SYR Safe-T Connect

Operating manual

(translation of original version)

Contents

1. General

1.1. About this manual

This operating manual enables you to operate your SYR Safe-T Connect leakage protection safely and efficiently.

It is a supplied with the product and must always be kept accessible for the user.

Due to technical developments, images and descriptions in this operating manual may differ from the Safe-T Connect leakage protection actually delivered.

We can accept no liability for damages caused by failure to comply with instructions in this manual.

1.2. Symbols used

All safety notices in this operating manual are marked with appropriate symbols. The signal words at the beginning of the safety notice express the level of risk.

Danger!
This combination of symbol and signal word indicates a situation that constitutes an imminent danger of death or serious injury if it is not avoided.

Warning!
This combination of symbol and signal word indicates a situation that constitutes a possible danger of death or serious injury if it is not avoided.

Caution!
This combination of symbol and signal word indicates a situation that constitutes a possible danger of minor injury if it is not avoided.

Note!
This combination of symbol and signal word indicates important information that will help to avoid material or environmental damage.

1.3. Copyright protection

The copyright for this operating manual and all documents supplied with this appliance remains the property of Hans Sasserath & Co. KG.

Their use in the context of using the appliance is both permitted and desired.

These documents may be neither reproduced nor made available to third parties, in particular competing companies, without the express authorisation of SYR.

Note that there is a patent protection for the SYR Safe-T Connect leakage protection.

1.4. Warranty

The manufacturer provides a warranty in accordance with the conditions of sale and delivery.

Warranty claims become void if:

• damage arises from incorrect operation,

• repairs or modifications are undertaken by unauthorised persons,

• original SYR accessories and spare parts are not used,

• defective components are not maintained promptly in order to minimise the extent of damage and avoid compromising the safety of the appliance (maintenance obligation).

1.5. Applicable standards

The following European and national standards were applied during the development and design of the SYR Safe-T Connect leakage protection:

• DIN EN 806

• DIN 1988

• DVGW VP 638

2. Safety

2.1. Intended use

The SYR-Safe-T Connect is an effective leakage protection in accordance with DVGW VP 638 for dwellings. The appliance is adaptable to all SYR flanges from DN 20 to DN 32. A 100 % protection against water damage cannot be guaranteed for every possible system.

Any use other than or going beyond this is not an intended and proper use.

Intended use also includes compliance with this operating manual.

2.2. Fundamental risks

Note:

Observe the technical rules for safety installations such as fire extinguishing lines, emergency showers, etc.

Certain risks are inherent in working with electrically operated equipment. You should therefore observe the legal regulations for the protection of health and safety (in Germany, VSG), any other generally recognised rules of health and safety at work and the regulations of the professional associations (in Germany, BGV).

Do not attempt to modify the SYR-Safe-T Connect. The manufacturer is not liable for damages arising from improper modifications.

2.3. Risks from electrical energy

Warning!
Risk of crushing injury!
A soon as voltage is applied (mains adapter, battery), the system moves to the closed position.
► **Do not insert any body parts or objects into the valve opening.**

Observe the prescribed values for voltage and current (see technical data) during installation.

Work on electrical installations or the controller may be carried out only by qualified electricians.

Before starting work, disconnect the network adapter and remove the batteries.

Regularly check the mains adapter and, if damaged, have it replaced by an electrician.

2.4. Servicing and repair work

Servicing and repair work may only be carried out by trained and authorised specialists. These are persons who, on the basis of training, instruction or experience, have been authorised to carry out the required work and can recognise and avoid the possible risks involved. They must be able to show that they know the relevant safety standards, regulations and legal provisions and have read the operating manual.

3.   Construction and operation

3.1. Contents of package
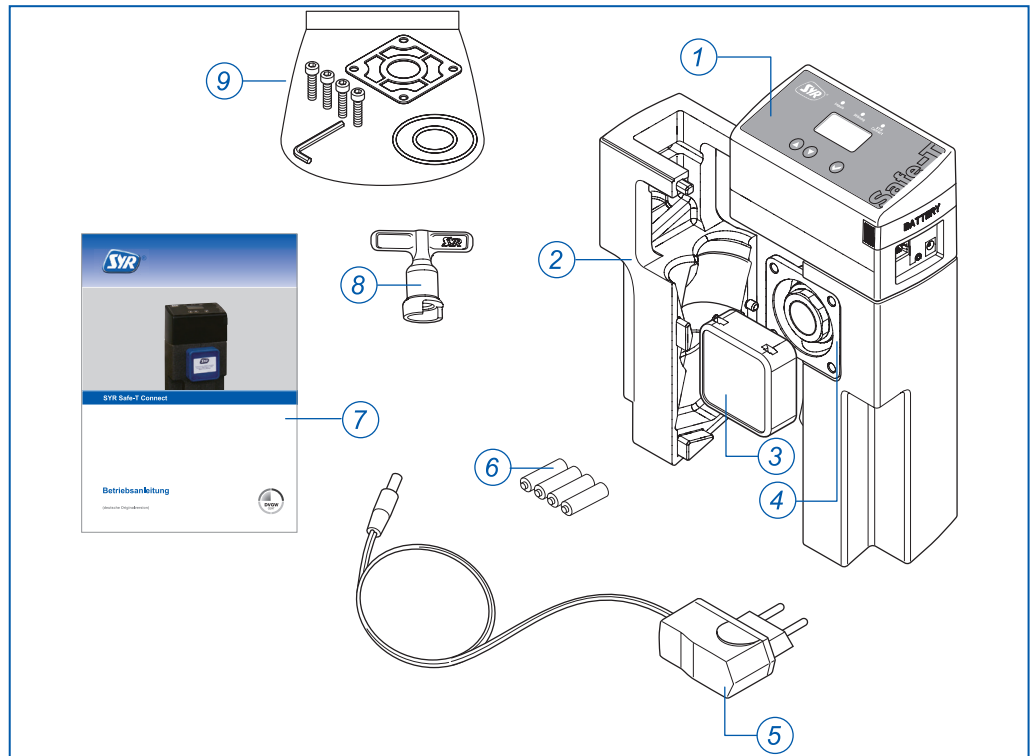
Fig. 1: SYR-Safe-T Connect package contents

Legend

1   Electronics unit

2   Insulating casing

3   Blanking cap

4   Leakage protection valve

5   Mains adapter

6   Batteries (4x AAA)

7   Operating manual

8   Key for emergency shut-off function

9   Sealing pack

3.2. Optionally available accessories

The following accessories are available to expand the functionality of the system:

• DN 20-32 flange

• Drufi +, FF, FR, DFF, DFR drinking water filters

3.3. Construction
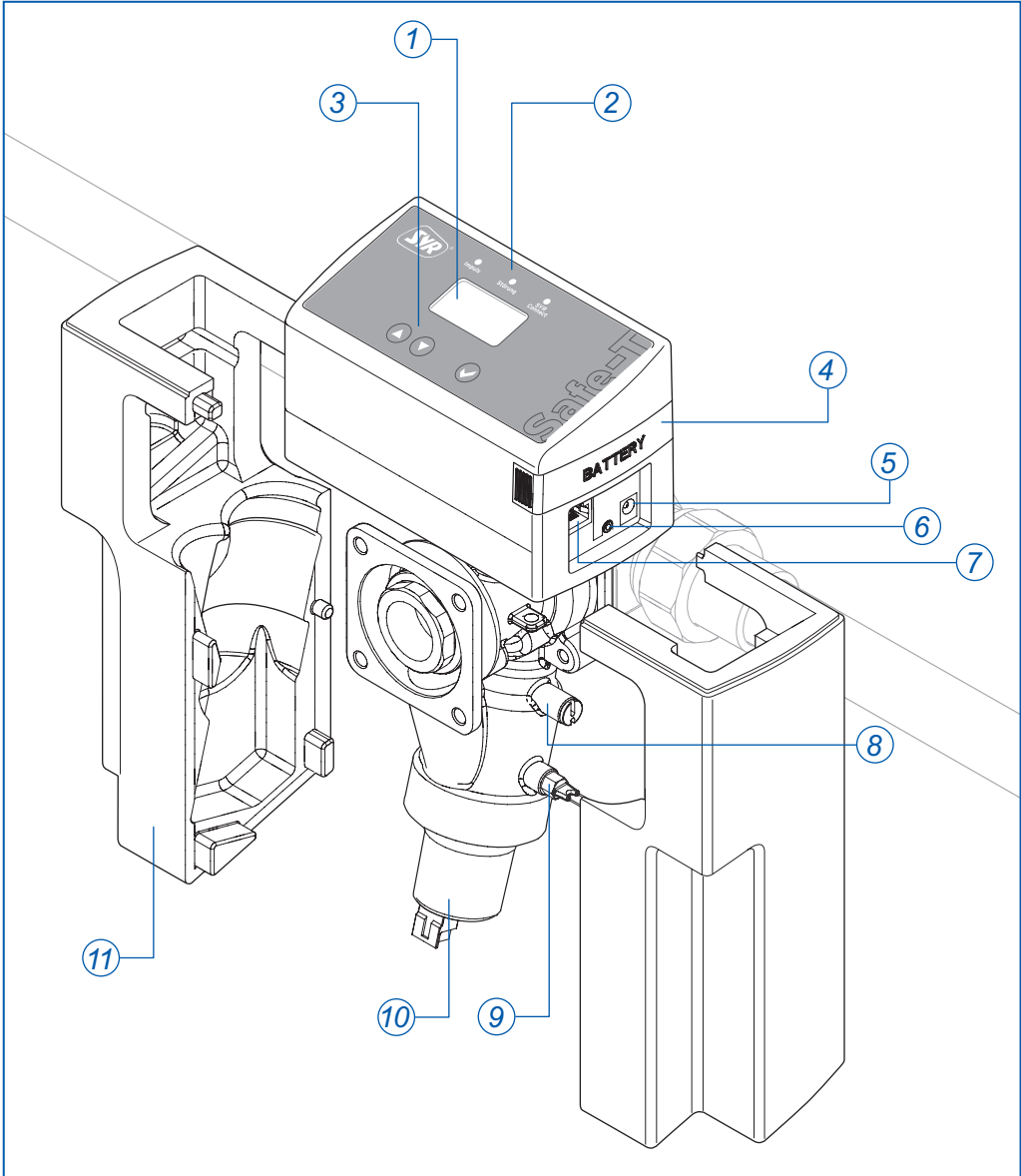
Fig. 2: SYR-Safe-T Connect construction

Legend

1 LCD display

2 LEDs for status indication

3 Control buttons

4 Battery compartment

5 Mains adapter connection (9 V DC)

6 Connection for humidity sensor

7 LAN connection

8 Flow sensor

9 Temperature sensor

10 Pressure sensor

11 Insulating casing

3.4. Function

SYR Safe-T Connect is an effective leakage protection system that complies with DVGW VP 638. It is adaptable to all SYR flanges from DN 20 to DN 32. Thanks to continuous monitoring, a leak is recognised early and water damage is limited by automatically shutting off the water supply.

The Safe-T Connect with integrated LAN connection has electronic water metering (by means of a turbine), an electrically actuated shut-off, a pressure sensor to monitor the smallest leakage quantities and a multifunctional display.

When installed, it has a permanent encoded link to a server, which polls it to obtain data from the drinking water installation such as: volumetric flow, total flow per unit time, duration of the volumetric flow, pressure drop and temperature.

The maximum permissible parameters can be configured or changed directly on the Safe-T Connect or via software on a smartphone or PC. Even if there is a loss of Internet connectivity, the parameters will continue to be monitored. However, there will be no communication with the server during this time.

Energy is supplied via the mains adapter. Batteries to provide a short-term backup in the event of a power cut are supplied.

4.   Transport and storage

4.1. Transport

The unit is delivered pre-assembled.

Its weight is approx. 1,720 g.

> **Note!**
> **Possible material damage by improper transport!**
> **The packaging provides transport protection.**
> ► **If there is significant damage to the packaging, do not install the appliance.**
> ► **After heavy impacts or blows, exchange the plastic part affected even if there is no visible damage.**

4.2. Storage

Store the appliance only under the following environmental conditions:

• Temperature: +4 to +60°C, Relative humidity: max. 80%

> **Note!**
> **Possible material damage by improper storage!**
> ► **Protect valves and electronics from frost.**

5. Installation and commissioning

5.1. Safety notices for installation and commissioning

Installation and commissioning of the SYR Safe-T Connect may only be carried out by authorised trained and instructed specialists, who have the appropriate knowledge.

Compliance is required with the applicable safety provisions for drinking water installations. These include (for Germany):

• TRWI - DIN 1988-200, EN 806, EN 1717,

• The regulations and provisions of the local water supply authority.

Note!
Possible material damage due to improper drinking water installation!
Improper installation of the SYR universal flange can lead to leakage in the drinking water supply system.
► **Fit the universal flange in accordance with the instructions for use. Test the connection for leaks.**
► **Avoid water hammer effects, e.g. from downstream solenoid valve.**

Note!
Contaminants in the drinking water can cause corrosion problems and lead to malfunctions of the valves.
► **We recommend the installation of a filter (e.g. Drufi + DFR) to protect the downstream installation.**

Note!
Possible material damage by improper drinking electrical installation!
► **Connect the unit to the mains supply only with the mains adapter supplied.**

Installation and commissioning

5.2. Installation

► Shut off the water supply before starting installation work.

5.2.1. Fitting the universal flange

► Install only in drinking water installations in accordance with DIN 1988, immediately after the water metering system.

► Fit in accordance with the instructions for use of the SYR universal flange.

Note:

Fit the universal flange free of applied stress!

It is essential to observe the flow direction!

5.2.2. Installation of the SYR-Safe-T Connect

The SYR-Safe-T Connect is adaptable to all SYR flanges from DN 20 to DN 32.

If a SYR DRUFI + pressure reducer-filter combination is already installed, this installation must not be altered.

The Safe-T Connect should be installed between the filter and flange.

► Mount the Safe-T Connect (2, fig. 3) on the flange (1) with the four Allen screws and gasket.

► Close off the front flange connection with a blanking cap (3, art. No. 2320.00.901) or connect a SYR DRUFI + (4) at this point.

Note:

In the case of continuous drawing (e.g. filling a swimming bath) and in combination with safety valves (e.g. thermal run-off protection 3065) a branch separate from the Safe-T plus must be made!
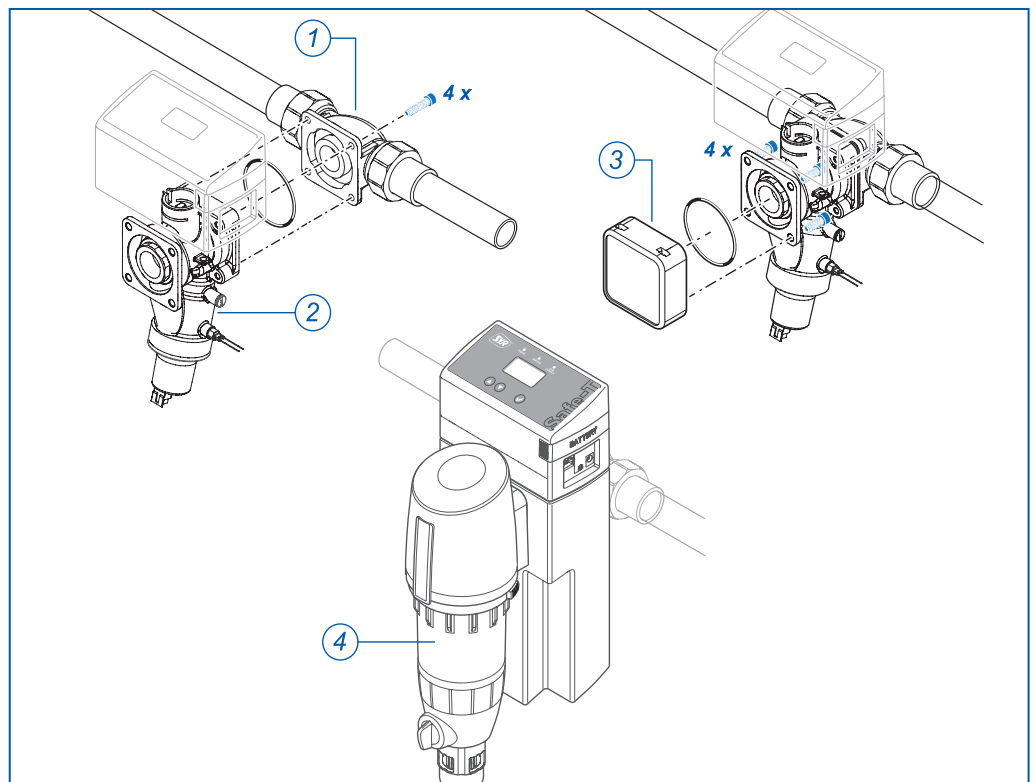
Fig. 3: Safe-T Connect installation

► Open the water supply.

► Test all valve connections for leaks.

► Insert four batteries (2; size AAA) in the battery compartment. Observe the correct polarity!
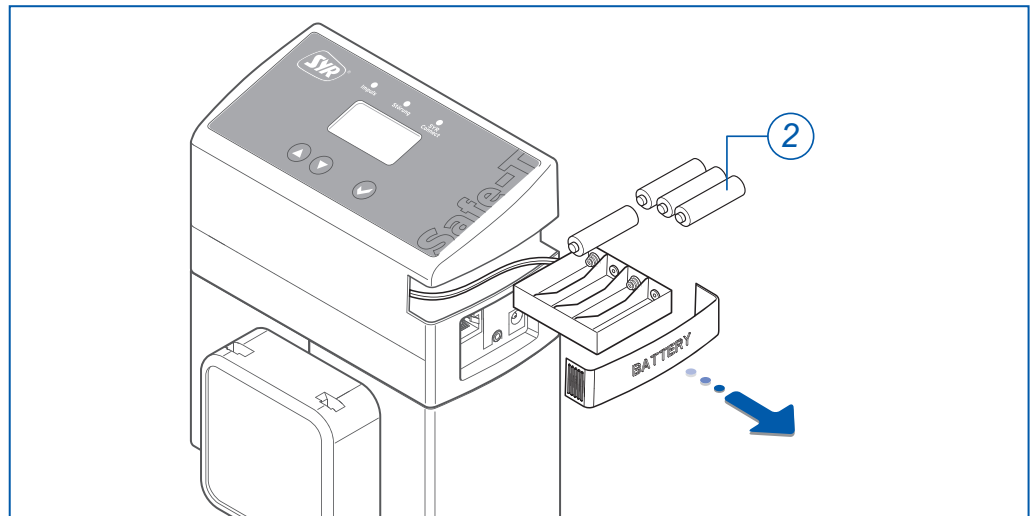
Fig. 4: Battery insertion

► Connect a network cable (1, fig. 5) and the mains adapter (2) to the Safe-T Connect.
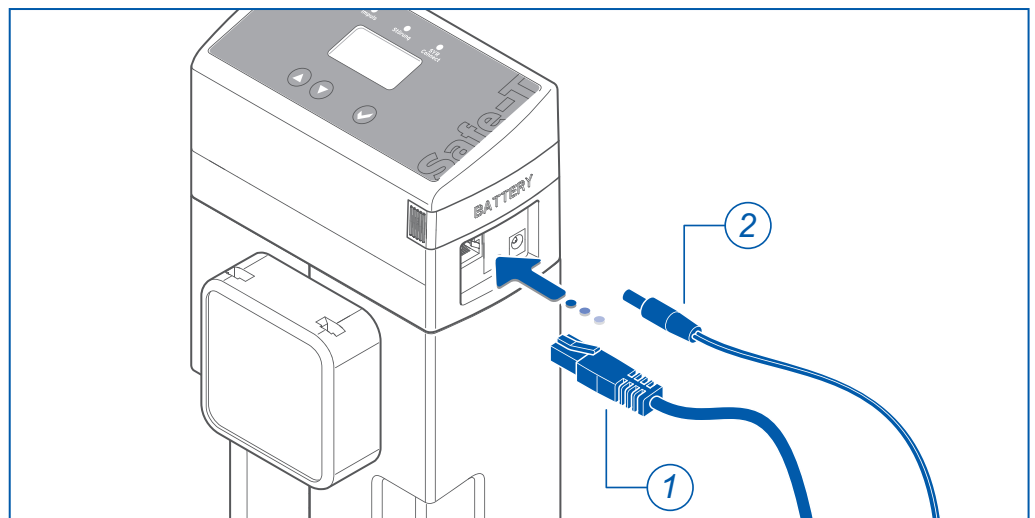
Fig. 5: Connections to the Safe-T Connect

► Plug the network cable and the mains adapter into the sockets provided.

► Optional: connect the humidity sensor.

Installation and commissioning

► Replace the insulating casing shells.
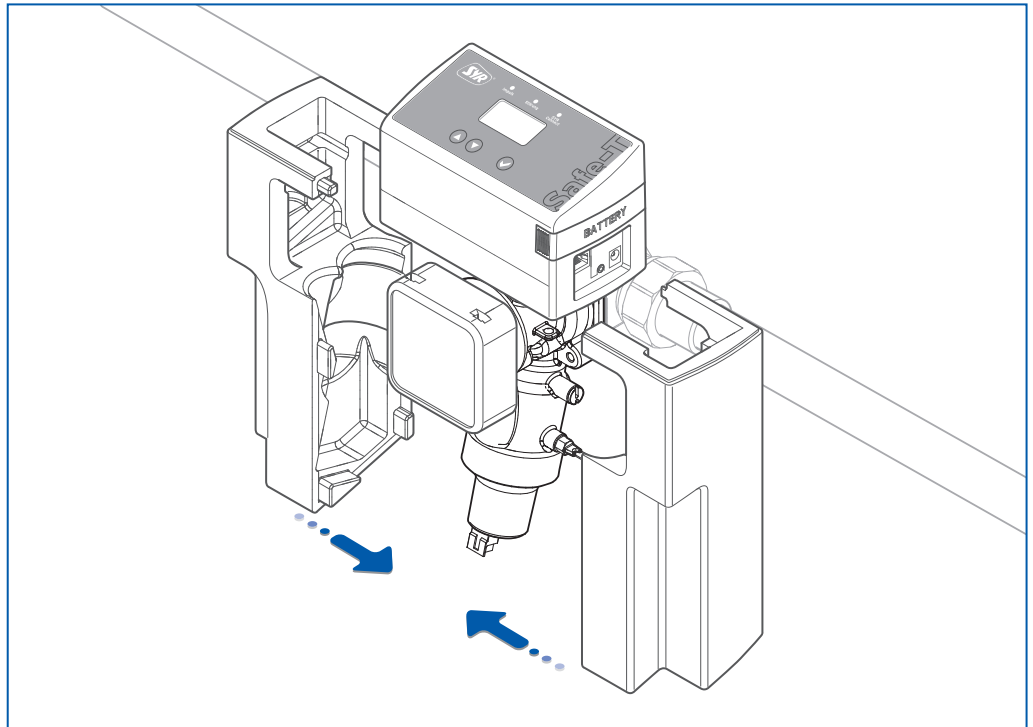
Fig. 6: Replacing insulating casing

5.3. Commissioning

The Safe-T Connect starts working as soon as voltage (mains adapter, batter-ies) is applied.

The system goes into the "closed" position.

► Press the ⊘ button.

The system goes into the "open" position and changes to the normal operating state.

You can make all the required settings directly on the Safe-T Connect, with the SYR app on your smartphone or via a PC.

The SYR app is available free of charge from the App Store.

Other operating systems can use an app-like application with their Web browser from http://syrconnect.de or http://syrconnect.com.

Over Internet connections, settings can be made only using the SYR app or a web browser.

6.   Operation

6.1. Controls on the Safe-T Connect

The user interface of the appliance consists of a four-line LCD display, three LEDs for status indication (pulse, fault and SYR Connect) and three control buttons (($\triangle$), ($\triangledown$) and ($\checkmark$)).
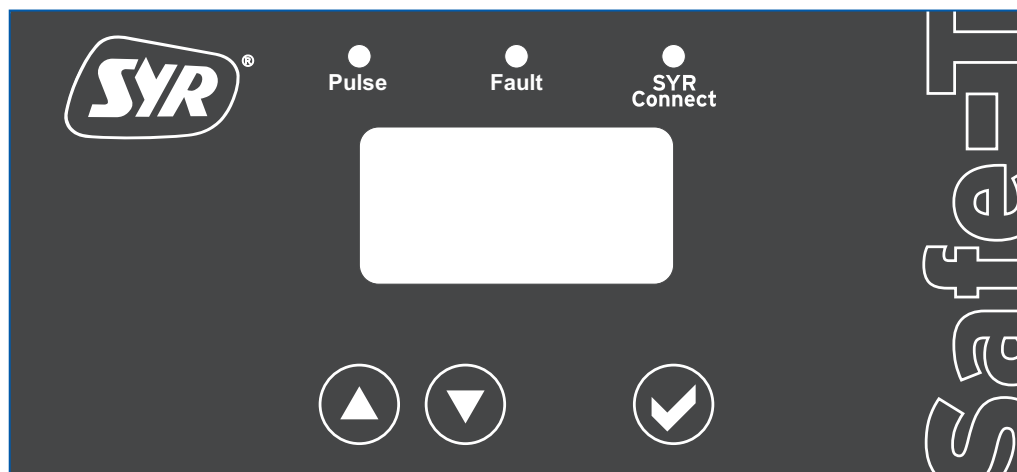
Fig. 7: User interface with display, LED and control buttons

Symbol	Button/LED	Meaning
$\checkmark$	Enter	Confirm and save the data entered or change menu.
$\triangledown$	Decrease	for changing values
$\triangle$	Increase	for changing values
yellow LED	Pulse	indicates flow (LED flashes)
red LED	Fault	indicates fault (LED lights up)
green LED	SYR Connect	Connection made to server (LED flashes)

The following graphic shows sections of the menu structure of the Safe-T Connect:

Basic Safe-T plus menu

Leakage at 100 L
PRESENT
Shut-off OPEN
P = 3,2 bar

Operating states that are shown in the basic menu

Leakage at 100 L	Leakage at 400 L	Leakage at 10 L	Leakage at --	Leakage at 100 L	Leakage at 100 L	Leakage at 100 L	Leakage at 100 L
PRESENT Shut-off OPEN	PRESENT Shut-off OPEN Q = 380 l/h	ABSENT Shut-off OPEN	PRESENT Shut-off OPEN Temporarily off 0:59 h	PRESENT Shut-off ? Valve closes…	PRESENT Shut-off OPEN No mains voltage	PRESENT Shut-off OPEN Battery change	PRESENT Shut-off OPEN No SYR-Connect
PRESENT, level 400 l	**Water drawing**	**Absent, level 20 l**	**Leakage protection temporarily off**	**Shut off**	**Mains adapter missing**	**Batteries flat**	**No Internet**

Leakage at 100 L	Leakage at 100 L	Leakage at 100 L
PRESENT Shut-off OPEN Flow > 3500 l/h	PRESENT Shut-off OPEN Run-off sensor/LP of	PRESENT Shut-off OPEN Micro-leakage test	PRESENT Shut-off OPEN Alarm/fault
Max. flow	**Run-off sensor active**	**ML test active**	**Fault (leakage)**

Basic settings menus

PARAMETER/INFO
Basic setting
Expert setting
Appliance info
Back
MODE

Basic setting	Basic setting	Basic setting	Basic setting
Present level 100 L MODE…	**Away level** 20 L	**Leakage protection off** No	**Shut-off** OPEN

Menus for the extended user settings

PARAMETER/INFO
Basic setting
Expert setting
Appliance info
Back
MODE, DOWN

Expert setting	Expert setting	Expert setting	Expert setting	Expert setting
Language German MODE…	**Units** °F/psi/US.liq.gal	**Leakage time** 2 hour(s)	**Auto-unlock** ON	**Alarm buzzer** ON

Expert setting	Expert setting	Expert setting	Expert setting	Expert setting
Floor sensor ON	**Ext. input Pulse (push button)** Ext. leakage sensor	**Leakage flow** 1 min.	**Ext. fault alarm** OFF	**LCD contrast** 45%

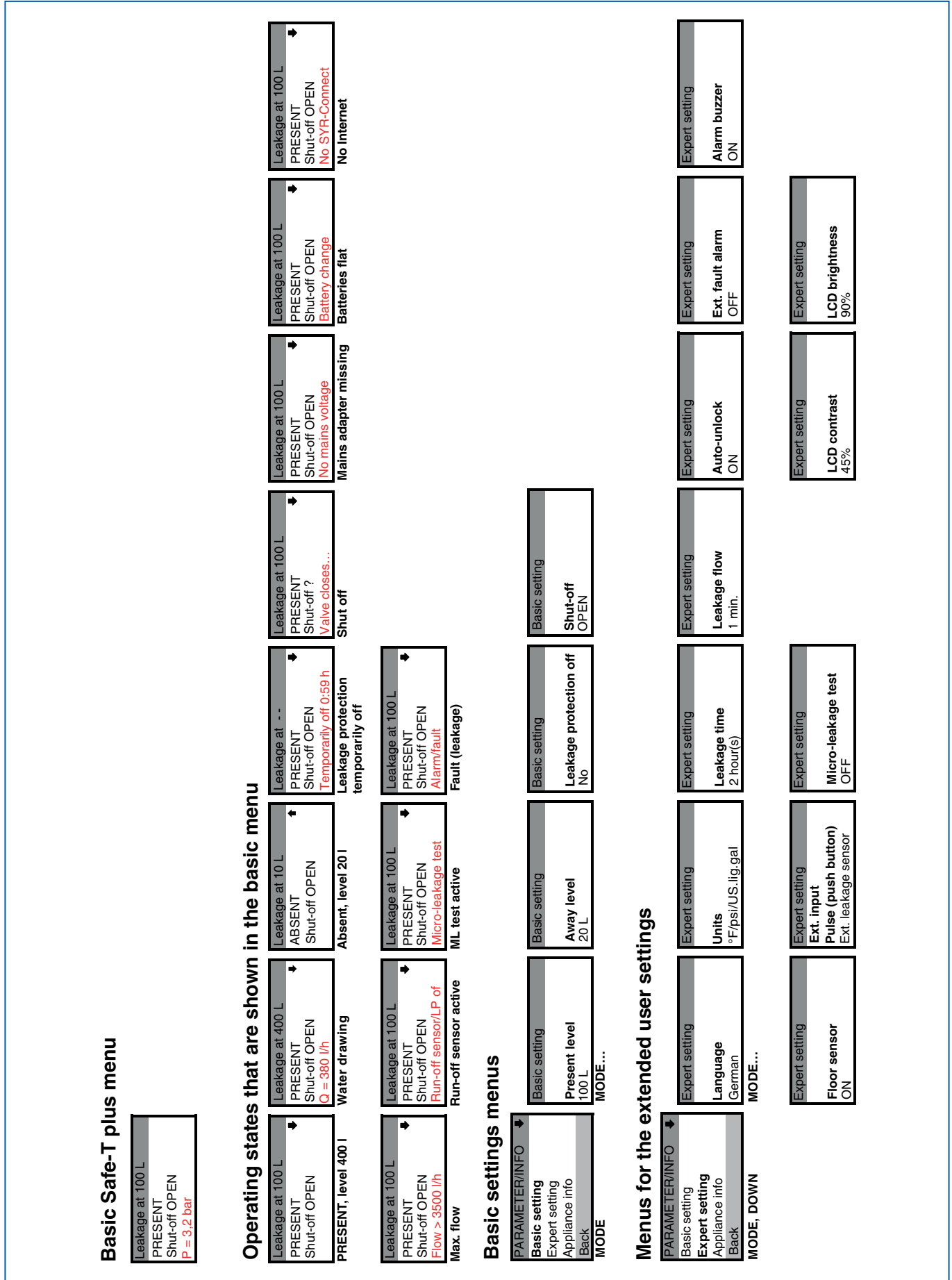| Expert setting	Expert setting
Micro-leakage test OFF	**LCD brightness** 90%

Fig. 8: Sections of the menu structure of the Safe-T Connect

6.1.1. Configurable parameters

The following table shows the configurable parameters.

Parameter	Adjustment range	Factory setting	
Start menu			
Presence leakage (at home level)	100 l ... 1,500 l	400 l	
Absence leakage (away level)	Off, 10 l ... 100 l	Off	
Leakage protection temporarily off	0 .. 8 hrs	No	
Shut-off	Open, closed	Open	
Extended settings (expert level)			
Sprache/Language	German, English	German	
Units	°C/bar/litre	German	
Leakage time	Off, 0.5 ... 25 hours	1.5 hrs	
Leakage flow	1 ... 99 minutes	1 min.	
Auto-unlock	On, off	Off	
External error message	Off, NO, NC, Pulse, Ext. valve control	Off	
Alarm buzzer	On, off	On	
Floor sensor	On, off	On	
External input	Off; Pulse (push button) Ext. leakage sensor; NC (switch) Ext. leakage sensor; NO (switch) Ext. leakage sensor; pulse (push button) remotely actuated open/closed; NC (switch) remotely actuated open/closed; NO (switch) remotely actuated open/closed	Off	
Micro-leakage test	Off, message only, shut-off	Off	
LCD contrast	0 ... 100%	45%	
LCD brightness	0 ... 100%	90%	

Operation

Parameter	Adjustment range	Factory setting
System and device information		
Firmware	Safe-T Connect VX.X	
Serial number	12345678	
Code number	123456789	
Battery voltage	0 ... 6 V.	
Temperature		
Error log		

Some important terms in the menu are explained in the following table with examples.

Function	Explanation
Presence leakage	Maximum possible water flow after opening a drawing point without time limitation Example: The drawing with the highest flow is the bathtub. The capacity of the bathtub is about 120 litres. Set the presence leakage value to 200 litres
Absence leakage	More stringent monitoring of the maximum possible water flow when the user is away for a longer period (holidays, etc.). Example: If the user is absent for a longer period, the absence leakage value setting should be relatively low. For an occasional drawing, e.g. watering the house plants, a value of 10 litres is sufficient.
Leakage flow	If a water flow > 3,500 l/h is detected, the system assumes that there is a leak. Example: After a factory time setting of 1 minute, the appliance shuts off. This fault usually arises from a pipe breakage or similar problem.
Leakage time	If a drawing is detected that lasts longer than the time setting at a defined volume, the appliance shuts off. Example: After each volume setting, a time setting can be individually programmed. If this is then exceeded when a drawing is detected although the volume is not reached, the appliance shuts off.
Presence and absence function	Defined via the monitoring stringency of the Safe-T. The desired function can be selected directly from the main menu with the UP and DOWN buttons. The limit values for "present" and "absent" must already be defined.

6.1.2. Setting the presence leakage on the appliance (without LAN cable plugged in)

The menu settings are explained using the presence leakage by way of example.

Proceed as follows:

▶ Press the ⊘ button.
In the first line of the display, "Parameter/Info" will appear.

▶ Press the ⊘ button again.
In the first line of the display, "Basic setting" will appear.
The line below will show "at home level - 100 l".

▶ With the △ and ▽ buttons, you can change the value (from 100 l to 1500 l in steps of 50 l).

▶ Confirm the setting with the ⊘ button.

6.1.3. Emergency open function

The emergency open function enables the valve to be opened in the event that the SYR Safe-T Connect shuts off at the same time as a power cut (no batteries inserted or batteries flat).

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

▶ Unplug everything from the side and disconnect the 7-pin adapter (1, fig. 9).

▶ For manual opening, remove the two insulating casing halves sideways.

The key for manual opening is stored inside the left half of the insulating casing.

▶ Pull out the controller clips (2) and lift off the controller (3).

⚠ **Note!**
Possible material damage through improper removal of the controller!
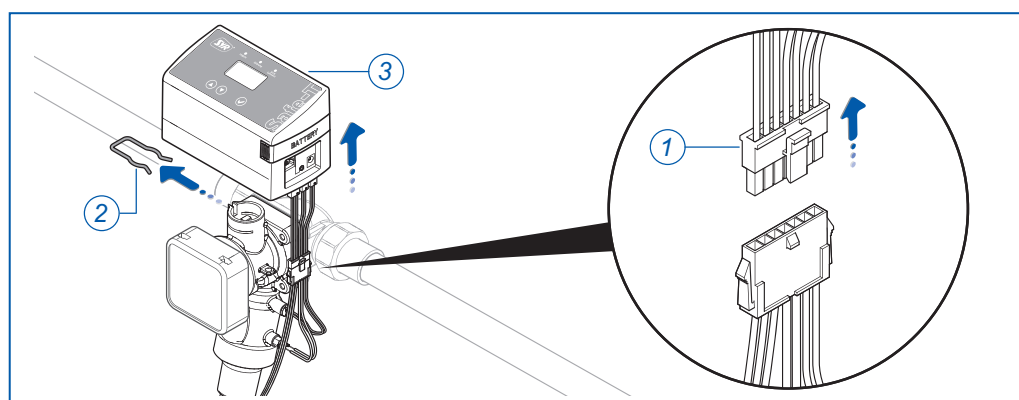▶ **Pay attention to the wiring layout!**

Fig. 9: Removing controller

► Insert the key and rotate in the direction of the arrows until water flows again.
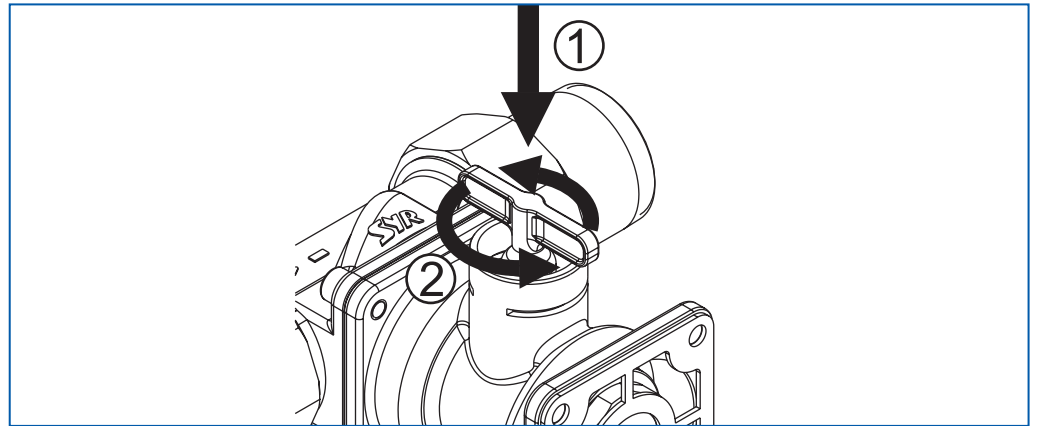

Fig. 10: Opening shut-off valve

⚠️ **Note!**
Possible material damage through improper assembly!
Because of the manual intervention, the control unit will no longer fit on the appliance!

► **Do not insert the controller on the Safe-T Connect for recommissioning!**

► Reconnect the controller to the mains or insert batteries.

► On the controller, select the open position and wait for the controller to reach this position.

► Pull off the key.

► Then fit the controller and secure it with the clips.

► Replace the two halves of the insulating casing.

The appliance is now ready for recommissioning.

6.2. Control via SYR app

As an alternative to using the controls on the appliance, you can make the basic settings from your smartphone. You first need to install the SYR app on your smartphone or use your Web browser (http://syrconnect.de) and follow the user instructions. For further information, see the accompanying short operating manual.

Fig. 11: User interface of the SYR app

Service and maintenance

7. Service and maintenance

We recommend a service interval of 2 years.

Use our maintenance contract service.

> ⚠️ **Note!**
> **Possible material damage through improper care!**
> ► **Do not clean the plastic parts with care products containing solvents.**

8. Faults

A fault is indicated by optical and acoustic (buzzer) indications. In addition, the fault is indicated externally on a smartphone or PC by e-mail.

A fault can be caused by:

• a limit value being reached (e.g. suspicion of a leak),

• an appliance fault,

• flat or worn out batteries.

Fault indication	Cause	Correction
A1	- shut-off cannot be actuated (motor or limit switch defective)	- Press the ⊘ button. Another attempt will be made to reach the position. - Inform SYR Service 0800/6105000.
A2	- no turbine signal (turbine defective or no water drawn for 30 days)	- Inform SYR Service 0800/6105000.
A3	- Presence leakage detected. The flow volume has exceeded the setting or permissible value.	- Press the ⊘ button to open the shut-off valve. Adjust the protection level or eliminate the leak.
A4	- Flow leakage: A continuous volumetric flow > 3,500 l/h for 1 minute was detected (e.g. broken pipe).	- Press the ⊘ button to open the shut-off valve. Adjust the protection level or eliminate the leak.
A5	- Absence leakage detected. The flow volume has exceeded the setting or permissible value.	- Press the ⊘ button to open the shut-off valve. Adjust the protection level or eliminate the leak.
A6	- Leakage at the floor sensor/drain sensor detected	- Press the ⊘ button to open the shut-off valve and eliminate the leak.
A7	- Leakage at inlet IN2 detected	- Press the ⊘ button to open the shut-off valve and eliminate the leak.
A9	- Run time leakage: Flow time criterion exceeded. The flow time has exceeded the setting or permissible value.	- Press the ⊘ button to open the shut-off valve. Adjust the protection level or eliminate the leak.
A0	- Minimal leakage detected by pressure sensor	- Press the ⊘ button to open the shut-off valve. Adjust the protection level or eliminate the leak.

9. De-installation and disposal

9.1. Dismantling

A Safe-T Connect that is no longer functional must be de-installed and sent for environmentally compatible disposal.

► Remove the mains adapter and network cable.

► Dismantle the Safe-T Connect from the universal flange.

► Mount a Drufi + or a blanking cap on the universal flange.

9.2. Disposal

If no return or disposal agreement has been agreed to, send the dismantled components for recycling:

► scrap the metal parts

► send plastic parts for recycling.

10. Technical data

10.1. Safe-T Connect

	Units	Safe-T Connect
Mains adapter voltage	V DC	9
Batteries		4 x AAA
Protection class		IP 21
Max. load on external floating contact		
External input IN2	V/mA	not less than 12/20
External output (Out)	V/A	24/2 max.
Max. operating pressure	bar	16
Max. operating temperature	°C	10...30
Working temperature	°C	10...60
Max. required torque	Nm	2
Pressure sensor	bar	0...16

10.2. Flow performance

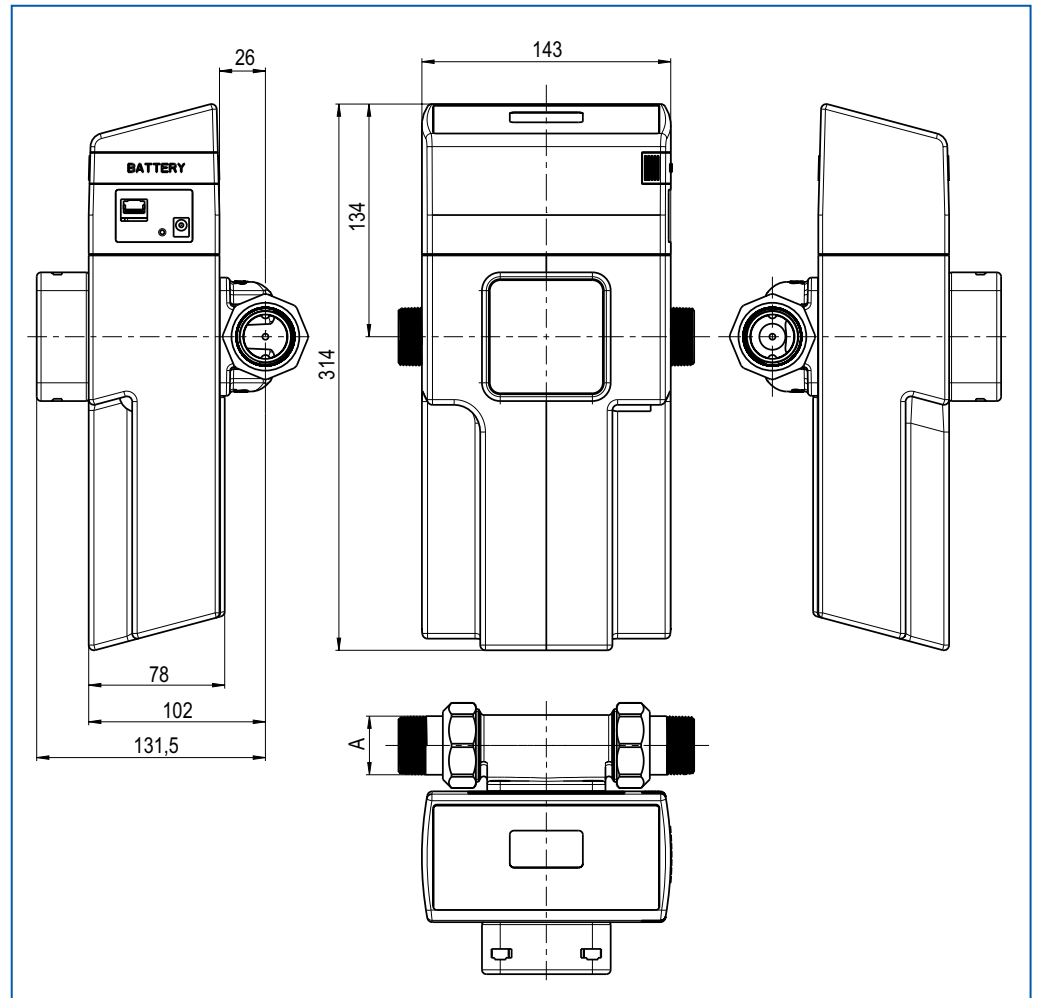|	DN 20	DN 25	DN 32
Δp 0.2 bar	2.0 m³/h	2.3 m³/h	2.5 m³/h
Δp 0.5 bar	3.5 m³/h	3.8 m³/h	4.0 m³/h
Δp 1.0 bar	5.2 m³/h	5.7 m³/h	6.0 m³/h

10.3. Dimensions

Fig. 12: Dimensional drawing, Safe-T Connect