WE KEEP SMART THINGS SIMPLE.

# Operation and Maintenance
## SafeTech Connect Leakage Detector

**Innovative solutions for smart people**

# Content

## 1.1 Indications regarding the instructions for use

The instructions for use are to help you handle your SYR SafeTech Connect Leakage Detector 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 present instructions for use may slightly differ from the SafeTech Connect Leakage Detector actually supplied.

We do not assume any liability for damage due to any violations of the present instructions for use.

## 1.2 Symbols used

All safety instructions are signalled in the instructions for use by respective symbols. The symbolsat the beginning of the safety instructions are an expression of the extent of the risk.

**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 Hans Sasserath GmbH & Co. KG.

Their use in the framework of the use of the device is admissible and desired.

These documents must not be copied nor may they be made available to third parties, in particular competitors, without the express consent of SYR.

Please note that the SYR SafeTech Connect Leakage Detector is patent protection.

The following European and national standards have been applied for the development and design of the SafeTech Connect Leakage Detector:

- DIN EN 806
- DIN 1988
- DIN 3553

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

The warranty is invalid in case of:

- Damage due to improper operation,
- Repair or conversion work performed by unauthorised persons,
- Use of non-original SYR accessories or spare parts.
- Faulty parts that are not repaired immediately as to limit the extent of damage as soon as possible and avoid a negative effect on the safety of the device (repair obligation).

# 2. Safety

## 2.1  Intended use

The SYR SafeTech Connect is 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 SYR SafeTech Connect Leakage Detector is intended for use in cold water systems. Any other use or use beyond the intended use is considered unintended use.

The respect of these instructions for use also falls under the scope of intended use.

## 2.2  Fundamental hazards

In general, danger can occur when handling electrically powered devices. Therefore, please follow safety and health regulations (VSG), other generally accepted safety and occupational health rules as well as health and safety regulations of the German trade associations (BGV).

Do not modify the SafeTech Connect Leakage Detector. The manufacturer does not assume any liability for damage due to improper alterations.

*Please pay attantion to the technical regulations for safety-related systems, e.g. fire-fighting pipelines, emergency showers etc.!*

## 2.3  Hazards due to electric energy

In general, danger can occur when handling electrically powered devices. Therefore, please follow safety and health regulations (VSG), other generally accepted safety and occupational health rules as well as health and safety regulations of the German trade associations (BGV).

Do not modify the SYR SafeTech Connect Leakage Detector. 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 of the German trade associations (BGV) and they must have read the instructions for use.

## 3. Installation instructions

The SYR SafeTech Connect Leakage Detector 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. Possibly, a wireless repeater will have to be installed to increase the range of the radio signal.

The SafeTech Connect Leakage Detector must be installed in frost-proof, non-condensing rooms. The SafeTech Connect must not be installed in inaccessible ducts.

To guarantee smooth operations, the SafeTech Connect, the smartphone or tablet and possibly the computer must be connected to the Internet. A wireless LAN-enabled router is also required.

## 4.1 Scope of supply
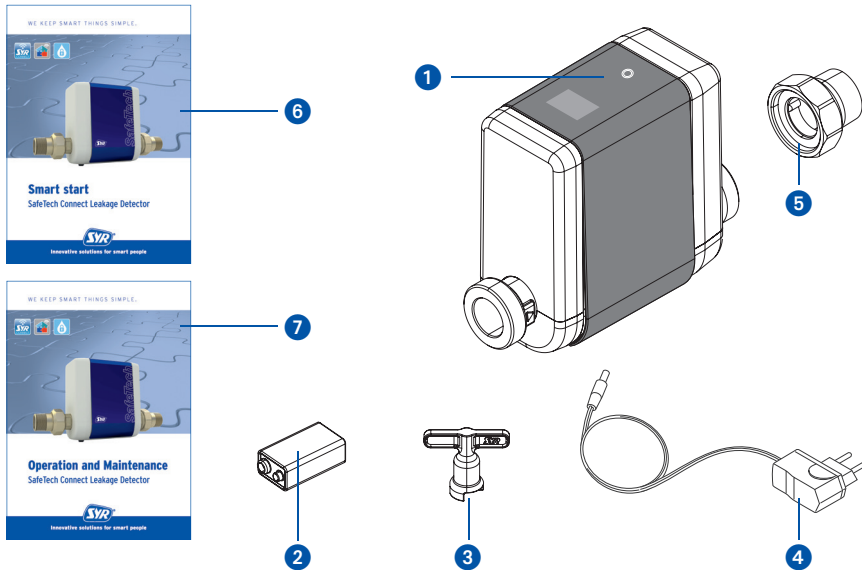


**Legend**

1. Electronic unit
2. 9V battery
3. Emergency unlocking key
4. Mains adapter
5. Screw connections (2x)
6. Smart start instructions
7. Operation and maintenance
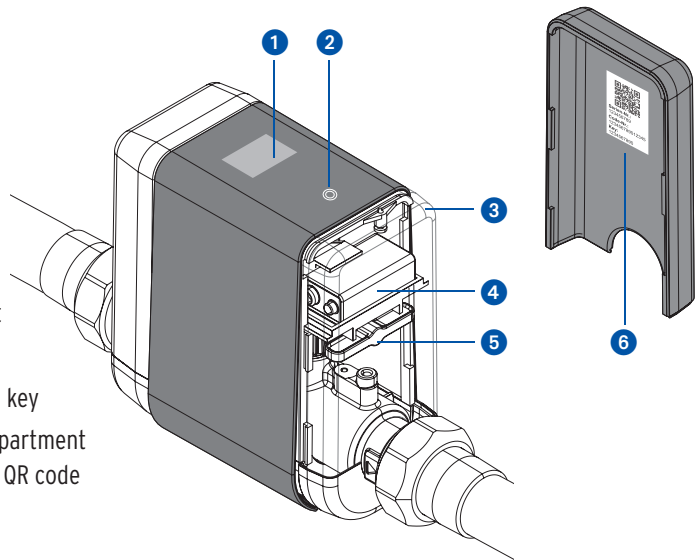
## 4.2 Optional accessories

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

- **SYR SafeFloor Connect radio-controlled floor sensor (2422.00.200)**

## 4.3 Design

**Legend**

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 SYR SafeTech Connect Leakage Detector is an efficient leakage protection system according to DIN 3553. Thanks to permanent 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 SafeTech Connect Leakage Detector 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 SYR SafeTech Connect Leakage Detector can connect to the SYR App via its AccessPoint. In case of an active Internet connection, the SafeTech Connect 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 that period, there is no communication with the server and no notification in case of derogations 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 the short-term protection in case of power failure.

## 5.1  Transport

The device is completely pre-mounted 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 presents no visible damage).**

## 5.2  Storage

Store the device under the following ambient conditions only:

**Temperature: +4 to +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 initial setup

## 6.1  Safety instructions for installation and initial setup

Only authorized, qualified and specially trained personnel with the corresponding know-how shall install and commission the SYR SafeTech Connect Leakage Detector.

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

- TRWI - DIN 1988, DIN EN 806, DIN EN 1717

- Rules and regulations of the local water company

**Attention!**
**Improper installation of the drinking water device may cause damage!**
- **Follow the instructions for use to mount the SafeTech Connect.**
  **Check that the connection is leaktight**
- **Avoid strong water hammers, caused e.g. by downstream solenoid valves.**

**Attention!**
**Drinking water pollution may cause corrosion and malfunctions of the valves.**
- **We recommend the use of a filter (e.g. DRUFI+ DFR) to protect the installation downstream!**

**Attention!**
**The device may be damaged if the electric installation is not made properly!**
- **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 DIN 1988, directly downstream of the water metering device. Do not apply stresses.

*Please observe the direction of flow marked by an arrow on the body!*

Flush the pipes before installation.

To be safe in case of a defect, you should install a drinking water filter according to DIN 1988 (e.g. SYR DRUFI+) downstream of the SafeTech Connect Leakage Detector.

Point of entry installation

SafeTech Connect

Drinking water filter
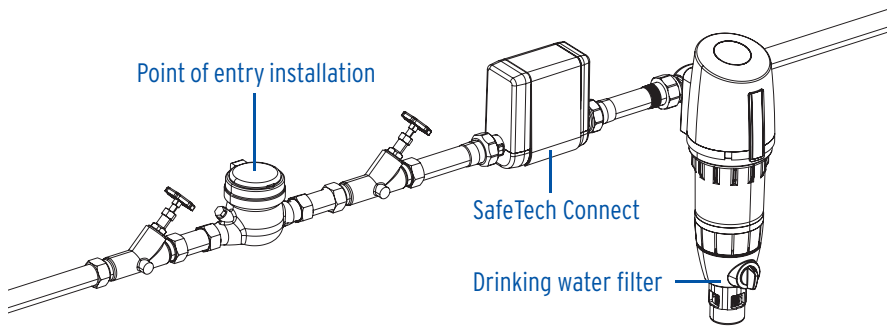
● **Re-open the water supply.**

● **Check that the valve connections are leaktight!**

● **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) and in combination with safety-related valves (e.g. thermal safety valve 3065), there must be a separate outlet upstream of the SafeTech Connect Leakage Detector!*
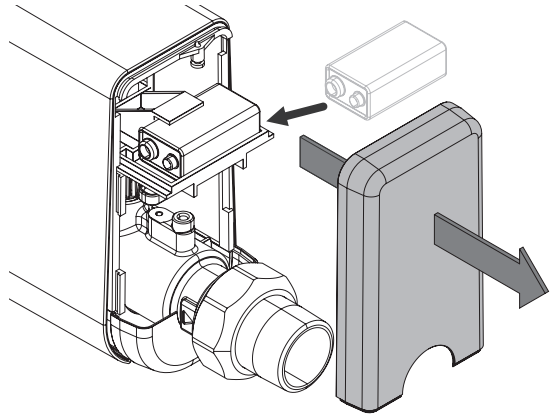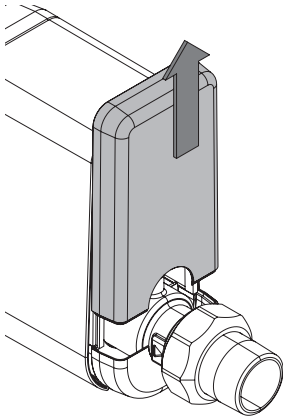
- Insert the battery.
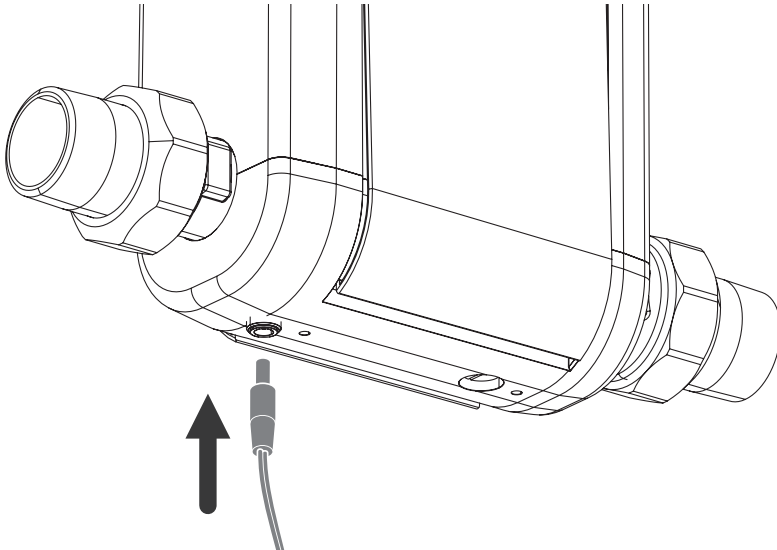


- Plug in the mains adapter to ensure power supply.

  The device is now ready to use!

## 7.1. Operation and settings via the SYR App

It's easy to set your SYR SafeTech Connect Leakage Detector via the SYR App on your smartphone or tablet.

Simply install the current SYR App on your smartphone or tablet. You can also use your computer (http://syrconnect.de) and follow the user instructions.

**You will find exact instructions for the initial setup of your device in the appended instructions.**
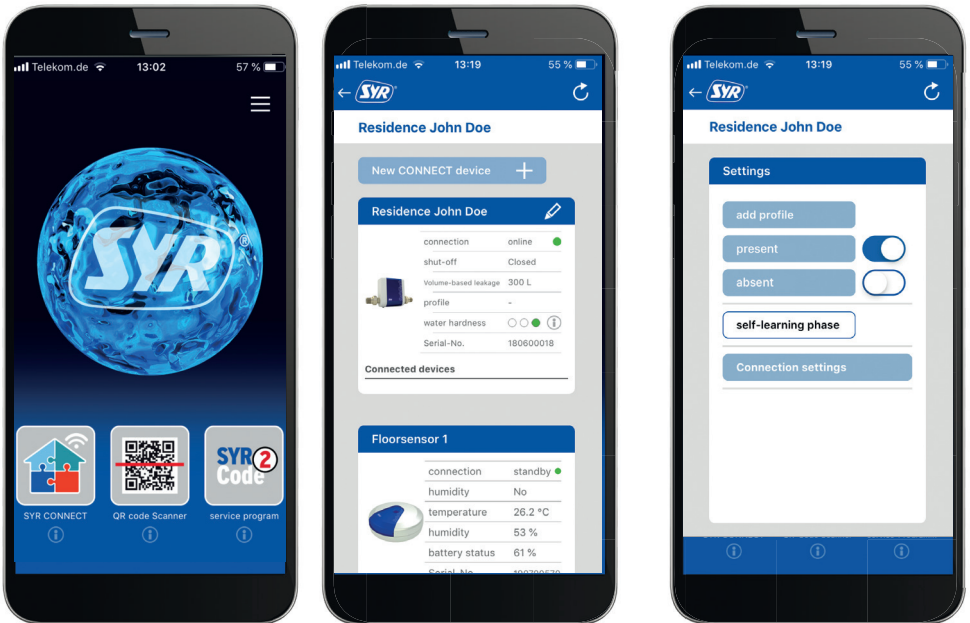


*The SafeTech Connect can also be used without an Internet connection. In this case, functions like notification by text messages or e-mail are not available though. The SafeTech Connect cannot be connected to other devices in this case either, like e.g. the radio-controlled floor sensor SafeFloor Connect.*

## 7.1.1. Settings range

Please find below the most important terms for the settings range of the SafeTech Connect Leakage Detector in the SYR App. Examples are given for illustration.

| Explanation and setting options | factory settings |
|---|---|
| **User profile** | |
| Individual setting of the device, adjusted to the user profile. A maximum of eight user profiles are possible.<br>**Example:**<br>**Usually, the two daughters are present at weekends. The two girls like to take long, extensive showers. To make sure that the parents have sufficient water, too, they create a new profile with the corresponding parameters.**<br><br>***SYR tip: Refer to the smart self-learning phase of the SafeTech Connect to determine the optimum safety levels for your new profile.*** | **Present (active) Absent** |
| **Volume-based leakage** | |
| 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.<br>**Example:**<br>**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.** | **300 l** |
| **Time-based leakage** | |
| 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.<br>**Example:**<br>**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 SafeTech Connect will isolate the system once this time has elapsed, even if the set volume has not yet been reached.** | **60 minutes** |

**Flow-based leakage**

| | |
|---|---:|
| If the SafeTech Connect 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.<br><br>**Example:**<br>**The factory setting of a maximum flow of 3,000 l/h continues for at least one minute – mostly in case of pipe bursts: the SafeTech Connect Leakage Detector will immediately shut off the pipe system.**<br><br>*SYR tip: Install an additional radio-controlled floor sensor SafeFloor in critical places. This will determine local water leaks, regardless of the selected settings. The SafeFloor can be connected to the SafeTech Connect so that the latter can immediately isolate the system.* | **3.000 l/h** |

**Return to "present" mode**

| | |
|---|---:|
| The user can determine the time when a selected profile shall be active. Once the set time is over, the SafeTech Connect will return to the "present" mode. The options for the settings range between one hour and 28 days. Times will be given in hours.<br><br>**Example:**<br>**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 SafeTech Connect will automatically switch back to this mode after the selected time and you do not have to worry about anything.** | **Time indica- tion** |

**Microleakage test**

| | |
|---|---:|
| The device will check at regular intervals for the smallest of leaks. The microleakage test can be switched on or off. | **Warning** |

**Warning sound**

| | |
|---|---:|
| The warning sound can be switched on or off. | **On** |

**Self-learning phase**

| | |
|---|---:|
| During the self-learning phase, the SafeTech Connect Leakage Detector 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 actions directly on the device

The user interface of the SafeTech Connect Leakage Detector includes a 4-line LCD display, one LED for the status indicator and one touch switch.
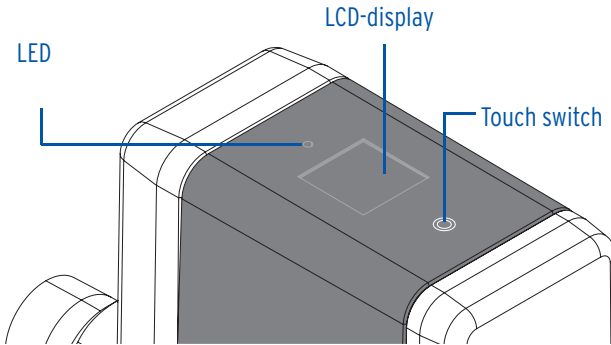


### 7.1.1. LED displays

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

### 7.1.2. Action

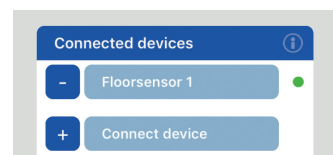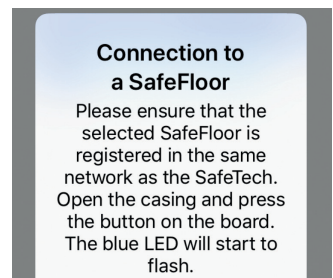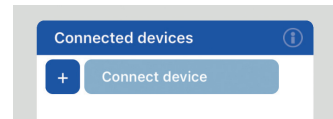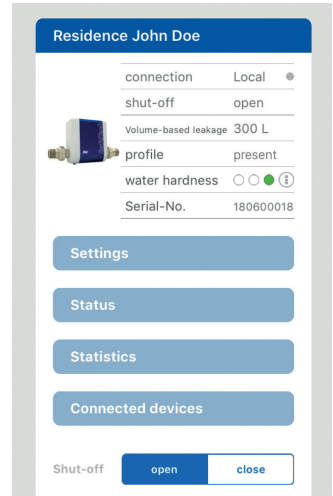| Condition of device | Action | Function |
|---|---|---|
| Shut-off valve open | Touch-switch **1 x for 3s** | Shut-off valve closes |
| Shut-off valve closed | Touch switch **1 x for 3s** | Shut-off valve opens |
| Fault ("red" LED on) Shut-off valve closed | Touch switch **1 x for 3s** | Reset of fault, shut-off valve opens |
| AccessPoint (de-)activated | Touch switch **1 x for 10s** | (De-)activates AccessPoint |

## 7.3. Connection of several Connect devices

To make sure that the external radio-controlled floor sensor SafeFloor Connect notifies a water leak or suspicious humidity levels, it has to be connected to a SafeTech Connect Leakage Detector.

*To connect the devices, they have to be registered via SYR CONNECT and be online.*

*The SafeTech Connect Leakage Detector acts as the master, i.e. the SafeTech Connect activates the connection to the radio-controlled floor sensor SafeFloor Connect, not vice versa.*

**1**  Select the SafeTech Connect Leakage Detector and click on "Connected devices".

**2**  Then click on "+ Connect device".

**3**  Follow the instructions and activate the AccessPoint of the SafeFloor Connect.

**4**  Once the SafeFloor has been successfully connected, it will be indicated by a green dot on the list.

| Residence John Doe | |
|---|---|
| connection | Local ● |
| shut-off | open |
| Volume-based leakage | 300 L |
| profile | present |
| water hardness | ○ ○ ● ⓘ |
| Serial-No. | 180600018 |

Settings

Status

Statistics

Connected devices ❶

Shut-off | open | close

---

Connected devices ⓘ

+ Connect device ❷

---

**Connection to a SafeFloor** ❸

Please ensure that the selected SafeFloor is registered in the same network as the SafeTech. Open the casing and press the button on the board. The blue LED will start to flash.

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Connected devices ⓘ

– Floorsensor 1 ● ❹

+ Connect device

# 8. Emergency unlocking function
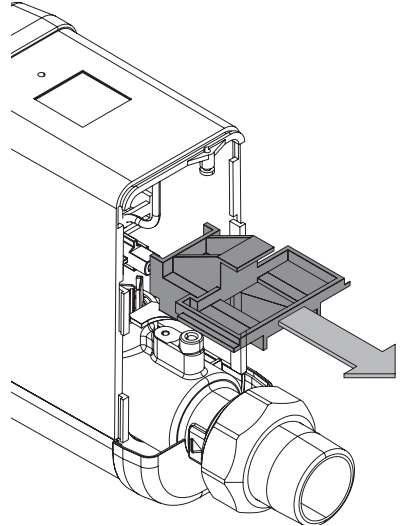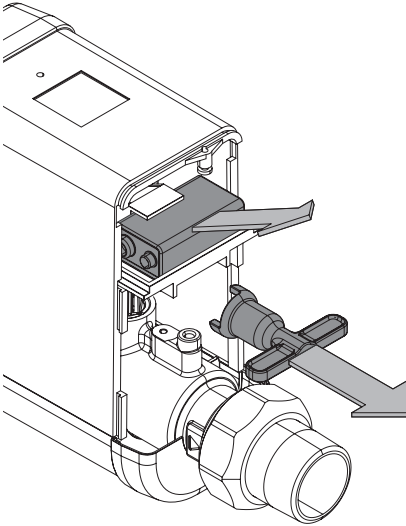
## 8.1  Emergency unlocking function

Thanks to the emergency unlocking function, the SafeTech Connect Leakage Detector can be manually unlocked, for instance in case of power failure or a missing or low battery.

The access to the emergency unlocking function is underneath the control unit.
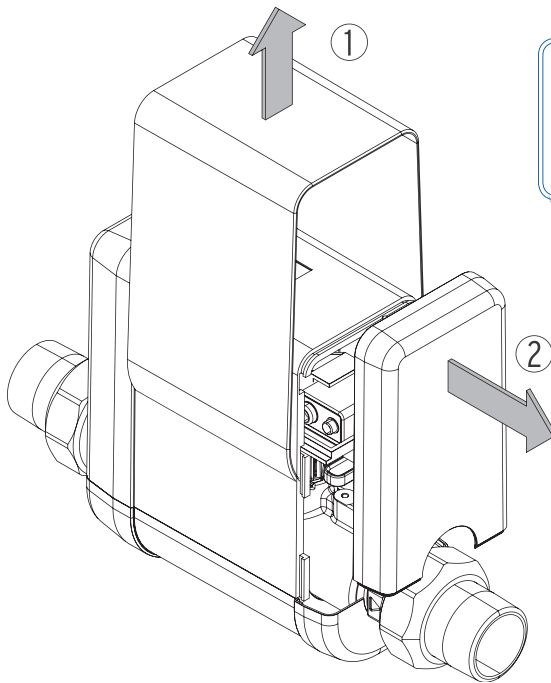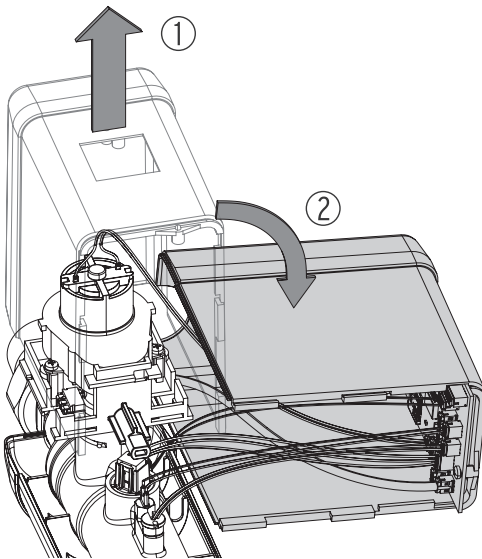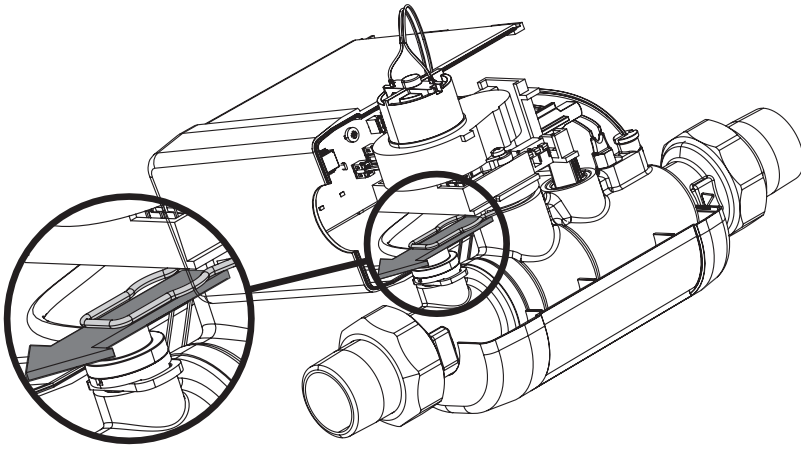
*No cables have to be removed!*

- **One by one, remove the battery compartment and the shell of the SafeTech Connect Leakage Detector.**

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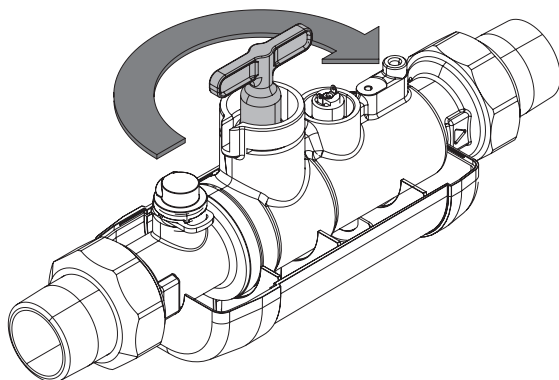


● Pull the casing upwards and tip it sideways.

- Remove the clamp that connects the body of the SafeTech Connect Leakage Detector 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.
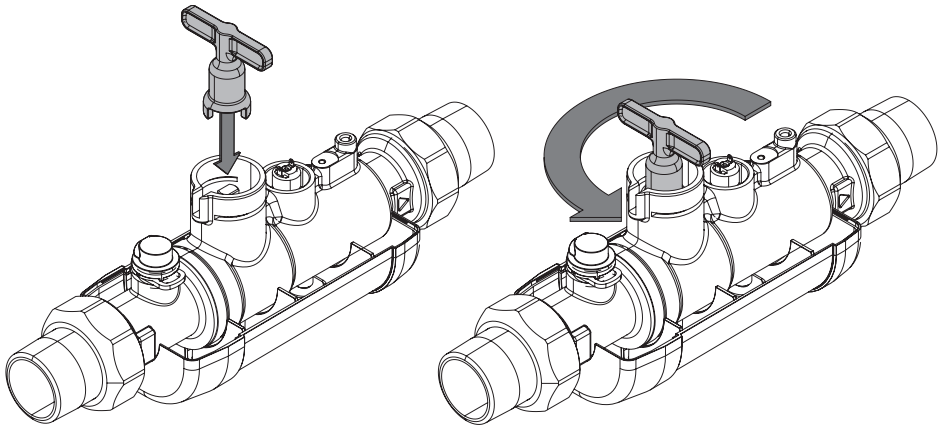


- Insert the emergency unlocking key from the top and turn it until water starts to flow.

- 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. Components and spare parts

1. Cover
2. Battery compartment
3. Shell
4. Motor unit
5. Pressure sensor
6. Conductivity cartridge
7. Inlet strainer
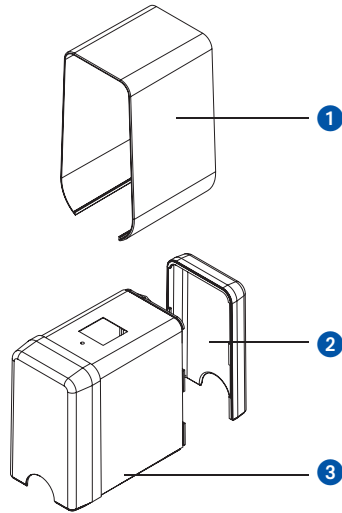
**Components and spare parts**

**DC mounting socket** (no illustration)
2422.00.905
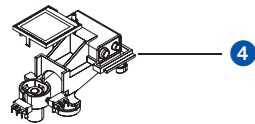
**Pressure sensor with cable**
2422.00.902

**Conductivity cartridge**
2422.00.901

**Reed switch** (no illustration)
2422.00.903

**Inlet strainer, complete**
2422.00.900

**Temperature sensor** (no illustration)
2422.00.904

# 10. Maintenance

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

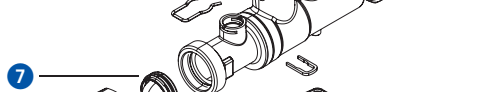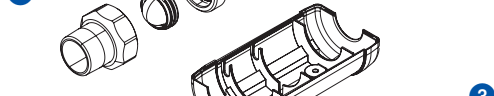- **Perform a visual check of the cable harness (kinked cables? Correctly plugged in?)**

- **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 operate correctly

- **Check of inlet strainer**
  Isolate and depressurize the drinking water installation, interrupt the main power supply. Completely remove the screw connections on the casing, remove the SafeTech, 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 with our SYR service technicians or a certified specialist for SYR leakage protection. Please make use of our service contract!**

⚠️ **Attention!**
**Potential material damage due to improper care!**
- **Do not clean the synthetic parts with care products
  that contain solvents.**

# 11. Faults

A fault is indicated by optical or acoustic (buzzer) notification. In addition, the fault will be notified externally to a smartphone / tablet or a computer by e-mail.

A fault can be caused, amongst others, by:

- **A limit value being reached (e. g. suspected leak)**

- **A device fault**

- **Spent batteries**

| Alarm text | 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. **Attention: Limited leakage protection!** | 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 SYR App or in the web application (http://syr-connect.de). |
| 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 SYR App or in the web application (http://syr-connect.de). |
| 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 SYR App or in the web application (http://syr-connect.de). |

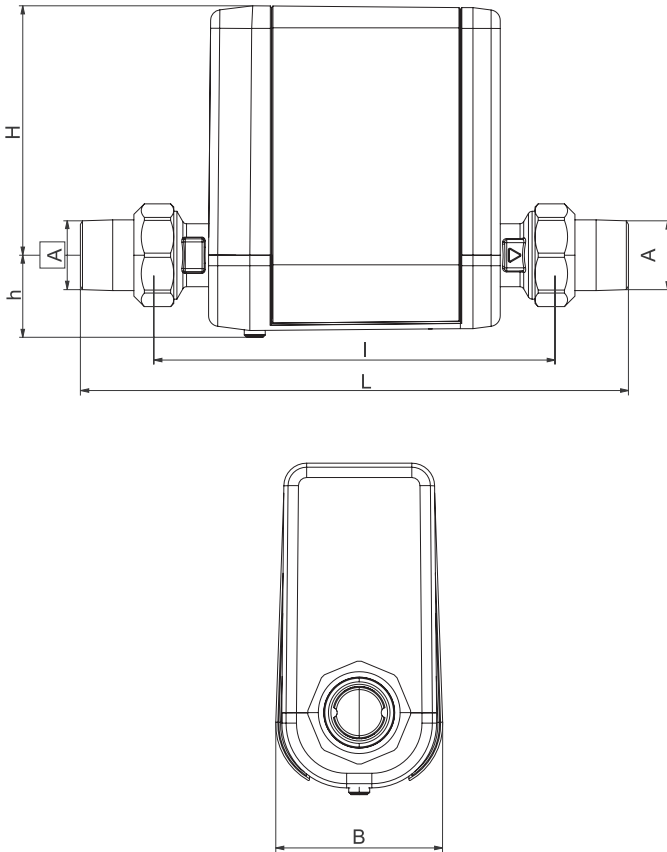| Alarm text | Cause | Correction |
|---|---|---|
| Suspected leak: Microleakage | The maximum admissible volume has been exceeded. Potential microleakage, e.g. in a cistern. | Please eliminate the leakage or adjust the protection level. Press the button on the device to open the shut-off valve. It is possible to perform this action via the SYR App or in the web application (http://syr-connect.de). |
| Floor sensor leakage | A leak has been detected on the floor sensor. | Please eliminate the leakage and check the floor sensor or 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. **Attention: Limited leakage protection!** | Open a draw-off point and check whether the control displays any (LED) turbine impulses. Contact the SYR service. |
| Fault Pressure sensor | The pressure sensor does not pass on any information, maybe due to a defect. | Please contact the SYR service. |
| Fault Temperature sensor | The temperature sensor does not pass on any information, maybe due to a defect. | Please contact the SYR service. |
| Fault Conductivity sensor | The conductivity sensor does not pass on any information, maybe due to a defect. | Please contact the SYR service. |
| 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. | Please stop draw-off operations. |

# 12. Specifications

## SafeTech Connect Leakage Detector

| 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 |
| Max. motor torque | Nm | 2 |

| Flow capacity | DN 20 | DN 25 | DN 32 |
|---|---|---|---|
| $\Delta$p 0,5 bar | 4,5 m$^3$/h | 4,8 m$^3$/h | 4,8 m$^3$/h |
| $\Delta$p 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) |

| 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 | 261,2 mm | 285,2 mm |
| l | 191,2 mm | 191,2 mm | 191,2 mm |
| B | 79,5 mm | 79,5 mm | 79,5 mm |

# Smart and safe – the SYR CONNECT drinking water installations

SYR CONNECT makes for safe and smart domestic installations. In the areas of leakage protection, water treatment, hygiene control and heating system monitoring, your respective valves will be controlled via the SYR App on your smartphone, tablet or computer by browser. Thanks to the Internet-based swarm intelligence (ISI), they can even be interconnected and centrally controlled.

**YOUR SYR PLUS**

**Winner of the Smart Home Award: SYR CONNECT**



*An animated 3D film will demonstrate the function of the SYR SafeTech Connect Leakage Detector and the radio-controlled floor sensor SafeFloor Connect: Simply scan the QR code to your right or go to the SYR YouTube channel.*