



RE.GUARD WATER CONTROL DEVICE

Installation and Operating Instructions

INFORMATION AND SAFETY INSTRUCTIONS

1.1 On this documentation

- Please read these instructions carefully before installing or operating the RE.GUARD water control device.
- Keep the instructions on hand at the location of use of the device.
- Pass these instructions on to subsequent users.

Scope

These installation instructions are valid for Germany.

Pictograms and logos

The following pictograms and logos are used in these instructions:



Safety notice



Legal notice



Important information

Validity of the instructions

To ensure your own safety and the correct use of our products, please check at regular intervals whether a newer version of these instructions is available. The issue date of these instructions is printed on the bottom right-hand side of the back page.

You can view and download the most recent instructions as well as further instructions at www.rehau.com/ti.

1.2 Intended use

The RE.GUARD water control device may only be installed and operated as described in these instructions. Compliance with these instructions is part of intended use.

Installation and maintenance may only be carried out by qualified and trained personnel. This means personnel who, through training and experience, are permitted and capable of carrying out the relevant installation work, identifying and avoiding potential hazards as well as observing relevant applicable regulations (e.g. regulations regarding work safety, electrical safety etc.)

1.3 Safety instructions

- Failure to follow these instructions can result in damage or injury.

We accept no liability for damage caused by non-compliance with these instructions.

- If you have not understood the safety instructions or individual operating steps or they are unclear, please contact REHAU. The contact data for your region or country can be found on the back cover page.

Accident prevention

Observe all applicable national and international regulations relating to installation, prevention of accidents and safety warnings when installing pipe systems and components of drinking water installations, as well as the information in these instructions.

Laws, standards and regulations

Please observe the presently valid laws, standards, instructions, regulations (e.g. DIN, EN, ISO, DVGW, NEN, VDE and VDI) as well as regulations regarding environmental protection, trade association regulations and regulations from local utility companies.

Electrical safety

Work on electrical systems may only be carried out by personnel trained and authorised to do so. There is a risk of electric shock in the case of unauthorised and improper work.

3 INSTALLATION

3.1 Delivery contents

The following components are included in the delivery contents of the RE.GUARD water control device:

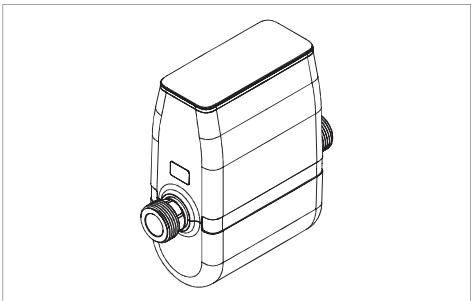


Abb. 3-1 RE.GUARD water control device

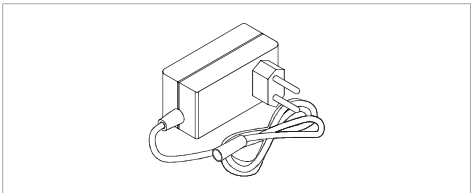


Abb. 3-2 Mains adapter

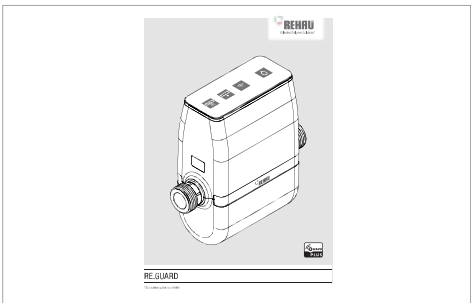


Abb. 3-3 Installation and operating instructions (short version)

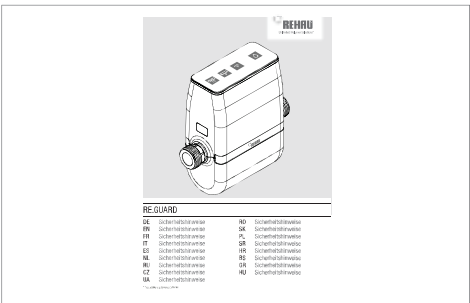


Abb. 3-4 Safety instructions

3.2 Transport and storage

The RE.GUARD water control device is delivered in transport packaging which offers good but not complete protection from environmental influences.

Always transport and store the RE.GUARD water control device in this closed packaging and only remove the device immediately before installation.

During transport and storage, the device must not be exposed to frost or reach temperatures above 50 °C.

3.3 Networking components

3.3.1 Networking prior to installation

The initial networking process between the RE.GUARD water control device and the RE.HUB gateway requires a high degree of data exchange and a highly stable wireless connection. Even minor interference in the wireless connection can lead to the termination of the initial networking process.

We therefore urgently advise you to carry out networking **prior to water-side installation**. Alternatively, the RE.HUB gateway can also be located in the immediate vicinity of the previously installed RE.GUARD water control device (e.g., by means of a longer LAN cable, closer LAN connection or Powerline network adapters).

Initial networking via a Z-Wave-based repeater is not possible.

3.3.2 Z-Wave® – fundamentals



The following conditions ensure the best possible wireless connection:

- Do not install the devices in metal cabinets
- Min. 50 cm distance from
 - Metal objects
 - Walls and ceilings with metal reinforcement (e.g. basement ceilings)
 - Cables
 - Other wireless sources

The RE.HUB gateway (optional accessory) is required for comprehensive operation of the RE.GUARD water control device (changing the

thresholds, setting the parameters, integrating it into a Z-Wave® network, pairing additional Z-Wave® components, remote controlling, recording and accessing historical data etc.) which can be via the RE.GUARD app. The RE.GUARD app runs on smartphones with Android and iOS.

The integration (pairing) of the RE.GUARD water control device is described in Chapter '5.1.1 Connecting pairing device in Z-wave® (inclusion/add)', page 31.

The RE.GUARD gateway set-up is described in the section 'Setting up the RE.HUB gateway', page 40.

Communication between the RE.GUARD water control device and the RE.HUB gateway as well as between the external components (e.g. RE.GUARD water detector) occurs via the open wireless standard Z-Wave®.

The wireless standard transmits at a frequency of 868.42 MHz and has a range of up to 40 m within buildings. However, this range is limited by solid components, particularly ceilings with a very high steel reinforcement and solid walls.

Other Z-Wave® gateways or similar smart home centres with Z-Wave® functionality can be used as an alternative to the RE.HUB gateway. However, in this case, advanced knowledge of wireless standards, smart home etc. is necessary and REHAU cannot accept any liability regarding the overall functionality. If you have any questions regarding integration and coupling, please contact the manufacturer of the respective device with regards to this.

3.4 Water-side installation

3.4.1 General preconditions



The installation of the RE.GUARD water control device is a significant modification to the drinking water installation. According to most national regulations, such modifications may only be carried out by an installation company registered in the plumbing directory of the water supply company. Please find out about these national regulations before installation.



Please observe the notes in Chapter '1 Information and safety instructions', page 6.

3.4.2 Installation-side preconditions



Installation of the device is **not permitted** in:

- Hot water pipes
- Circulation pipes
- Non-drinking water pipes

Before installing the RE.GUARD water control device, check that the dimensions of the drinking water installation are sufficient.

It is recommended to install the RE.GUARD water control device immediately after the domestic water meter fitting in the drinking water installation, i.e. directly after the shut-off device

with check valve, right behind the water meter.



The following conditions must be fulfilled:

- The mains pressure must not exceed 1.0 MPa (10 bar). In the case of higher mains pressure, the RE.GUARD water control device should only be installed after a pressure reducer, which is set to a maximum of 1.0 MPa (10 bar).
- If drinking water consumers are installed on the property, which may under no circumstances be shut off by the RE.GUARD water control device, the pipe works must be branched off beforehand. These might be:
 - Any type of fire-fighting water system, such as a wall hydrant for self-help, backfire protection in the case of solid fuel boilers, sprinkler systems
 - Any type of emergency cooling device, such as thermal flow protection
 - Any type of re-feeding equipment for relevant systems which have the potential to cause more damage than leaking water if they are not operational, such as the cooling system in a server room or heating in a greenhouse

In general, inlet piping is not required for installation of the RE.GUARD water control device directly after the water meter or any other straight fitting. However, for installation directly after a deflection (e.g. a 90° bend/angle), inlet piping of approx. 5 x DN is recommended to improve the measurement results for flow and pressure rates.

In the shell construction phase, it is possible to replace the RE.GUARD water control device with a water meter adapter that is 190 mm in length with G1" external thread connections. This adapter is not part of the delivery contents and must be procured on-site.

It is recommended to leave at least 20 cm of free space above the display for operation and maintenance of the RE.GUARD water control device. This allows the top of the housing to be removed without risk of damage. When selecting the location of installation, please also refer to Chapter '3.6 Integrating RE.GUARD water control device and accessories in a Z-Wave® wireless network – Basics', page 14 and Chapter '3.5.1 Connecting to the mains supply', page 25.

Also observe the instructions in Chapter '2.2 Range of application', 9page.



For the secure detection of leakages, in particular for the detection of micro leakages, all installed check valves (after the domestic water meter, after the branch for the water provision, on the extraction fittings) must work correctly. Ensure their function through regular maintenance.

3.4.3 Permissible installation positions



Malfunction due to an incorrect installation location is possible

'Upside-down' installation is not permitted, i.e. with the display on the bottom.



It is to be observed that the device is installed correctly in accordance with the flow direction (flow arrows on the device, see Chapter '3.4.4 Installing the RE.GUARD water control device', page 18) and that, if necessary, the top of the housing including the display panel must be rotated by 180° depending on the operating direction (see Chapter '3.5 Rotating the top of the housing', page 23).

Horizontal installation position

The regular installation position of the RE.GUARD water control device is horizontal with the display facing upwards.

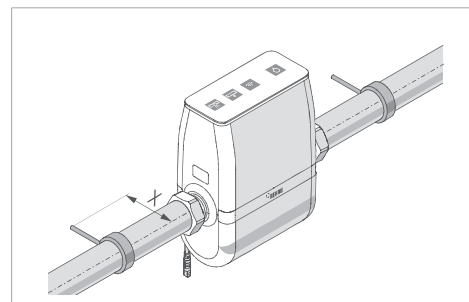


Abb. 3-5 Horizontal installation position

Distance x from wall ≥ 60 mm

The possible wall distance x is minimised, and this provides better access to the display or to remove the top of the housing, for example, to replace the battery or perform maintenance.

If the water meter bracket is being used, a greater distance from the wall may be necessary.

Horizontal installation position rotated up to 90°

Alternatively, the RE.GUARD water control device can be turned forward up to 90° in the horizontal installation position.

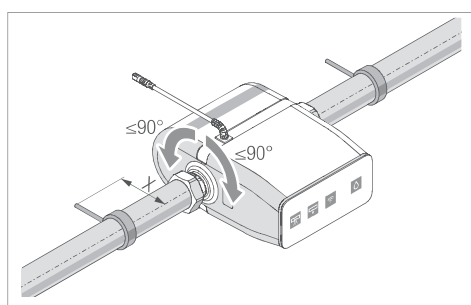


Abb. 3-6 Horizontal installation position rotated up to 90°
Distance x from the wall at 90° $\geq$ 85 mm

The required wall distance x successively increases the further forward the device is turned.



Turning the device further than 90° may cause the device to malfunction.

If the water meter bracket is being used, a greater distance from the wall may be necessary.

Vertical installation position

Alternatively, the RE.GUARD water control device can also be installed in vertical pipe sections.

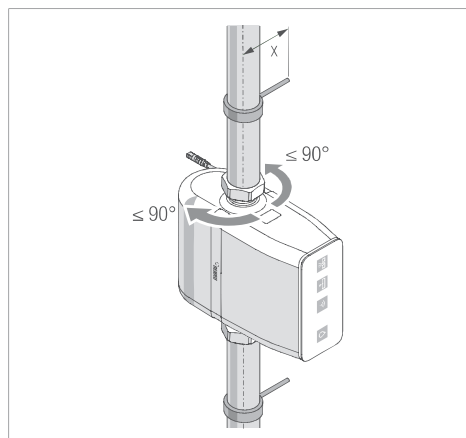


Abb. 3-7 Vertical installation position
Distance x from the wall at 90° $\geq$ 85 mm

The orientation of the device, including the operating panel, depends on the conditions at the location of installation and the desired operating direction. It can be adjusted by rotating the device 90° to the right or left.

If the water meter bracket is being used, a greater distance from the wall may be necessary.

3.4.4 Installing the RE.GUARD water control device

The RE.GUARD water control device can be installed in two ways:

- With water meter bracket and water meter screw connections
- With bracket clamps

Both types of installation are described here and allow the RE.GUARD water control device to be integrated into the drinking water network free of tension.



Risk to life due to electric shock

In the case of older buildings, check whether the metal water pipe is used as a grounding for the electrical installation. A domestic water meter bridged with a cable is a clear indication of this.

Ensure there is an alternate grounding before opening the pipe.



Crushing hazard

The device has an electrically operated shut-off function.

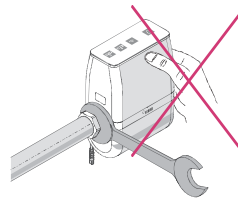
Never insert objects or body parts into the pipe openings if there is voltage present from the mains adapter or if the emergency batteries are inserted.



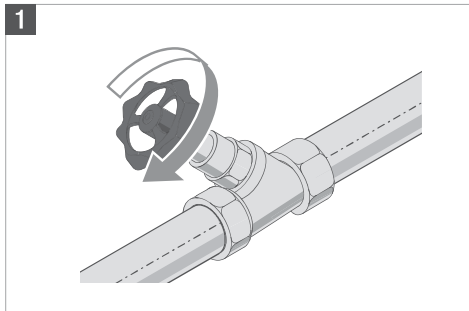
Damage to property due to incorrect handling

Do not use the housing or any other parts of the RE.GUARD water control device as support when tightening the thread connections.

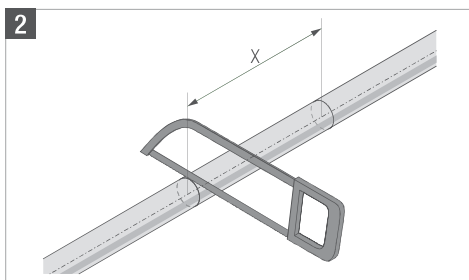
To support the device when tightening the threaded connections, use only the spanner flat behind the thread connections.



3.4.4.1 Installation with water meter bracket and water meter screw connections



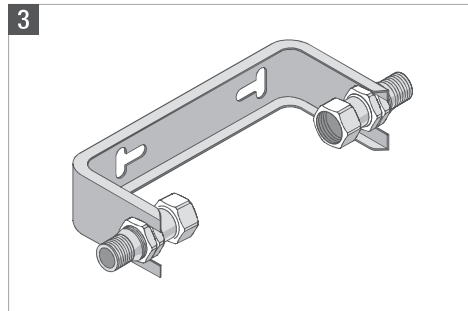
Shut off the drinking water installation and drain it if necessary.



Open the pipe with suitable tools.

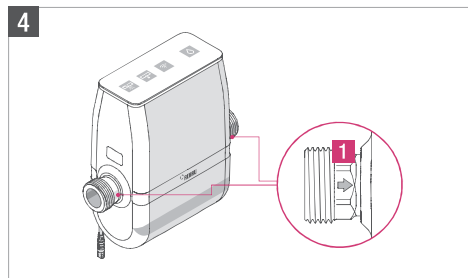
The measurement 'x' is calculated from the selected water meter bracket incl. water meter screw connections as well as further necessary screw connections as an adapter to the existing piping system.

The water meter bracket, water meter screw connections and adapters are not included in the delivery contents and must be selected and acquired separately depending on the piping system (material, dimensions).



Keep the flow direction in mind when attaching the water meter bracket including the water meter screw connections to the wall.

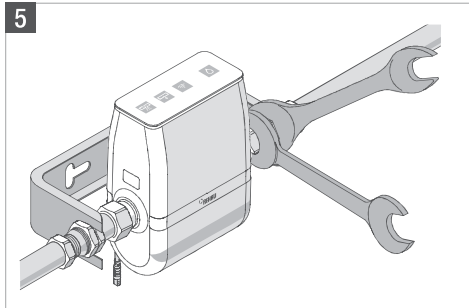
The water meter fittings require G1½ union nuts and flat gaskets suitable for drinking water on the connection sides for RE.GUARD water control device.



Insert RE.GUARD. Chapter '3.5 Rotating the top of the 23housing', page describes the process of rotating the display, where necessary.



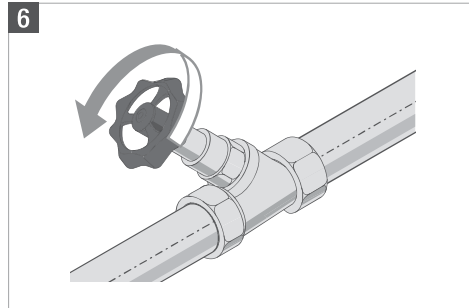
Observe the **1** flow direction arrows in the spanner flat area behind the thread connections.



Use flat gaskets and screw in the RE.GUARD water control device.
Tighten the screw connections with a suitable tool (spanner or adjustable spanner) (spanner flat RE.GUARD water control device: size 27).



Do not use the housing or other parts of the RE.GUARD water control device for support when tightening the thread connections.



Re-open the shut-off.



Afterwards, rinse the drinking water installation in accordance with the national specifications and check the seal tightness of all new thread connections. When using leak detectors, it is advisable to consult the manufacturer of the detector to establish the extent to which it could influence the materials of the RE.GUARD water control device.

Only use leak detectors that are suitable for use with drinking water.

3.6 Power-side installation

3.6.1 Connect to the mains supply

An available socket for a type C European plug is required to securely connect the mains adapter of the RE.GUARD water control device to the power supply.



Risk to life due to electric shock

A water leak may occur during installation, which can lead to a short circuit or electric shock.

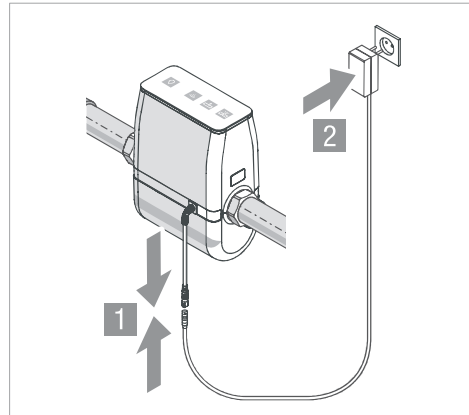
The socket and electrical equipment must not be directly adjacent to or below the RE.GUARD water control device.



A suitable mains adapter is provided with the device to transform an AC of 110 to 230 V. Only this mains adapter may be used for the connection of the RE.GUARD water control device.

In the event of a malfunction of the mains adapter, a replacement may be purchased separately.

The RE.GUARD water control device is operated with a low safety voltage of 12 V DC.



1. Connect the connecting plug of the device cable.
2. Insert the mains plug.

The total length of the cable from the mains adapter to RE.GUARD is approx. 1.25 m and may not be lengthened or shortened.

Avoid mechanical stress on this cable.



REHAU recommends safeguarding the RE.GUARD water control device on a circuit with overvoltage protection, to which a more frequent power consumer is also connected (e.g. light). This means that when this circuit fuse is triggered, the lack of power supplied to the RE.GUARD water control device can be detected faster.

3.6.2 Emergency power mode

The RE.GUARD water control device has an integrated battery compartment for four AA or R6 emergency batteries (batteries are not included in the delivery contents).

In general, the functionality of the RE.GUARD water control device is also provided without the emergency batteries, as long as the mains voltage is not interrupted.

REHAU recommends inserting the emergency batteries to increase the security of the leak detection. The following basic functions are maintained by the batteries if the mains voltage fails:

- Macro leakage detection (burst pipe) for 24 hours
- Sending warning messages wirelessly via Z-Wave®
- Optionally, a one-time preventative closure of the RE.GUARD water control device.

The process of inserting the emergency batteries is described in Chapter '6.2 Inserting/changing emergency batteries', page 47.

3.7 Commissioning

After installation of the RE.GUARD water control device and plugging in the mains plug, the device performs a self-test and is ready for use after a few seconds. From this point onwards, the device's leak prevention function for burst pipes and drop leakages is already operating, but only within the preset factory settings.



REHAU strongly recommends carrying out the steps described in Chapter '5 Operation 30', page, in particular for operation via the smartphone app, and that all settings are adapted for the specific building. This is the only way to ensure the best possible protection from water damage.

A commissioning protocol is available at www.rehau.com/ti or via the QR code on page 2 of these instructions. It can be used as a template for instruction and handover of the RE.GUARD water control device from the installer to the user.

4 OPERATING TYPES/MODES

Depending on the respective situation, the RE.GUARD water control device is in a specified operating mode. Alternatively, it can also be deliberately changed into a certain operating mode via operation, e.g. into 'absent' mode (see below).

4.1 Commissioning mode

In the following situations, the RE.GUARD water control device is in commissioning mode:

- During initial commissioning
- After a factory reset

The following functionalities are available:

Burst pipe protection:	Active
Drop leakage test:	active (also Chapter section5.1.5)
Wireless connection:	Pairing has not yet taken place
Valve:	Open
Device:	Ready for use 'Present' mode
Threshold:	Factory setting

Status display indicators/light ring on the device:

				
White	White	Off	Green	White

4.2 Normal mode

After pairing has been completed (see Chapter '5.1.1 Connecting pairing device in Z-wave® (inclusion)', page 31), the device is in normal mode.

The following functionalities are available:

Burst pipe protection:	Active
Drop leakage test:	active (also Chapter section5.1.5)
Wireless connection:	Pairing has taken place
Valve:	Open
Device:	Ready for use 'Present' mode
Threshold:	Factory settings/ adjusted values

Display indicators/light ring on the device:

				
White	White	White	Green	White

After a period of non-operation, the buttons are dimmed and the light ring extinguishes.



The modes 'present' and 'absent' described in the following chapter 4.3 cannot be differentiated and adjusted on the device itself. This is only done in the RE.GUARD app.

4.3 'Present' and 'absent' modes

'Present' mode

The RE.GUARD water control device is in normal operation. The thresholds are set for the average day-to-day operation.

The functionality and the status of the display indicators are in line with the normal mode of operation.

The factory settings can be found in the section 'Adjust the 'present' mode thresholds', page 43.

A table with recommendations for thresholds depending on equipment and number of persons can be found in the Appendix, section 'Threshold table', 65page.

'Absent' mode

This mode can be used during absences (for example, holidays). The shut-off criteria generally correspond to 'present' mode, but the value limits are set at a lower level. This means, for example, that automatic plant irrigation or neighbours watering plants are still possible during absence.

Alternatively, it is also possible to change the RE.GUARD water control device to 'shut-off' in absent mode. This means that the water supply is completely interrupted.

The status of the display indicators corresponds to the normal mode.

The factory settings can be found in the section 'Adjust the "absent" mode thresholds', page 43.

4.4 Custom mode

In custom mode, the leak prevention function of the RE.GUARD water control device is temporarily overridden. This may be necessary if, for example, a pool is being filled or another consumer needs a higher quantity of water over a longer period of time.

After the time limit has elapsed (factory setting: 2 hrs), the RE.GUARD water control device automatically returns to normal operation ('present' mode) and the protective function is operating again.

The following functionalities are available:

Burst pipe protection:	Temporarily inactive
Drop leakage protection:	Temporarily inactive
Wireless connection:	Pairing has taken place
Valve:	Open

Display indicators/light ring on the device:

				
Flashes white	White	White	Green	Flashes white

4.5 Deactivation

When deactivated, the leak prevention function of the RE.GUARD water control device is permanently overridden. (= custom mode without time limitation). This can be necessary in the case of larger and prolonged renovation works on the drinking water installation, during rinsing processes and the like, where the consumption values should still be monitored through the app.

The following functionalities are available:

Burst pipe protection:	Inactive
Drop leakage protection:	Inactive
Wireless connection:	Pairing has taken place
Valve:	Open

Display indicators/light ring on the device:

				
Yellow	Yellow	Yellow	Yellow	Yellow

5 OPERATION

5.1 Operation and status indicators on the device

Operation on the device itself serves the basic functionality. Comprehensive operation including adjusting the thresholds, setting notifications, schedules and other actions can be performed with the RE.GUARD app (see Chapter '5.2 Operation with the RE.GUARD app' 40 page).

The RE.GUARD water control device has a display on top with four buttons for status indicators and operation of basic functions as well as an all-round luminous ring as an overall status indicator (see also Chapter '2.3 Operating elements and indicators', page 9).

Button		Functionality	Status indicator	
	Shut-off	Changes the current position of the shut-off	Green	Not closed/ Valve open
			Red	Closed/ Valve closed
	Wireless connection:	Changes the connection status (pairing status)	Off (unlit)	Not paired, device not connected to Z-Wave®
			White	Paired, wireless connection established
			Yellow	Paired, wireless connection lost
	Drop leakage (micro leakage)	Indication and acknowledgement of a drop leakage	White	No drop leakage
			Red	Drop leakage detected
	Burst pipe (macro leakage)	Indication and acknowledgement of a burst pipe	White	No burst pipe
			Red	Burst pipe detected/ Floor moisture detected (with RE.GUARD water detector)
	All-round luminous ring	Status indicator	White	Everything is OK, no malfunctions
			Yellow	There is a malfunction
			Red	There is a warning



The pictogram shown on the left is used in the following instructions to symbolise pressing a particular button or combination of buttons.

5.1.1 Connecting pairing device in Z-Wave® (inclusion)

Pairing must take place to integrate the RE.GUARD water control device into a Z-Wave® network. This pairing is optimised for connection to the RE.HUB gateway (see Chapter '2.4.1 RE.HUB gateway', page 10 and the operating instructions of the RE.HUB gateway).



The RE.HUB gateway must be made ready for pairing parallel to the start of the pairing process for the RE.GUARD water control device. This is done exclusively in the RE.GUARD app during the step-by-step pairing process (see Chapter 5.2).

The pairing search runs for about 30 seconds, the subsequent inclusion process takes a few minutes.

Pairing to other Z-Wave® participants (including Z-Wave® smart home centres/gateways) is also possible, although the pairing process may differ from the one described here. Please consult the manufacturer's product documentation.

Enable pairing search:



White



White



Press for
3 s,
Flashes
white for
30 s



Green



White

Pairing successful:



White



White



White



Green



Flashes
green
3 times
(confirmation)

Pairing not successful:



White



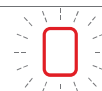
White



Off



Green



Flashes
red 3
times

5.1.2 Disconnecting pairing device from Z-Wave® (exclusion)

Depairing a device might be necessary if the RE.HUB gateway needs to be replaced or during an permanent removal of the RE.GUARD water control device (for example, when passing on the device).



The RE.HUB gateway must be ready for depairing parallel to the start of the depairing process for the RE.GUARD water control device. This is done directly on the device by holding down the Z-Wave® button on the back of the gateway housing (see the operating instructions for the RE.HUB gateway).5.2.1

The search runs for about 30 seconds, the subsequent exclusion process takes a few minutes.

Depairing the device:

White	White	Press 3 times in 3 s, Flashes yellow for 30 s	Green	White

Successful depairing:

White	White	Off	Green	Flashes green 3 times (confirmation)

Unsuccessful depairing:

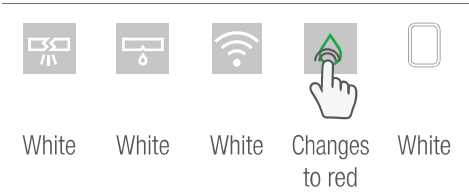
White	White	White	Green	Flashes red 3 times

5.1.3 Closing/opening the valve manually

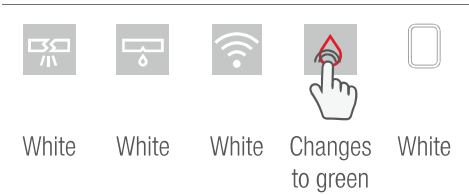
The RE.GUARD water control device can be shut off or opened manually in two ways:

This action leads to a change into 'present' mode.

Closing the valve manually:



Opening the valve manually:



5.1.4 Acknowledging a burst pipe (macro leakage)

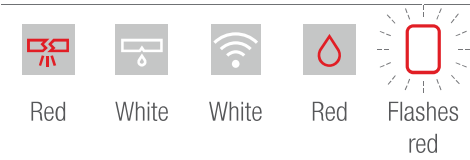
If the threshold for the maximum extraction duration, amount or current flow rate are exceeded, the RE.GUARD water control device presumes a burst pipe and shuts off the water pipe.



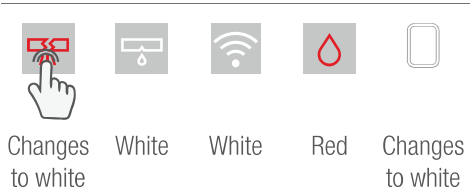
Before acknowledging the message, make sure that a pipe has not burst, but instead an unusual extraction situation has occurred (for example, a tap was not turned off).

Acknowledgement does not result in mode change.

Burst pipe message:



Acknowledge message:



The water pipe remains closed even after the notification is acknowledged, until the valve is re-opened manually (see Chapter '5.1.3 Closing/opening the valve manually', page 33).

5.1.5 Acknowledge drop leakage (micro leakage)

The RE.GUARD water control device checks the pressure with a brief shut-off and simultaneous monitoring of the pressure at specific points in time in order to see whether there is a very small leak in the drinking water installation, e.g. a dripping tap, a cistern that keeps running or a leaking thread connection. Such small leaks can cause considerable water damage in the long-term.

The default factory setting is to carry out a drop leakage measurement every day at 3 a.m., whereby a warning will only be sent if the RE.GUARD water control device stays open (option 1, factory settings). It is only possible to switch to option 2 ('close valve') in the app.

During the drop leakage measurement, the water supply is shut off. If a fitting is opened at exactly this time, the measurement is cancelled and the water supply is opened. This can delay the start of water flow by a few seconds.

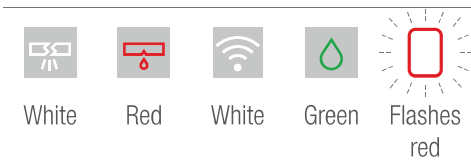


Regardless of the selected option, it is necessary to look for indications of drop leakage (moist stains on the wall or ceiling, musty/mouldy odour in individual rooms, dripping fittings, cistern keeps running) and establish the cause. Only then should the micro leakage warning be acknowledged.

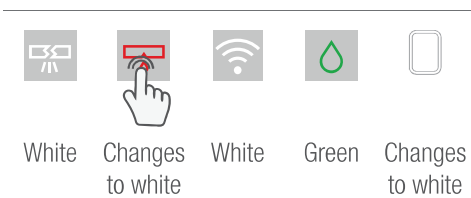
Acknowledgement does not result in mode change.

Option 1: 'Notification only'

Drop leakage message:



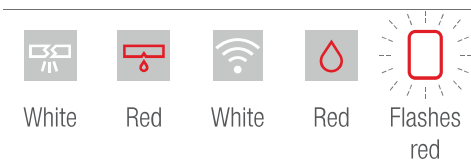
Acknowledge message:



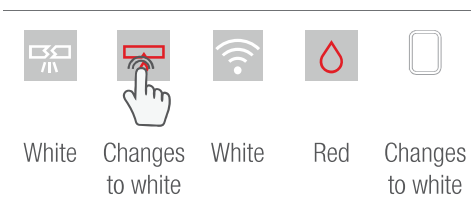
Acknowledgement does not result in mode change.

Option 2: 'Close valve'

Drop leakage message:



Acknowledge message:



The water pipe remains closed even after the notification is acknowledged, until the valve is re-opened manually (see Chapter '5.1.3 Closing/opening the valve manually', page 33).

5.1.6 Acknowledging floor moisture (via optional RE.GUARD water detector)

If an additional RE.GUARD water detector has been installed and properly paired, then when this device has detected moisture, a warning will be displayed on the RE.GUARD water control device.

The factory setting is that if moisture is detected, only a warning is sent, the RE.GUARD water control device will remain opened (option 1). It is only possible to switch to option 2 ('close valve') in the app.

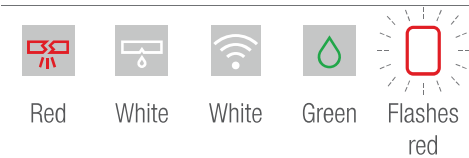


Regardless of the selected option, it is necessary to check for indications of an actual water leak in the vicinity of the RE.GUARD water detector. The cause of the warning message may also be stormwater, wastewater, condensation or heating water. The message should only be acknowledged after the cause has been established.

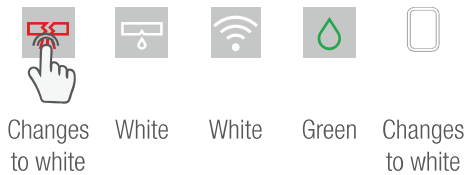
Acknowledgement does not result in mode change.

Option 1: 'Notification only'

Floor moisture message:



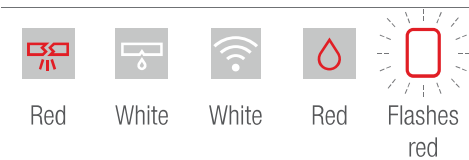
Acknowledge message:



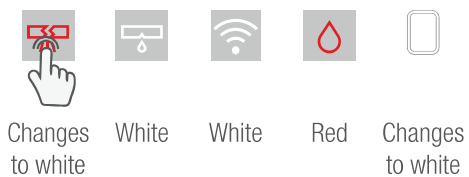
Acknowledgement does not result in mode change.

Option 2: 'Close valve'

Floor moisture message:



Acknowledge message:



The water pipe remains closed even after the notification is acknowledged, until the valve is re-opened manually (see Chapter '5.1.3 Closing/opening the valve manually', page 33).

5.1.7 **Activating/deactivating custom mode**

In custom mode, the leak prevention function of the RE.GUARD water control device is temporarily overridden. (See Chapter ‘4.4 Custom mode’, page 29).

After the time lapses, the RE.GUARD water control device automatically returns to normal operation (‘present’ mode) and the protective function is operating again.

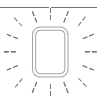
Custom mode has a limited duration of two hours according to factory settings. If other maximum times are required for custom mode, they can only be changed in the app.



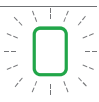
If the maximum times have been changed in the app, these new changed times will also apply when custom mode is set directly on the device.

When deactivating custom mode, the mode changes to ‘present’.

Activating custom mode:

				
Press for 3 s, Flashes white	White	White	Green	Flashes white

Manually deactivating custom mode:

				
Changes to white (permanent light)	White	White	Green	Flashes green 3 times (confirmation)

5.1.8 Deactivation

When deactivated, the leak prevention function of the RE.GUARD water control device is **permanently** overridden. (See Chapter‘4.5 Deactivation’, page 29).

Deactivation must be done in two steps:

- 1. Initiate deactivation
- 2. Confirm deactivation

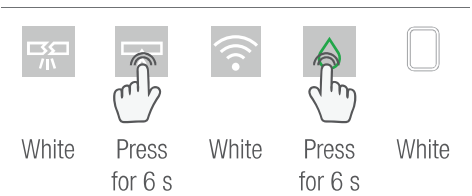
If deactivation is not confirmed, the RE.GUARD water control device will return to the mode it was in before deactivation was triggered.



Do not forget to undo the deactivation (reactivation) when the reason for having done so no longer applies. Otherwise, the leak prevention function is permanently overridden.

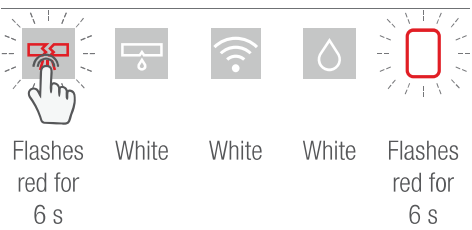
Initiate deactivation

Press and hold the buttons simultaneously for 6 s:

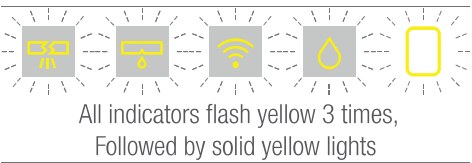


Confirm deactivation

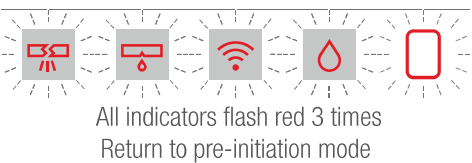
Press the red flashing burst pipe button within 6 s:



Deactivation confirmed by device:



Deactivation **not** confirmed by device:



If the device does not confirm the deactivation, both steps (initialisation and confirmation) must be performed again.

5.1.9 **Reactivation**

To return to normal mode after deactivation, the RE.GUARD water control device must be reactivated.

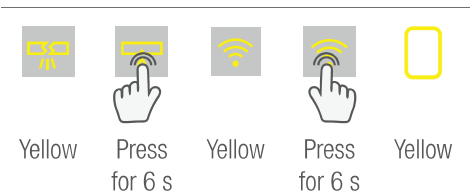
Reactivation must be done in two steps:

- 1. Initiate reactivation
- 2. Confirm reactivation

The RE.GUARD water control device automatically returns to normal operation ('present' mode) and the protective function is operating again.

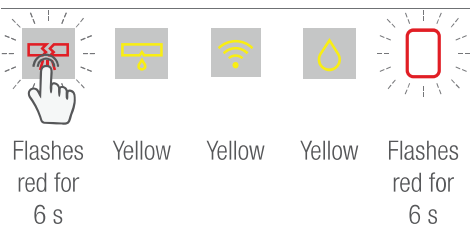
Initiate reactivation

Press and hold the buttons simultaneously for 6 s:

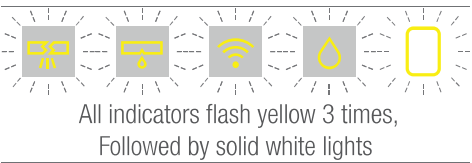


Confirm reactivation

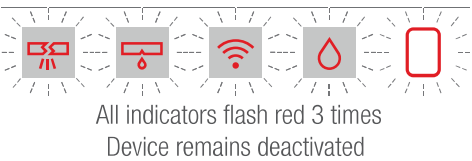
Press the red flashing burst pipe button within 6 s:



Reactivation confirmed by device:



Reactivation **not** confirmed by device:



If the device does not confirm the reactivation, both steps (initialisation and confirmation) must be performed again.

5.1.10 Resetting the device to factory settings

If the RE.GUARD water control device is being permanently taken out of use (for example, handed on to someone else) or if there is a fault with the RE.HUB gateway, then it can be reset to the factory settings.

Reactivation must be done in two steps:

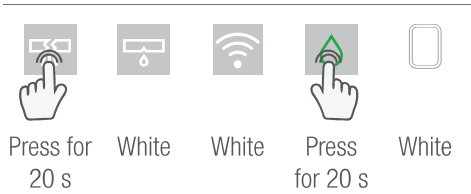
1. Initiate reset
2. Confirm reset

The RE.GUARD water control device is reset to the factory settings that it had upon delivery. Updates to the firmware that have been performed up to this point are retained.

The device goes into commissioning mode (see section 'Commissioning', page 27).

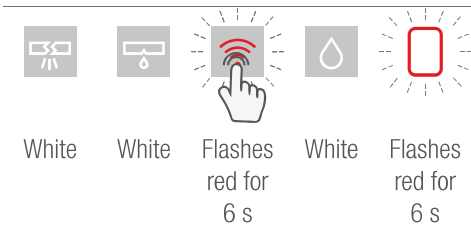
Initiate reset

Press and hold the buttons simultaneously for 20 s:

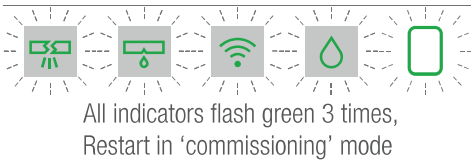


Confirm reset

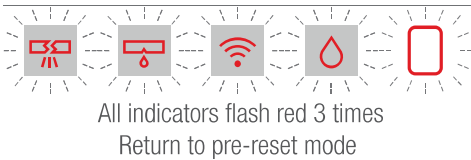
Press the red flashing wireless connection button for {1}20 s {1} within 6 s:



Reset confirmed by device:



Reset **not** confirmed by device:



If the device does not confirm the reset, both steps (initialisation and confirmation) must be performed again.

7 MALFUNCTIONS



In the event of malfunctions, please first check whether you can fix the malfunction yourself by using the table of possible solutions. If this is not successful, please contact your installation technician to have the cause of the malfunction corrected.

All leakage events such as macro leakage (burst pipe), micro leakage (drop leakage) and detection of floor moisture (via RE.GUARD water detector) are not recorded and displayed as a malfunction but as a warning. These shall not be included in the following because the relevant causes and corrective measures are described in the respective chapters.

7.1 Malfunction indicators

In general, malfunctions are displayed both in the app (see Chapter '5.2.1 App areas and navigation', 42page) as well as on the device itself. The indicators on the device are as follows:

Motor and sensor malfunction indicator

Motor malfunction:

				
White	White	White	Flashes yellow	Flashes yellow

Sensor malfunction:

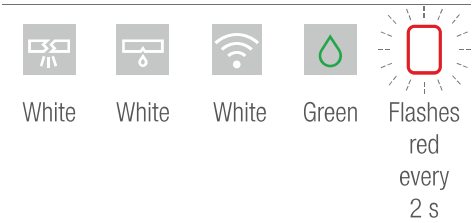
				
Flashes yellow	Flashes yellow	White	Green	Flashes yellow

Power failure and emergency power batteries fault indicators

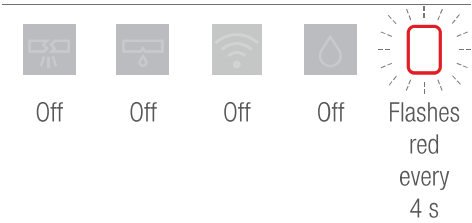
Battery level low – replacement recommended:

				
White	White	White	Green	Flashes yellow every 2 s

Battery level OK – mains power failure:



Battery level low – mains power failure:

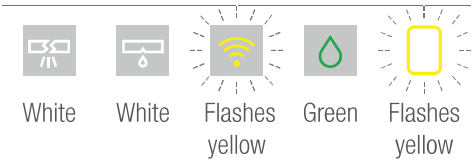


Z-Wave® connection malfunction indicators

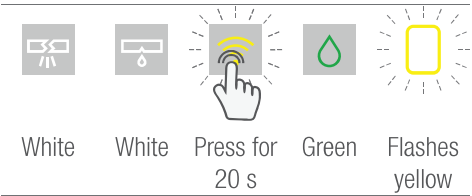
If the connection between RE.GUARD water control device and the RE.HUB gateway is not functioning correctly, this will be indicated on the device as shown on the right.

If the troubleshooting measures specified in the following list are not successful, the Z-Wave® radio chip can be reset.

Connection lost:



Reset the Z-Wave chip



Reset confirmed by device:



Device will restart in commissioning mode.

Reset not confirmed by device:



The device is again in the pre-reset state.

7.2 Corrective measures

Description of the malfunction	Possible corrective measures
Connection to RE.HUB gateway lost	1. Make sure that both the RE.HUB gateway as well as the RE.GUARD water control device are connected to the power and the mains adapters are properly plugged in and are not faulty. 2. Remove any possible sources of interference in the wireless range, which may have been newly added and are too close to the equipment (at least 50 cm distance). 3. Check whether there are any metal components nearby or if some have been newly added (e.g. metal cabinets; at least 50 cm distance). 4. Check the distance between the units and the next wall and ceiling. There should be a distance of 50 cm. 5. If required, install an additional Z-Wave® component as a repeater to amplify the wireless signal (for example, the 'Qubino Smart Plug 16A' wireless socket). 6. If the aforementioned measures are not successful, reset the Z-Wave® radio chip as described in this chapter under malfunction indicators. 7. Repeat the pairing process in the app.
Connection to RE.GUARD water detector lost	1. Check whether the RE.GUARD water detector is still functional by briefly placing the device on a moist spot. A drop-shaped light should briefly light up on top of the water detector. 2. If there is no light, please change the batteries in the device (type ER14250 or 1½AA). Consult the operating instructions for the RE.GUARD water detector on how to do this. 3. If the light illuminates, there is still sufficient battery voltage and the wireless connection is probably disrupted. Check the distance of possible sources of wireless interference (e.g. wireless LAN), metal components, ceilings or walls and keep a distance of > 50 cm where possible. 4. If required, install an additional Z-Wave® component as a repeater to amplify the wireless signal (for example, the 'Qubino Smart Plug 16A' wireless socket). 5. Repeat the pairing process in the app, if necessary.

Description of the malfunction	Possible corrective measures
RE.GUARD water control device valve malfunction	1. First, acknowledge the message on the device or in the app by closing and opening the shut-off. 2. Observe whether or not the device actually opens and closes 3. See if the message comes up again. 4. If so, disconnect the device from the mains supply by unplugging the mains plug and removing the emergency batteries and reconnect it to the mains supply. 5. If the valve malfunction message reoccurs, the shut-off is actually disrupted. (Fault of the drive or blockage of the shut-off). Please contact your installation technician.
RE.GUARD water control device sensor malfunction Flow rate sensor/pressure sensor/temperature sensor malfunctioning	1. Disconnect the device from the mains supply by unplugging the mains plug and removing the emergency batteries and reconnect it to the mains supply. 2. See if the message comes up again. 3. If the sensor fault message reoccurs, the sensors are actually malfunctioning. Please contact your installation technician.
RE.GUARD water control device emergency batteries empty	Replace the emergency batteries (4 x AA) as described in Chapter '6.2 replacing/inserting emergency batteries', page 54

You will also find a constantly updated list of faults and their remedies at www.rehau.com/ti or via the QR code on page 2 of these instructions.

7.3 Emergency release (emergency open function)

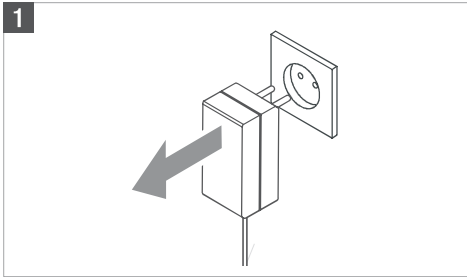
In the event of an accidental shut-off of the drinking water supply by the RE.GUARD water control device, which is cannot be undone on the device, by unplugging and plugging the mains adapter, or via the RE.GUARD app, the device has a manual 'emergency open' function.



Risk to life due to electric shock

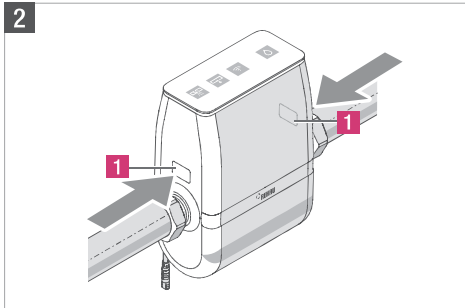
Always disconnect the device from the mains supply before opening it.

1



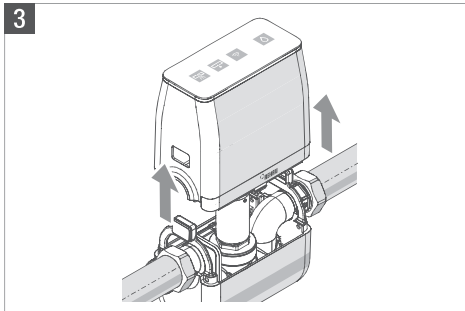
Disconnect the device by unplugging the mains plug from the mains supply.

2



Gently push the release points **1** above the water connections of the RE.GUARD water control device slightly inward (max. 5mm).

3



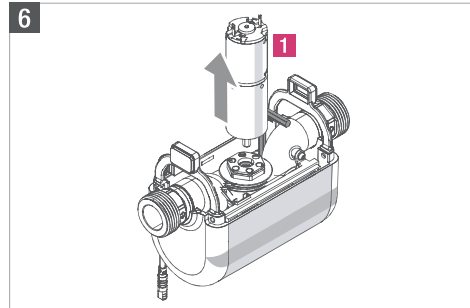
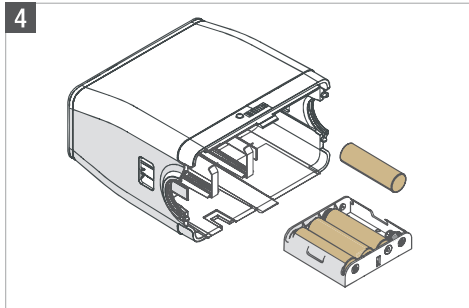
Gently remove the top of the housing whilst pressing the release points. Ensure that the gap width between the top and bottom parts of the housing does not exceed approx. 10 cm.



It should be pulled straight in the direction of the arrow (see above).

Tilting may damage both housing components and internal components.

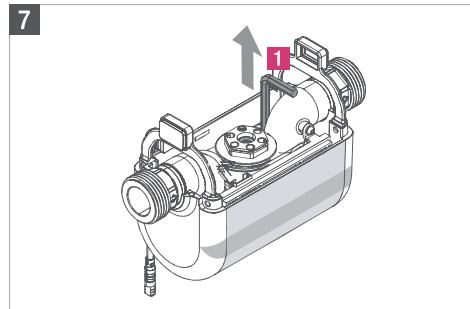
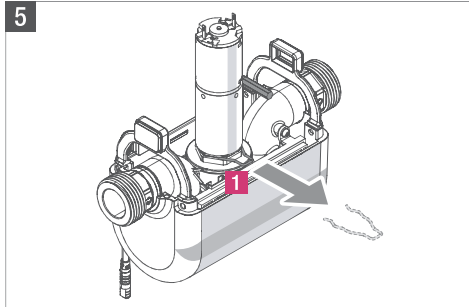
The upper part must not be pulled too far upwards because there are cable connections between the two halves of the housing with a limited length (approx. 15 cm).



Risk of injury

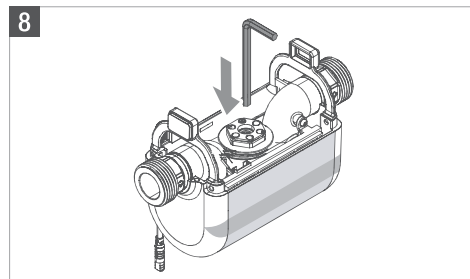
Motor-operated parts can suddenly move due to battery emergency power. Remove one or more batteries from the battery compartment (see Chapter '6.2 Inserting/changing emergency batteries', 47page) to stop emergency power.

Pull the drive **1** including the connecting cable upwards.

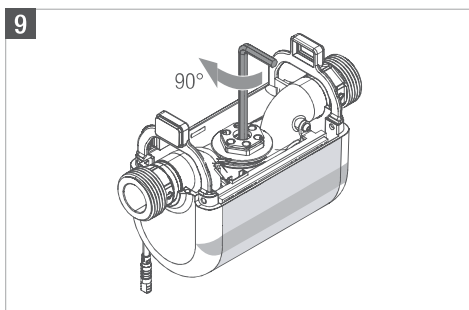


Pull the hexagonal wrench **1** out upwards.

1 Pull out the locking ring of the motor lock in the direction of the arrow.



Insert the hexagonal wrench into the receptacle that the remote drive was plugged into.



Rotate the hexagonal wrench 90° clockwise.

The valve is opened (emergency open), the shut-off is overridden.



This means that the drinking water installation is in a state as if no leakage protection system had been installed. There is no automatic shut-off for burst pipes and drop leakages are not recognised.

10. Consult the malfunction list at the end of this operating instruction as well as the app and contact the installation technician to determine the cause of the malfunction, if necessary.

11. After determination and elimination of the cause, undo the emergency open and put it back together in the reverse order.

8 Z-WAVE®: RELEVANT DATA

The product can be operated in any Z-Wave® net-work with other Z-Wave®-certified devices from other manufacturers. All non-battery-operated devices within the network function as repeaters, regardless of the manufacturer, to increase the reliability of the network.

This device is a secure Z-Wave® Plus product that uses encrypted Z-Wave® Plus messages to communicate with other secure Z-Wave® Plus products.

To fully utilize the product including all security features a "Security Enabled" Z-Wave Controller must be used.

The DSK code can be found on the smaller left side of the device between touch panel and connection thread.

8.1 Associations

ID	Name	Permitted associations	Description
1	Lifeline	1	The following command classes are supported: - Reset the device locally: Triggered on request - Meter report: Triggered on request or hourly - Notification report: Triggered through alarms for water, power supply, system or shut-off - Binary switch report: Triggered on request - Multilevel sensor report: Triggered on request or hourly - Battery report: Triggered on request or percentage capacity change - Clock report: triggered at power on
2	Valve status	5	The following command classes are supported: - Basic report: Triggered by changing the valve status
3	Leak notification	5	The following command classes are supported: - Notification report: Triggered by changes in water pressure and water temperature in combination with the configuration parameters 50–53, water leakage in combination with the configuration parameters 15–26 and 28 + 30, charging state emergency batteries in combination with the configuration parameters 31 + 32

8.2 Notifications

Notification type	Notification event	Description
Water (0x05)	Water leakage detected (0x02)	A notification is sent if the threshold for flow rate, volume and time are exceeded. A notification is sent if the threshold for a pressure drop when the shut-off is closed.
Water (0x05)	Water pressure alarm (0x07)	A notification is sent if the threshold values for the water pressure are too low or high.
Water (0x05)	Water temperature alarm (0x08)	A notification is sent if the threshold values for the water temperature is too low or high.
Power supply (0x08)	Replacing the emergency batteries (0x0B)	A notification is sent if the threshold values for the battery voltage and capacity are too low or high.
System (0x09)	Hardware failure system (0x01)	A notification is sent if the main board is not answering.
Valve (0x0F)	Valve malfunction (0x03)	A notification will be sent in the event of a valve malfunction (blockage, overvoltage or short circuit).

8.3 Z-Wave® configuration parameters

The RE.GUARD water control device uses the following configuration parameters:

ID	Name	Description	Size (Byte)	Permitted Values	Unit	Factory setting
1	Operating mode	General device condition (0 = valve (always) closed/1 = user 'absent' = not at home = holiday/ 2 = user 'present' = at home/3 = valve (always) open)	1	0-3	/	2
4	Fixed schedule – hours	Preset time (hour) for the micro leakage test cycle	1	0-23	h	3
5	Fixed schedule – minutes	Preset time (minute) for the micro leakage test cycle	1	0-59	m	0
6	Fixed schedule – weekdays	Predetermined day of the week. Summation of the values for the individual days of the week in which the micro leakage test cycle is to take place (Sunday = 1, Saturday = 2, Friday = 4, Thursday = 8, Wednesday = 16, Tuesday = 32, Monday = 64)	1	0-127	/	127
7	Automated time interval	Hours between two consecutive micro leakage test cycles	2	1-168	h	24
8	Micro leakage – test time	Time with closed shut-off during a single micro leakage measurement	2	0-32000	s	100
9	Micro leakage – pressure drop	Detection criterion for probable micro leakage during a single measurement	2	0-32000	kPa	5
10	Micro leakage – cancel pressure drop	Cancellation criterion for single micro leakage measurement due to intended extraction during the measuring time	2	0-32000	kPa	100
11	Number of measurements	Number of measuring repetitions (with waiting time #12), decision is made on the basis of a majority of the results	1	1-99	/	3
12	Waiting time between measurements	Time delay up to the next measurement (until #11 measurements have been carried out)	1	1-60	min	10
13	Reaction to micro leakage	Follow-up action of a detected micro leakage (0 = ignore, 1 = notification, 2 = notification and shut-off)	1	0-2	/	1
15	Maximum flow rate mode 2	Threshold for maximum flow rate in the 'present' operating mode	2	0-32000	l/h	3600
16	Maximum pressure drop mode 2	Threshold for maximum pressure drop in 'present' mode	2	0-32000	kPa	1000
17	Maximum individual volume mode 2	Threshold for maximum volume of a single extraction in the 'present' mode	2	0-32000	l	400
18	Maximum total volume mode 2	Threshold for maximum volume of a ongoing extraction in the 'present' mode	2	0-32000	l	400
19	Maximum individual time mode 2	Threshold for maximum duration of a single extraction in 'present' mode	2	0-1440	min	30
20	Maximum time operating mode 2	Threshold for maximum duration of a ongoing extraction in 'present' mode	2	0-1440	min	30
21	Maximum flow rate mode 1	Threshold for maximum flow rate in 'absent' mode	2	0-32000	l/h	3680

ID	Name	Description	Size (Byte)	Permitted Values	Unit	Factory setting
22	Maximum pressure drop mode 1	Threshold for maximum pressure rate in 'absent' mode	2	0-32000	kPa	1000
23	Maximum individual volume mode 1	Threshold for maximum volume of a single extraction in 'absent' mode	2	0-32000	l	20
24	Maximum total volume mode 1	Threshold for maximum volume of a ongoing extraction in 'absent' mode	2	0-32000	l	20
25	Maximum individual time mode 1	Threshold for maximum duration of a single extraction in 'absent' mode	2	0-1440	min	30
26	Maximum overall time mode 1	Threshold for maximum duration of a ongoing extraction in 'absent' mode	2	0-1440	min	30
27	Macro leakage – time deactivation	Temporary deactivation of macro leakage detection because of special extraction of water, e.g. filling a pool	2	1-168	h	2
28	Reaction to macro leakage	Follow-up action of a detected micro leakage (0 = ignore, 1 = notification, 2 = notification and shut-off)	1	0-2	/	2
30	Reaction to floor sensor	Follow-up action of detected floor moisture (0 = ignore, 1 = notification, 2 = notification and shut-off)	1	0-2	/	1
31	Emergency power battery nominal voltage	Nominal voltage of the emergency batteries	2	0-32000	mV	6000
32	Emergency power battery nominal capacity	Nominal capacity of the emergency batteries	2	0-32000	mAh	3000
37	Correct time setting	Time is set with the gateway's timer command (1 = time set correctly, 0 = time not set correctly)	1	0-1	/	0
38	Total operating duration	Operating duration from the beginning	4	0-2147483647	s	0
39	Operating duration since last power interruption	Operating duration metering since last power interruption	4	0-2147483647	s	0
49	Automatised absence mode	Automatic change from 'present' to 'absent' after time without water extraction (0 = deactivated, 1–168 hours without extraction)	2	0-168	h	0
50	Water temperature upper threshold	Upper threshold value for water temperature for warnings of possible hygienic impairments (stagnation)	2	-1000+1000	1/10 °C	250
51	Water temperature lower threshold	Lower threshold value for water temperature for warning of potential risk of frost	2	-1000+1000	1/10 °C	20
52	Water pressure upper threshold	Upper threshold for water pressure for warning about values above permissible operating conditions	2	0-32000	kPa	1000

ID	Name	Description	Size (Byte)	Permitted Values	Unit	Factory setting
53	Water pressure lower threshold	Lower threshold for water pressure for warning about values below permissible operating conditions	2	0-32000	kPa	100
54	Fault code	Fault code (read-only mode) to identify the cause of a warning or malfunction	2	0-255	/	0
56	Automatic learn mode	Automatic adaptation of the threshold based on historical data (sets IDs #15–26 to learned values but only if the last 40 days were okay and no leakage occurred)	1	0-1	/	0

8.4 Command classes

The following Z-Wave® command classes are used for the RE.GUARD water control device:

5E - COMMAND_CLASS_ZWAVEPLUS_INFO_V2
6C - COMMAND_CLASS_SUPERVISION_V1
55 - COMMAND_CLASS_TRANSPORT_SERVICE_V2
98 - COMMAND_CLASS_SECURITY_V1
9F - COMMAND_CLASS_SECURITY_2_V1

25 - COMMAND_CLASS_SWITCH_BINARY_V1 [S0]* [S2]*
85 - COMMAND_CLASS_ASSOCIATION_V2 [S0]* [S2]*
59 - COMMAND_CLASS_ASSOCIATION_GRP_INFO_V2 [S0]* [S2]*
86 - COMMAND_CLASS_VERSION_V2 [S0]* [S2]*
72 - COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2 [S0]* [S2]*
80 - COMMAND_CLASS_BATTERY_V1 [S0]* [S2]*
81 - COMMAND_CLASS_CLOCK_V1 [S0]* [S2]*
31 - COMMAND_CLASS_SENSOR_MULTILEVEL_V9 [S0]* [S2]*
5A - COMMAND_CLASS_DEVICE_RESET_LOCALLY_V1 [S0]* [S2]*
70 - COMMAND_CLASS_CONFIGURATION_V1 [S0]* [S2]*
32 - COMMAND_CLASS_METER_V4 [S0]* [S2]*
71 - COMMAND_CLASS_NOTIFICATION_V8 [S0]* [S2]*
73 - COMMAND_CLASS_POWERLEVEL_V1 [S0]* [S2]*
7A - COMMAND_CLASS_FIRMWARE_UPDATE_MD_V4 [S0]* [S2]*

**[S0] Security Command Class*

**[S2] Security S2 Command Class*