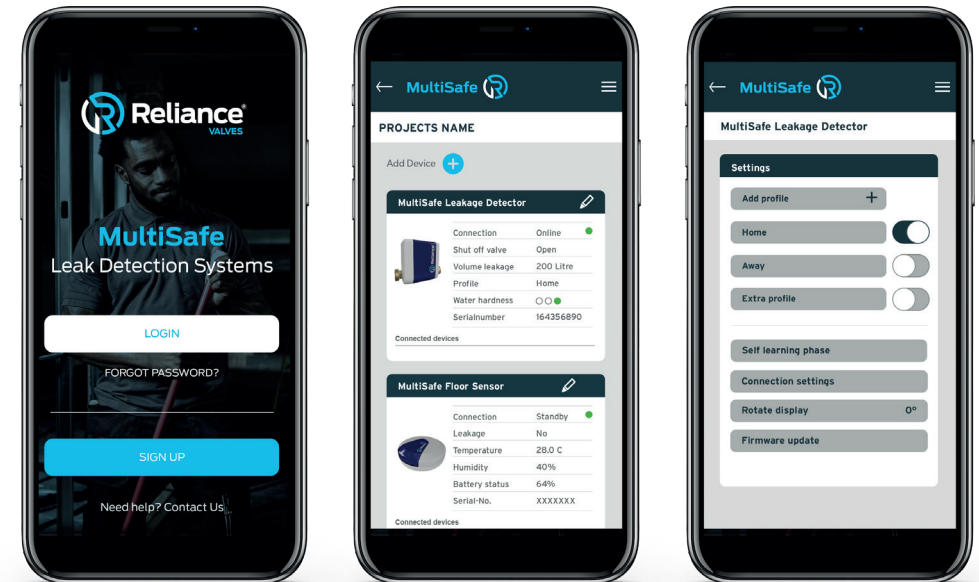


7. Operation and settings

7.1 Operation and settings via the Reliance Valves App

It's easy to set your MultiSafe Leak Detector Control Valve via the Reliance Valves App on your smartphone or tablet.

Simply install the current Reliance Valves App on your smartphone or tablet. You can also use your computer and follow the self-explanatory user instructions.



The MultiSafe can also be used without an Internet connection. In this case, functions like notification by text messages or e-mail are not available though. The MultiSafe cannot be connected to other devices in this case either, like e.g. the radio-controlled MultiSafe Floor Leak Sensor.

Reliance Valves App Settings range

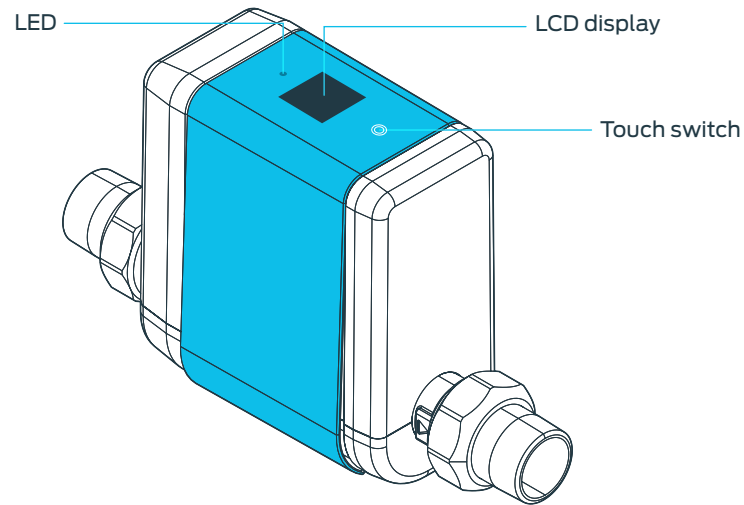
Please find below the most important terms for the settings range of the MultiSafe Leak Detector Control Valve in the Reliance Valves App. Examples are given for illustration.

	Explanation and setting options	Ex works
User profile	Individual setting of the device, adjusted to the user profile. A maximum of eight user profiles are possible.	Present (active)
	<p>Example:</p> <p>Usually, the two teenagers are present at weekends. The two teens like to take long showers. To make sure that the parents have sufficient water, too, they create a new profile with the corresponding parameters.</p> <p>Refer to the smart self-learning phase of the MultiSafe to determine the optimum safety levels for your new profile</p>	Absent
Volume-based leakage	<p>Maximum amount of water drawn after opening a draw-off point. The setting for volume-based leakage ranges from 10 to 9,000 litres. Volume-based leakage may be switched off.</p> <p>Example:</p> <p>The draw-off point with the highest draw-off amount is a bathtub with a capacity of approximately 120 litres. Set the value of leakage in the presence-mode to 200 litres so that the bathtub can be filled up without any problem and you can still draw water.</p>	300 l
Time-based leakage	<p>If a draw-off is registered that takes longer than the time set for a specific volume, the device will isolate the system. Time-based leakage can be set to 30 minute intervals, ranging between 0.5 and 25 hours. This setting can also be switched off.</p> <p>Example:</p> <p>In addition to the amount of water set for volume-based leakage, a period of time can be determined when water may be drawn without interruption. If, for example, the time-based leakage is set to 60 minutes, the MultiSafe will isolate the system once this time has elapsed, even if the set volume has not yet been reached.</p>	60 minutes

	Explanation and setting options	Ex works
Flow-based leakage	<p>If the MultiSafe detects unusual flow rates within short periods of time, the device will consider this as leakage. Flow-based leakage can be set up to a volume of 5,000 l/h, yet this setting can also be switched off completely.</p> <p>Example:</p> <p>The ex works setting of a maximum flow of 3,000 l/h continues for at least one minute — mostly in case of pipe bursts: the MultiSafe Leak Detector Control Valve will immediately isolate the pipe system.</p> <p>Install an additional radio-controlled MultiSafe Floor Leak Sensor in critical places. This will determine local water leaks, regardless of the selected settings. MultiSafe Floor Leak Sensor can be connected to the MultiSafe so that the latter can immediately isolate the system.</p>	3,000 l/h
Return to “present” mode	<p>The user can determine the time when a selected profile shall be active. Once the set time is over, the MultiSafe will return to the “present” mode. The options for the settings range between one hour and 28 days. Times will be given in hours.</p> <p>Example:</p> <p>You will be away from home for four days and therefore you select a mode with low water consumption. If you select your return time to “present” to be four days, the MultiSafe will automatically switch back to this mode after the selected time.</p>	Ex works without time indication
Micro-leakage test	The device will check at regular intervals for the smallest of leaks. The microleakage test can be switched on or off.	Off
Warning sound	The warning sound can be switched on or off.	On
Self-learning phase	During the self-learning phase, the MultiSafe Leak Detector Control Valve analyses water consumption and the usual household usage. The measured values can then be used for your own, selected profile. The duration of the self-learning phase can range between one and 28 days.	Off

7.2 Displays and controls directly on the device

The user interface of the MultiSafe Leak Detector Control Valve includes a 4-line LCD display, one LED for the status indicator and one touch switch.



LED display

LED display	Green	Red
LED lights up	Active leakage protection	General fault
LED flashes	Motor opens, closes, active flow	Suspected leak

Action

Condition of device	Green	Red
Shut-off valve open	Touch sensor 1 x for 3s	Shut-off valve closes
Shut-off valve closed	Touch sensor 1 x for 3s	Shut-off valve opens
Fault ("red" LED on) Shut-off valve closed	Touch sensor 1 x for 3s	Reset of fault, shut-off valve opens
Access point activated	Touch sensor 1 x for 10s	Activates access point

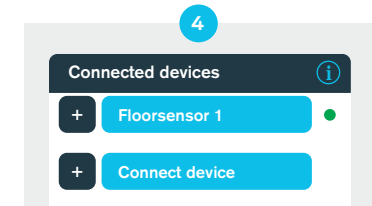
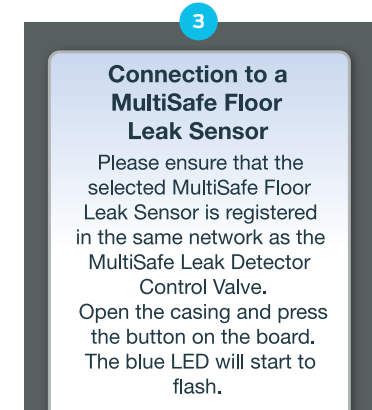
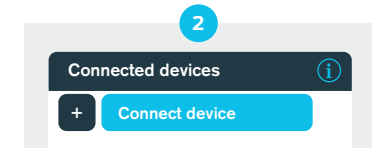
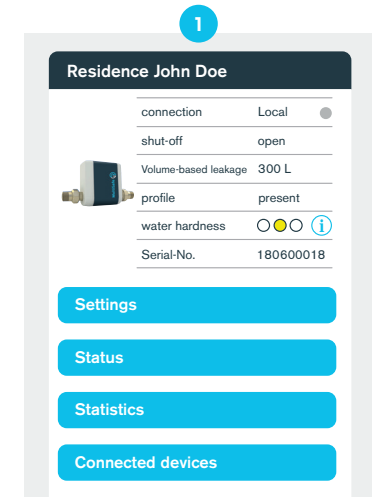
7.3 Connection of several devices

To make sure that the external radio-controlled MultiSafe Floor Leak Sensor notifies a water leak or suspicious humidity levels, it can be connected to a MultiSafe Leak Detector Control Valve.

To connect the devices, they have to be registered via Reliance Valves App and be online.

The MultiSafe Leak Detector Control Valve acts as the master, i.e. the MultiSafe activates the connection to the radio-controlled MultiSafe Floor Leak Sensor, not vice versa.

- 1 Select the MultiSafe Leak Detector Control Valve and click on "Connected devices".
- 2 Then click on "+ Connect device".
- 3 Follow the instructions and activate the access point of the MultiSafe Floor Leak Sensor Connect.
- 4 Once the MultiSafe Floor Leak Sensor has been successfully connected, it will be indicated by a green dot on the list.



8. Emergency unlocking function

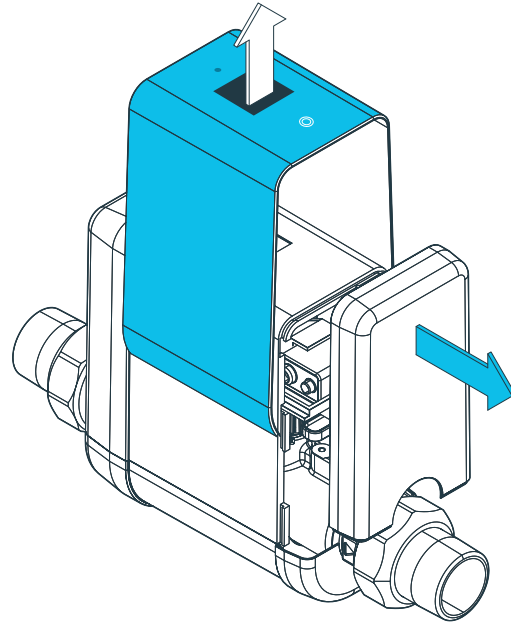
1. Emergency unlocking function

Thanks to the emergency unlocking function, the MultiSafe Leak Detector Control Valve can be manually unlocked, for instance in case of loss of energy supply due to power failure or a missing or spent battery.

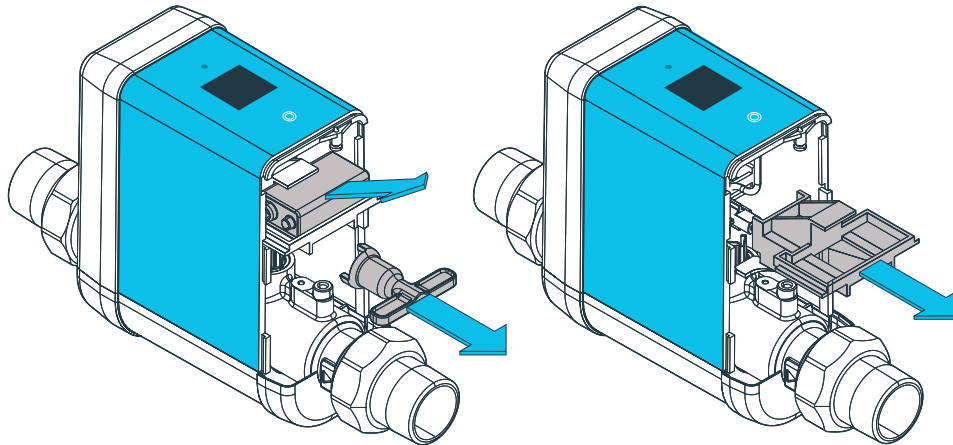
The access to the emergency unlocking function is underneath the control unit.

No cables have to be removed!

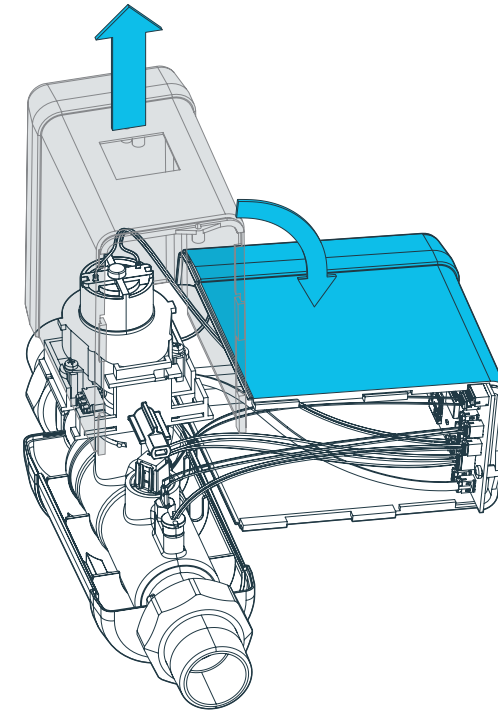
- First isolate the water supply and turn off the electrical power. One by one, remove the battery compartment and the shell of the MultiSafe Leak Detector Control Valve.



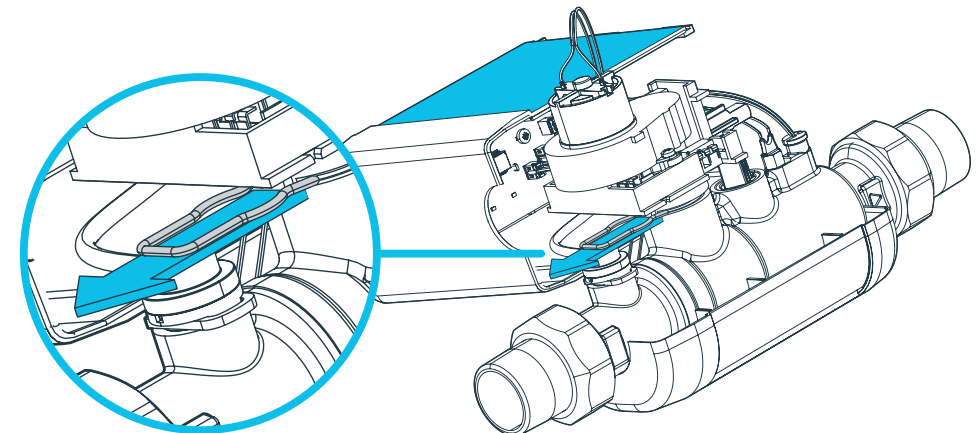
- Remove the emergency unlocking key, the battery and the battery compartment.



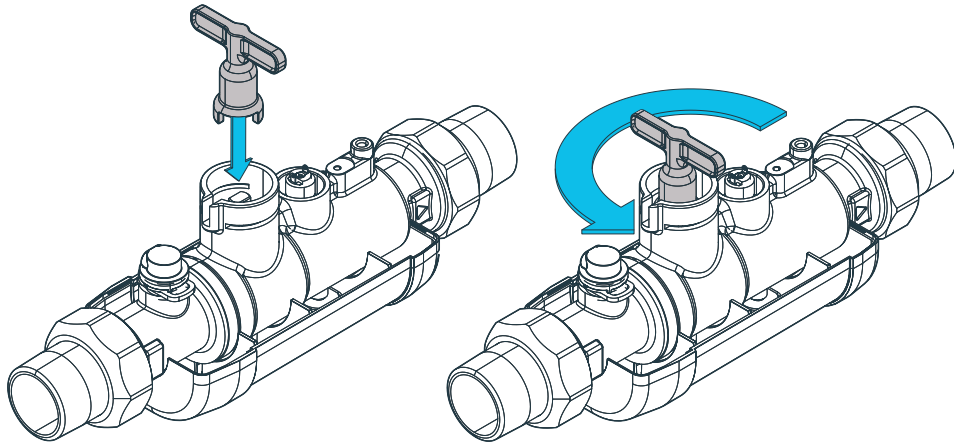
- Pull the casing upwards and tip it sideways.



- Remove the clamp that connects the body of the MultiSafe Leak Detector Control Valve with the motor unit and place the motor unit next to it, sideways (without removing the cables), thus opening access to the shut-off valve.

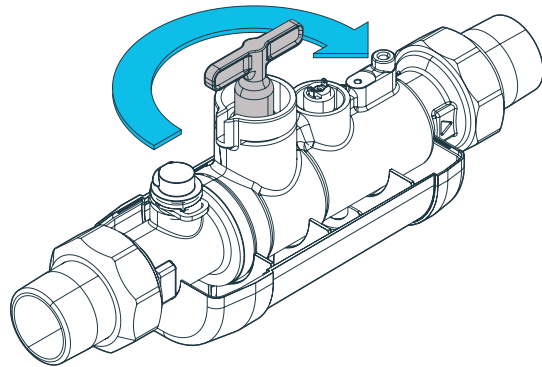


- Insert the emergency unlocking key from the top and turn it until water starts to flow.



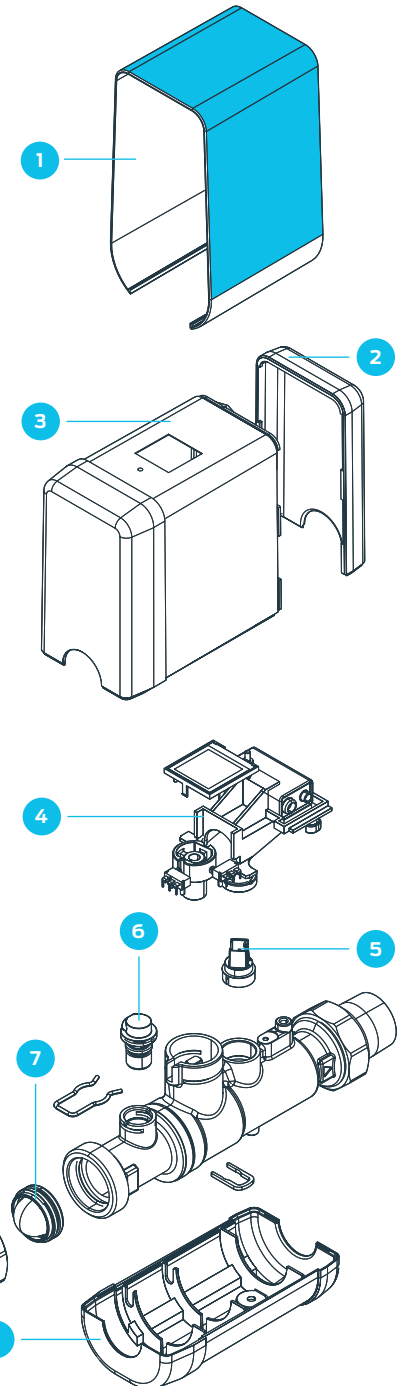
- Once you have drawn water, turn the shut-off valve by using the key until it is closed again and the water ceases to flow.

Re-assemble the device in reverse order.



9. Component Parts

- 1 Cover
- 2 Battery compartment
- 3 Shell
- 4 Motor unit
- 5 Pressure sensor
- 6 Conductivity cartridge
- 7 Inlet strainer



10. Maintenance

The turbine, the inlet strainer, the cables and the shut-off valve should be checked and serviced.

- **Perform a visual check of the cable harness** (kinked cables? Correctly plugged in?)
- **Control of turbine and shut-off valve:**
Select “absent” profile (for instance with limit value of 10 litres) and draw water. If the shut-off valve closes after 10 litres have been drawn, the turbine and the shut-off valve are operating correctly.
- **Check of the inlet strainer**
Isolate and depressurise the drinking water installation, interrupt the main power supply. Completely remove the screw connections on the casing, remove the MultiSafe, check the inlet strainer, if required, remove it and rinse with clear water (replace if necessary). Re-assemble in reverse order. **Slowly** re-open drinking water supply.

We recommend annual servicing intervals.



Attention!

Potential material damage due to improper care!

- Do not clean the synthetic parts with cleaning products that contain solvents.

11. Faults

A fault is indicated by an acoustic buzzer and a flashing LED on the display. In addition, the fault will be notified externally to a smartphone / tablet or a computer by e-mail.

A fault can be caused by:

- A limit value being reached (e.g. suspected leak)
- A device fault
- Spent batteries

Alarm	Cause	Correction
Fault of shut-off valve	The shut-off valve cannot be activated. Maybe due to dirt or a defect of the motor or of the limit switch.	Please check the function by operating the shut-off valve manually.
Fault of network connection	There is no connection to the network.	Please establish a connection to the network.
Suspected leak: volume-based leakage	The maximum admissible volume is exceeded. Potential volume-based leakage.	Please eliminate the leakage or adjust the protection level. Press the button on the device to open the shut-off valve. It is possible to perform this action via the Reliance Valves App or in the web application.
Suspected leak: time-based leakage	The maximum admissible time has been exceeded. Potential time-based leakage.	Please eliminate the leakage or adjust the protection level. Press the button on the device to open the shut-off valve. It is possible to perform this action via the Reliance Valves App or in the web application.
Suspected leak: flow-based leakage	The maximum admissible flow rate has been exceeded. Potential flow-based leakage, for instance due to a pipe burst.	Please eliminate the leakage or adjust the protection level. Press the button on the device to open the shut-off valve. It is possible to perform this action via the Reliance Valves App or in the web application.

Alarm	Cause	Correction
Suspected leak: microleakage	The maximum admissible volume has been exceeded. Potential microleakage, e.g. in a cistern.	Please eliminate the leakage or adjust the protection level. Press the button on the device to open the shut-off valve. It is possible to perform this action via the Reliance Valves App or in the web application.
Floor sensor leakage	A leak has been detected on the floor sensor.	Please eliminate the leakage and check the floor sensor and its installation site.
Fault flow sensor	No turbine impulses have been registered over an extended period of time. Maybe the turbine or the sensor is contaminated or defective.	Open a draw-off point and check whether the control displays any (LED) turbine impulses. Please contact the RWC technical support team.
Fault pressure sensor	The pressure sensor does not pass on any information, maybe due to a defect.	Please contact the RWC technical support team.
Fault temperature sensor	The temperature sensor does not pass on any information, maybe due to a defect.	Please contact the RWC technical support team.
Fault conductivity sensor	The conductivity sensor does not pass on any information, maybe due to a defect.	Please contact the RWC technical support team.
BA – battery replacement	The batteries are spent.	Please replace the batteries.
Warning volume- based leakage	The limit value for volume-based leakage has almost been reached.	Stop all water use.

12. Specifications

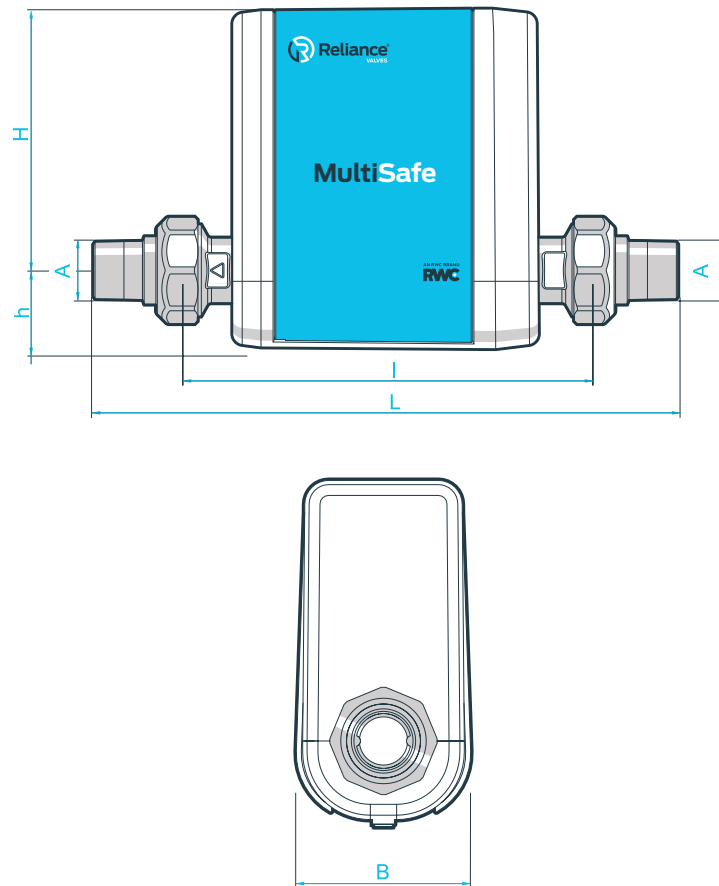
MultiSafe Leak Detector Control Valve

Unit		
Battery		1 x 9V Block (6LR61)
Buffer battery (on circuit board)		1 x CR 2032
IP Code		IPX3
Standard wireless protocol		WiFi 2.4 GHz
Max. operating pressure	bar	16
Max. ambient temperature	°C	10 ... 60
Operating temperature	°C	10 ... 30
Room temperature	°C	5 - 50

Flow capacity	DN 20	DN 25	DN 32
Flow capacity	DN 20	DN 25	DN 32
Δp 0.5 bar	4.5 m ³ /h	4.8 m ³ /h	4.8 m ³ /h
Δp 1.0 bar	6.4 m ³ /h	7.3 m ³ /h	7.7 m ³ /h

Mains adapter	Unit	
Inlet voltage	V (AC)	100 - 240
Frequency	Hz	50 - 60
Outlet voltage	V (DC)	12
Power	A	2
Class		II (double insulated)

13. Dimensions



Nominal size	DN 20	DN 25	DN 32
A	¾"	1"	1¼"
H	118.8 mm	118.8 mm	118.8 mm
h	39 mm	39 mm	39 mm
L	265.2 mm	271.2 mm	285.2 mm
l	191.2 mm	191.2 mm	191.2 mm
B	79.5 mm	79.5 mm	79.5 mm



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