DEHOUST

CONNECT-control unit

Operating manual

For the operation and monitoring of:

Rainmanager®
C-Class *CONNECT*

Break tank station
CONNECT

Hybrid system
CONNECT

Valid from version: 1.1

Last update: November 2016

Inhaltsverzeichnis

1. Safety advice

1.1. Reference to other instructions

To ensure safe and trouble-free operation of the system, the following instructions should also be taken into account along with this operating manual. The instructions for external appliances must also be taken into consideration.

- Installation and start-up instructions for CONNECT break tank station, CONNECT hybrid system and Rainmanager® C-Class CONNECT.

1.2. Safety advice in these instructions

	Instructions labelled with this symbol provide advice on technical information and tips for usage which should avoid any damage to the system. This symbol does not denote safety advice.
	Instructions labelled with this symbol indicate that minor bodily injury or minor material damage can occur if the precautionary measures are not heeded.
	Instructions labelled with this symbol indicate that death, severe bodily injury or considerably material damage can occur if the precautionary measures are not heeded.

1.3. General safety advice

This operating manual contains basic instructions which should be taken into account during operation. The valid data, operating conditions and usage conditions specified in the technical datasheet and installation and maintenance manual must be taken into when using the CONNECT control unit.

	After a software update, the new operating manual should be followed.
	This operating manual is only valid in connection with the corresponding installation and maintenance instructions!

- Never exceed the permitted limits of use stated in the installation and start-up instructions with regards pressure, temperature, etc.
- Follow all the safety advice and handling instructions in this operating manual.
- Instructions displayed directly on the CONNECT system must be heeded and must be kept in a completely legible condition.
- This applies to:
    - Safety advice
    - Labels regarding connections
    - Type plate
- Before assembly and start-up, the operating manual must be read by the user and the responsible specialist/operator. The manual must always be available in the place of use.
- Installation and maintenance work must only be carried out by an authorised professional with suitable tools.
- The technical condition of the CONNECT system must be checked at regular intervals by the operator.
- Local safety and accident regulations must be complied with when operating the CONNECT system.
- The generally accepted rules of technology must be complied with for the assembly and operation of the CONNECT system.
- No changes to the CONNECT system are permitted. Any changes will lead to any warranty claims being void.
- A defined or controlled restart of the process must be guaranteed after any interruption to the electricity or fluid supplies.

- The operator is responsible for complying with the local conditions that are not detailed in this operating manual.

1.4. Further safety conditions

As well as the safety advice listed in this operating manual and the proper use, the following safety conditions apply:

- Accident prevention regulations, safety and operating conditions
- Safety conditions when dealing with hazardous substances
- Valid standards and legislation, particularly the following standards: EN 12056, EN 1717, EN 806.

1.5. Consequences and risks of non-compliance with the manual

- Non-compliance with this operating manual will lead to the loss of any warranty and damage claims.
- Non-compliance can result in the following risks:
    - Danger to persons use to electrical, thermal, mechanical and chemical impacts.
    - Failure of important functions of the product.
    - Failure of instructed methods for maintenance and repairs.
    - Danger to the environment due to the leakage of hazardous substances.

1.6. Duty of care of the operator

The CONNECT system has been designed and constructed whilst taking into account a risk assessment and after careful selection of the harmonised standards to be complied with and other technical specifications. This means the product conforms to the state of technical knowledge and guarantees a maximum level of safety. But this safety can only be achieved in operational practice if all the measures needed for this are met. It is the operator's duty of care to plan these measures and check their execution. In particular, the operator must ensure that

- the CONNECT system is only used as intended.
- the CONNECT system is only operated in a flawless, functional state.
- the operating manual is always in a legible condition and available in its entirety at the CONNECT system's place of use.
- only sufficiently qualified and authorised personnel assemble the CONNECT system, commission it, repair it and carry out maintenance on it.
- these personnel are regularly instructed in all the relevant issues of occupational safety and environmental protection, as well as ensuring that they have read and understood the operating manual and, specifically, the safety advice contained therein.
- none of the safety and warning signs attached to the CONNECT system are removed and that all remain in a legible state.
- any additional risks which arise due to the specific working conditions at the place of use of the CONNECT system are recognised as part of a risk assessment (in the sense of the German Occupational Safety and Health Act § 5 or the equivalent legislation in the country of use).
- all additional instructions and safety advice arising from the risk assessment are compiled in a user guide (in the sense of German Work Equipment Usage Ordinance § 6 or the equivalent legislation in the country of use).
- the duct routing is assessed sufficiently.

1.7. Safety advice for maintenance, inspection and assembly work

- The CONNECT system must only be altered or modified with the consent of the manufacturer.
- Only use original parts or those authorised by the manufacturer. Using other parts can void your warranty for any consequences resulting there from.
- Only work on the machine when it is turned off.

- The parts of the system must be at the ambient temperature.
- Reattach or restart any safety and protection equipment immediately after work has been completed.
- Before restarting the equipment, ensure the listed points for start-up have been taken into account.
- Keep any unauthorised persons (e.g. children) away from the CONNECT system.

1.8. Duty to register process water plants

Please make sure if process water plants must be registered with the relevent authorities (regional water authority, building authorities, local health authorities) when being started up or decommissioned.

1.9. Requirements of operating personnel

The CONNECT system must only be assembled, commissioned, repaired and decommissioned by persons who have been trained, instructed and authorised for this purpose. If necessary, training can be provided the manufacturer/supplier at the request of the operator. Training sessions for the CONNECT system must only be carried out under the supervision of technical professionals. The relevant authorisations of personnel must be clearly specified by the operator in the form of an operating manual. In addition, special qualifications are required for the following activities:

- Work on the electrical equipment must only be carried out by trained electricians.
- Assembly, maintenance and repair work must only be carried out by qualified professionals.

The basic regulations for occupational safety and accident prevention must be heeded.

2. General informationen

The operating manual is part of the specified series and its models. The operating manual describes the proper and safe use of the equipment in all operating phases. The type plate states the series and size, the most important operational data and the serial number. To maintain any warranty claims in the case of damage, the authorised dealer must be notified immediately with information of the installation site and serial number of the machine.

2.1. Warranty and liability

The general delivery conditions and terms of sale of DEHOUST shall apply. Any warranty and liability claims for personal or material damage are void if they can be attributed to one or more of the following causes.

- Improper use of the CONNECT system.
- Improper assembly, commissioning, operation and maintenance of the CONNECT system.
- Non-compliance with the instructions in the manual regarding operation of the CONNECT system.
- Unauthorised structural modifications to the CONNECT system.
- Improperly executed repairs.
- Disasters caused by third party exposure and force majeure.

3. Operation of the *CONNECT* control unit

The CONNECT control unit is equipped with a colour touchscreen display and reacts to the functional graphics being pressed. To switch on / switch off the CONNECT control unit, the main switch of the CONNECT system is pressed.

3.1. Operating interfaces

The operating interface of the CONNECT control unit is activated by touching the touchscreen display.

Inputs, changes and operation of buttons are activated and carried out by directly pressing the relevant graphic.

The user interface consists of two segments. In the left segment, the CONNECT system is shown graphically with the basic units. The main menu is found in the right segment, in which system-specific parameters can be changed.

Components shown in black are currently inactive.

Components shown in green are currently active.

Components shown in red have a fault or are disabled.

3.1.1. Operating interface for break tank station

The user interface for the operation and monitoring of an *STS break tank station* must fulfil the following component settings, which will be explained in more detail later in this operating manual:

Process water supply pump available: no (see chapter 3.3.6)

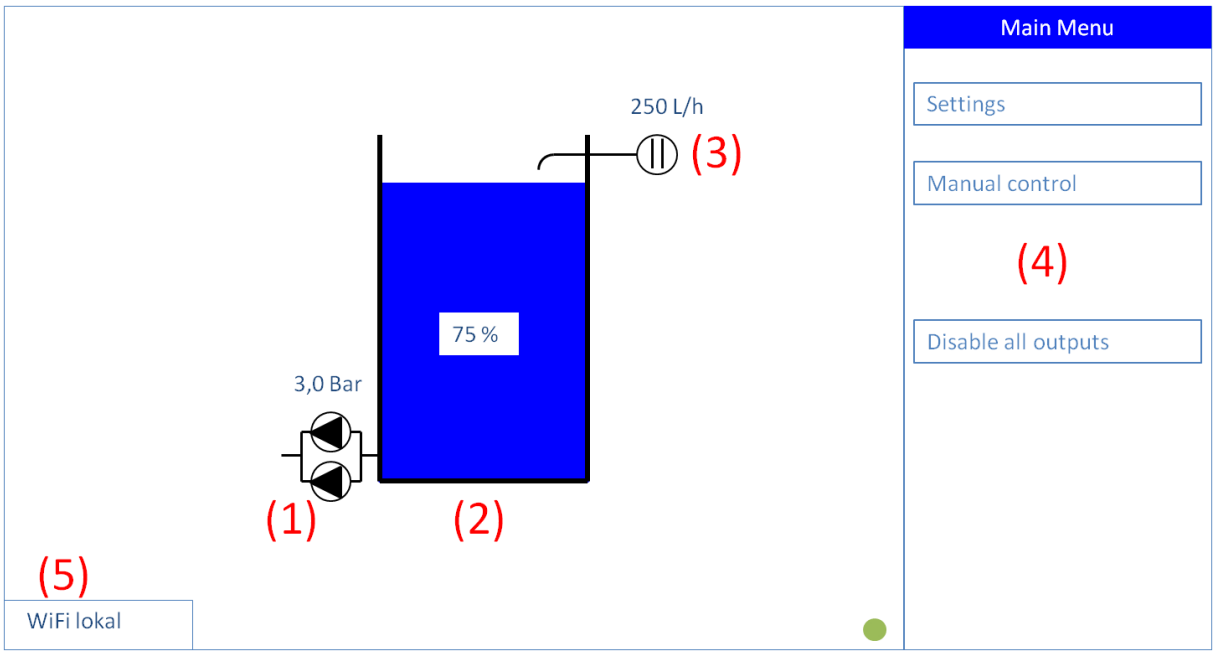

Figure 1: Operating interface for safety isolating station

(1) Double pump system with actual pipeline pressure

(2) Process water storage tank with actual filling level display

(3) Ball valve of mains water back-up with current flow rate volume

(4) Main menu with sub menus of settings, manual control and block all outputs.

(5) Status of current internet connection

3.1.2. User interface for hybrid system and Rainmanager® C-Class

The user interface for the operation and monitoring of a hybrid system or a Regenmanager® C-Class must fulfil the following component settings, which will be explained in more detail later in this operating manual:

Process water supply pump available: Yes (see chapter 3.3.6)

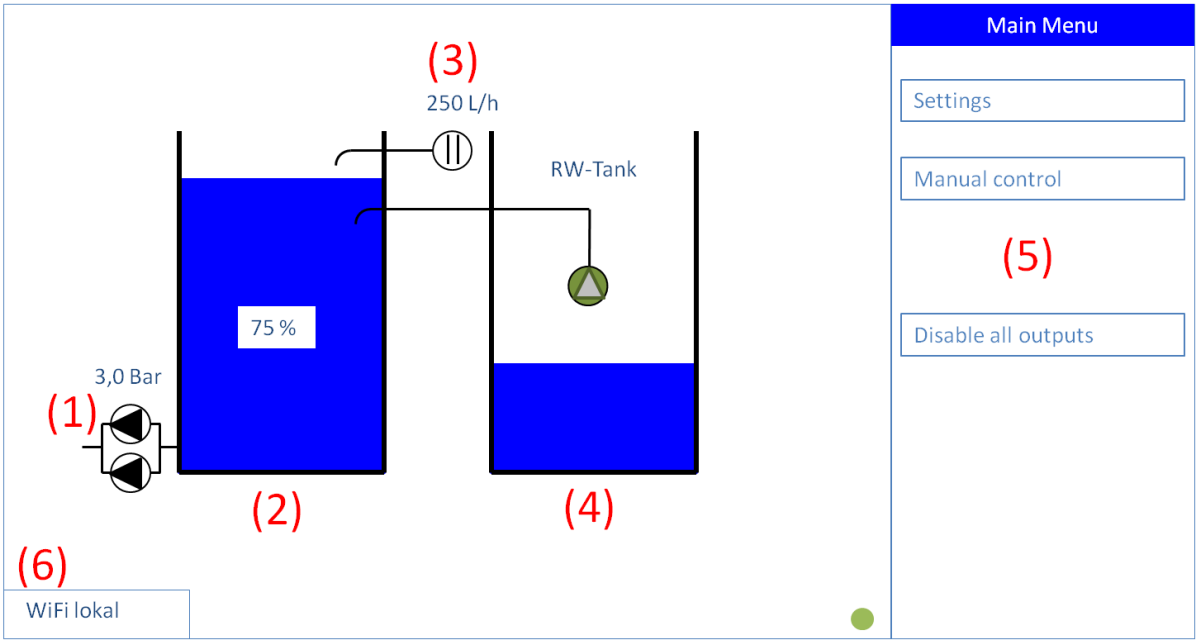

Figure 2: user interface for hybrid system and Rainmanager C-Class

(1) Double pump system with actual pipeline pressure

(2) Process water storage tank with actual filling level display

(3) Ball valve of mains water back-up with current flow rate volume

(4) External rainwater cistern with process water supply pump

(5) Main menu with sub menus of settings, manual control and block all outlets

(6) Status of current internet connection

3.2. Setting up the WLAN internet connection

To connect the CONNECT control unit with a durable internet connection via WLAN, the Wifi status must first be set to “local”.

To do this, the [WiFi local] button is pressed (see Figure 3), so that “WiFi local” is activated. The CONNECT control unit works as its own internet hotspot in this status.

Using your own smartphone or tablet, connect to “DehoustConnect” as the WLAN network.

Open the internet browser and enter the following IP address into the address line: 192.168.1.1.

Now select the in-house WLAN network and enter and confirm the requested network key. The CONNECT control unit then connects automatically with the in-house WLAN network when the key is entered successfully.

Change the WiFi status to “WiFi online” by pressing the [WiFi local] button again. The CONNECT control unit is now connected with the WLAN network.

The correct WLAN internet connection is shown by a small green dot (see Figure 3).

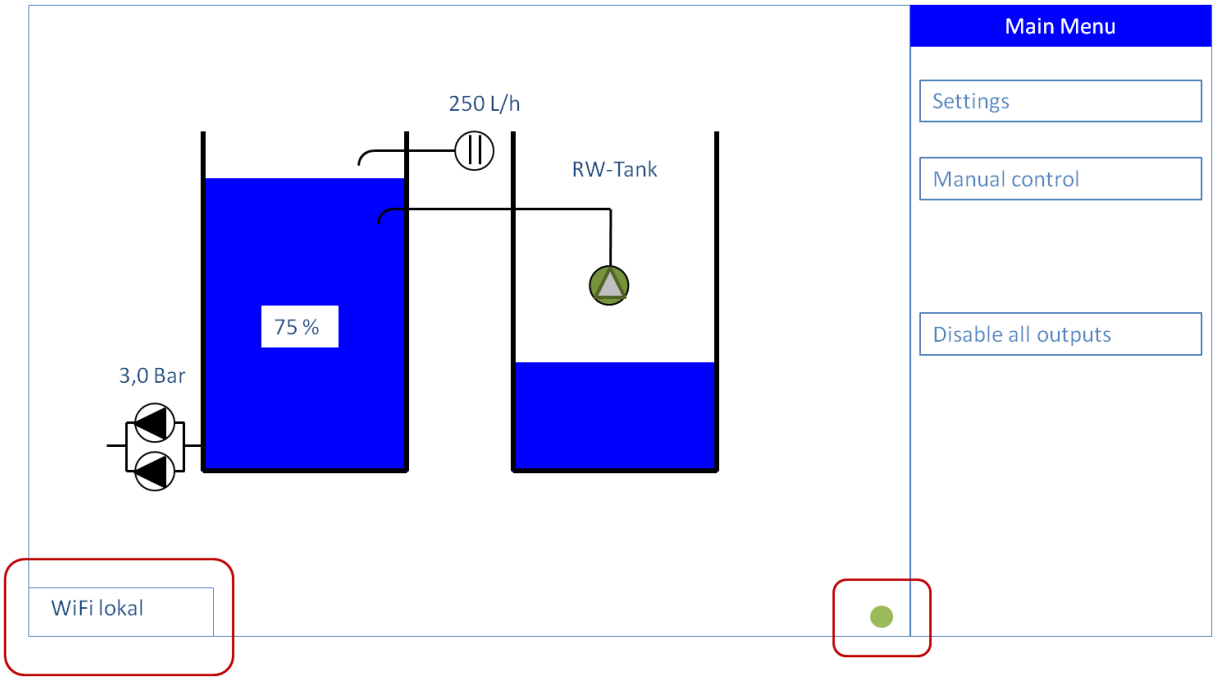

Figure 3: Setting up the WLAN internet connection

3.3. Settings

By pressing the [Settings] button, the menu of the system-specific parameters is opened (see Figure 4). By confirming the [Back] button, the [Settings] menu is closed and the [Main menu] called up.

The system-specific settings will be explained in more detail below.

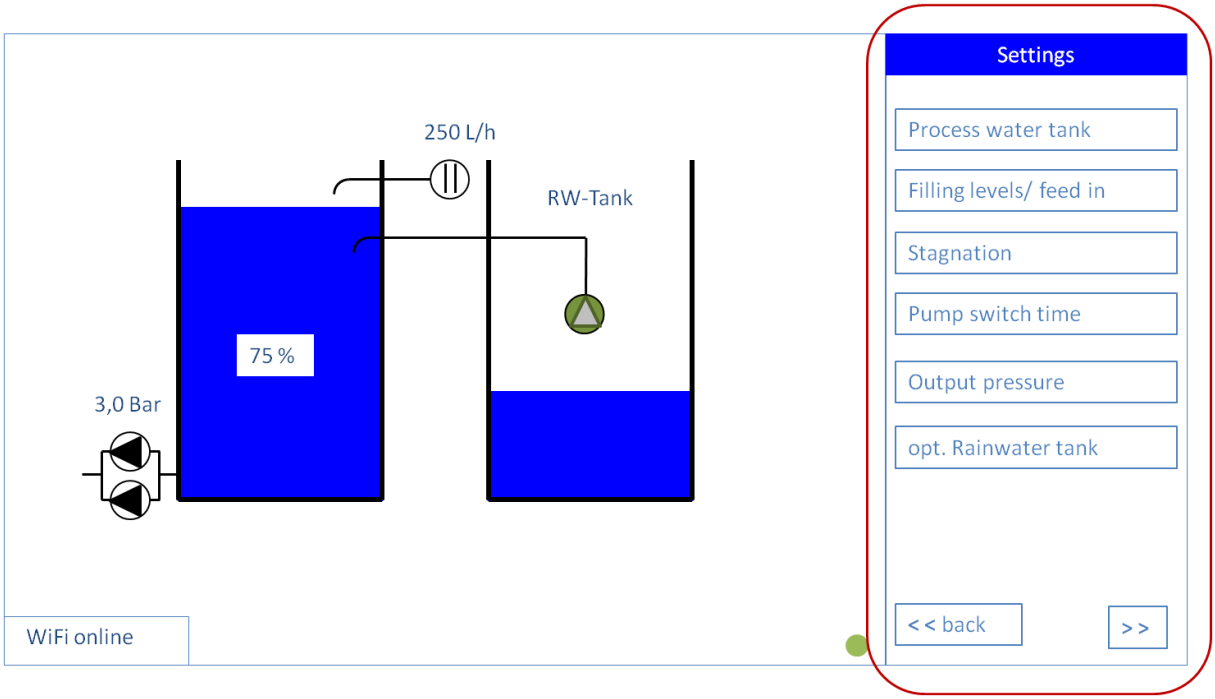

Figure 4: Settings for process water storage tank

3.3.1. Settings for process water tank

Any tank, in which mains water feed occurs and to which the pressure booster is connected is labelled as a process water tank.

Min filling level	Defines the filling level as a percentage in the process water storage tank, at which the dry-run protection of the pressure booster becomes active and the pressure booster automatically deactivates.
Tank height 120 %	Defines the height measured in metres from the lower edge of the emergency overflow connection to the base of the process water storage tank.
Emergency operation limits	Defines the filling level as a percentage in the process water storage tank, at which the second pump of the pressure booster is automatically deactivated so the dry-run protection is not entered.
✓	Acceptance of modified values
X	Rejection of modified values

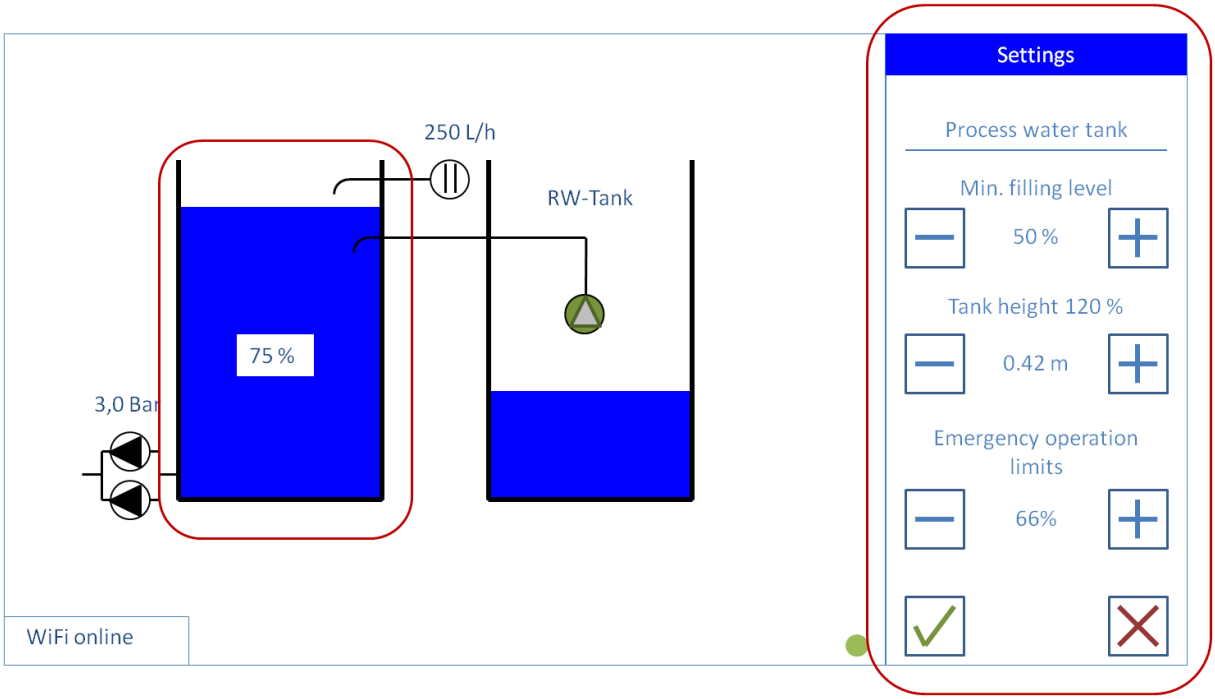

Figure 5: Settings for process water tank

3.3.2. Settings for filling level / back-up

Mains water from	Defines the filling level as a percentage in the process water tank, at which the mains water feed is activated
Rainwater from	Defines the filling level as a percentage in the process water tank, at which the process water supply pump is activated and rainwater is fed into the process water tank from an external rainwater cistern.
Filling up to	Defines the filling level as a percentage in the process water tank, at which the mains water and rainwater feed is deactivated
✓	Acceptance of modified values
X	Rejection of modified values

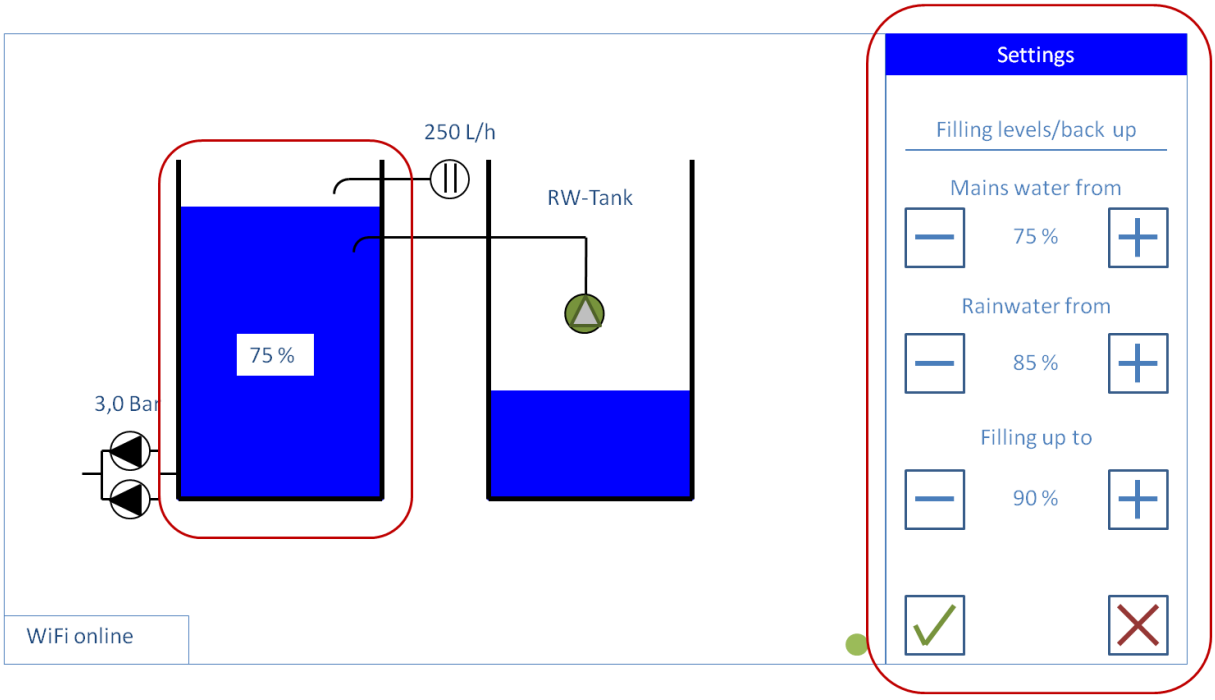

Figure 6: Settings for filling level / back-up

3.3.3. Settings for stagnation protection

Stagnation time	Defines the time interval in days, for which the mains water feed becomes activated and the mains water line is thus flushed to protect against stagnation. The process water tank overflows the emergency overflow connection during this procedure. ⚠ The installation room is at risk of flooding if the emergency overflow connection is not attached to the sewer connection.
Line flushing time	Defines the time interval in minutes, for which the mains water feed remains activated before this is deactivated again.
✓	Acceptance of modified values
X	Rejection of modified values

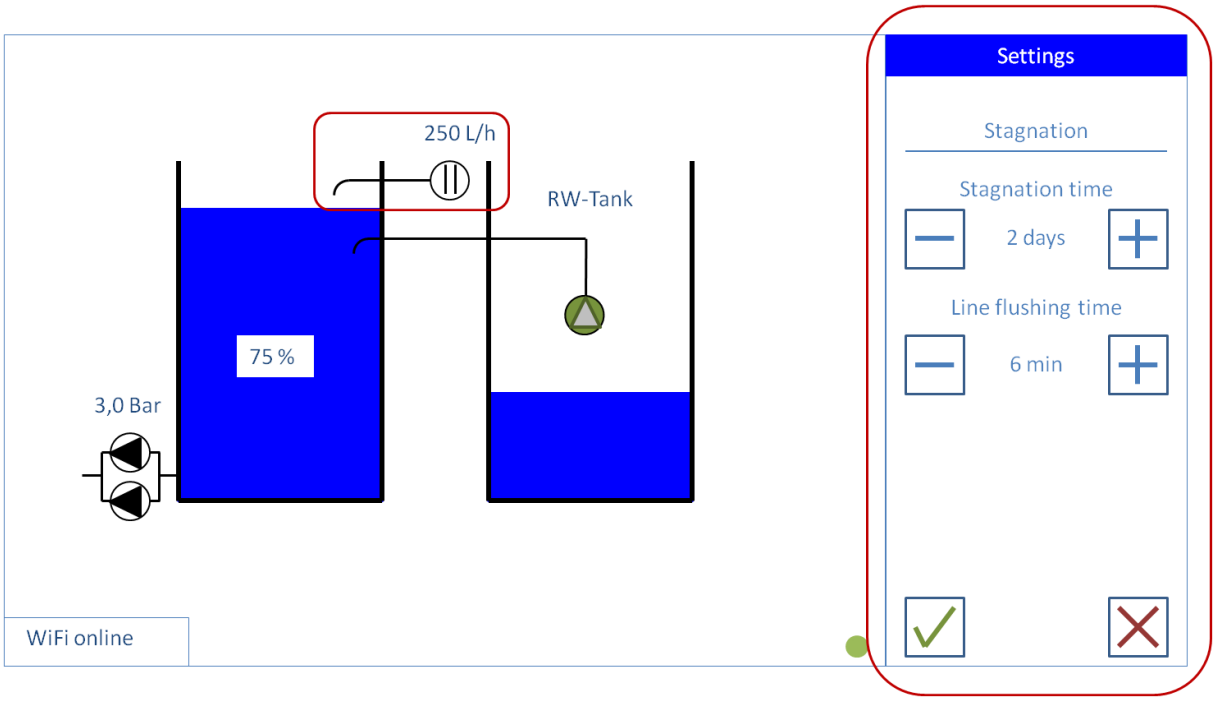

Figure 7: Settings for stagnation protection

3.3.4. Settings for pump cycle time

Pump cycle time	A) Defines the delay interval in seconds, at which the pressure booster becomes activated when registering the defined start-up pressure. B) Defines the delay interval in seconds, at which the second pump of the pressure booster becomes activated when registering the defined start-up pressure. C) Defines the delay interval in seconds, at which the pressure booster becomes deactivated when registering the defined cut-off pressure (follow-up time).
✓	Acceptance of modified values
X	Rejection of modified values

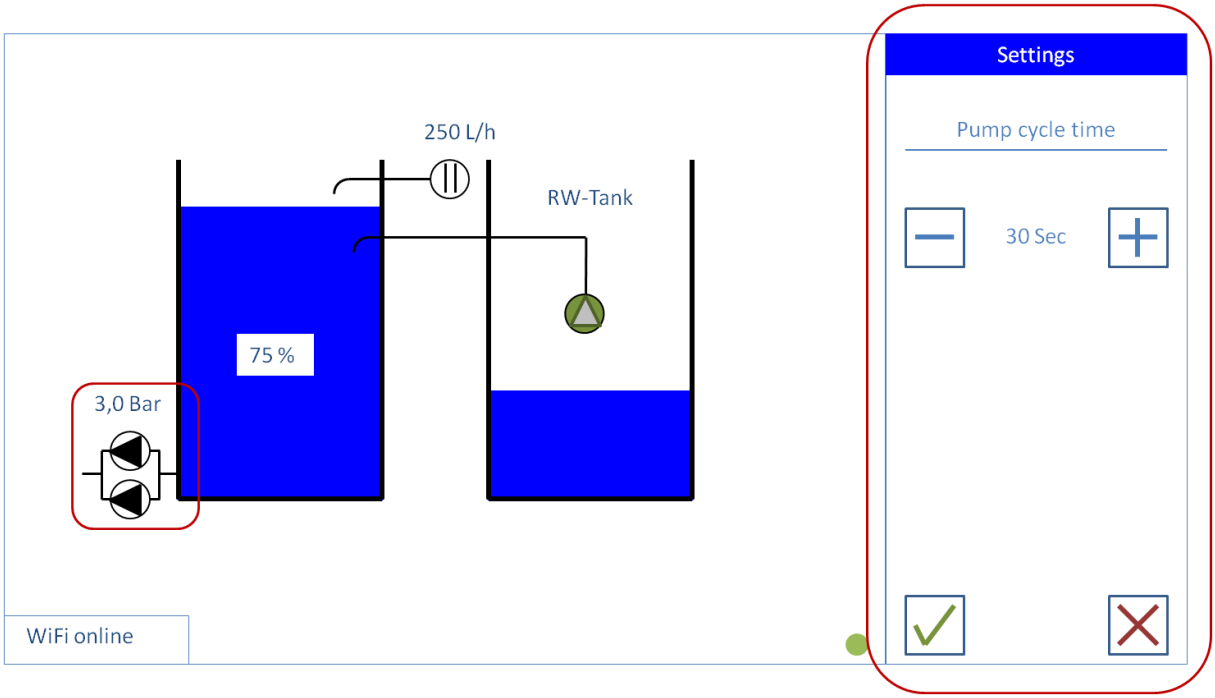

Figure 8: Settings for pump cycle time

3.3.5. Setting of switching pressures of pressure pumps

Min. output pressure	Defines the start-up pressure in bar, at which the first pump of the pressure booster is activated. The second pump of the pressure booster is switched on as soon as the min. output pressure has dropped by 0.8 bar.
Max. output pressure	Defines the cut-off pressure in bar, at which the follow-up time of the pressure booster is activated and the pressure booster is then deactivated.
✓	Acceptance of modified values
X	Rejection of modified values

The inputted output pressure must be at least 0.3 bar beneath the maximum feed pressure of the installed pressure pump, as the pressure pump would never be deactivated otherwise.

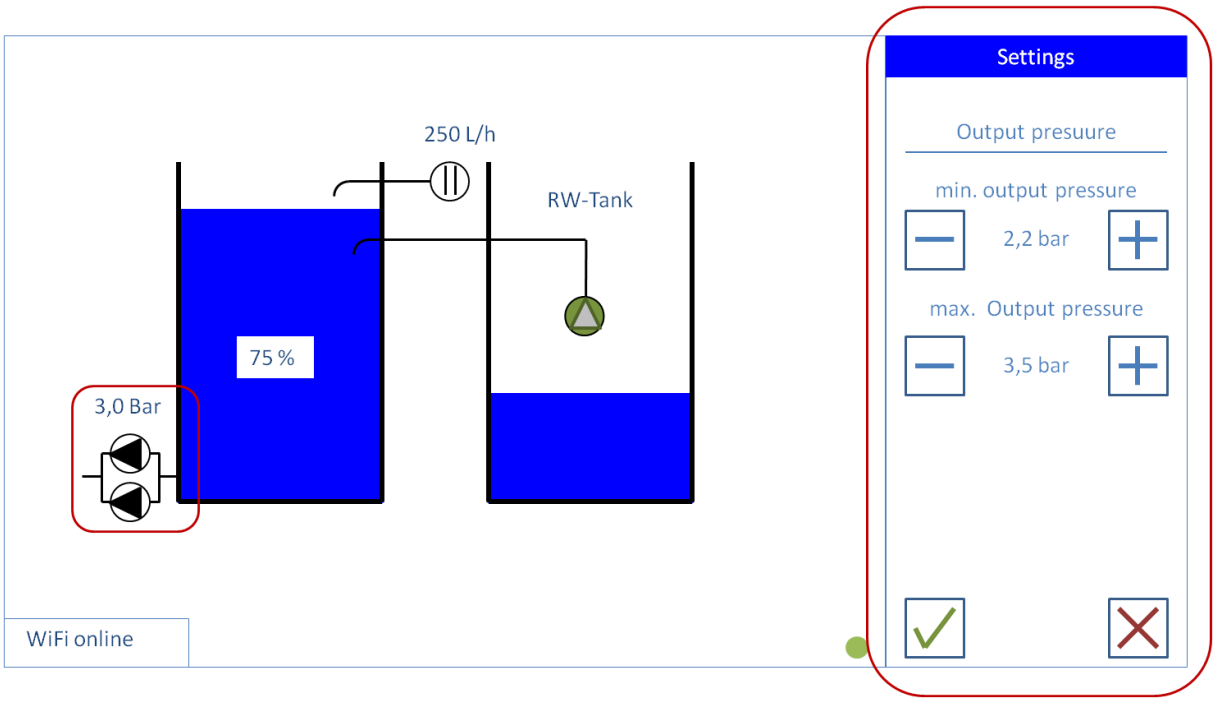

Figure 9: Settings for output pressure

3.3.6. Settings for external rainwater cistern

Supply pump available yes / no	Defines the operating mode, whether a process water supply pump exists in an external rainwater cistern and should be activated for rainwater feed-in or not.
Rainwater sensor available yes / no	Defines the operating mode, whether a filling level display exists in an external rainwater cistern and if this should be activated for monitoring purposes or not. Available as an optional accessory (Article Number 812448).
RW-tank height 100%	Defines the height measured in metres from the lower edge of the overflow connection to the base of the external rainwater cistern.
✓	Acceptance of modified values
X	Rejection of modified values

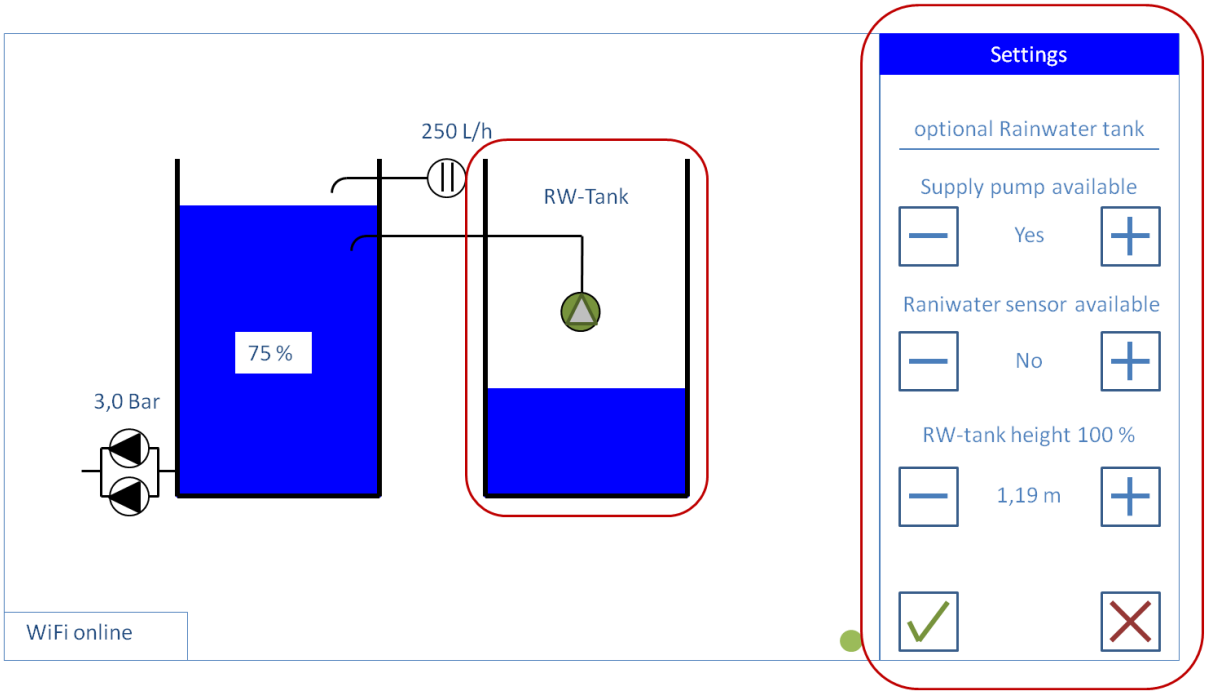

Figure 10: Settings for external rainwater cistern

3.4. Manuel control

By pressing the [Manual control] button, the menu of the manual control of components is opened (see Figure 11). By confirming the [Back] button, the [Manual control] menu is closed and the [Main menu] called up.

By pressing the relevant button of a component once, this is activated and highlighted in green in the graphic. The activated component is deactivated again by pressing the corresponding button again.

Pump 1	Activates the first pump of the pressure booster.  There is the risk of the process water storage tank being pumped until it is empty and the pumps therefore running dry and hot.
Pump 2	Activates the second pump of the pressure booster.  There is the risk of the process water storage tank being pumped until it is empty and the pumps therefore running dry and hot.
Back-up	Activates the electrical ball valve of the mains water back-up.  There is the risk of the process water storage tank overflowing.
Supply pump	Activates the process water supply pump.  There is the risk of the external rainwater cistern being pumped until it is empty and the process water storage tank overflowing and the supply pump therefore running dry and hot.

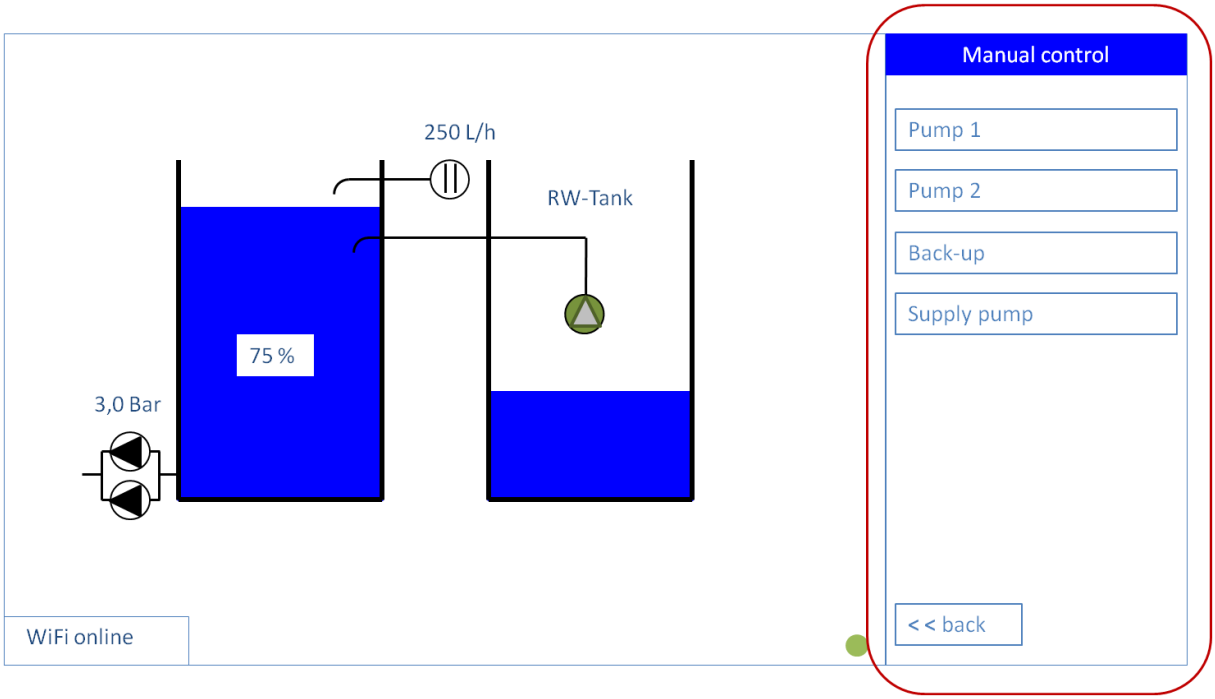

Figure 11: Manual control of components

3.5. Disable all outputs

By tapping on the button [Disable all outputs], the colour of the button changes from blue to red.

In this mode, the following components are blocked / deactivated and are no longer available for automatic activation:

- Pumps of the pressure booster,

- Electrical ball valve to the mains water feed,

- process water supply pump.

By tapping the button again [Disable all outputs], the components are released again for automatic activation. The button changes from red to blue.

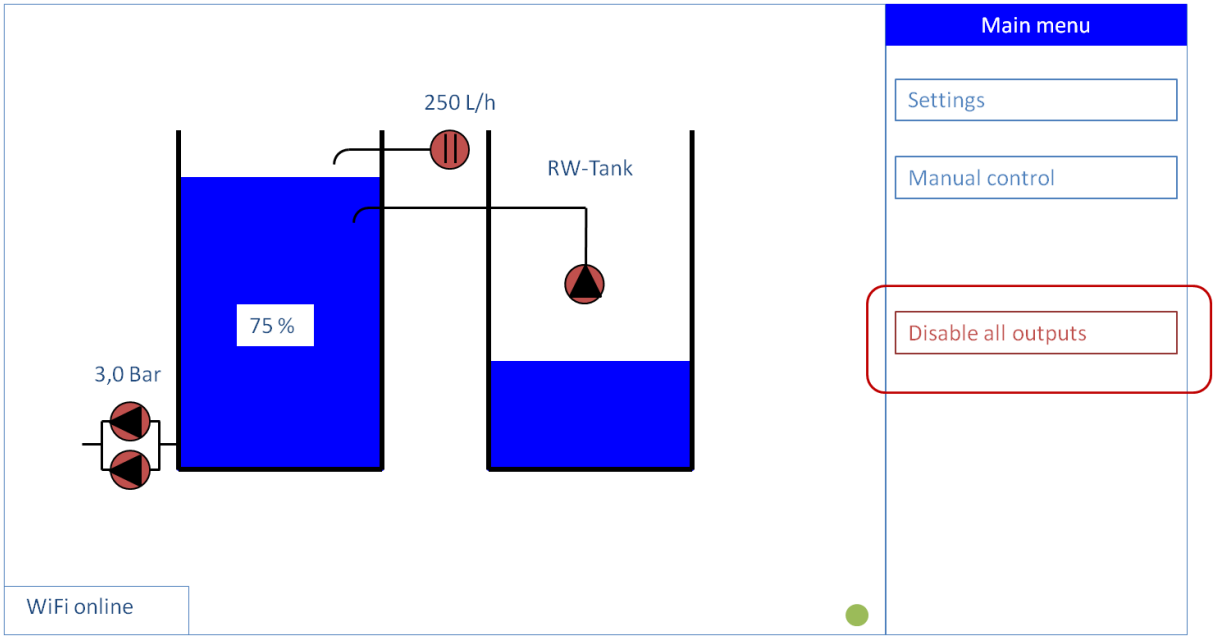

Figure 12: Disable all outputs; here: red mode = active

4. Errors / Troubleshooting

All error messages are displayed with red highlighting on the touchscreen display of the CONNECT control unit (see Figure 13).

Error messages that need acknowledging are acknowledged by pressing the function button (X) on the touchscreen display once.

Error messages, which do not need acknowledging, are automatically acknowledged after troubleshooting.

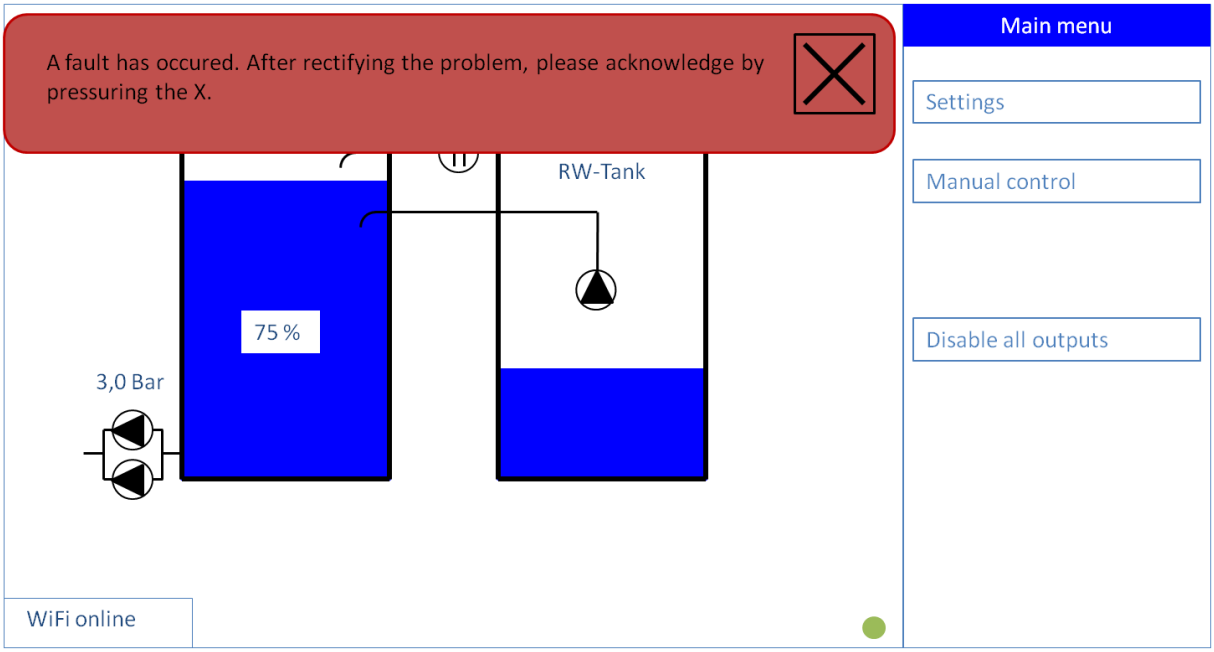

Figure 13: Display of error messages on the user interface

If the cause of the error has not first been rectified, the error message either cannot be acknowledged or the error message will promptly appear again on the touchscreen display.

Table 1: Error messages and operating problems

Error Code	Brief description	Measure / possible causes	Execution
	Faults in the process water storage tank		
Filling level sensor defective or not connected	The filling level sensor on the process water storage tank is either defective or not correctly connected. The mains water feed and pressure booster have been blocked.	Inspection of the filling level sensor (wire breakage, short circuit, correct connection	Service
Overflow protection activated. Feed-in	The filing level in the process water storage tank is > 120%.- The mains water feed(s) and supply pump have	Inspection of the electrical ball valve of the mains water feed.	Operator / service

blocked. The drinking water feed(s) and supply pump have been blocked.	been blocked. Fault must be acknowledged after troubleshooting.	Inspection of the control relay of the supply pump Inspection of the calibration of the filling level of the process water storage tank.	
Dry-run protection activated.	The filling level in the process water storage tank is lower than the defined min. level. The pressure booster has been blocked.	Inspection of the process water storage tank for leakages. Inspection of the interplay of max. feed volumes of the pressure booster and max. mains water feed-in volume.	Operator / Service
Electrical ball valve of the mains water feed			
No flow rate on the supply line to the ball valve	No water flow is detected during the mains water feed-in procedure to the ball valve. The ball valve is closed. Fault must be acknowledged after troubleshooting.	Inspection of the stopcock in the mains water feed-in line.	Operator
No feedback from valve bus	The electrical control head on the ball valve of the mains water feed is not in contact with the CONNECT control unit.	Inspection of the electrical ball valve of the drinking water feed.	Service
Pressure booster			
No flow rate and / or line pressure drops while pressure pumps are running	The pressure sensor in the process water pressure line is either defective or not correctly connected. The pressure booster has been blocked.	Inspection of the pressure sensor (wire breakage, short circuit, correct connection)	Service
External rainwater cistern			
The process water supply pump is defect.	Despite activated process water supply pump, the filling level in the process water storage tank does not rise.	Inspection whether external rainwater cistern is sufficiently filled with water and supply pump is not in the dry-run protection. Check supply pump is working.	Operator Service
Filling level sensor for	The filling level sensor in the external	Inspection of the filling level	Service

rainwater cistern does not work..	rainwater cistern is either defective or not correctly connected.	sensor (wire breakage, short circuit, correct connection)