BigFarmNet manager

# HydroMix*pro*

Code No. 99-94-0626 GB

Edition: 09/2024

New Copyright

## Copyright



## Liability

The manufacturer or distributor of the hardware and software described herein shall not be liable for any damage (such as the loss or illness of animals or the loss of other opportunities for profit) caused by failure of the system or incorrect use or operation.

We are constantly working on further developing the computer and the software and also consider user preferences. Please let us know if you have ideas or suggestions for improvement and modification.

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# 1 System description

The **Big Dutchman** HydroMix system is a computer-controlled feeding system for the fully automatic feeding of sows, piglets and finishing pigs for any size of operation. It mixes together various liquid and solid feed components to form a pumpable mix (liquid feed) which is then distributed in weighed doses via feed valves in the pig house.

HydroMix is a modular system that can be used to realize multiple system concepts.

HydroMix is controlled by the HydroMix*pro* application with the BigFarmNet Manager software. The software allows configuring all necessary settings for the feeding process.

## 1.1 Licenses

The HydroMix*pro*application uses the 510pro as control computer. The 510pro control computer controls a maximum of one HydroMix system. The number of control computers per network is not limited.

The following software licenses are **required** to run the HydroMix*pro* application:

| Code no. | BigFarmNet Manager license | Use |
|---|---|---|
| 91-02-6601 | License 510 – BigFarmNet HydroMix | 1 per 510pro |
| 91-02-6568 | Software BFN Manager on USB stick | 1 per BigFarmNet network |

**Additionally**, a license for the Pig Manager and/or the Sow Manager is **necessary**:

| Code no. | BigFarmNet Manager license | Use |
|---|---|---|
| 91-02-6559 | BigFarmNet Manager – Pig Manager | 1 per BigFarmNet network |
| 91-02-6555 | BigFarmNet Manager – Sow Manager | 1 per BigFarmNet network |

The following software licenses are **optional**:

| Code no. | BigFarmNet Manager license | Use |
|---|---|---|
| 91-02-6551 | BigFarmNet Manager per additional PC/ MC700 | In case animal and system data in BigFarmNet Manager are to be available on additional computers |
| 91-02-6558 | BigFarmNet Manager – Sow management < 1000 sows | 1 per BigFarmNet network |
| 91-02-6566 | BigFarmNet Manager – Sow management 1000 - 3000 sows | |
| 91-02-6567 | BigFarmNet Manager – Sow management > 3000 sows | |
| 91-02-6564 | License BigFarmNet – Web Access Pig | Access via the user's smartphone or tablet |

## 1.2 System limits

| | |
|---|---|
| 10,000 | Sows |
| 100,000 | Finishing pigs |
| 50 | Feed circuits |
| 1,200 | Feed valves |
| 20 | Mineral dosing units / Medicators |
| 100 | Feed curves |
| 100 | Components (from HydroMix system) |
| 50 | Recipes |
| 200 | Feeding times |
| 50 | Eating timetables |

# 2 Setting up the BFN Manager PC and 510pro control computer

**NOTICE!**

Only service technicians may install and configure the control computer.


Figure 2-1: Control computer 510*pro*

To set up the 501*pro* control computer and the BFN Manager PC,

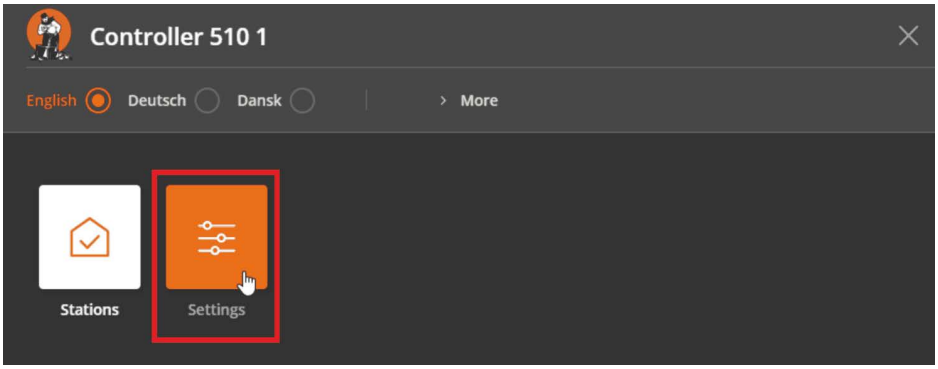
1. connect the 501*pro* control computer to the network,
2. check the communication between the 501*pro* control computer and the BFN Manager PC,
3. register the 501*pro* control computer in BFN Manager,
4. install the BFN software on the 501*pro* control computer,
5. assign the HydroMix application to the 501*pro* control computer and the farm structure in BFN Manager,
6. assign the electrical parts of the HydroMix system to the IO cards in the IO Manager.

**NOTICE!**

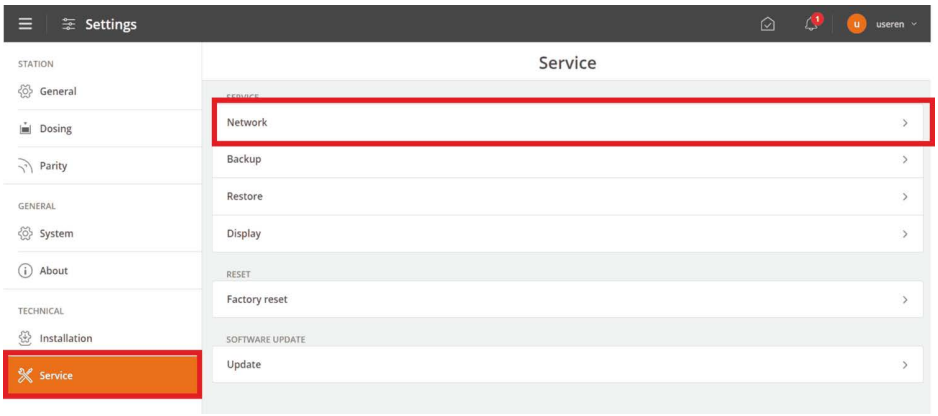
The operator's IT administrator is responsible for defining the static IP addresses.

## 2.1 Connecting the 510pro control computer to the network (assigning a static IP address)

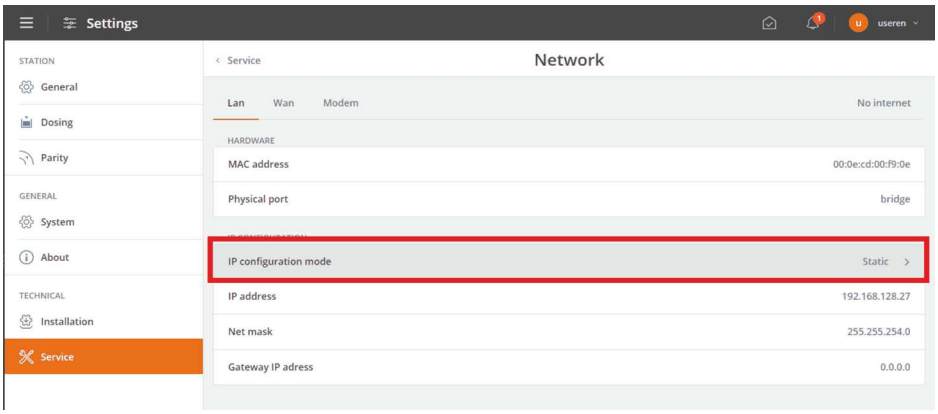
1. On the start screen, tap on **Settings**.



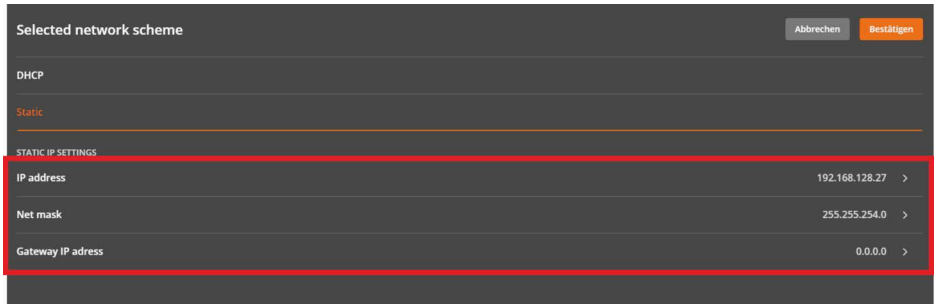

2. Tap on **Service** and then on **Network**.



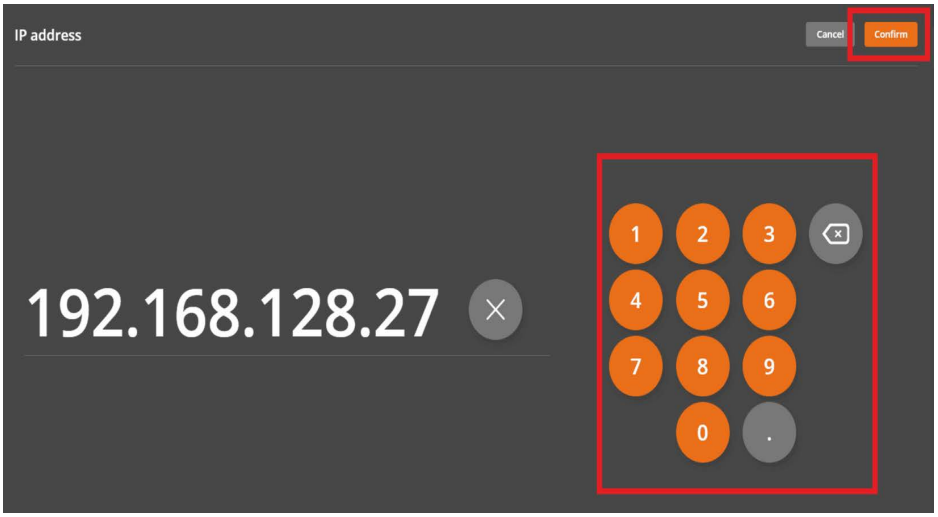

3. Tap on **IP configuration mode**.



4. Under "Selected network scheme", make sure that **Static** is selected.
5. Tap on **IP address**.




6. Enter the IP address defined for this control computer. Complete your input by tapping on **Confirm**.




7. Continue in this manner to enter the values for **Net mask** and **Gateway IP address**.

**NOTICE!**

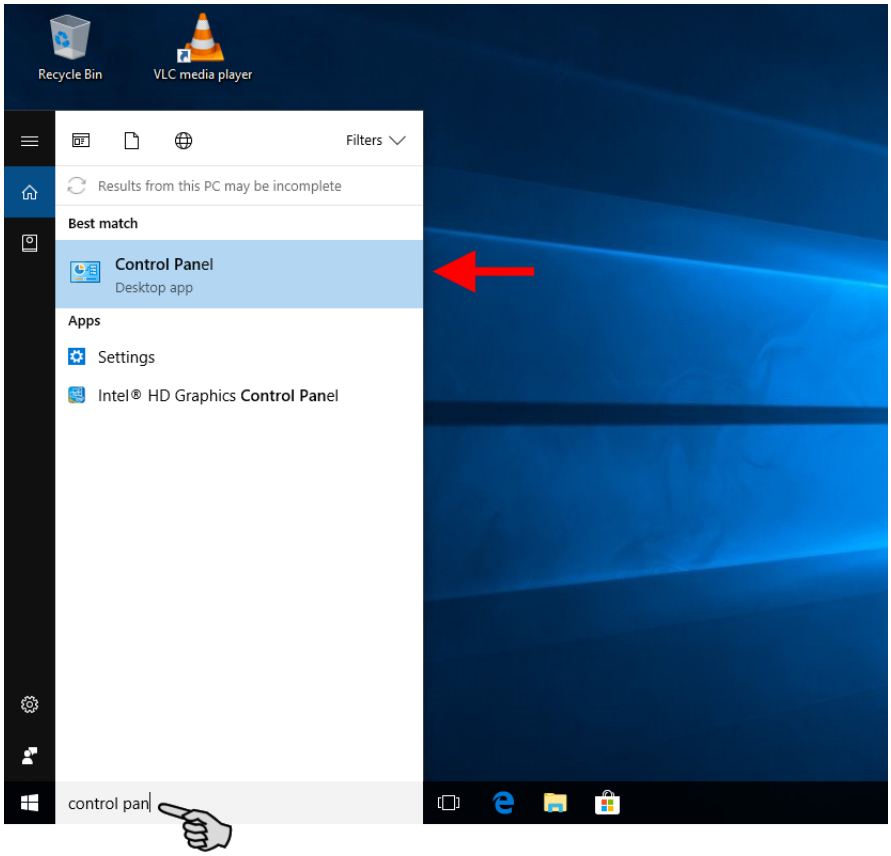
A static IP address must be assigned to the BFN Manager PC.

If necessary, assign this address via the network settings in the Windows control panel before setting up the 501*pro* control computer.

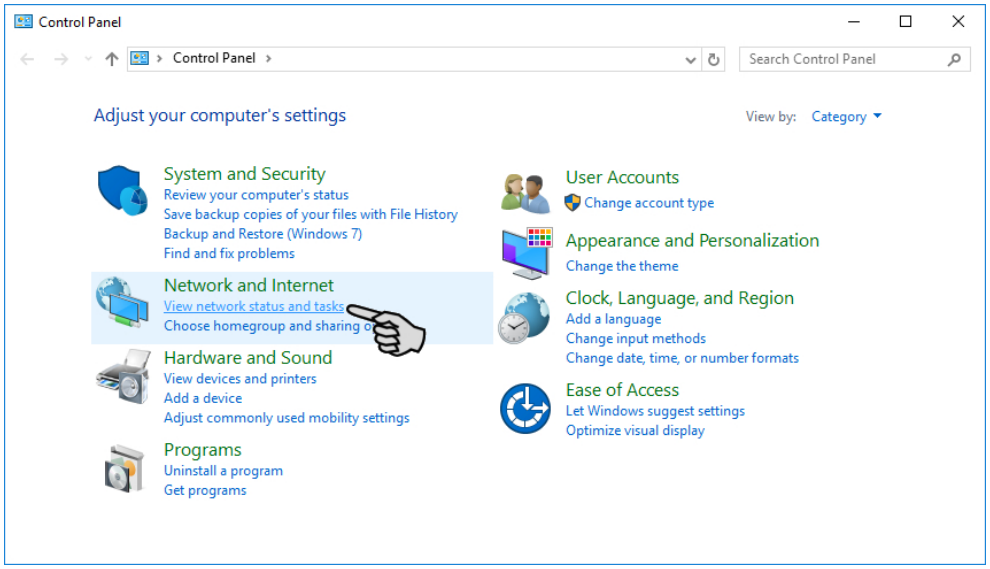
## 2.2 Manager PC: assigning a static IP address

### Windows 10 operating system

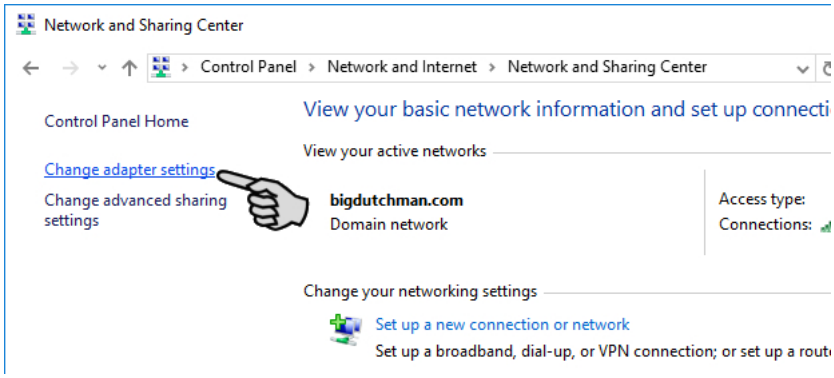
1. Open the **Control Panel** using the search field in the task bar.



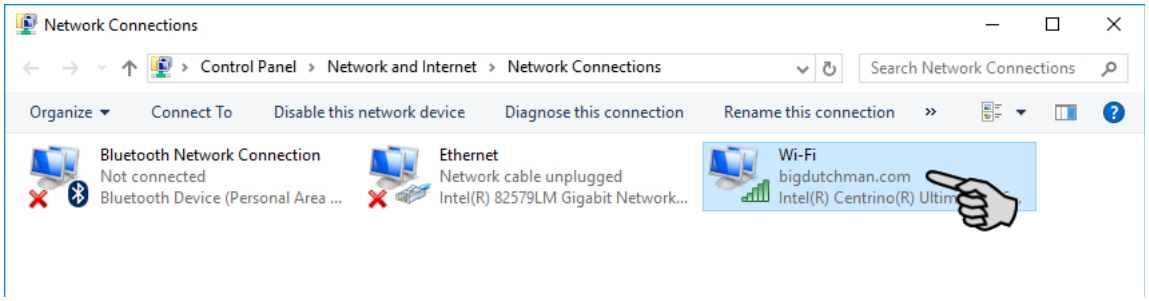

2. Click on **View network status and tasks** under **Network and Internet**.



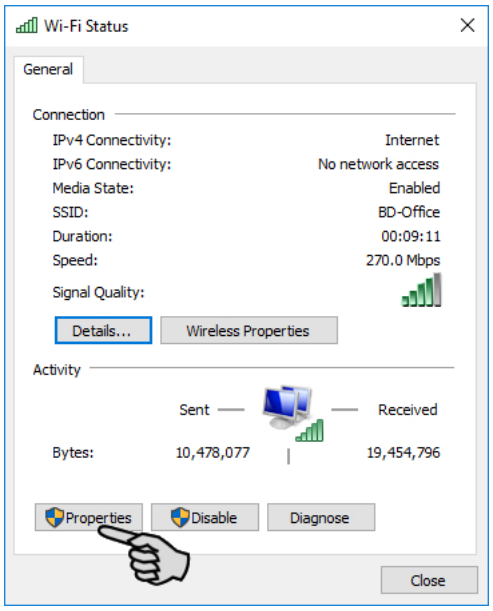
3. Click on **Change adapter settings**.



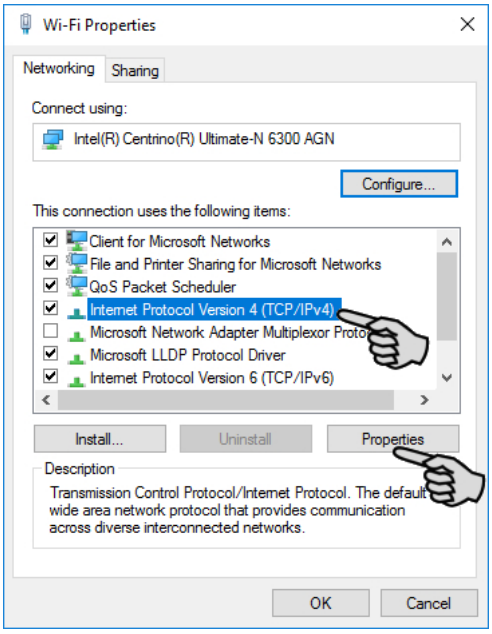

4. Double-click on **Wi-Fi**.



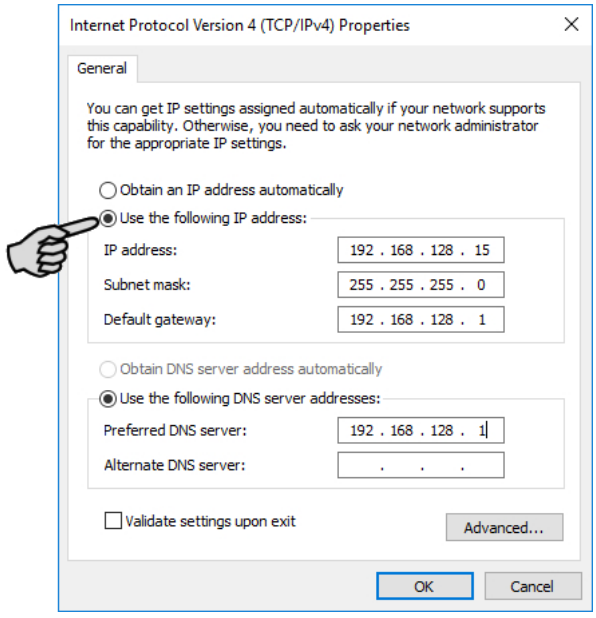

5. Click on **Properties**.



6. Select **Internet Protocol Version 4 (TCP/IPv4)** and click on **Properties**.



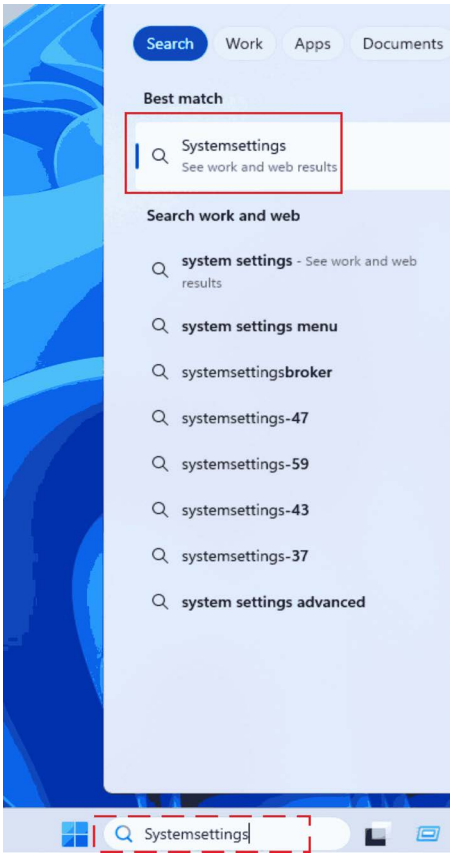

7. Enter a static IP address.



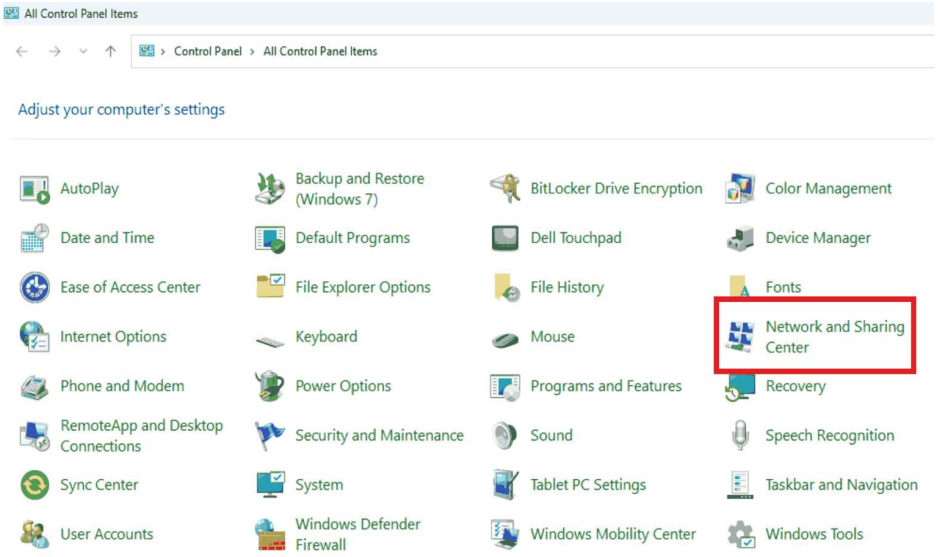

8. Confirm these inputs by clicking on **OK**.

### Windows 11 operating system

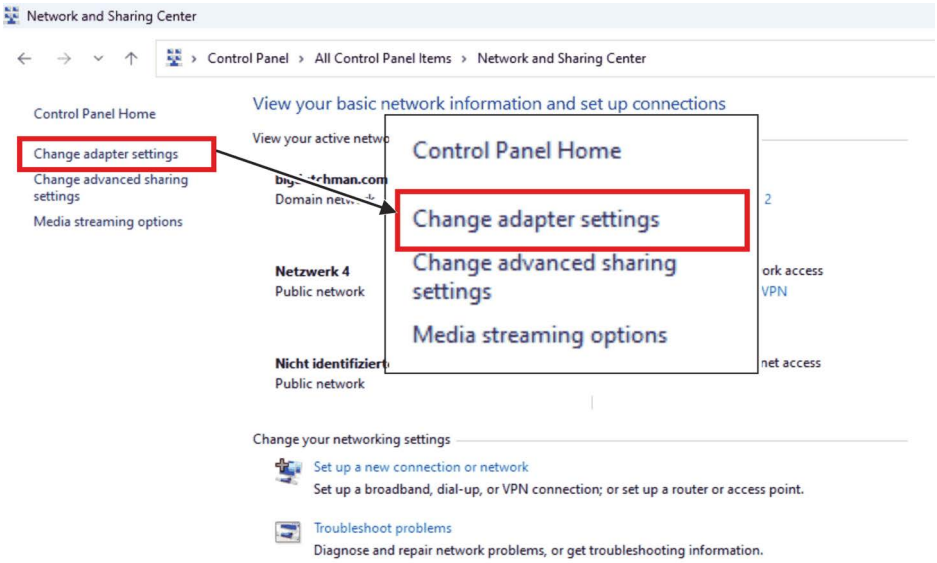
1. Open the **Control Panel** using the search field in the task bar.



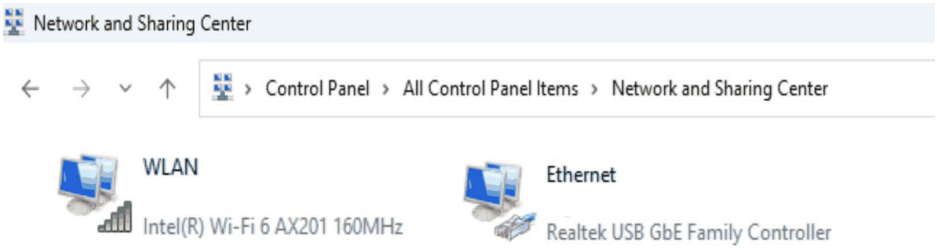

2. Click on **Network and Sharing Center**.



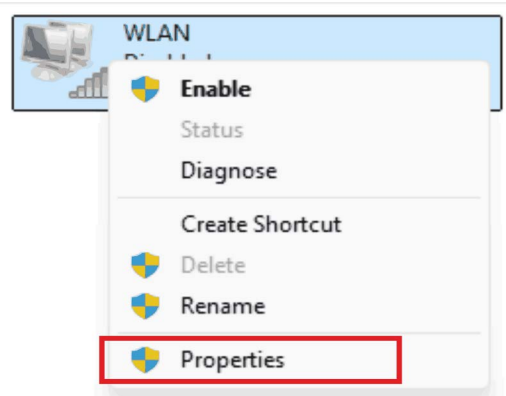
3. Click on **Change adapter settings**.



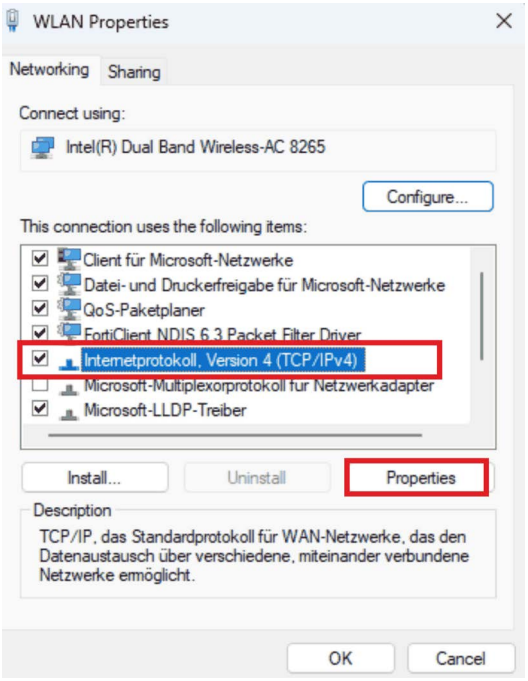

4. Select the correct adapter.



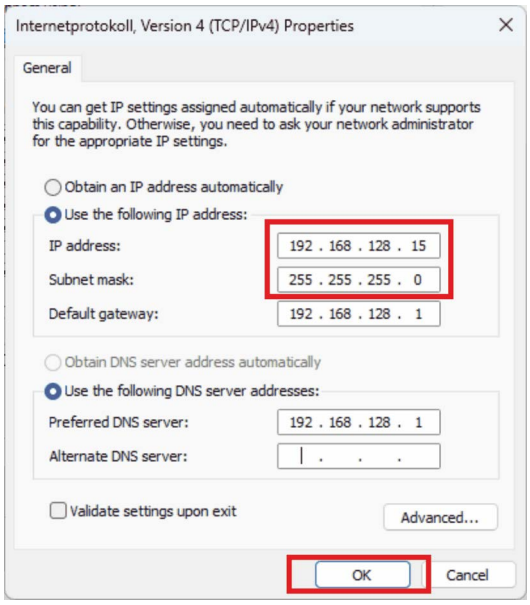

5. Click on **Properties**.



6. Select **Internet Protocol Version 4 (TCP/IPv4)** and click on **Properties**.



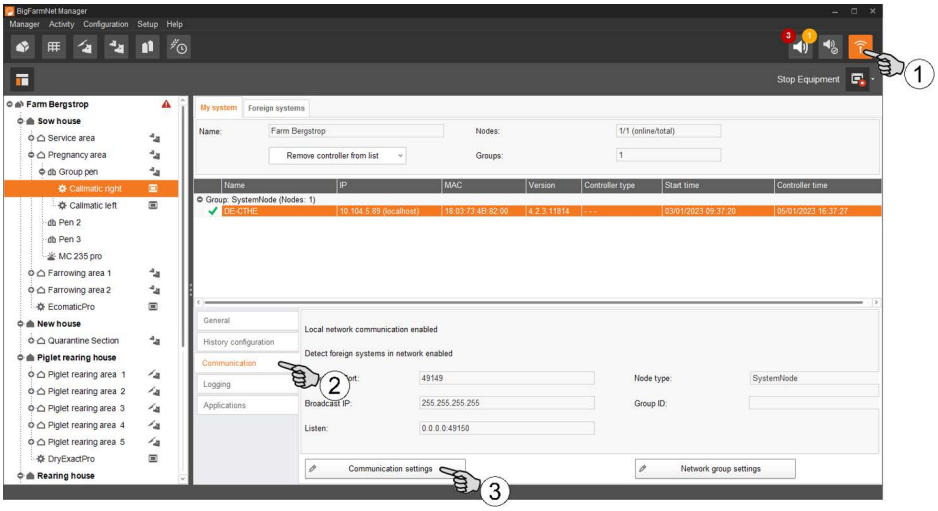

7. Enter the values for **IP address** and **Subnet mask**.



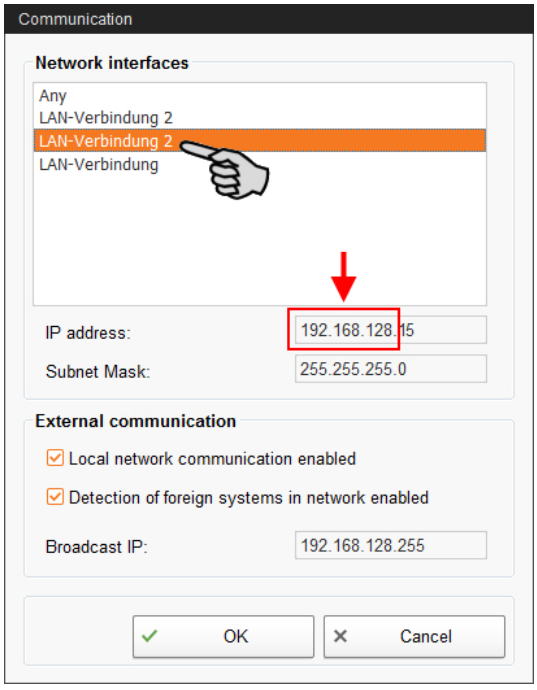

8. Confirm these inputs by clicking on **OK**.

## 2.3 Assigning a network card

The network card is read during the first start of BigFarmNet Manager. Its assignment can be changed later on as follows:




1. Click on the network icon.
2. Click on "Communication".
3. Click on "Communication settings".
4. Select the correct network interface. The first three octets of the IP address must match those you have entered for the Manager PC beforehand.




5. Click on "OK" to accept these settings.

## 2.4 Testing the communication between control computer and BFN Manager PC

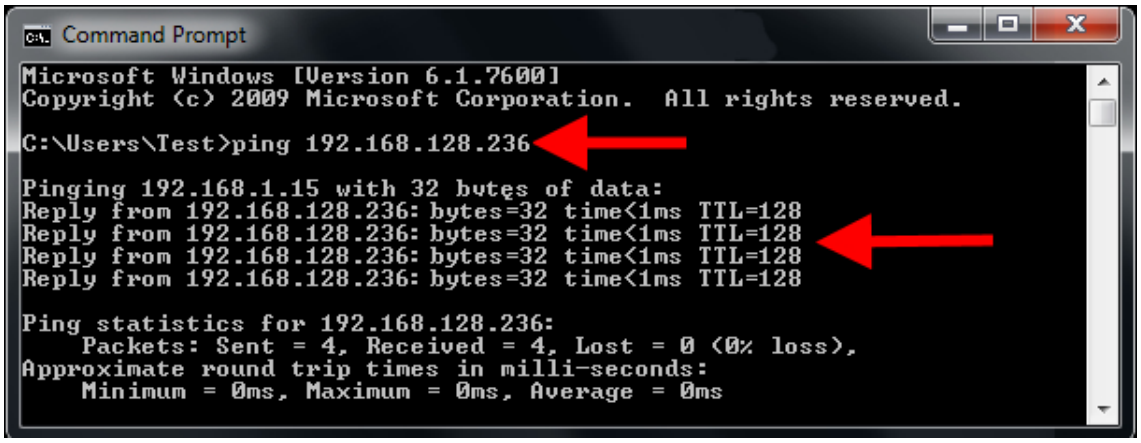
Use the "ping" command to check whether the control computer is available in the network.

Enter the command into the console as follows: ping <IP address>

Example in the screenshot: ping 192.168.128.236

If the control computer replies, four lines with the following information will appear:

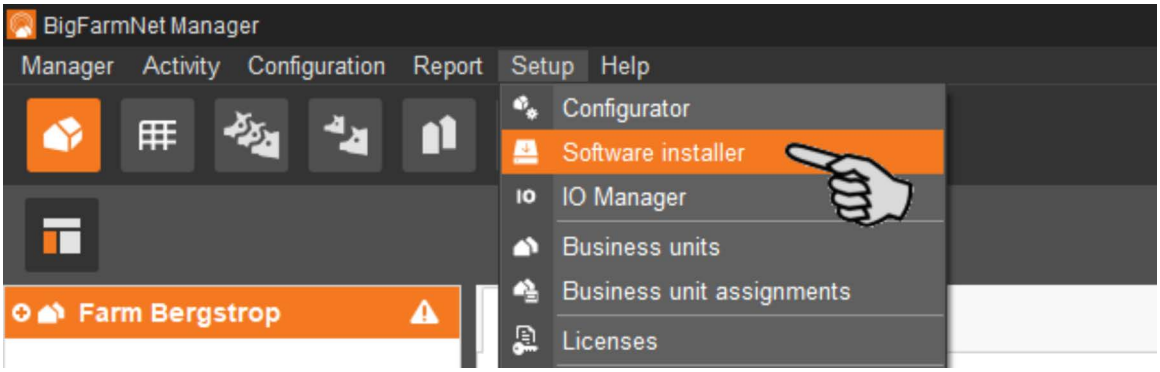
- IP address;
- packet size;
- required time;
- TTL (time to live).



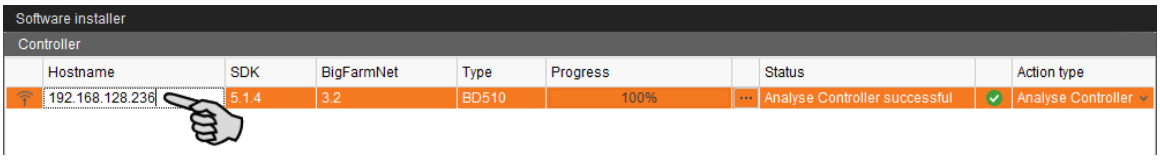
## 2.5 Installing the BFN software on the 510pro control computer

Upon delivery, the control computer has an operating system pre-installed. The corresponding BigFarmNet software must be installed additionally.

1. Click on "Software installer" in the "Setup" menu.

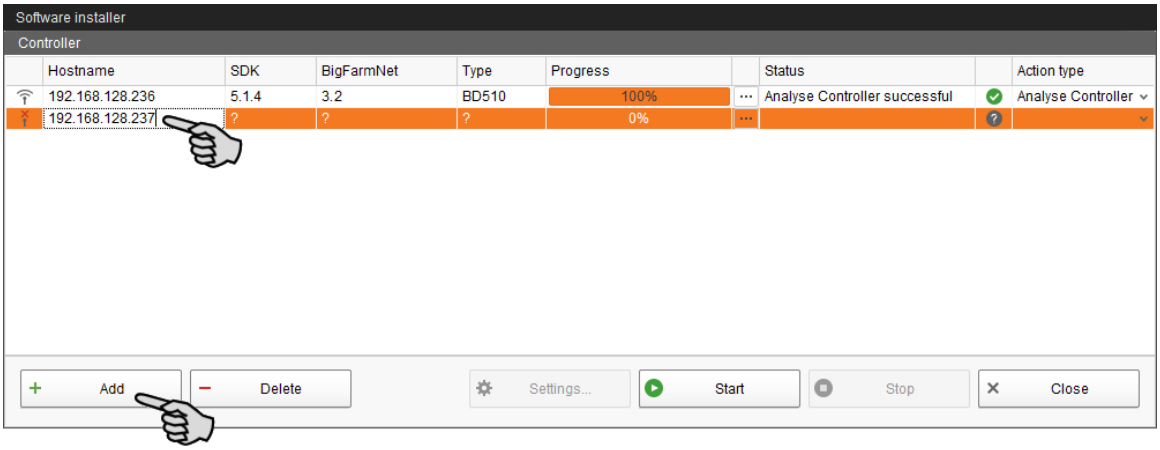



2. Enter the IP address of the control computer on which you want to install the software.



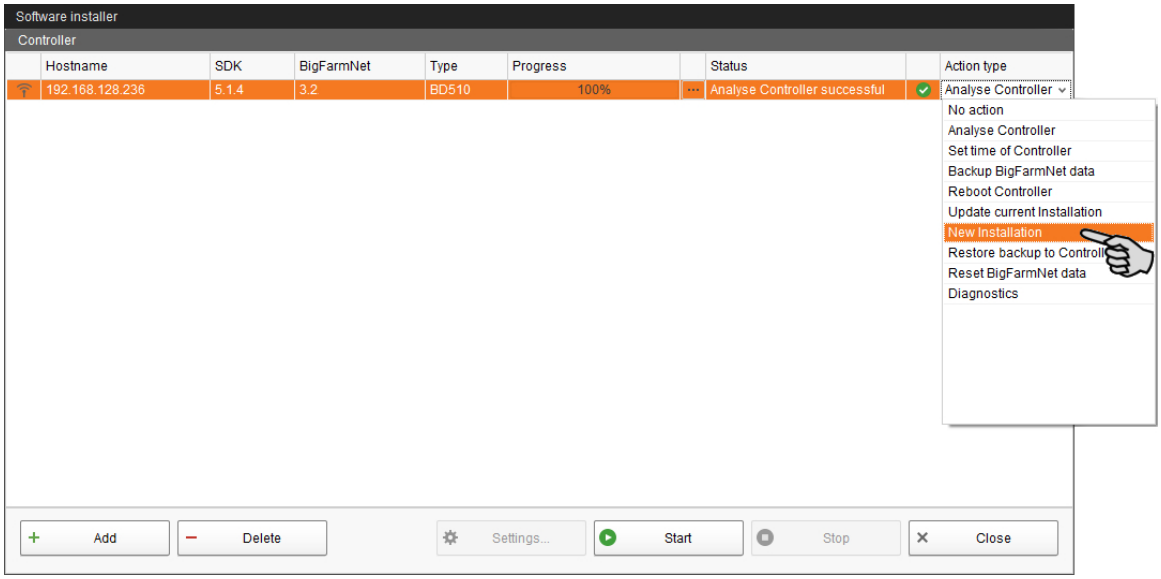

3. If necessary, add the desired number of control computers by clicking on "Add".

   This feature allows you to install the software simultaneously on multiple control computers. Each click on "Add" adds another control computer and the IP address increases by 1. However, you may change the IP address according to your wishes.




4. Click on a control computer to select it.

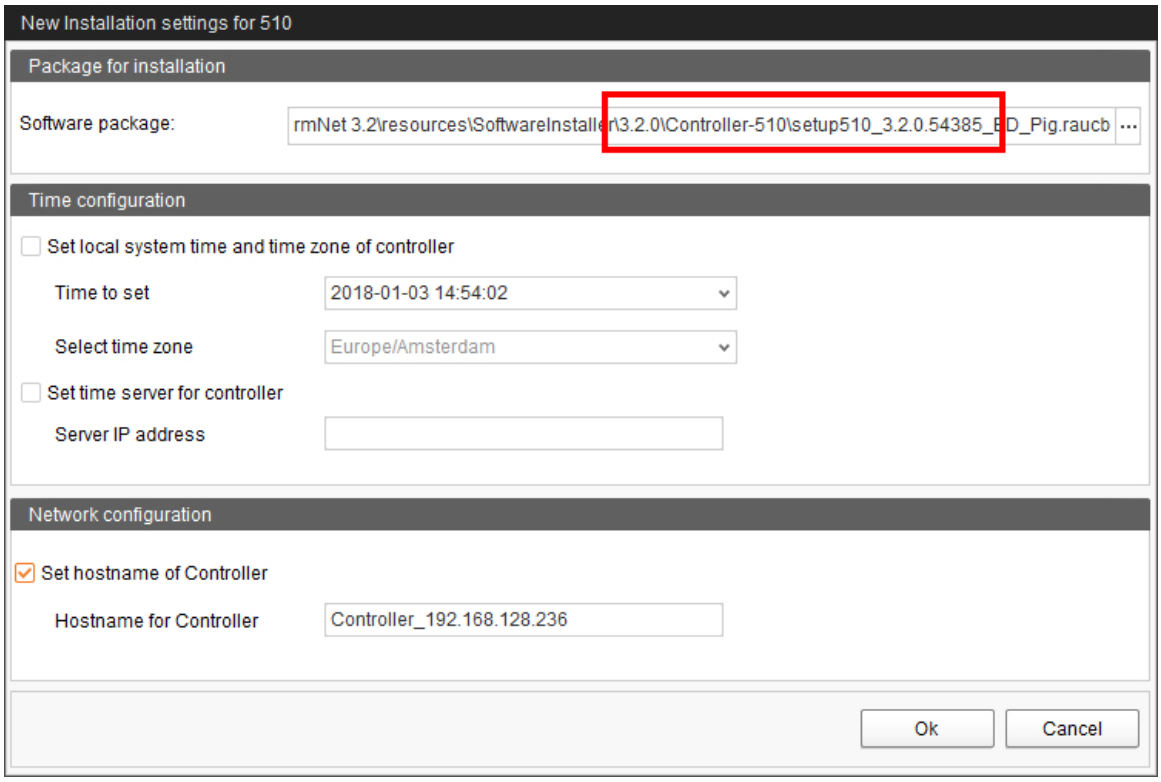
5. Click into the respective input field under "Action type" and select "New Installation".



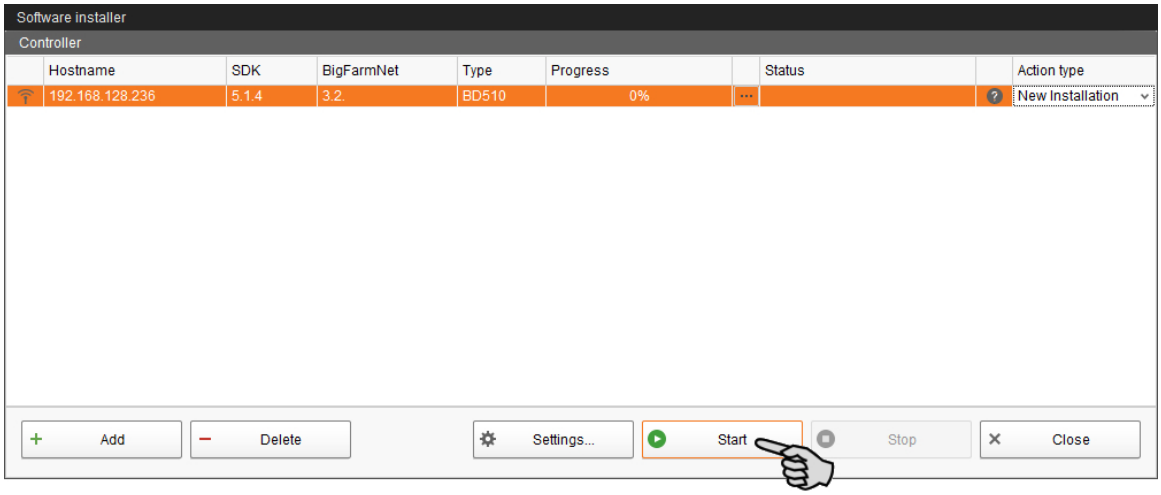

6. Click on "Settings" in the lower command bar of the dialog window.
7. Under "Software package", check whether the setup for the 510*pro* control computer is stored under the indicated path.

**NOTICE!**

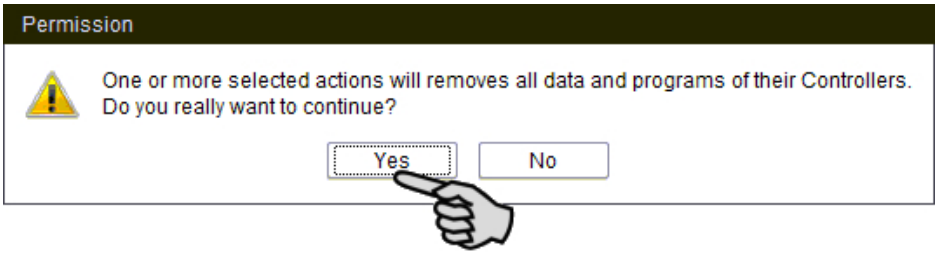
When updating, check whether the update's version number in the software package corresponds to the version you want to install.




8. Confirm the dialog by clicking on "OK".
9. Click on "Start".

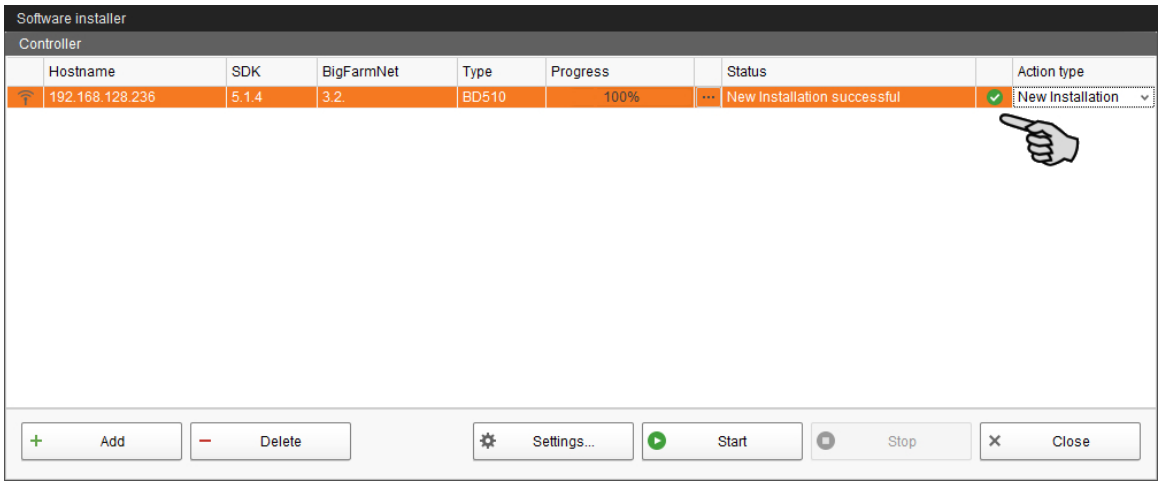



10. Confirm the prompt for confirmation.



The installation process may take a few minutes. Click on ··· to receive more information on the progress.

Successful installation is indicated by a checkmark in the "Status" column.




## 2.6 Adding the control computer and the application

Add the control computer and the application to your farm structure before you configure the system according to the mechanical situation.

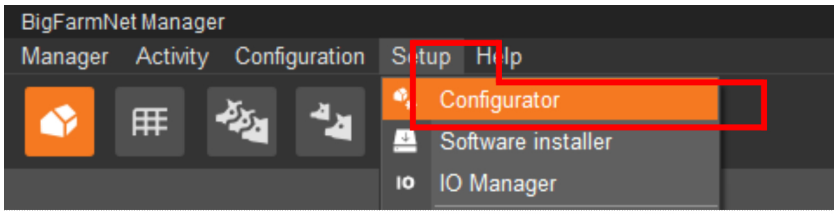
**NOTICE!**

Do **not** use the Configurator to create the farm structure with houses, sections and pens for this system. Circuits and feed valves must be assigned to their corresponding location (house, section and pen) in the Composer, see chapter 3.1.2 ”Allocation to the farm structure”, page 50. The farm structure is generated automatically as soon as the locations have been assigned in the Composer. This approach can save much time.

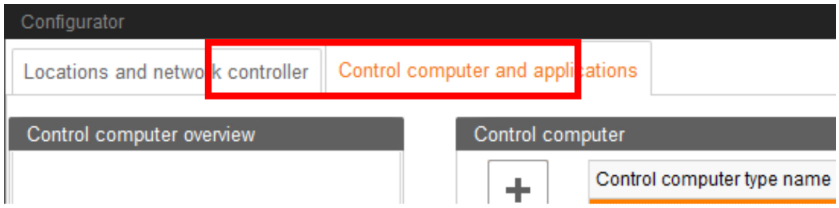
Proceed as follows:

1. Click on "Configurator" in the "Setup" menu.

   This opens the "Configurator" window.

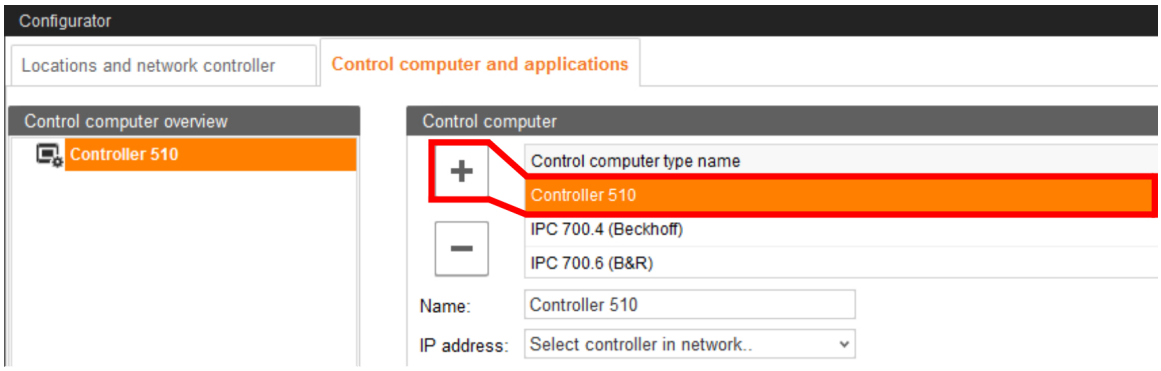


2. Click on the "Control computer and applications" tab.

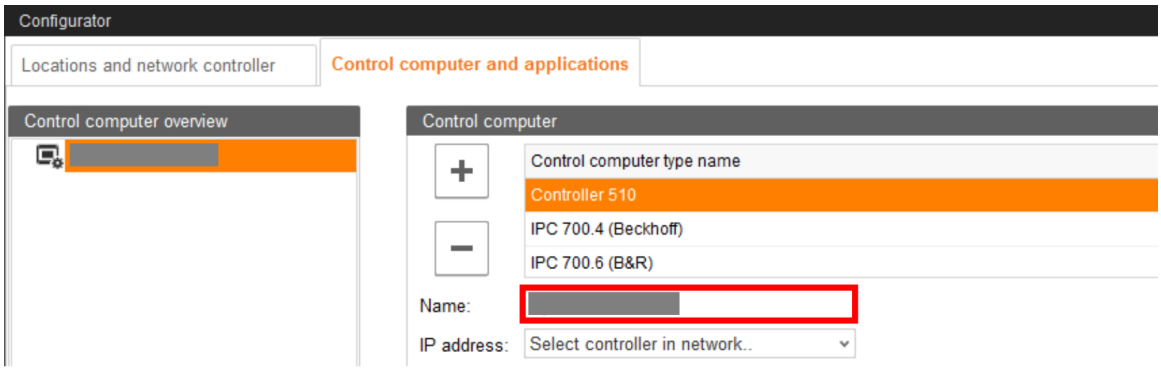



3. Select the correct control computer in the upper part of the window under "Control computer" and click on the plus button.

   The control computer is now added on the left under "Control computer overview".



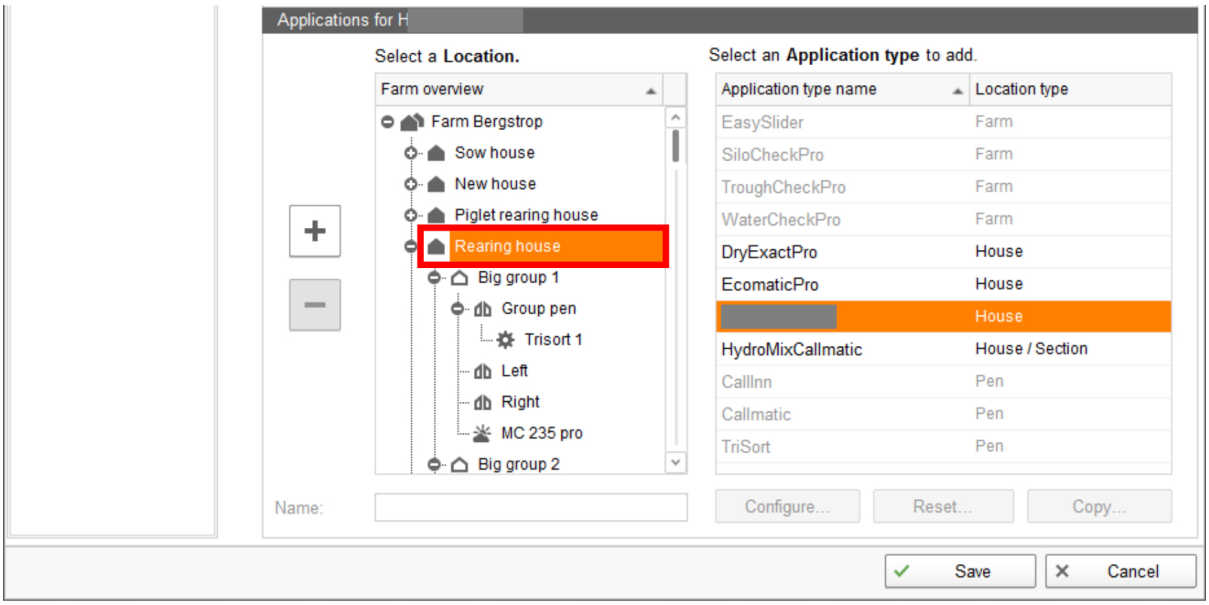

4. Enter a name for the control computer.



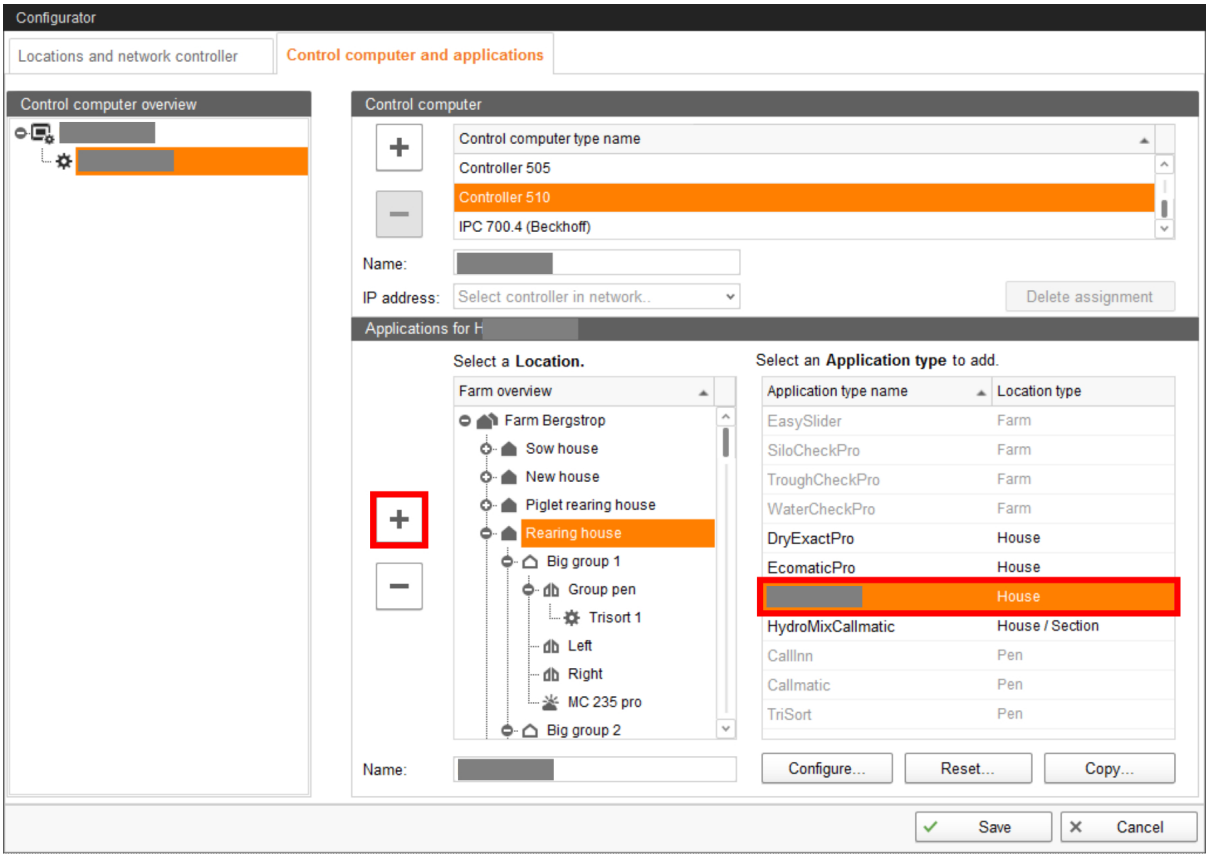

5. From the lower part of the window, select the location where the system is to be operated.

   The applications available for selection depend on the selected location.

   The HydroMixPro and CulinaMixPro applications can only be added to the "House" level.

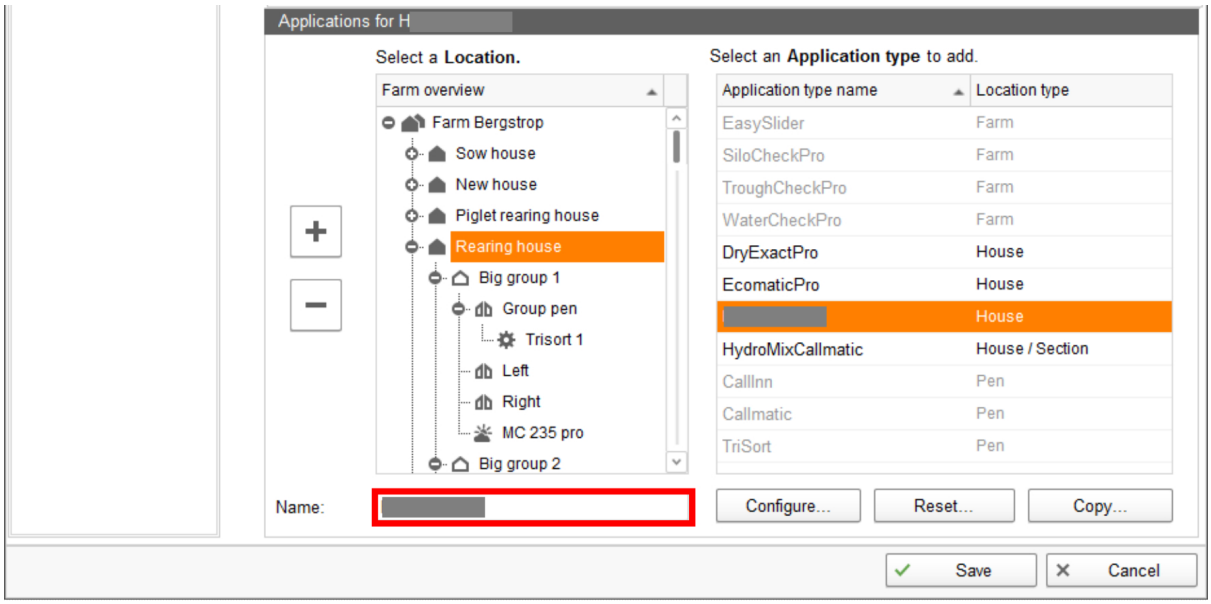



6. Select the correct application in the table on the right and click on the plus button to the left.



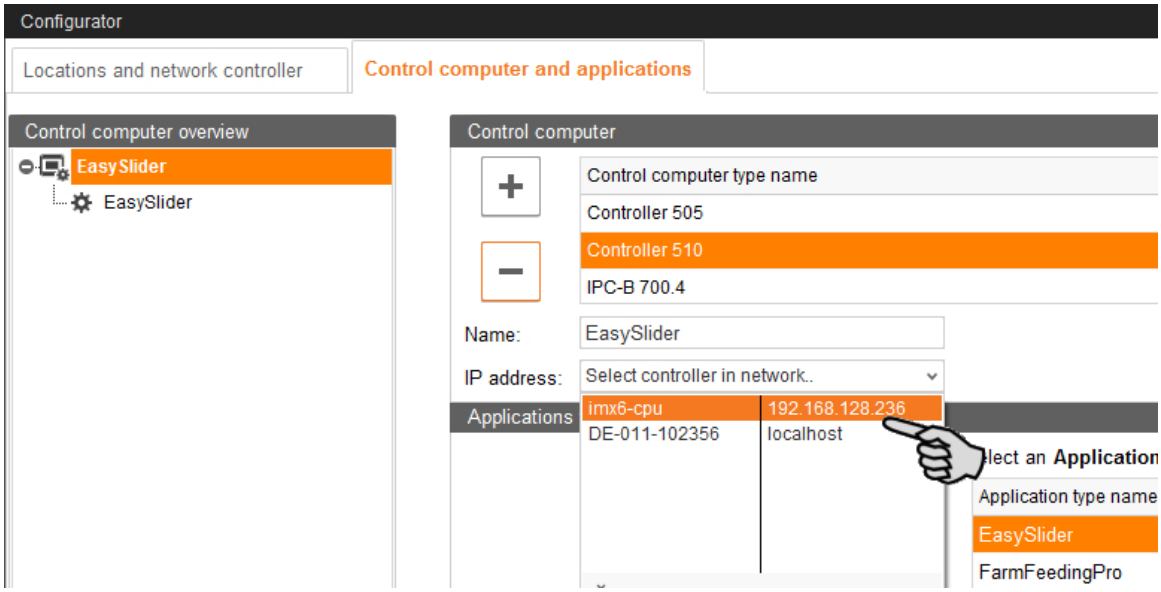

The selected application is assigned to the control computer on the left under "Control computer overview". In the structure, the control computer is displayed on the upper level and the respective application on the lower level.

7. Enter a name for the application.




8. Click on the level of the control computer in the left-hand part of the window under "Control computer overview".
9. Assign the corresponding IP address to the control computer, if known.

   If the IP address has not been set up yet, you will need to add it later on.




10. Save your settings by clicking on "Save" and confirm the next dialogs with "OK".

# 3 Mapping the HydroMix system configuration in BFN Manager

The configuration of the HydroMix*pro* system with all system components and functionalities is mapped in BigFarmNet Manager using the **Composer** and the **FeedMove Editor**.

### Composer

All possible system components of a HydroMix*pro* system are listed in the Composer.

Select the correct component quantities of the system to be controlled.

### FeedMove Editor

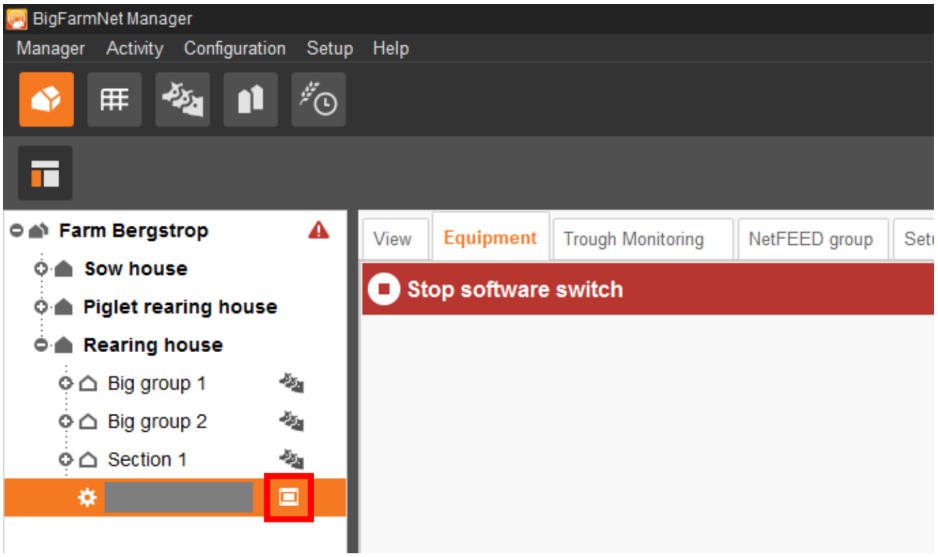
The system components selected in the Composer are displayed graphically in the FeedMove Editor. The feed move connections between the system components are also mapped.

## 3.1 Configuring settings in the Composer

Define the functional range and configure settings according to the system's structure in the Composer. These settings are usually configured once.

### 3.1.1 Defining components of the HydroMix system

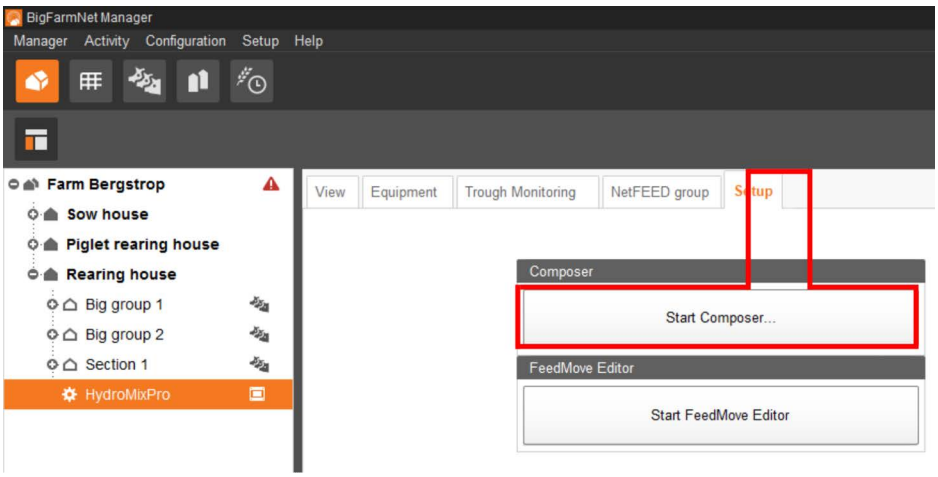
1. Click on the controller icon of the respective system application in the farm structure.



**NOTICE!**

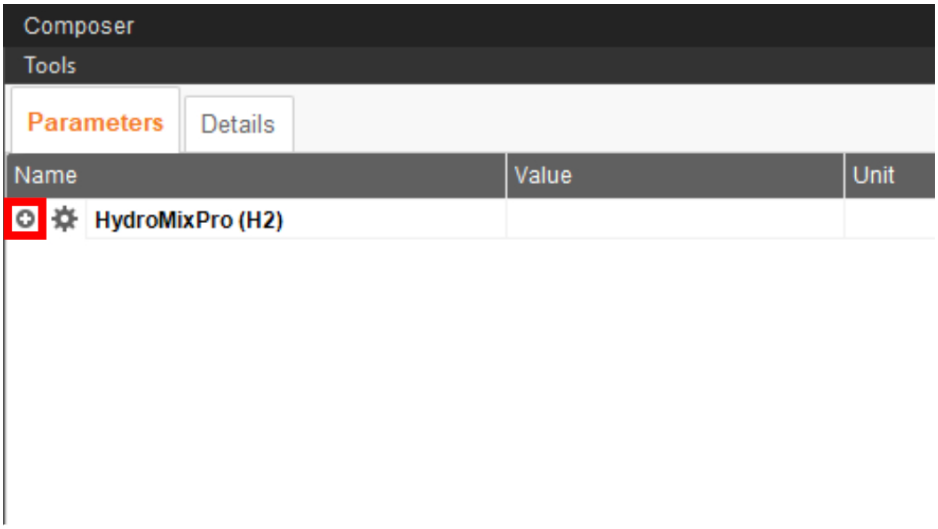
Check whether the system is running. Stop the system by clicking on Stop in the upper bar.

2. Under "Setup", click on "Start Composer...".



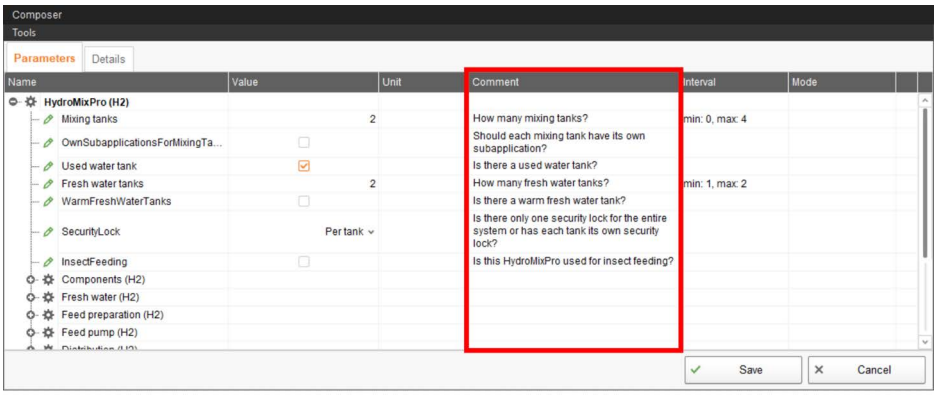

3. Click on the plus icon to show hidden parameters.

   Also open subordinate parameters by clicking on the respective plus icon.




4. Configure the settings in accordance with the structure of the HydroMix system. Change pre-set values, if necessary.

   The column "Comment" contains information for setting of the values.

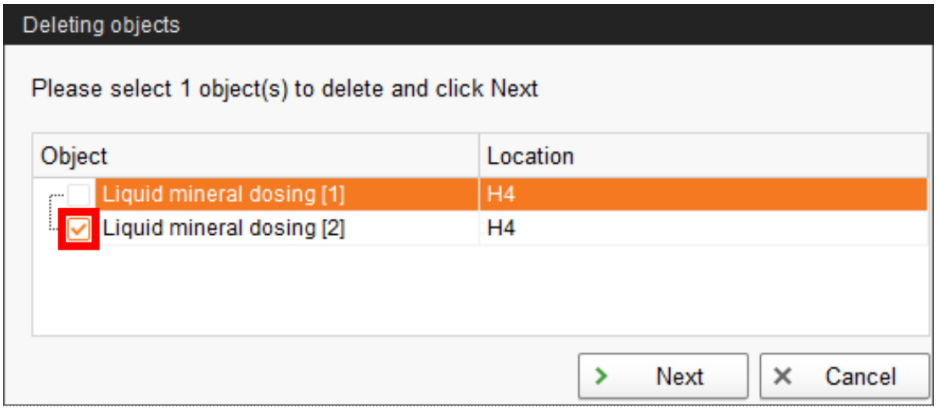



5. Proceed as follows to delete system components:

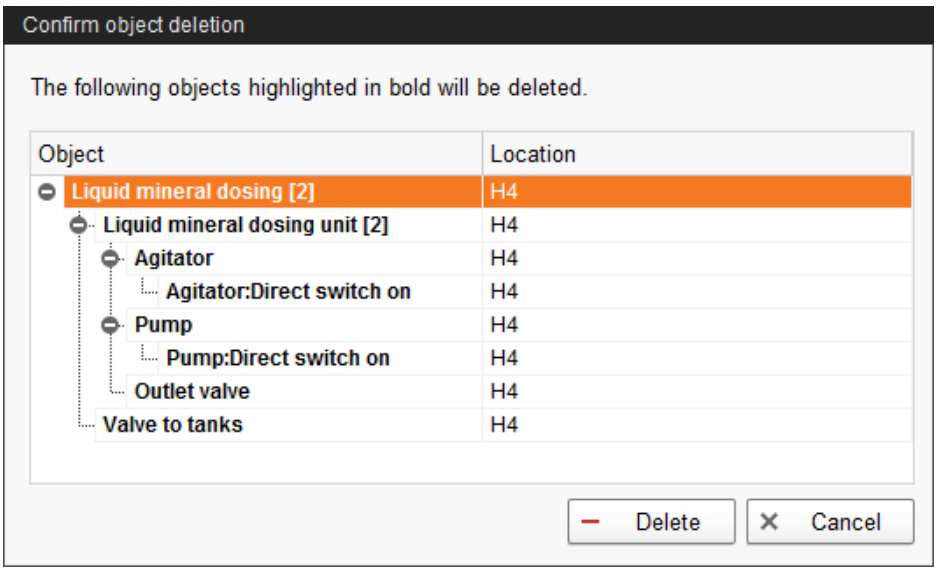
   a) Enter the new quantity (a lower number or 0) and press Enter.

      This opens a new dialog window that shows the system components with their assigned locations.

   b) Select the object(s) you wish to delete and click on "Next".




   c) In the next window, confirm that you want to delete the object(s) shown by clicking on "Delete".




6. Click on "Save" to accept all settings for the Composer.

The following section explains the parameters:

**Mixing tanks:** Number of mixing tanks used to prepare and dispense feed.

**Own sub-applications for mixing tanks:** Each mixing tank is a separate sub-application and is therefore not assigned to the "Feed kitchen" sub-application. Each mixing tank can be started and stopped individually. If one mixing tank is in error mode, the other mixing tanks can continue to work.

**Used water tanks:** The feeding system works with a used water tank (or "rinse water tank"), i.e. the system is residue-free.

**Fresh water tanks:** Number of fresh water tanks with cold water.

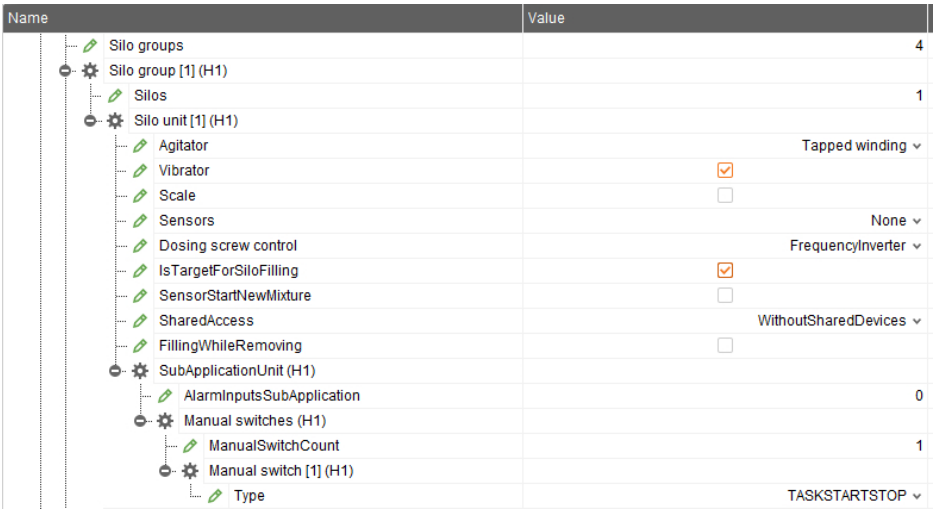
**Warm fresh water tanks:** A fresh water tank with warm fresh water is used to prepare feed and to clean tanks.

**Security lock:** Safety switch/security lock as emergency stop loop ("One for the entire system", "Per tank").

**Insect feeding:** The system is used to feed insect larvae.

### 3.1.1.1 Components

Define the component supply using these parameters. Depending on the selected supply system, new sections including setting parameters appear.




**Silo groups:** Number of existing silo groups.

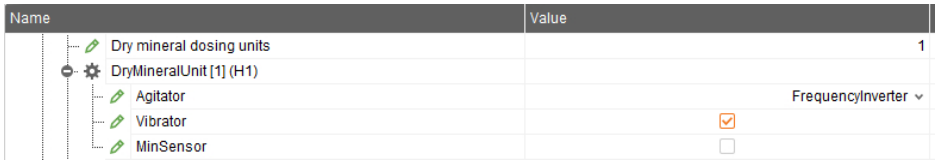
**Silo group:** A silo group is a direct connection to the mixing tank. In each silo group, define the number of silos with dry component that share a collecting auger.

**NOTICE!**

A silo group can also be just one silo that is directly connected to the mixing tank by its own auger.

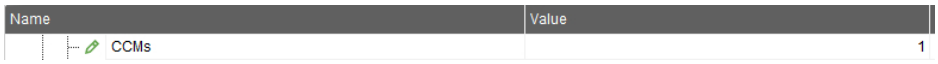
- **Silos:** Number of silos in the silo group.
- **Agitator:** Type of agitator of the silo with dry component ("None", "Direct switch-on", "Tapped winding", "Frequency inverter").
- **Vibrator:** The silo has a vibrator. The vibrator is activated if no components are removed within the set dosing time. The goal is to dispense components from the silo. As soon as a minimum dosing speed has been reached, the vibrator switches off again while dispensing continues.
  If no components are removed from the silo within the dosing time despite a running vibrator, the system either switches to a replacement silo or generates an alarm.
- **Scale:** The silo has a scale. The scale monitors the weight of the silo and generates an alarm in the event of unexpected weight loss.
- **Sensors:** Sensor type for the fill level monitoring of the silo.
  "None": no sensors for fill level monitoring of the silo.
  "Min sensor" monitors the minimum fill level in the silo.
  "Max sensor" prevents overfilling of the silo.
  "Min and Max sensors" = "Min sensor" + "Max sensor".
- **Dosing screw control:** Type of control of the discharging auger in the silo ("Frequency inverter", "Direct switch-on", "Shared frequency inverter").
- **Is target for silo filling:** The silo is the target for silo filling, e.g. for component transfer, or the target of a milling process.
- **Sensor "Start new mixture":** A fill level sensor is installed, which is used to determine that a new filling of the silo should start. Necessary if the silo is to be filled automatically.
- **Shared access:** Type of parallel removal from e.g. two different tanks or applications at the same time.
  "None" = no parallel removal possible.
  "Without shared devices" = parallel removal only possible by processes that do not share devices.
  "With shared devices" = parallel removal also possible by processes that share devices.
- **Filling while removing:** Parallel filling into the silo and removal from the silo are permitted.
- **Sub-application unit:** If the silo is the target of a silo filling, the silo becomes a sub-application.

- **Alarm inputs sub-application:** Number of alarm sensors that do not stop the entire application, but only the corresponding sub-application.
- **Manual switch count:** Number of manual switches for the sub-application.
- **Type:** Type of the manual switch ("TASKSTARTSTOP", "APPSTARTSTOPBUTTON", "APPPAUSESWITCH").

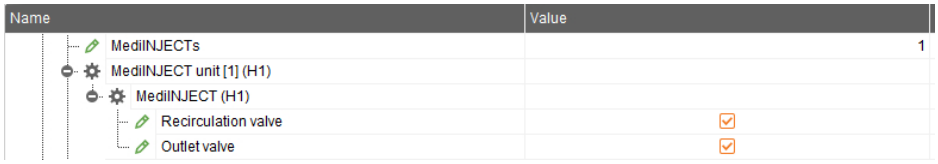



**Dry mineral dosing units:** Number of small quantity dosing units available for dry components or additives.

- **Agitator:** Type of agitator of the small quantity dosing unit ("None", "Direct switch-on", "Tapped winding", "Frequency inverter").
- **Vibrator:** The small quantity dosing unit has a vibrator. The vibrator is activated if no ingredients are removed within the set dosing time. The goal is to dispense components from the small quantity dosing unit. As soon as a minimum dosing speed has been reached, the vibrator switches off again while dosing continues.
- **Min. sensor:** A minimum sensor for fill level monitoring is installed.

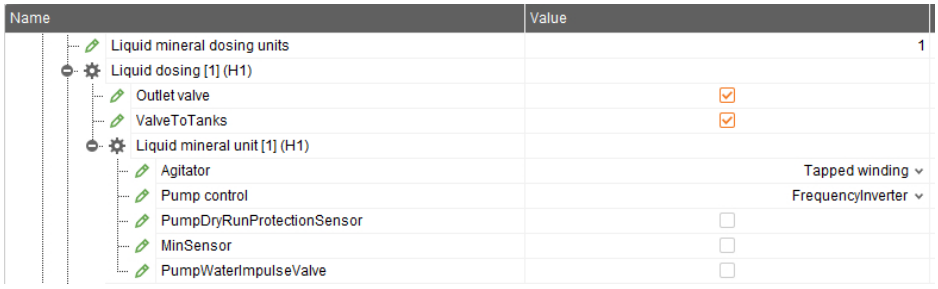



**CCMs:** Number of CCM metering systems that are installed.



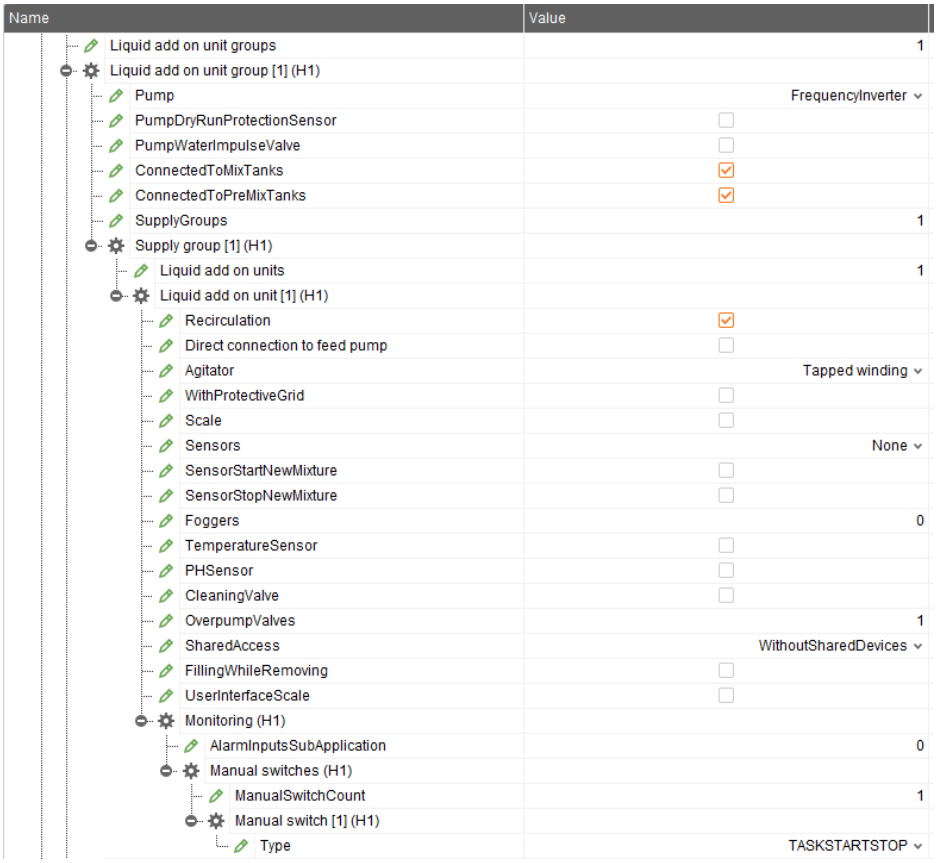

**MediINJECTs:** Number of MediINJECT systems that are installed in the feed kitchen.

- **Recirculation valve:** A recirculation valve is installed. Necessary if a ring line is connected to the MediINJECT dosing unit.
- **Outlet valve:** An outlet valve is installed at the MediINJECT tank.



**Liquid mineral dosing units:** Number of small quantity dosing units available for liquid components or additives.

- **Outlet valve:** An outlet valve is installed at the small quantity dosing unit.
- **Valve to tanks:** A valve to the mixing tanks is installed.
- **Agitator:** Type of agitator of the small quantity dosing unit ("None", "Direct switch-on", "Tapped winding", "Frequency inverter").
- **Pump control:** Type of control of the component pump ("Frequency inverter", "Direct switch-on", "Shared frequency inverter").
- **Pump dry-run protection sensor:** The component pump is protected against running dry.
- **Min. sensor:** A minimum sensor for fill level monitoring is installed.
- **Pump water impulse valve:** A water impulse valve is installed. Water is injected into the component pump through this valve at the beginning of or during the pumping process, which makes the pump start up more easily.



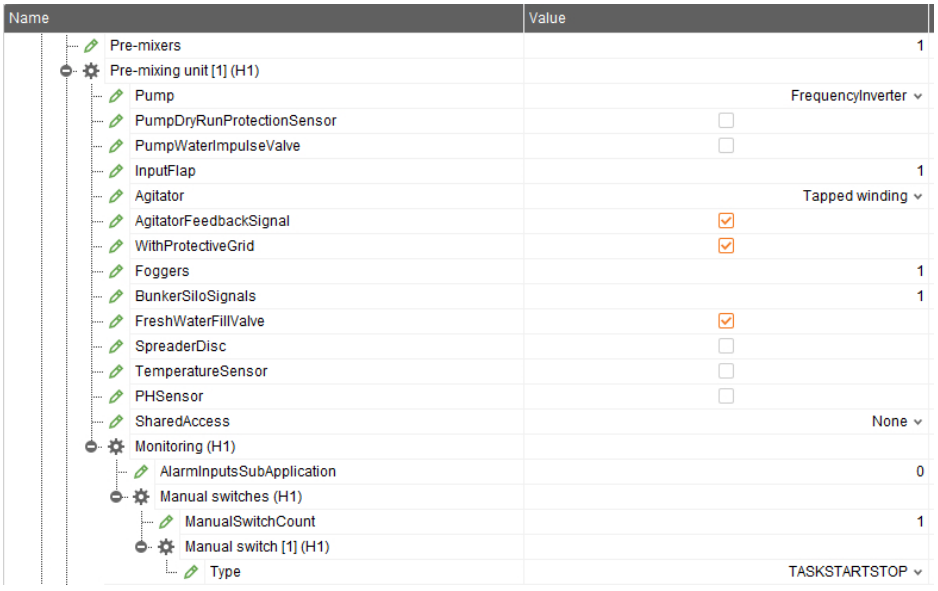

**Liquid add-on unit groups:** Number of liquid silo groups that share a pump for removal.

**NOTICE!**

A "liquid add-on unit group" may also be just one liquid silo with its own pump for removal of components.

- **Pump:** Type of control of the component pump ("None", "Direct switch-on", "Frequency inverter", "Shared frequency inverter").
- **Pump dry-run protection sensor:** The component pump is protected against running dry.
- **Pump water impulse valve:** A water impulse valve is installed. Water is injected into the component pump through this valve at the beginning of or during the pumping process, which makes the pump start up more easily.
- **Connected to mix tanks:** There is a connection to the mixing tanks.
- **Connected to pre-mix tanks:** There is a connection to the pre-mixing tanks.
- **Supply groups:** Number of liquid silo groups that share a supply line to the mixing tank, in addition to the pump.
- **Liquid add-on units:** Number of liquid silos within the supply group that share the supply line to the mixing tank.
- **Recirculation:** Component recirculation is possible.
- **Direct connection to feed pump:** There is a direct connection between the liquid silo and the feed pump.
- **Agitator:** Type of agitator of the liquid silo ("None", "Direct switch-on", "Tapped winding", "Frequency inverter").
- **With protective grid:** A protective grid is installed.
- **Scale:** The liquid silo is weighed.
- **Sensors:** Sensor type for the fill level monitoring of the liquid silo.
  "None": no sensors for fill level monitoring of the liquid silo.
  "Min sensor" monitors the minimum fill level in the liquid silo.
  "Max sensor" prevents overfilling of the liquid silo.
  "Min and Max sensors" = "Min sensor" + "Max sensor".
- **Sensor "Start new mixture":** A fill level sensor is installed, which is used to determine that a new filling of the liquid silo should start. Necessary if the liquid silo is to be filled automatically.
- **Sensor "Stop new mixture":** A fill level sensor is installed, which is used to determine that no further mixture should be prepared. Necessary if the liquid silo is to be filled automatically and this requires several mixtures.

- **Foggers:** Number of fogging nozzles that are installed.
- **Temperature sensor:** A temperature sensor is installed.
- **pH sensor:** A pH sensor is installed.
- **Cleaning valve:** A cleaning valve is installed for cleaning the liquid silo.
- **Overpump valves:** Number of filling valves installed to fill the liquid silo with a recipe, for example.
- **Shared access:** Type of parallel removal from the liquid silo.
  "None" = no parallel removal possible.
  "Without shared devices" = parallel removal only possible by processes that do not share devices.
  "With shared devices" = parallel removal also possible by processes that share devices.
- **Filling while removing:** Parallel filling into the liquid silo and removal from the liquid silo are permitted.
- **User interface scale:** A scale is installed which is only used to display the weight in the liquid silo and not by the control system.
- **Monitoring**
  - **Alarm inputs sub-application:** Number of alarm sensors that do not stop the entire application, but only the corresponding sub-application.
  - **Manual switch count:** Number of manual switches for monitoring.
  - **Type:** Type of the manual switch ("TASKSTARTSTOP", "APPSTARTSTOPBUTTON", "APPPAUSESWITCH").



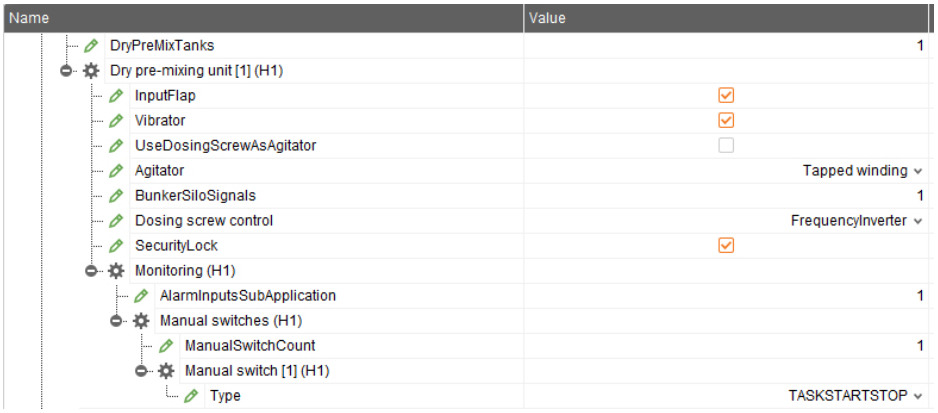
**Pre-mixers:** Number of pre-mixing tanks that are installed.

- **Pump:** Type of control of the pump for the pre-mixing tank ("None", "Direct switch-on", "Frequency inverter", "Shared frequency inverter"). This is a separate pump for this pre-mixing tank only, which pumps the premix to the mixing tanks, for example.
- **Pump dry-run protection sensor:** The pump is protected against running dry.
- **Pump water impulse valve:** A water impulse valve is installed. Water is injected into the pump through this valve at the beginning of or during the pumping process, which makes the pump start up more easily.
- **Input flap:** Number of meal inlet flaps that are installed.
- **Agitator:** Type of agitator of the pre-mixing tank ("Direct switch-on", "Tapped winding", "Frequency inverter").
- **Agitator feedback signal:** If there is no feedback signal from the agitator after switching on the agitator, an alarm is generated.
- **With protective grid:** A protective grid is installed.
- **Foggers:** Number of foggers for acids or lyes that are installed in the pre-mixing tank.
- **Bunker silo signals:** Number of bunker silo signals leading to the pre-mixing tank.
- **Fresh water fill valve:** A valve for water is installed directly without using the tank cleaning system.
- **Spreader disc:** The pre-mixing tank has a spreader disc nozzle for cleaning with recipe.
- **Temperature sensor:** A temperature sensor is installed.
- **pH sensor:** A pH sensor is installed.
- **Shared access:** Type of parallel removal from the pre-mixing tank.
  "None" = no parallel removal possible.
  "Without shared devices" = parallel removal only possible by processes that do not share devices.
  "With shared devices" = parallel removal also possible by processes that share devices.
- **Monitoring**
  - **Alarm inputs sub-application:** Number of alarm sensors that do not stop the entire application, but only the corresponding sub-application.
  - **Manual switch count:** Number of manual switches for monitoring.

- **Type:** Type of the manual switch ("TASKSTARTSTOP", "APPSTARTSTOPBUTTON", "APPPAUSESWITCH").


**Bunker silos:** Number of bunker silos.

- **Shared access:** Type of parallel removal from the bunker silo.
  "None" = no parallel removal possible.
  "Without shared devices" = parallel removal only possible by processes that do not share devices.
  "With shared devices" = parallel removal also possible by processes that share devices.

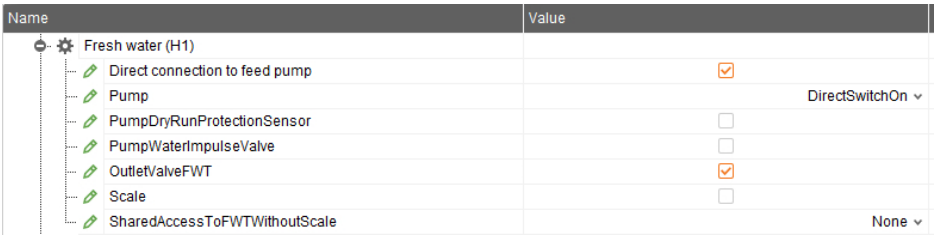



**Dry pre-mix tanks:** Number of dry pre-mixing tanks that are installed.

- **Input flap:** A meal inlet flap is installed.
- **Vibrator:** The dry pre-mixing tank has a silo vibrator.
- **Use dosing screw as agitator:** The discharging auger can also be used as an agitator.
- **Agitator:** Type of agitator of the dry pre-mixing tank ("Direct switch-on", "Tapped winding", "Frequency inverter").
- **Bunker silo signals:** Number of bunker silo signals leading to the dry pre-mixing tank.
- **Dosing screw control:** Type of control of the dosing auger of the dry pre-mixing tank ("Frequency inverter", "Direct switch-on", "Shared frequency inverter").
- **Security lock:** A safety switch is installed.
- **Monitoring**
  - **Alarm inputs sub-application:** Number of alarm sensors that do not stop the entire application, but only the corresponding sub-application.

- **Manual switch count:** Number of manual switches for monitoring.
- **Type:** Type of the manual switch ("TASKSTARTSTOP", "APPSTARTSTOPBUTTON", "APPPAUSESWITCH").

#### 3.1.1.2 Fresh water




**Direct connection to feed pump:** There is a direct connection between the fresh water tank and the feed pump.

**Pump:** Type of control of the fresh water pump ("None", "Direct switch-on", "Frequency inverter", "Shared frequency inverter").

**Pump dry-run protection sensor:** The fresh water pump is protected against running dry.

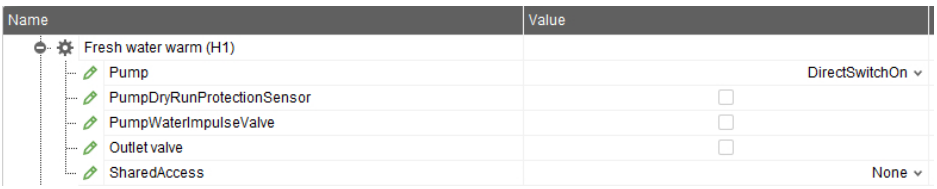
**Pump water impulse valve:** A water impulse valve is installed. Water is injected into the fresh water pump through this valve at the beginning of or during the pumping process, which makes the pump start up more easily.

**Outlet valve FWT:** An outlet valve is installed at the fresh water tank.

**Scale:** The fresh water tank is weighed.

**Shared access to FWT without scale:** Type of parallel removal from the fresh water tank.
"None" = no parallel removal possible.
"Without shared devices" = parallel removal only possible by processes that do not share devices.
"With shared devices" = parallel removal also possible by processes that share devices.

#### 3.1.1.3 Fresh water (warm)




**Pump:** Type of control of the fresh water pump ("None", "Direct switch-on", "Frequency inverter", "Shared frequency inverter").

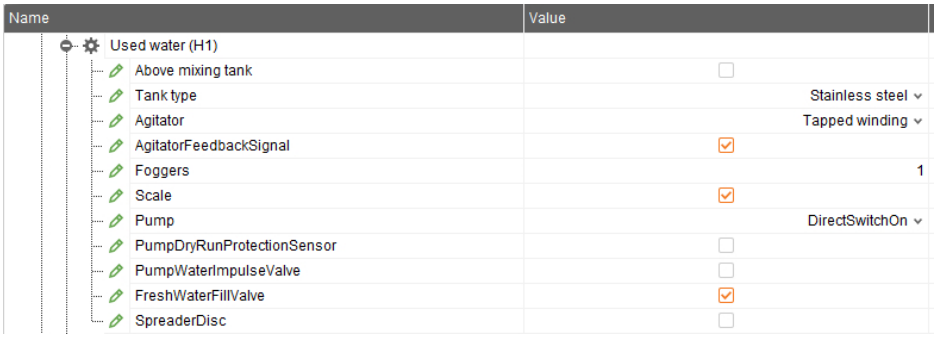
**Pump dry-run protection sensor:** The fresh water pump is protected against running dry.

**Pump water impulse valve:** A water impulse valve is installed. Water is injected into the fresh water pump through this valve at the beginning of or during the pumping process, which makes the pump start up more easily.

**Outlet valve:** An outlet valve is installed at the warm fresh water tank.

**Shared access:** Type of parallel removal from the warm fresh water tank.
"None" = no parallel removal possible.
"Without shared devices" = parallel removal only possible by processes that do not share devices.
"With shared devices" = parallel removal also possible by processes that share devices.

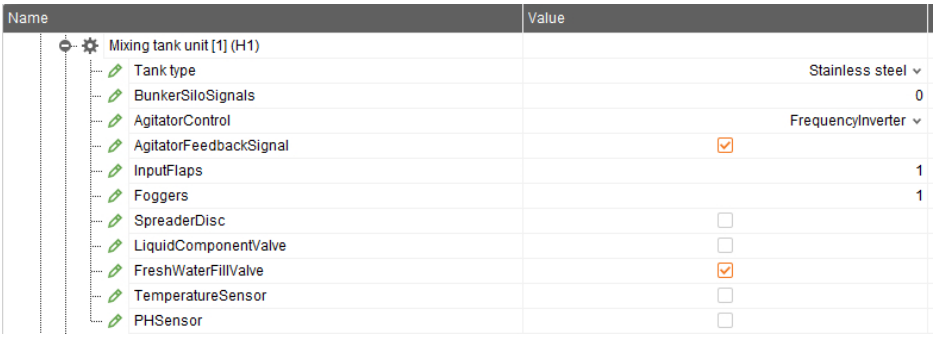
#### 3.1.1.4 Feed preparation




**Used water:**

- **Above mixing tank:** The used water tank is installed above the mixing tanks and empties by gravity.
- **Tank type:** Tank type ("GRP", "Stainless steel").
- **Agitator:** Type of agitator of the used water tank ("None", "Direct switch-on", "Tapped winding", "Frequency inverter").
- **Agitator feedback signal:** If there is no feedback signal from the agitator after switching on the agitator, an alarm is generated.
- **Foggers:** Number of foggers for acids or lyes that are installed in the used water tank.
- **Scale:** The used water tank is weighed.

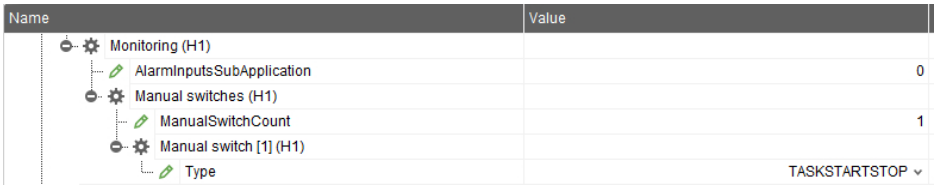
- **Sensors:** Sensor type for the fill level monitoring of the used water tank.
  "None": no sensors for fill level monitoring of the used water tank
  "Min sensor" monitors the minimum fill level in the used water tank.
  "Max sensor" prevents overfilling of the used water tank.
  "Min and Max sensors" = "Min sensor" + "Max sensor".
- **Pump:** Type of control of the used water pump ("None", "Direct switch-on", "Frequency inverter", "Shared frequency inverter").
- **Pump dry-run protection sensor:** The used water pump is protected against running dry.
- **Pump water impulse valve:** A water impulse valve is installed. Water is injected into the used water pump through this valve at the beginning of or during the pumping process, which makes the pump start up more easily.
- **Fresh water fill valve:** A valve for water is installed directly without using the tank cleaning system.
- **Spreader disc:** The used water tank has a spreader disc nozzle for cleaning with recipe.
- **Direct connection to feed pump:** There is a direct connection between the used water tank and the feed pump.




**Mixing tank unit:**

- **Tank type:** Tank type ("GRP", "Stainless steel").
- **Bunker silo signals:** Number of bunker silo signals leading to the mixing tank.
- **Agitator control:** Type of agitator of the mixing tank ("Direct switch-on", "Tapped winding", "Frequency inverter").
- **Agitator feedback signal:** If there is no feedback signal from the agitator after switching on the agitator, an alarm is generated.
- **Input flaps:** Number of meal inlet flaps that are installed.
- **Foggers:** Number of foggers for acids or lyes that are installed in the mixing tank.

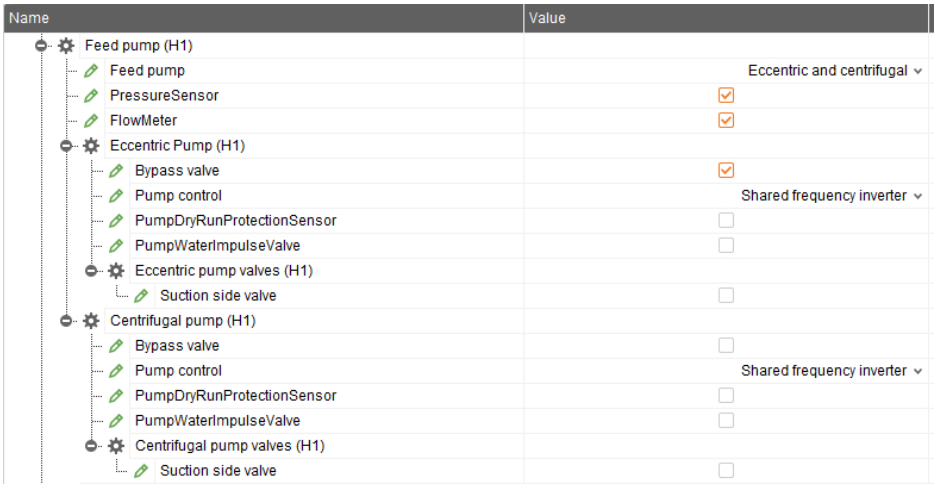
- **Spreader disc:** The mixing tank has a spreader disc nozzle for cleaning with recipe.
- **Liquid component valve:** A valve is installed for the supply of liquid components.
- **Fresh water fill valve:** A valve for water is installed directly without using the tank cleaning system.
- **Temperature sensor:** A temperature sensor is installed.
- **pH sensor:** A pH sensor is installed.




**Monitoring:**

- **Alarm inputs sub-application:** Number of alarm sensors that do not stop the entire application, but only the corresponding sub-application.
- **Manual switch count:** Number of manual switches for monitoring.
- **Type:** Type of the manual switch ("TASKSTARTSTOP", "APPSTARTSTOPBUTTON", "APPPAUSESWITCH").

#### 3.1.1.5 Feed pump




**Feed pump:** Type of feed pump(s) installed ("Eccentric pump", "Centrifugal pump", "Eccentric and centrifugal").

**Pressure sensor:** A pressure sensor is installed for pressure regulation and safety shutdown.

**Flow meter:** A flow meter is installed.

**Bypass valve:** A bypass valve is installed parallel to the feed pump.

**Pump control:** Type of control of the feed pump ("Frequency inverter", "Direct switch-on", "Shared frequency inverter").

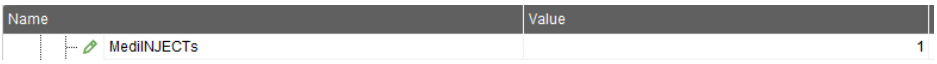
**Pump dry-run protection sensor:** The feed pump is protected against running dry.

**Pump water impulse valve:** A water impulse valve is installed. Water is injected into the feed pump through this valve at the beginning of or during the pumping process, which makes the pump start up more easily.

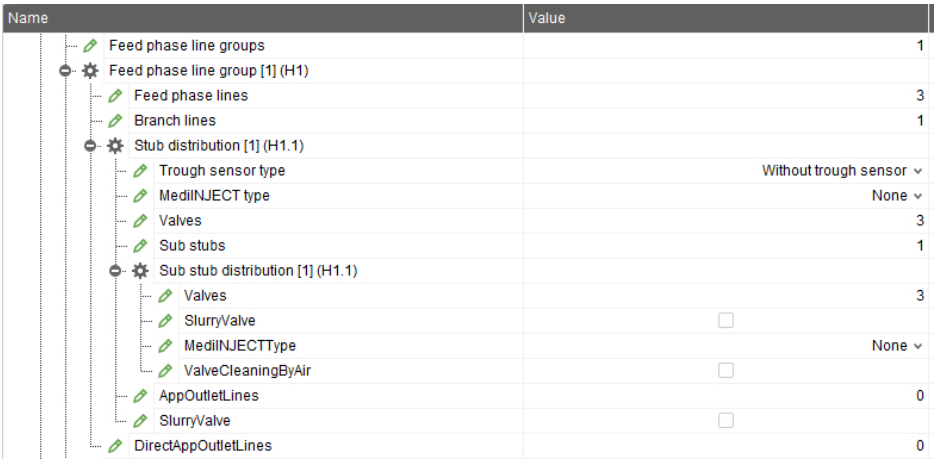
**Suction side valve:** A valve is installed on the suction side of the feed pump.

### 3.1.1.6 Distribution

Define the feed move route here.




**MediINJECTs:** Number of MediINJECT dosing units that are installed.




**Feed phase line groups:** Number of groups of feed phase lines that are installed.

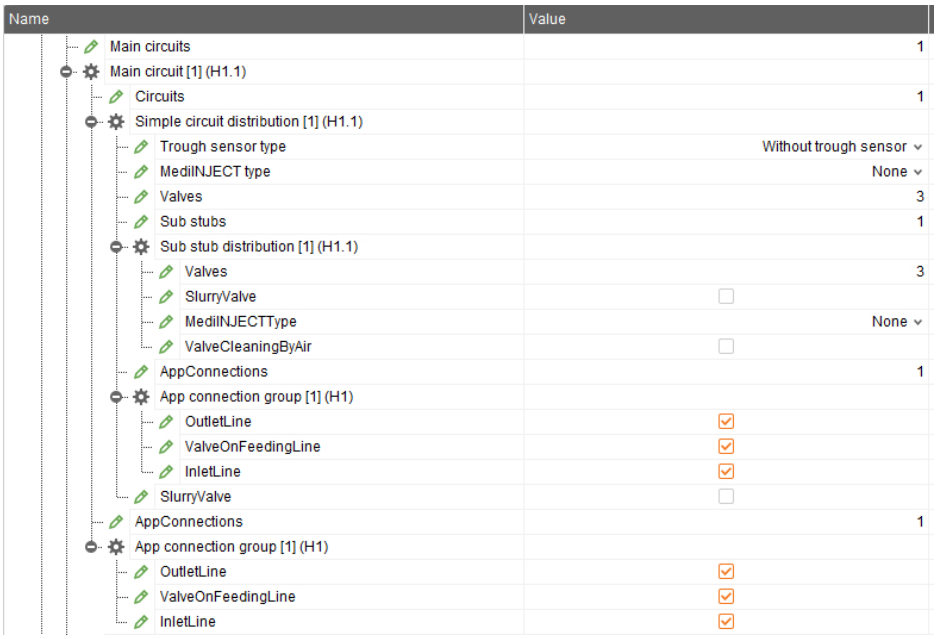
- **Feed phase lines:** Number of feed phase lines within the group.
- **Branch lines:** Number of filled branch lines installed for feed distribution.
- **Trough sensor type:** Type of trough sensors used ("Without trough sensor", "Digital").
- **MediINJECT type:** Control of the MediINJECT dosing unit.

  "None" = no MediINJECT dosing unit installed.
  "In feeding line" = dosing into the feeding line.
  "In single valves" = dosing into the outlet of the feed valves.
- **Valves:** Number of feed valves at the branch line (stub).
- **Sub stubs:** Number of sub-branches that are installed.
  - **Valves:** Number of valves at the sub-branch line.

- **Slurry valve:** A slurry valve is installed at the sub-branch line.
- **MediINJECT type:** Control of the MediINJECT dosing unit.

  "None" = no MediINJECT dosing unit installed.
  "In feeding line" = dosing into the feeding line.
  "In single valves" = dosing into the outlet of the feed valves.
- **Valve cleaning by air:** The sub-branch line can be cleaned with compressed air.

- **App outlet lines:** Number of transfer lines to sub-systems installed at the branch line.
- **Slurry valve:** A slurry valve is installed at the branch line.
- **Direct app outlet lines:** Number of transfer lines to sub-systems installed at the feed phase line.




**Main circuits:** Number of main circuits that are installed.

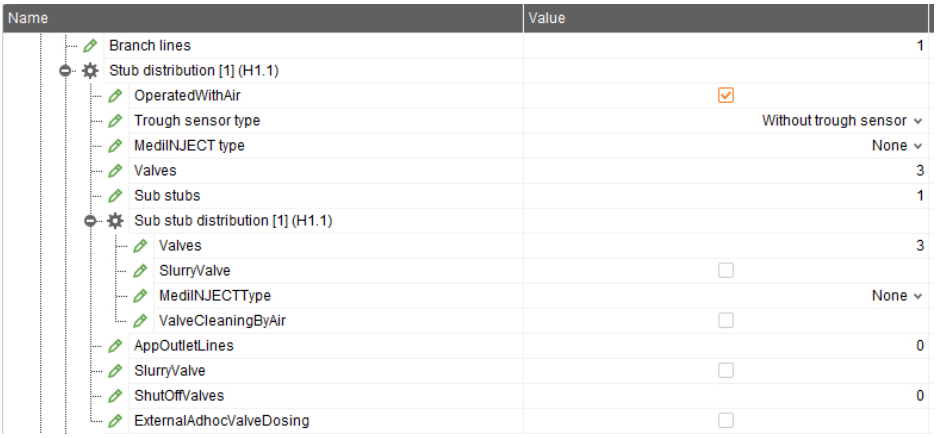
- **Circuits:** Number of circuits installed at the main circuit.
- **Trough sensor type:** Type of trough sensors used ("Without trough sensor", "Digital").
- **MediINJECT type:** Control of the MediINJECT dosing unit.

  "None" = no MediINJECT dosing unit installed.
  "In feeding line" = dosing into the feeding line.
  "In single valves" = dosing into the outlet of the feed valves.
- **Valves:** Number of feed valves at the circuit.
- **Sub stubs:** Number of sub-branches that are installed.

- **Valves:** Number of valves at the sub-branch line.
- **Slurry valve:** A slurry valve is installed at the sub-branch line.
- **MediINJECT type:** Control of the MediINJECT dosing unit.

  "None" = no MediINJECT dosing unit installed.
  "In feeding line" = dosing into the feeding line.
  "In single valves" = dosing into the outlet of the feed valves.
- **Valve cleaning by air:** The sub-branch line can be cleaned with compressed air.

- **App connections:** Number of transfer circuits to sub-systems installed at the circuit.
  - **Outlet line:** An outlet line is installed at the circuit.
  - **Valve on feeding line:** A shut-off valve is installed at the circuit.
  - **Inlet line:** An inlet line is installed at the circuit.
- **Slurry valve:** A slurry valve is installed at the circuit.
- **App connections:** Number of transfer circuits to sub-systems installed at the main circuit.
- **Outlet line:** An outlet line is installed at the main circuit.
- **Valve on feeding line:** A shut-off valve is installed at the main circuit.
- **Inlet line:** An inlet line is installed at the main circuit.



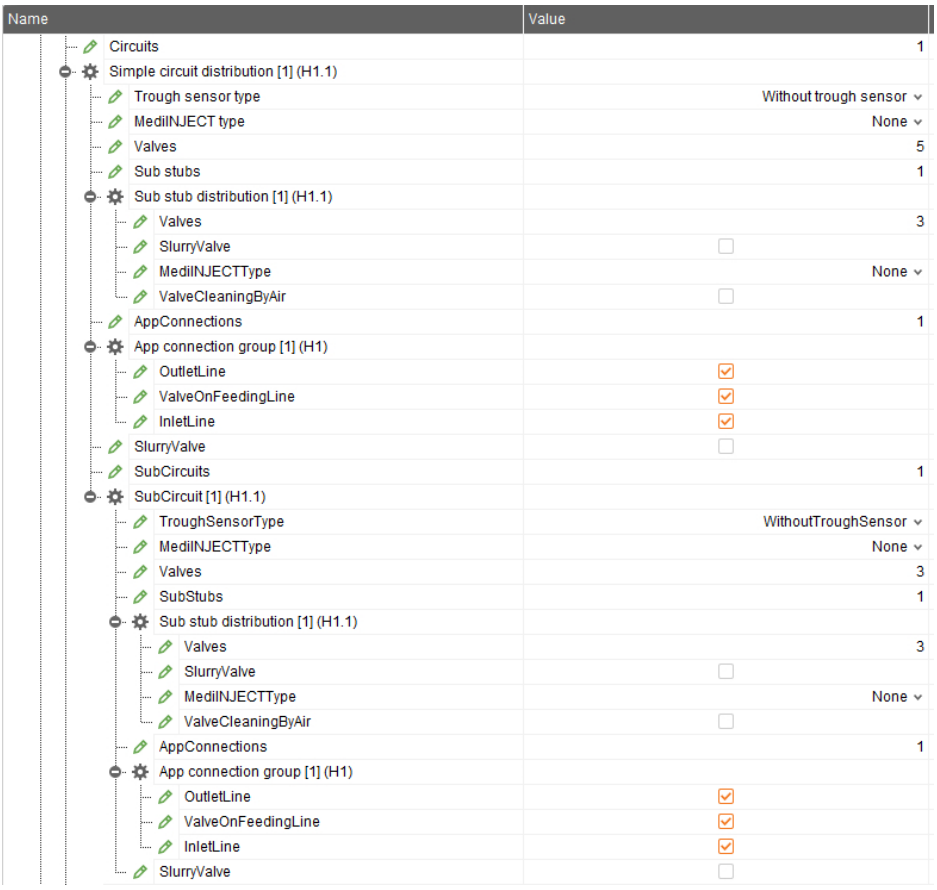

**Branch lines:** Number of filled branch lines (stubs).

- **Operated with air:** The feed is dispensed into the troughs using compressed air.
- **Trough sensor type:** Type of trough sensors used ("Without trough sensor", "Digital").

- **MediINJECT type:** Control of the MediINJECT dosing unit.

  "None" = no MediINJECT dosing unit installed.
  "In feeding line" = dosing into the feeding line.
  "In single valves" = dosing into the outlet of the feed valves.
- **Valves:** Number of feed valves at the branch line (stub).
- **Sub stubs:** Number of sub-branches that are installed.
  - **Valves:** Number of valves at the sub-branch line.
  - **Slurry valve:** A slurry valve is installed at the sub-branch line.
  - **MediINJECT type:** Control of the MediINJECT dosing unit.

    "None" = no MediINJECT dosing unit installed.
    "In feeding line" = dosing into the feeding line.
    "In single valves" = dosing into the outlet of the feed valves.
  - **Valve cleaning by air:** The sub-branch line can be cleaned with compressed air.
- **App outlet lines:** Number of transfer circuits to sub-systems installed at the branch line.
- **Slurry valve:** A slurry valve is installed at the branch line.
- **Shut-off valves:** Number of shut-off valves at the branch line for dispensing with compressed air.
- **External ad-hoc valve dosing:** Feed dispensing is started by an external control system.



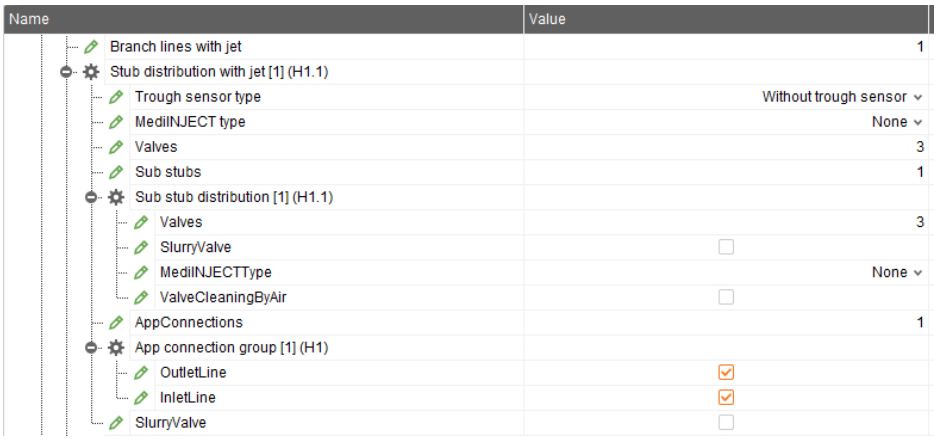

**Circuits** or **Sub-circuits:** Number of (sub-)circuits that are installed.

- **Trough sensor type:** Type of trough sensors used ("Without trough sensor", "Digital").
- **MediINJECT type:** Control of the MediINJECT dosing unit.

  "None" = no MediINJECT dosing unit installed.
  "In feeding line" = dosing into the feeding line.
  "In single valves" = dosing into the outlet of the feed valves.
- **Valves:** Number of feed valves at the (sub-)circuit.
- **Sub stubs:** Number of sub-branches that are installed.
  - **Valves:** Number of valves at the sub-branch line.
  - **Slurry valve:** A slurry valve is installed at the sub-branch line.
  - **MediINJECT type:** Control of the MediINJECT dosing unit.

    "None" = no MediINJECT dosing unit installed.
    "In feeding line" = dosing into the feeding line.
    "In single valves" = dosing into the outlet of the feed valves.
  - **Valve cleaning by air:** The sub-branch line can be cleaned with compressed air.

- **App connections:** Number of transfer circuits to sub-systems installed at the (sub-)circuit.
  - **Outlet line:** An outlet line is installed at the (sub-)circuit.
  - **Valve on feeding line:** A shut-off valve is installed at the (sub-)circuit.
  - **Inlet line:** An inlet line is installed at the (sub-)circuit.
- **Slurry valve:** A slurry valve is installed at the (sub-)circuit.




**Branch lines with jet:** Number of branch lines (stubs) with PipeJet.

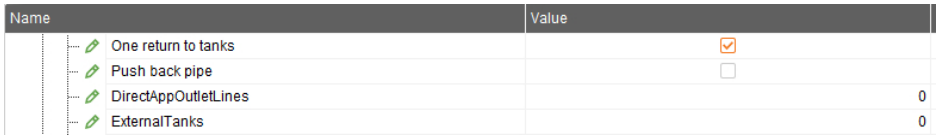
- **Trough sensor type:** Type of trough sensors used ("Without trough sensor", "Digital").
- **MediINJECT type:** Control of the MediINJECT dosing unit.

  "None" = no MediINJECT dosing unit installed.
  "In feeding line" = dosing into the feeding line.
  "In single valves" = dosing into the outlet of the feed valves.
- **Valves:** Number of feed valves at the branch line with jet.
- **Sub stubs:** Number of sub-branches that are installed.
  - **Valves:** Number of valves at the sub-branch line.
  - **Slurry valve:** A slurry valve is installed at the sub-branch line.
  - **MediINJECT type:** Control of the MediINJECT dosing unit.

    "None" = no MediINJECT dosing unit installed.
    "In feeding line" = dosing into the feeding line.
    "In single valves" = dosing into the outlet of the feed valves.
  - **Valve cleaning by air:** The sub-branch line can be cleaned with compressed air.
- **App connections:** Number of app connection groups to sub-systems installed at the branch line with Jet.

- **Outlet line:** An outlet line is installed at the branch line with jet.
- **Inlet line:** An inlet line is installed at the branch line with jet.

- **Slurry valve:** A slurry valve is installed at the branch line with jet.




**One return to tanks:** A shared return pipe is installed for the small circuit and the (main) circuits.

**Push-back pipe:** Piping and valves are installed to feed the circuits in opposite direction.

**Direct app outlet lines:** Number of outlet lines to sub-systems installed at the distribution system.

**External tanks:** Number of external "HydroMix CallMatic" tanks supplied by the distribution system.

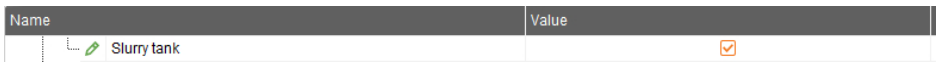

**Air pressure water unit**

- **Low air pressure valve:** A valve for draining the pipes using compressed air is installed.


**Water supply unit**

- **Additive device:** A valve for draining the pipes using water is installed.

### 3.1.1.7 Waste disposal




**Slurry tank:** A slurry tank or outlet is connected to the system.

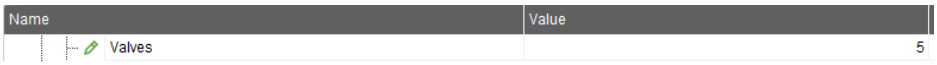
### 3.1.1.8 Compressed air


**Compressors:** Number of compressors that are installed.

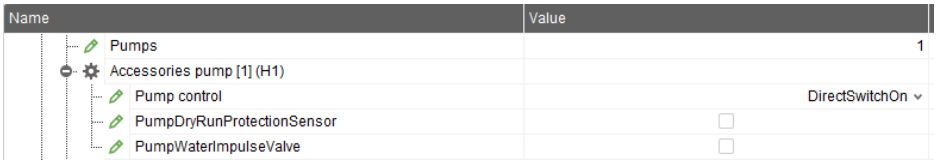
**PSI stations:** Number of PSI stations.

### 3.1.1.9 Accessories

You may add additional system components such as valves, pumps and augers for the feed move route later on below this parameter.

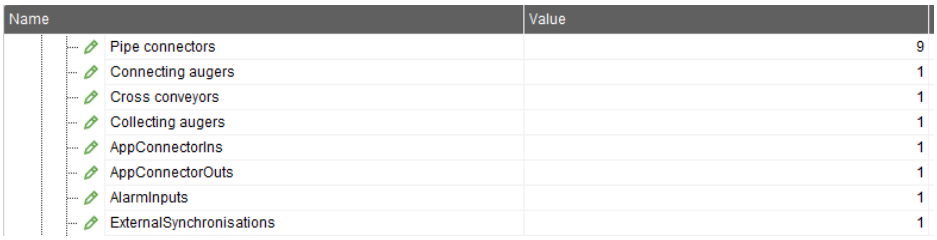



**Valves:** Number of additional valves.




**Pumps:** Number of additional pumps.

- **Pump control:** Type of control of the pump ("Frequency inverter", "Direct switch-on", "Shared frequency inverter").
- **Pump dry-run protection sensor:** The pump has a dry-run protection sensor.
- **Pump water impulse valve:** A water impulse valve is installed. Water is injected into the pump through this valve at the beginning of or during the pumping process, which makes the pump start up more easily.




**Pipe connectors:** Number of additional pipe connectors.

**Connecting augers:** Number of connecting augers.

**Cross conveyors:** Number of cross conveyors.

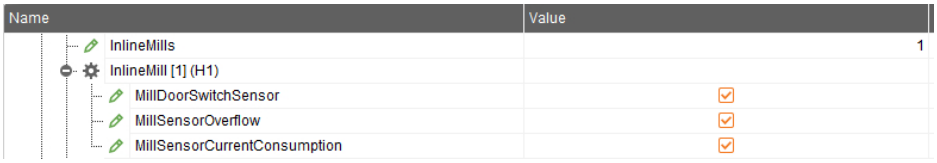
**Collecting augers:** Number of collecting augers.

**App connector ins:** Number of app input connections.

**App connector outs:** Number of app output connections.

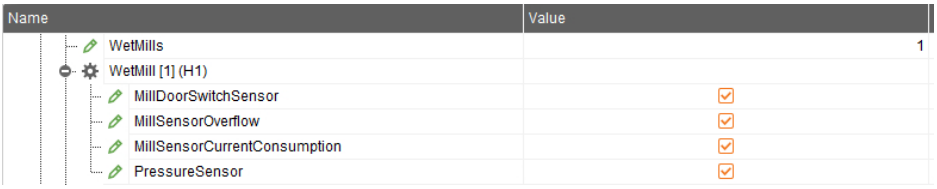
**Alarm inputs:** Number of additional alarm inputs.

**External synchronisations:** Number of external synchronizations.



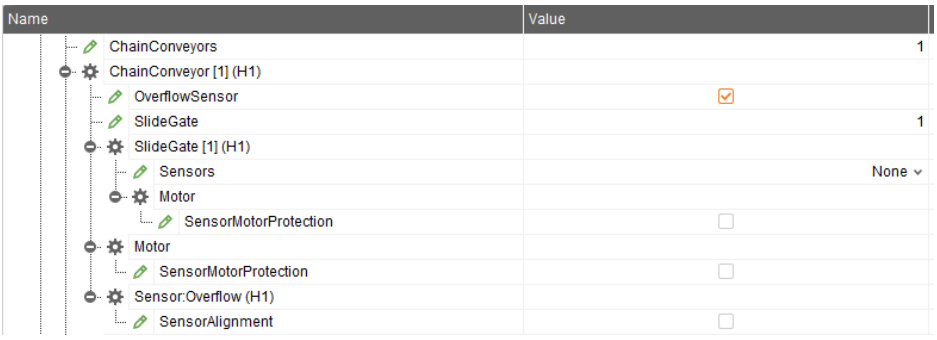
**Inline mills:** Number of inline mills.

- **Mill door switch sensor:** A safety switch for the mill cover is installed.
- **Mill sensor overflow:** An overflow sensor is installed.
- **Mill sensor current consumption:** A sensor for measuring the power consumption of the mill is installed.



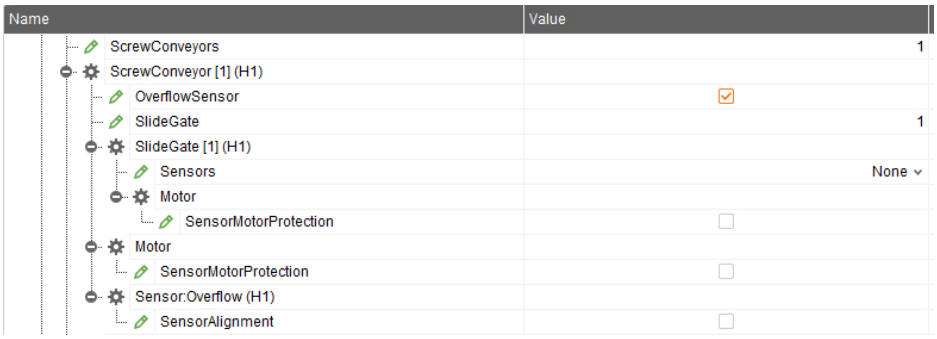

**Wet mills:** Number of wet mills.

- **Mill door switch sensor:** A safety switch for the mill cover is installed.
- **Mill sensor overflow:** An overflow sensor is installed.
- **Mill sensor current consumption:** A sensor for measuring the power consumption of the wet mill is installed.
- **Pressure sensor:** There is a pressure sensor under the wet mill which, by measuring the mill's actual fill level during milling, generates a desired target fill level by regulating the speed of the pump under the wet mill accordingly.



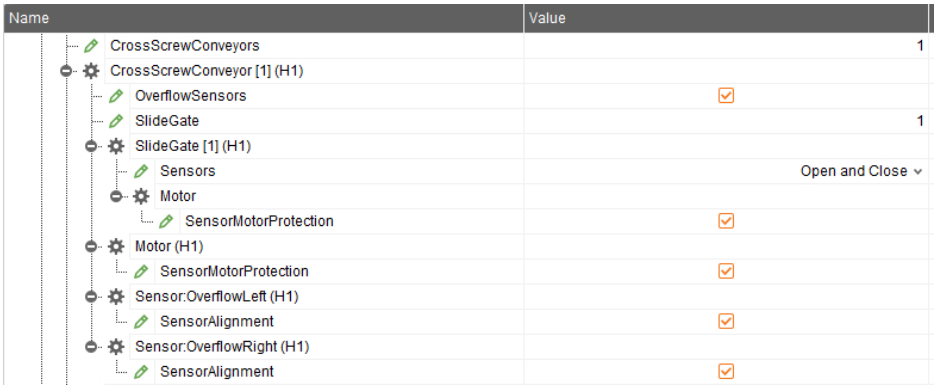

**Chain conveyor:** Number of chain conveyors.

- **Overflow sensor:** The chain conveyor has an overflow sensor.
- **Slide gate:** Number of slide gates of the chain conveyor.
  - **Sensors:** Type of sensors for the slide gate ("None", "Position OK", "Open and closed").
  - **Sensor motor protection:** A motor protection sensor is installed.
- **Sensor motor protection:** A motor protection sensor is installed.
- **Sensor alignment:** A module for adapting the data of the overflow sensor is installed.




**Screw conveyor:** Number of auger conveyors.

- **Overflow sensor:** The auger conveyor has an overflow sensor.
- **Slide gate:** Number of slide gates of the auger conveyor.
  - **Sensors:** Type of sensors for the slide gate ("None", "Position OK", "Open and closed").
  - **Sensor motor protection:** A motor protection sensor is installed.
- **Sensor motor protection:** A motor protection sensor is installed.
- **Sensor alignment:** A module for adapting the data of the overflow sensor is installed.



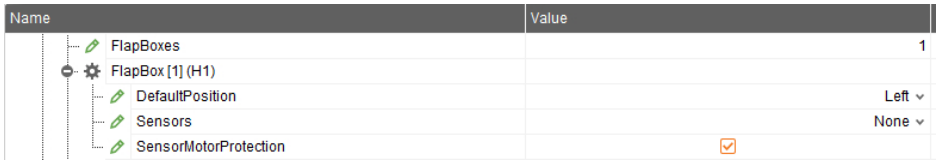

**Cross screw conveyor:** Number of cross conveyors.

- **Overflow sensors:** The cross conveyor has an overflow sensor.
- **Slide gate:** Number of slide gates of the cross conveyor.
  - **Sensors:** Type of sensors for the slide gate ("None", "Position OK", "Open and closed").
  - **Sensor motor protection:** A motor protection sensor is installed.
- **Sensor motor protection:** A motor protection sensor is installed.
- **Sensor alignment:** A module for adapting the data of the left overflow sensor is installed.

- **Sensor alignment:** A module for adapting the data of the right overflow sensor is installed.

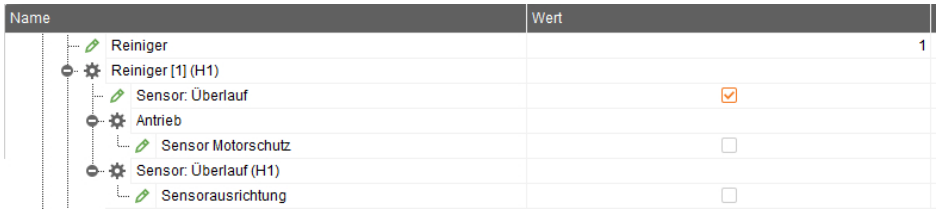

**Bucket elevators:** Number of bucket elevators.

- **Pulse sensor:** The bucket elevator uses a pulse sensor.
- **Explosion sensor:** The bucket elevator uses an explosion sensor.
- **Belt sensor:** The bucket elevator uses a belt sensor.
- **Sensor motor protection:** A motor protection sensor is installed.
- **Sensor alignment:** A module for adapting the sensor data (pulse sensor, explosion sensor, belt sensor) is installed.



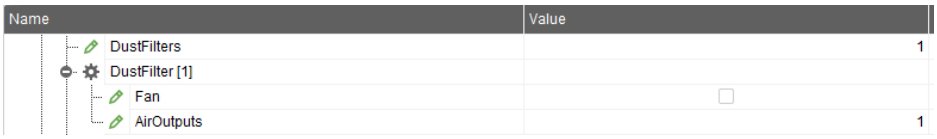

**Flap boxes:** Number of flap boxes.

- **Default position:** Standard flow direction of the flap box ("Right", "Left").
- **Sensors:** Type of sensors used by the flap box ("None", "Position OK", "Left and Right").
- **Sensor motor protection:** A motor protection switch is installed.




**Cleaner:** Number of cleaners.

- **Sensor: Overflow:** The cleaner has an overflow sensor.
- **Sensor motor protection:** A motor protection sensor is installed.
- **Sensor alignment:** A module for adapting the data of the overflow sensor is installed.




**Dust filters:** Number of dust filters.

- **Fan:** The dust filter uses a fan.
- **Air outputs:** Number of air outlets used by the dust filter.


**Flaps:** Number of flaps.

**Pressure sensors:** Number of pressure sensors.

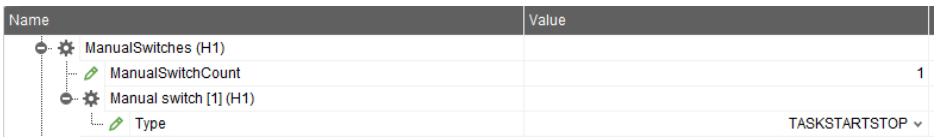

**Dosing screws:** Number of dosing augers.

- **Dosing screw control:** Type of control of the dosing auger ("Frequency inverter", "Direct switch-on", "Shared frequency inverter").


**Label for user-defined text:** Number of user-defined labels, see chapter 3.7 ”Editing a user-defined label”, page 99.

**Additional outputs:** Number of additional outputs.

### 3.1.1.10 Manual switches




**Manual switch count:** Number of manual switches.

**Type:** Type of manual switch ("TASKSTARTSTOP", "APPSTARTSTOPBUTTON", "APPPAUSESWITCH").

### 3.1.1.11 Control unit

| Name | Value |
|---|---|
| Water meters | 0 |
| Shared frequency inverters | 1 |
| Timed relays | 2 |
| Output devices PLC | 0 |
| Input devices PLC | 0 |
| Display PLC | 0 |

**Water meters:** Number of water meters.

**Shared frequency inverters:** Number of shared frequency inverters.

**Timed relay:** Number of time relays.

**Output devices PLC:** Number of output devices for PLC.

**Input devices PLC:** Number of input devices for PLC.

**Display PLC:** Number of displays for PLC.

| Name | Value |
|---|---|
| Control box (H1) | |
| Weighing box CAN Bus | 0 |
| Weighing box V3 CAN Bus | 1 |
| Junction box 16 out 18 in | 0 |
| Junction box 16 out 2 in | 0 |
| Junction box 32 out 4 in | 0 |
| Junction box 16 out 2 in 16 analog sensors | 0 |
| Frequency inverter Frenic Multi | 0 |
| Frequency_Inverter_FrenicACE | 0 |
| Frequency_Inverter_Altivar312 | 0 |
| Frequency_Inverter_Altivar320 | 0 |
| Motor_Controller_24V | 0 |
| Digital_module_BDDIO32 | 1 |
| Digital_module_BDDIO32LC | 0 |
| Analog_module_BDAM48 | 0 |
| Jumo_Pressure_Transmitter_402056 | 0 |
| Intelligent_Valve_Module_V4 | 0 |
| Gateway_CAN_Izumi_Lohbus | 2 |
| Gateway_CAN_Izumi_Lohbus [1] (H1) | |
| Bus | Lohbus |
| Lohbus (H1) | |
| BDM adapter V25 | 0 |
| Input card HLI 16 in | 0 |
| Output card HLO 32 out | 0 |
| Gateway_CAN_Izumi_Lohbus [2] (H1) | |
| Bus | Izumi |
| Izumi (H1) | |
| BDP digital 16/16 card | 0 |
| Valve module int. valves vers 2 | 0 |
| Relay module MC99 24relays | 0 |
| Valve module MC99 200 valves | 0 |
| Nano_Intelligent_CAN_Couplers | 1 |
| Nano_Intelligent_CAN_Coupler [1] (H1) | |
| Nano_analog_in_8 | 0 |
| Nano_analog_in_8_Temperature | 0 |
| Nano_analog_out_8 | 0 |
| Nano_digital_in_8 | 0 |
| Nano_digital_out_8 | 0 |
| Nano_relais_8_NO | 0 |
| Nano_analog_in_2_Ph | 0 |
| DisplayAMZ1 | 0 |
| Tag_reader | 0 |
| QuadScale_HouseLink_HL10C | 0 |
| ValveSensorPlusCards | 0 |

**Control box**

- **Weighing box CAN bus:** Number of weighing boxes (CAN).
- **Weighing box V3:** Number of weighing boxes V3.0 (CAN).
- **Junction box 16 out 18 in:** Number of junction boxes with 16 outputs and 18 inputs.
- **Junction box 16 out 2 in:** Number of junction boxes with 16 outputs and 2 inputs.
- **Junction box 32 out 4 in:** Number of junction boxes with 32 outputs and 4 inputs.
- **Junction box 16 out 2 in 16 analog sensors:** Number of junction boxes with 16 outputs, 2 inputs and 16 analog sensors.
- **Frequency inverter Frenic Multi:** Number of Frenic Multi frequency inverters.
- **Frequency inverter Frenic ACE:** Number of Frenic ACE frequency inverters.
- **Frequency inverter Altivar312:** Number of Altivar312 frequency inverters.
- **Frequency inverter Altivar320:** Number of Altivar320 frequency inverters.
- **Motor controller 24 V:** Number of 24 V motor controllers.
- **Digital module BDDIO32:** Number of digital modules BDDIO32.
- **Digital module BDDIO32LC:** Number of digital modules BDDIO32LC.
- **Analog module BDAM48:** Number of analog modules BDAM48.
- **Jumo pressure transmitter 402056:** Number of Jumo pressure transmitters 402056.
- **Intelligent valve module V4:** Number of V4 intelligent valve modules.
- **Gateway CAN Izumi Lohbus:** Number of Izumi/Lohbus CAN gateways.
  - **Bus:** Bus ("Lohbus", "Izumi").
  - **BDM Adapter V25:** Number of V25 BDM adapters.
  - **Input card HLI 16 in:** Number of HLI input cards with 16 inputs.
  - **Output card HLO 32 out:** Number of HLO output cards with 32 outputs.
  - **BDP Digital 16/16 card:** Number of BDP Digital 16/16 cards.
  - **Valve module intelligent valves vers. 2:** Number of intelligent valve modules version 2.
  - **Relay module MC99 24 relays:** Number of MC99 relay modules with 24 relays.
  - **Valve module MC99 200 valves:** Number of MC99 valve modules with 200 valves.
- **Nano Intelligent CAN coupler:** Number of Nano Intelligent CAN bus couplers.

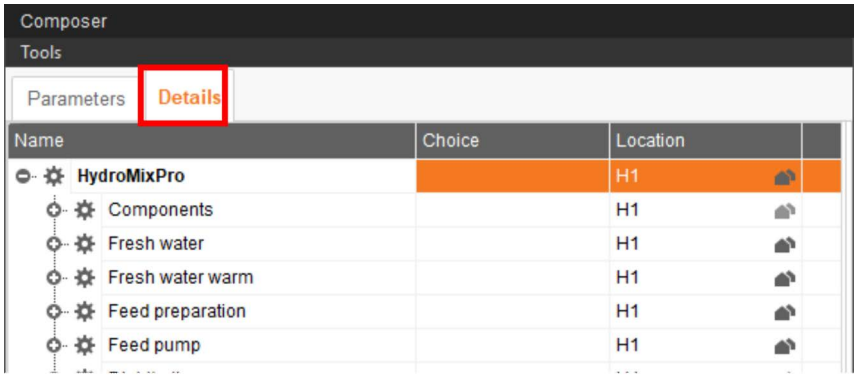
  - **Nano_analog_in_8:** Number of Nano I/O module boards, analog in (8 inputs).
  - **Nano_analog_in_8_Temperature:** Number of Nano I/O module boards, analog in (8 inputs) – temperature.
  - **Nano_analog_out_8:** Number of Nano I/O module boards, analog out (8 outputs).
  - **Nano_digital_in_8:** Number of Nano I/O module boards, digital in (8 inputs).
  - **Nano_digital_out_8:** Number of Nano I/O module boards, digital out (8 outputs).
  - **Nano_relay_8_NO:** Number of Nano I/O relay cards (8 relay outputs).
  - **Nano_analog_in_2_Ph:** Number of Nano I/O analog in 2 Ph cards.
- **Display AMZ1:** Number of displays type AMZ1 (UniScale).
- **Tag reader:** Number of transponder readers.
  - **Tag reader type:** Transponder reader type ("BDP antenna", "BDP antenna V2", "RFID box").
- **QuadScale_HouseLink_HL10C:** Number of QuadScale houselink cards.
- **Valve Sensor Plus cards:** Number of valve sensor cards with additional outputs for status lamps.

### 3.1.2 Allocation to the farm structure

If the system is integrated into an existing BigFarmNet network, the corresponding location must be assigned to the system and/or the individual system components. If the BigFarmNet network is installed at the same time as the system (application), the location does not need to be adjusted.

1. Make sure that you are in the Composer.
2. Click on the "Details" tab. Open the structure by clicking on the plus icon.

   The structure shows all location-related components of the system.



**NOTICE!**

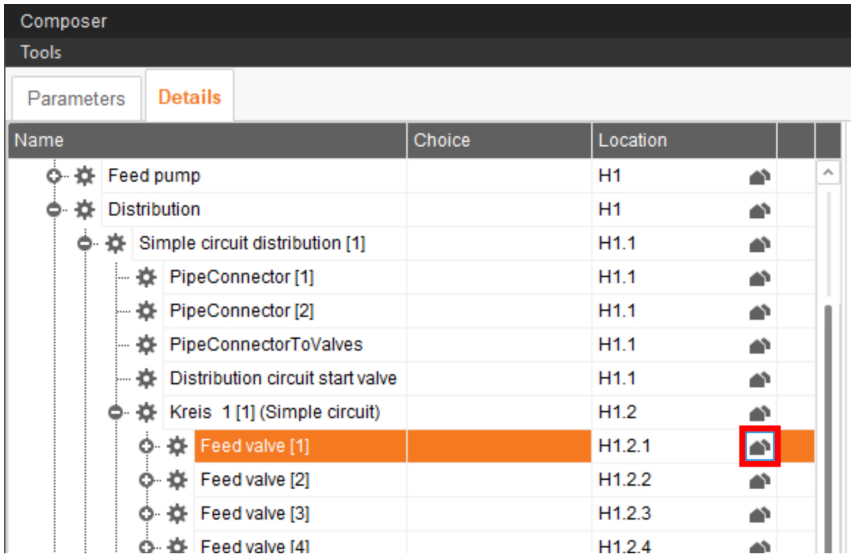
If your farm works with multiple control computers, assign each control computer its own location.

3. Assign the correct location to HydroMix and/or the individual system components.

**NOTICE!**

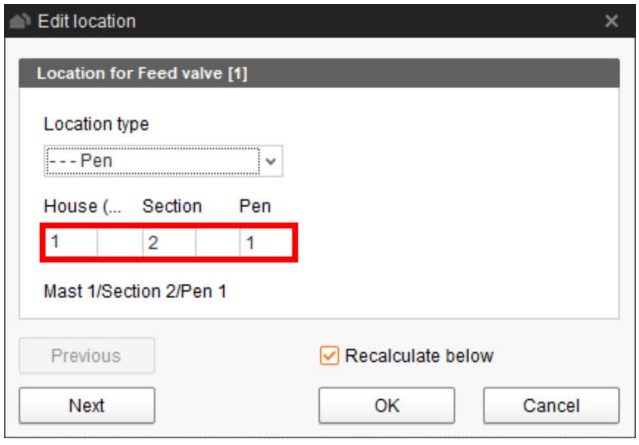
Make sure to refer to the counting order of the customer's house plan when assigning locations to the valves.

a) Click on the house icon of the system component.



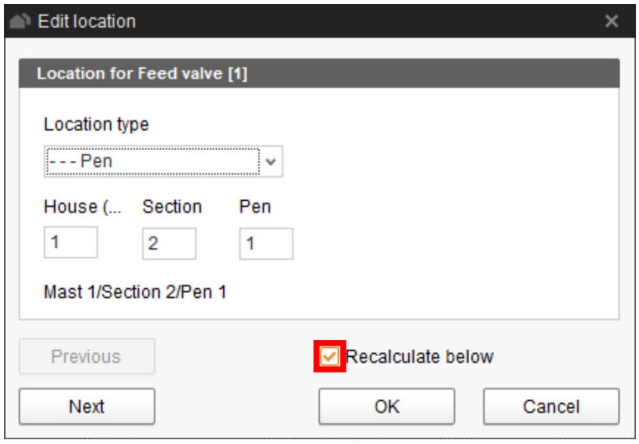

b) In the next window, enter the number of the correct location.

The selected location is displayed in its entirety below the input field.




c) If necessary, check the box "Recalculate below".

All below (subordinate) system components are then automatically assigned to the new location.




d) Click on "Next" to continue assigning locations to the system components on the same level.

e) Click on "OK" after you have finished to accept the input.

4. Enter a unique name for the silos so the assignment is clear.

**NOTICE!**

Check list Composer:

•Did you open all system components using the structure?

•Did you configure all settings according to the structure of the system?

•Did you assign all system components to the correct location (refer to the house plan)?

Click on "Save" to accept all settings for the Composer.


Confirm the dialog by clicking on "OK".

The FeedMove Editor opens.

## 3.2 Depicting the system in the FeedMove Editor

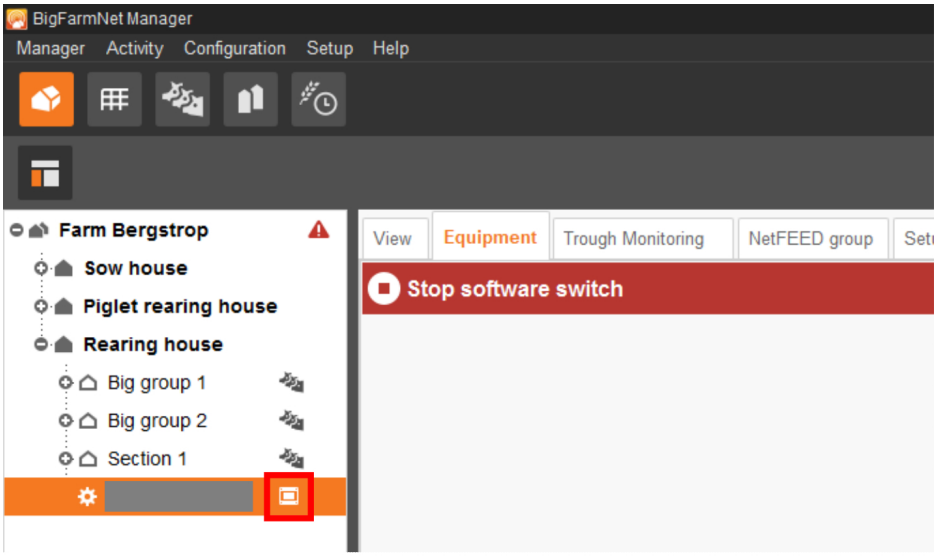
The Feedmove Editor is a program used to edit the graphical depiction of the installed system. All system components you have created in the Composer are displayed as icons in the FeedMove Editor. In the FeedMove Editor, you can connect the individual system components according to the installed system. You thus define the route of the feed move.

**NOTICE!**

Automatically generated feed moves must be edited!

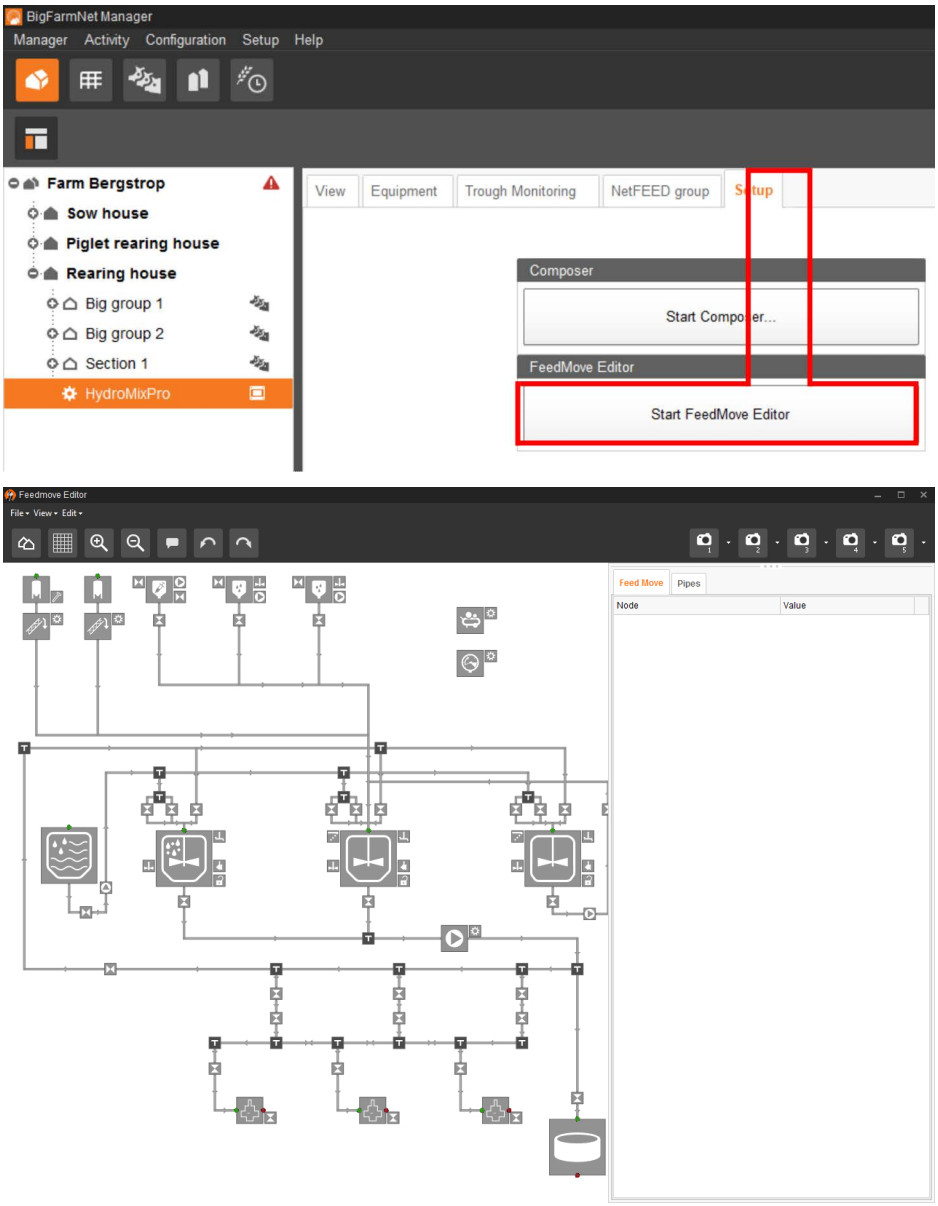
The completed depiction is displayed in the "View" application window. The image shows the system's activity during operation.

1. Click on the controller icon of the respective system application in the farm structure.

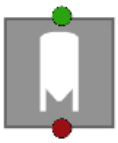



2. Under "Setup", click on "Start FeedMove Editor".

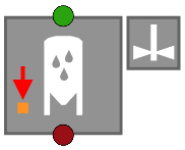
   The FeedMove Editor opens in a new window.




## 3.2.1 Icons of the system components



Dry silo



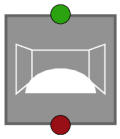
Liquid add-on unit, agitator and minimum sensor

Dry mineral dosing unit

Liquid mineral dosing unit

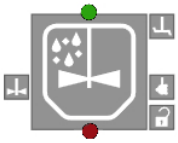
MediINJECT

CCM

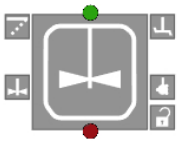


Bunker silo

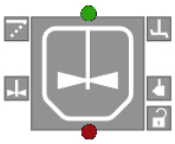
Fresh water tank



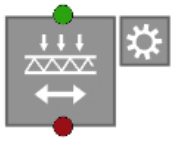
Used water tank



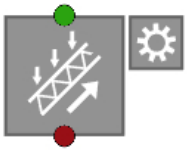
Pre-mixer



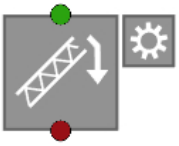
Mixing tank



Cross conveyor



Collecting auger



Dosing auger / FlexVey


Feed valve


Compressed air monitoring


Reciprocating compressor


Feed pump


Pump general


Vibrator


Agitator


Valve


Inlet flap


Fogger


Cleaner


Security lock / tank blocking


Blade CCM


Slope auger CCM


Drive


Pipe connector

### 3.2.2 Tool bar

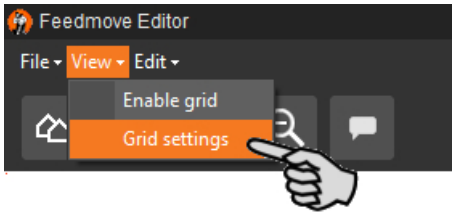

| | | |
|---|---|---|
|  | View | Complete view of the system |
|  | Grid | Hide / show grid lines |

| | | |
|---|---|---|
|  | Zoom in / zoom out | Zoom into / out of the view |
|  | Description boxes (labels) | Hide / show description boxes of specific system components |
|  | Undo / redo | Undo / redo an action |
|  | Camera | Save different views of the system |

### 3.2.3 Configuring the grid

If you want to align the system components based on a grid, click on  . Adjust the size of the grid as follows, if necessary:

1. Click on "Grid settings" in the "View" menu.




2. Enter the correct values into the input fields or change them using the arrows pointing upwards and downwards.
3. Accept these inputs by clicking on "OK".

### 3.2.4 Adjusting and saving views

**NOTICE!**

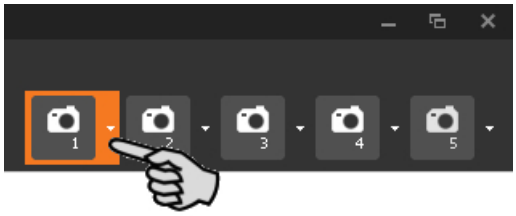
The below mentioned functions of the mouse depend on how you have configured your mouse in Windows.

You can save up to 5 different views: one view for each camera icon. Saved views can be retrieved later on in the window "View".

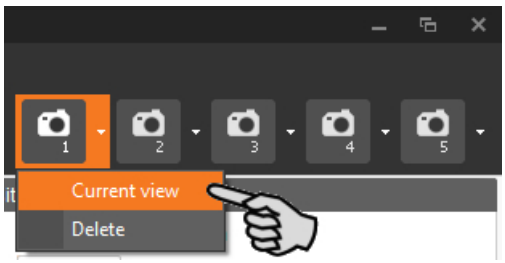
1. Adjust the view as follows:
   - **Zooming in and out:** Roll the scroll wheel of your mouse.
   - **Moving to the left and to the right:** Hold down the Shift key while rolling the scroll wheel of your mouse.
   - **Moving up and down:** Hold down the Control (Ctrl) key while rolling the scroll wheel of your mouse.

     OR

     Press the scroll wheel of your mouse to move the image (two-dimensional) into all directions.
2. Click on the arrow pointing downwards at one of the camera icons.




3. Click on "Current view" in the context menu. The view is now saved.




4. If you would like to retrieve the saved view later on, click on the corresponding camera icon.

### 3.2.5 Selecting and moving system components

1. Move the mouse pointer over the respective system component.

   The mouse pointer will change its shape  . The name of the system component is additionally displayed as tooltip for a moment.

2. Click on the system component and hold the mouse button.

   The colour of the system component changes to orange.

3. Move the system component to the required position and release the mouse button.

   Or:

1. Select multiple system components

   a) by drawing a rectangle over the system components while holding the left mouse button

      Or:

      by clicking on the different system components while holding the Ctrl key.

      The colour of the selected components changes to orange.

2. Click into the selected area and hold the mouse button.
3. Move the system component to the required position and release the mouse button.

**NOTICE!**

You can also move objects that are marked orange using the arrow keys on your keyboard.

### 3.2.6 Linking system components

For the HydroMix*pro* application, the links between the system components, also called feed moves, are pre-defined.

**NOTICE!**

If you would like to use the default feed moves, make sure that they are possible with the system you have installed.

To link system components, you might have to delete existing links first.

- **Deleting individual links:**

**a)** Move the mouse pointer to the link you want to change.

The mouse pointer will change its shape .

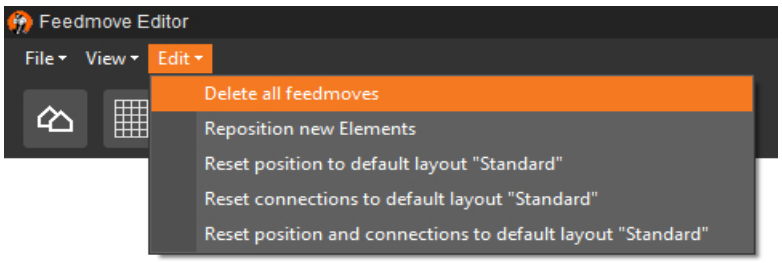
**b)** Click on the link.

The colour of the link changes to orange.

**c)** Press the "Delete" key on your keyboard.

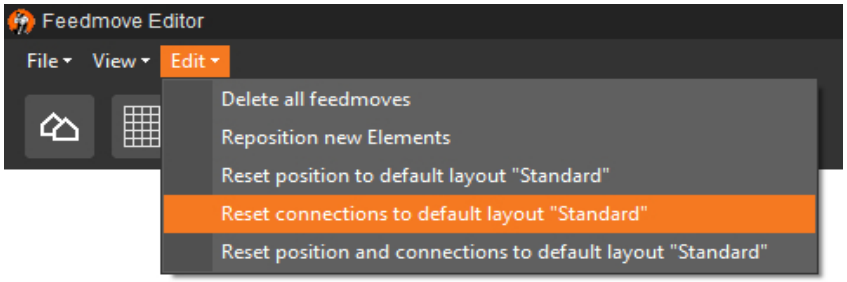
The link is deleted.

- **To delete all links**, click on "Delete all feedmoves" in the menu "Edit".



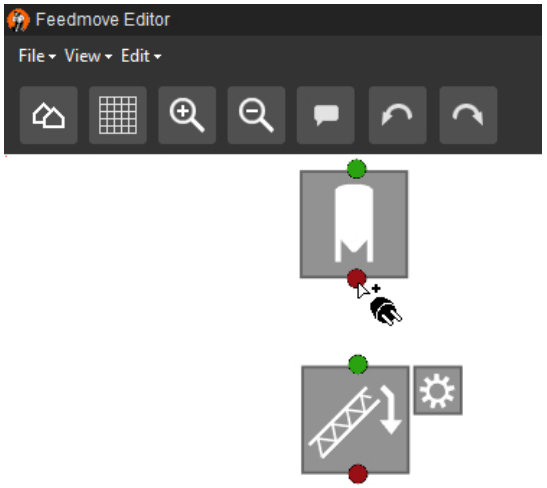

- **Resetting to default:** For EcoMatic, the system components are connected automatically by default links. If this configuration has been changed, you may reset the default links and continue using this default.

  In the menu "Edit", click on "Reset connections to default layout 'Standard'".



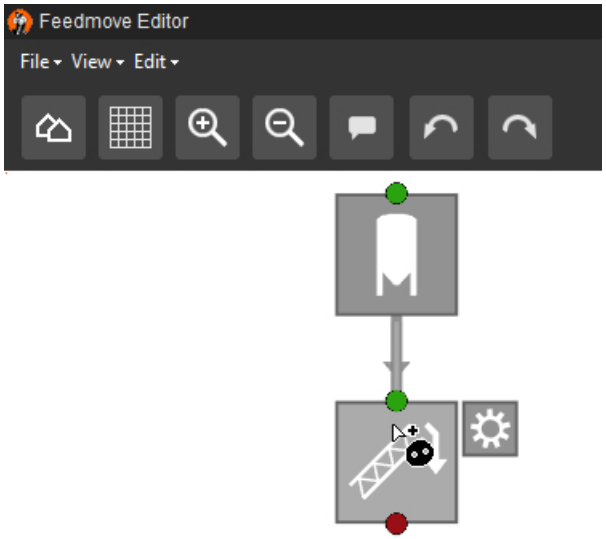

1. Move your mouse pointer to the **red dot** of the specific system component.

   The mouse pointer will change its shape .



2. Click on the red dot and hold the mouse button.
3. Move the mouse pointer over the icon of the system component to which you want to link the selected system component.

   The mouse pointer will change its shape and a line linking both components appears. The flow direction is indicated by an arrow within the line.




4. Release the mouse button.

   The two system components are now linked.

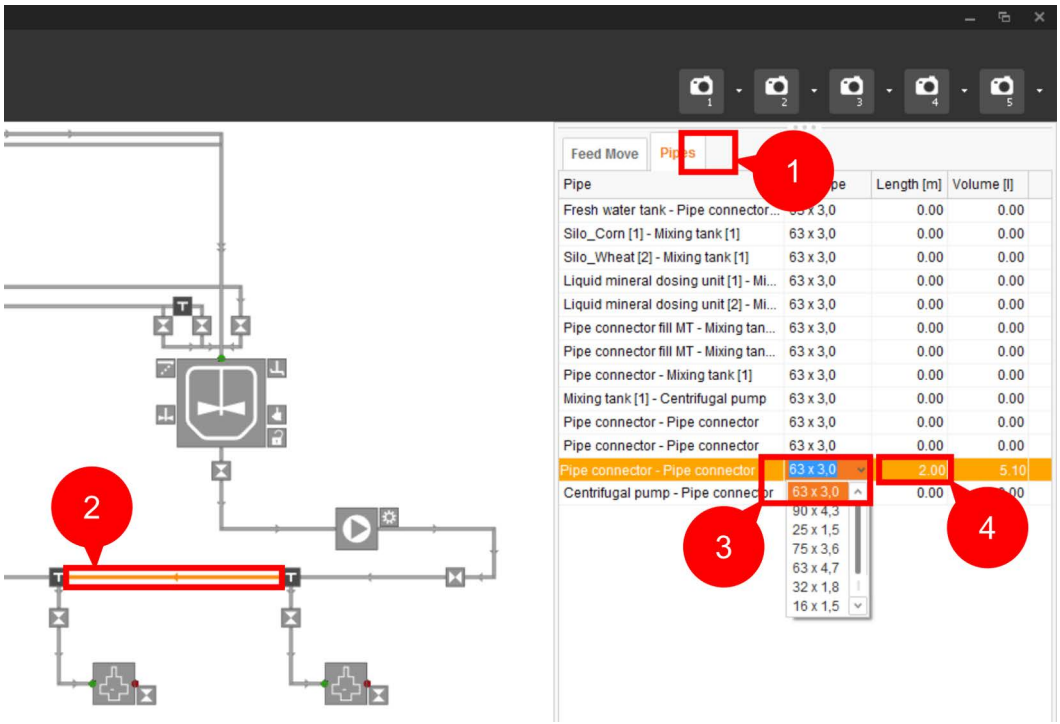
   Linked system components without green or red dot cannot be linked further.
5. Continue linking all system components so that all feed move routes are displayed correctly.

### 3.2.7 Adding system components subsequently

If you need additional system components for a system you have already generated with the FeedMove Editor, such as pipe connectors or valves, you must return to the Composer. Select all additionally required system components in the Composer below the parameter "Accessories", see chapter 3.1.1.9 ”Accessories”, page 43.

### 3.2.8 Calculating the volume of the supply pipes

If the distribution systems in the feed kitchen are very extensive, the pipes between the feed pump and the individual circuit start valves contain a large and undefined amount of feed. The feed amount can be pushed forward in defined steps in the small circuit (feed kitchen circuit) if the distance between the circuit start valves has been defined. This means that the feed amount is pushed towards the circuit start valves as far as possible without causing the feed to mix with another component or water. Define the distance between the circuit start valves by entering the length of the supply pipes. Their volume is then calculated automatically.




1. Click on the "Pipes" tab.
2. Select the correct supply pipe by clicking on it.

   Information regarding the selected pipe is highlighted in the list.
3. Select the pipe type from the drop-down menu by double-clicking into the corresponding input field.
4. Enter the length of the pipe and press Enter to confirm your input.

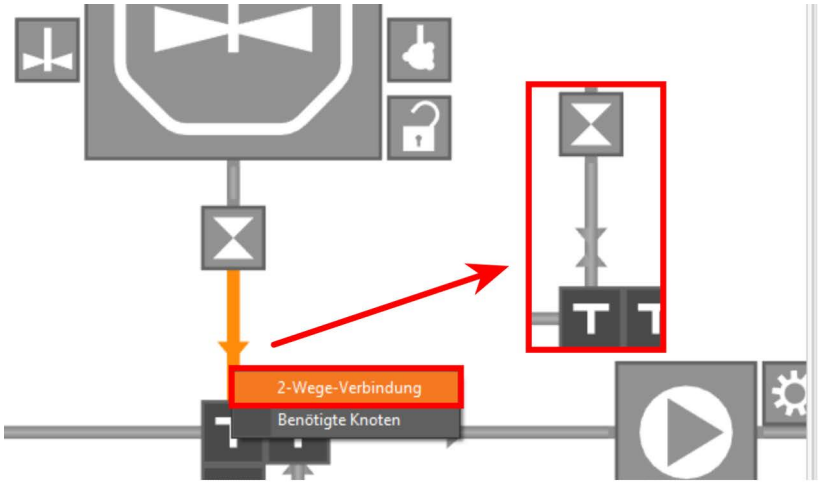
   The volume is now calculated automatically.

### 3.2.9 Changing the flow direction

You may define both flow directions for the feed in all pipes in the FeedMove Editor. An arrow at the pipes shows the flow direction and is defined for one specific direction by default.

1. Click on the respective line to mark it.
2. Right-click on the selected line to open the context menu.
3. Select "Connection bidirectional" (if the "Feed Move" tab is active) or "Pipe bidirectional" (if the "Pipes" tab is active).

   Two arrows appear at the line, indicating both flow directions.



### 3.2.10 Configuring feed moves

At first, feed moves include all possible feed routes between the different system components, also called nodes. Use these nodes to define the feed moves so that the system knows exactly which feed move is the correct one. This reduces the number of possible feed moves to those that are absolutely mandatory.

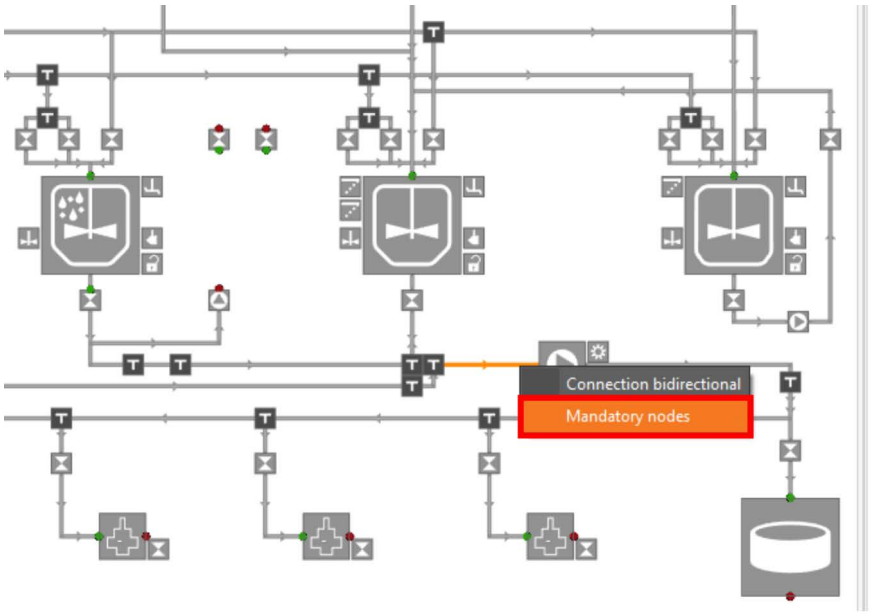
**NOTICE!**

Only service technicians may configure the feed moves using the nodes.

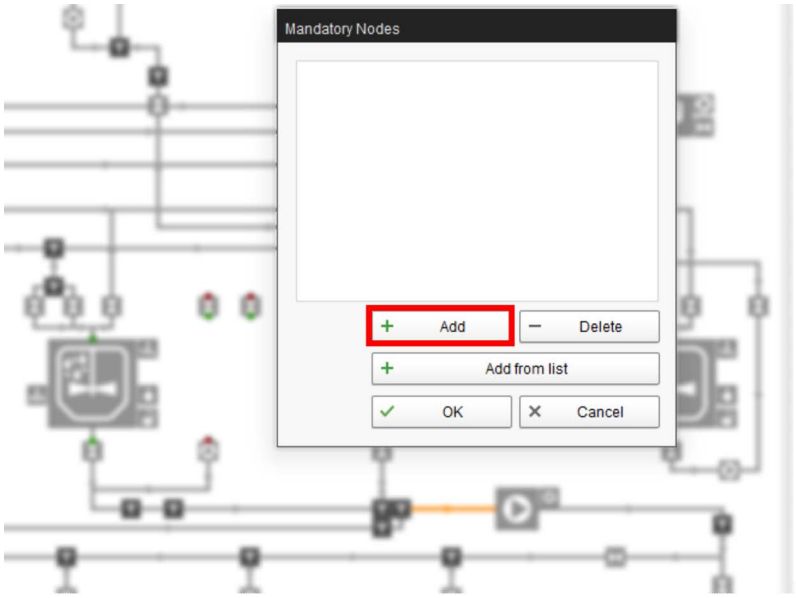
1. Click on the respective line to mark it.
2. Right-click on the selected line to open the context menu.

3. Select "Mandatory nodes".

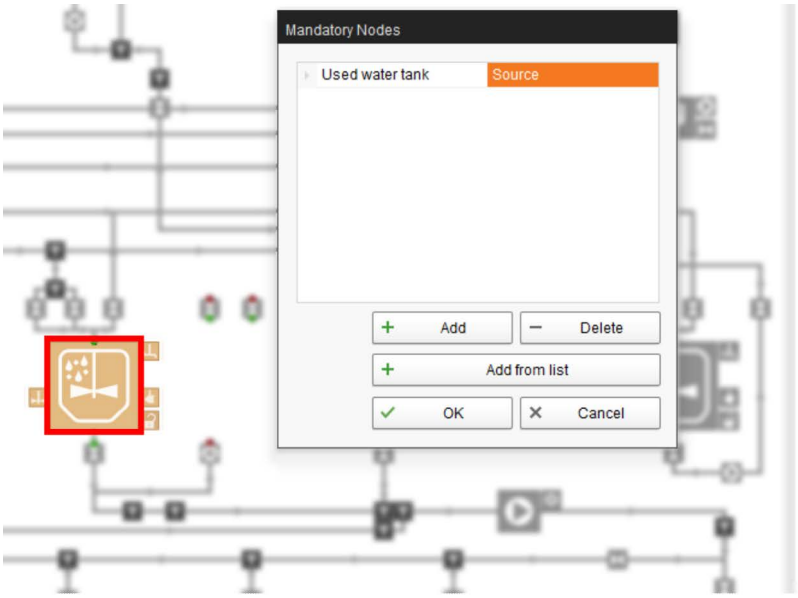
   This opens the dialog window "Mandatory nodes".



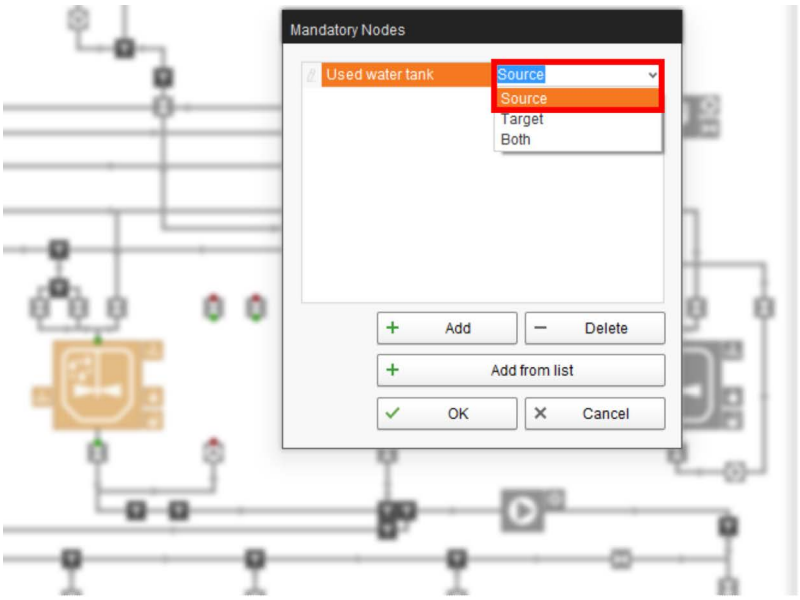

4. Click on "Add".



5. Click on the correct node in the graphic (system component, example: used water tank).




6. Define the selected node as "Source", "Target" or "Both".

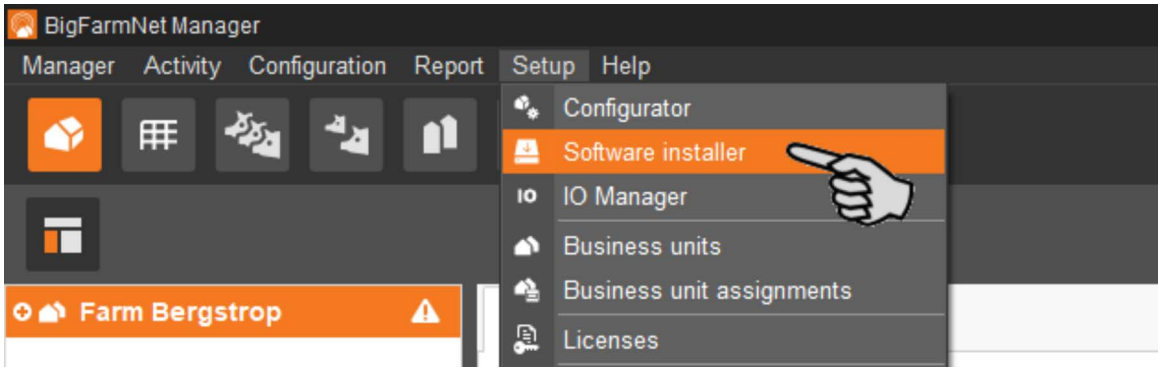



7. Add further nodes to the installed system as described above, depending on its structure.
8. Click on "OK" to accept these settings.

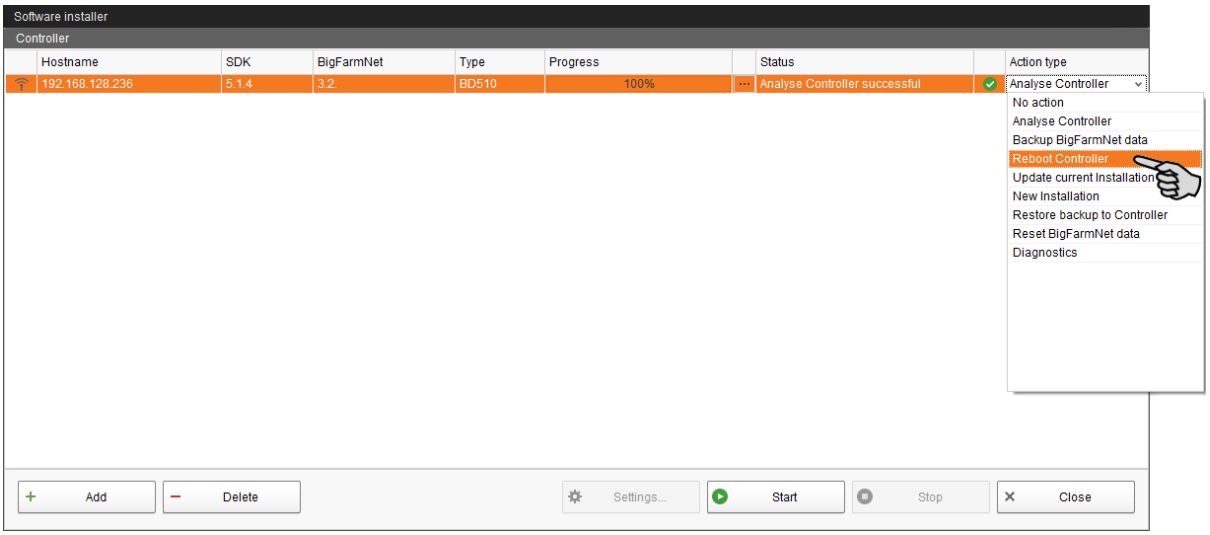
### 3.2.11 Closing the FeedMove Editor

After saving the changes in the FeedMove Editor, a new dialog appears, prompting the restart of the 501*pro* control computer.


9. Confirm the dialog by clicking on "OK".
10. Click on "Software installer" in the "Setup" menu.




11. Click on the control computer to select it.
12. Click into the corresponding input field under "Action Type" and select "Reboot Controller".




13. Click on "Start".

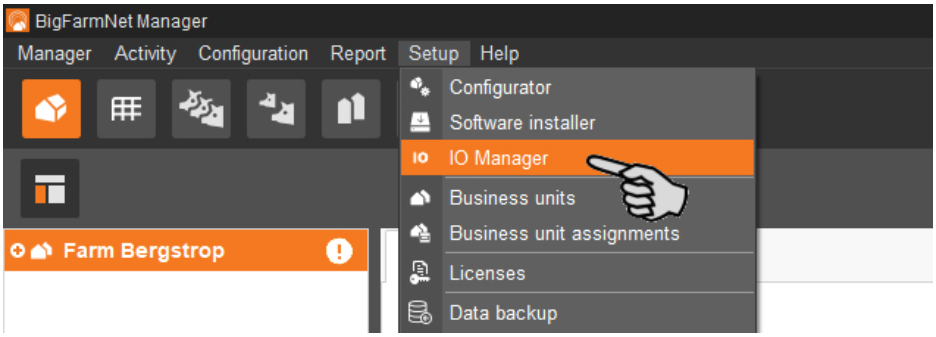
**NOTICE!**

This process may take a few minutes!

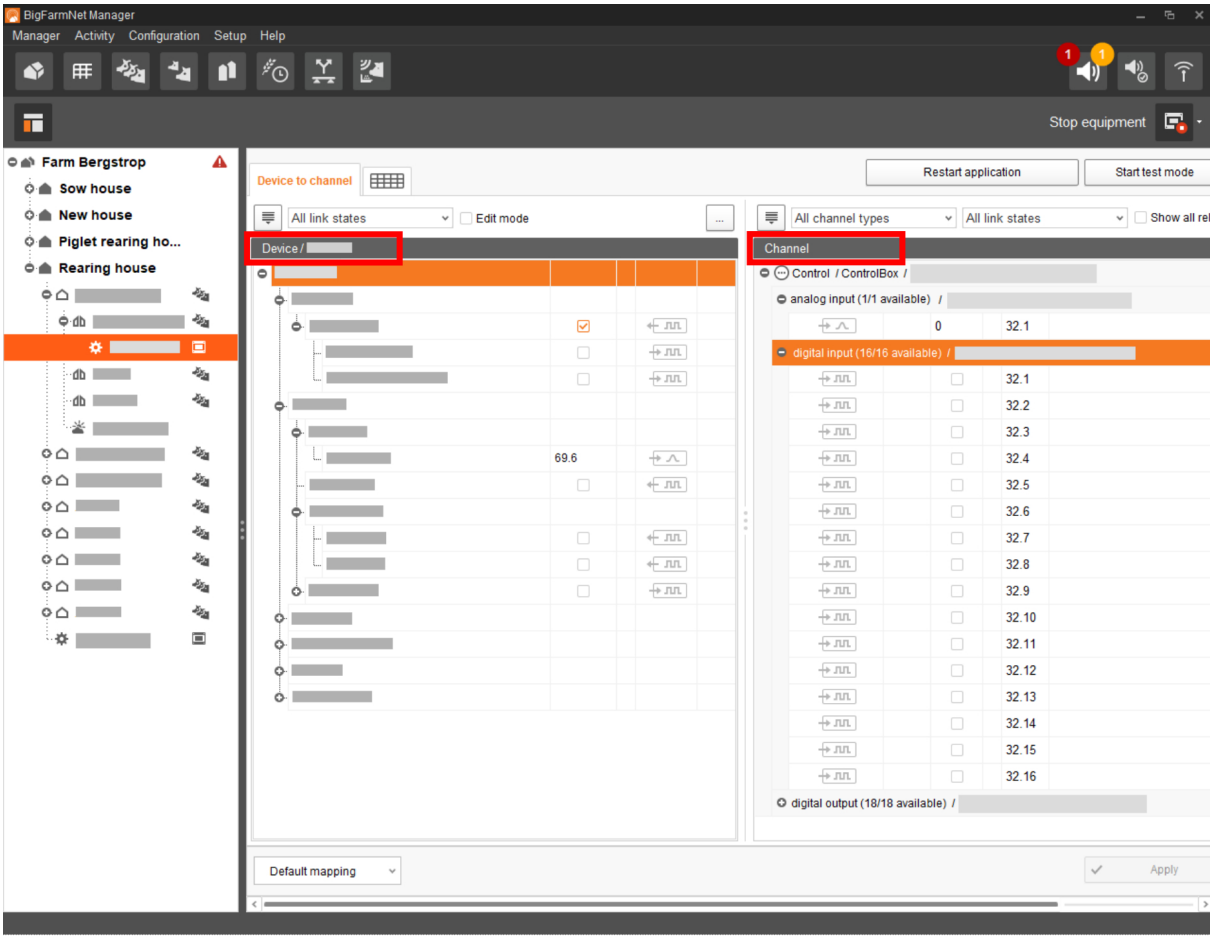
## 3.3 Configuring the IO Manager

The controller is configured in the IO Manager. Assign the system functions that you defined in the Composer in the previous step to the IO cards.

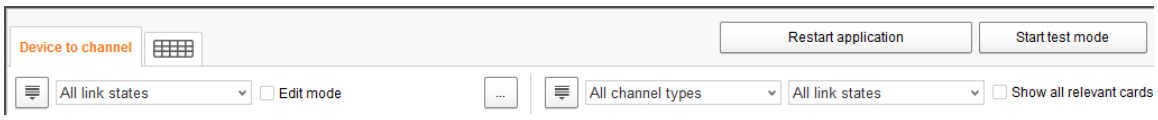
1. Click on the controller icon of the respective system application in the farm structure.
2. Click on "IO Manager" in the "Setup" menu.




The IO Manager opens in the application window. The left-hand part of the window shows the individual devices of the system under "Device". The right-hand part of the window displays the channels of the IO cards under "Channel".




Adjust the view in the IO Manager as follows using the upper bar:




-  Expanding or collapsing the structure entirely
- Displaying the device and/or channel according to the link state
- Enabling or disabling the edit mode, in which you can edit device names and create links between devices and IO cards manually with your keyboard
-  Displaying control box numbers and indexes; displaying feed valves without location names
- Showing the channel according to the channel type
- Displaying all relevant cards to also display the IO cards of other applications of the NetFEED group that are connected to devices of the own application

The interfaces of the devices and the IO cards are indicated by the following icons:

-  Digital output
-  Digital input

- Analog output
- Analog input
- Counter input
- Serial interface
- Linked interfaces are colored:
- Non-linked interfaces are grayed out:

### 3.3.1 Order of the IO cards: Lohbus, Izumi

If you use Lohbus or Izumi IO cards, the order of the IO cards in the IO Manager must match that in the control cabinet. Both Lohbus and Izumi are automatically added to the IO Manager after you have selected them in the Composer. The order of the IO cards is arbitrary in the IO Manager.

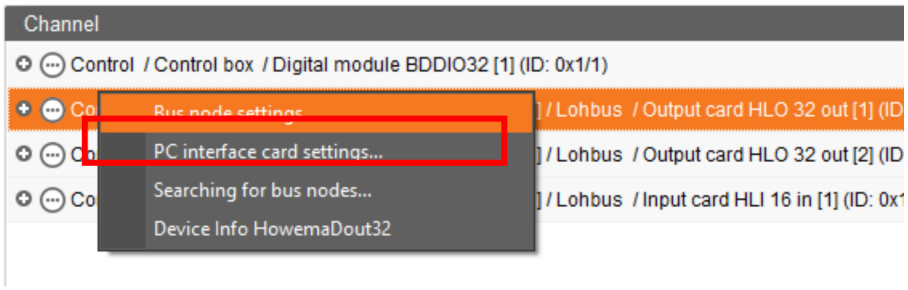
**NOTICE!**

Sort the Lohbus and Izumi IO cards in the IO Manager **before** creating any links.

The following instructions explain how the Lohbus IO cards are sorted. The Izumi IO cards are sorted in the same way.

1. Right-click on one of the Lohbus cards to open the context menu.
2. Click on "Bus node settings" in the context menu.

   This opens a new dialog window with the settings.

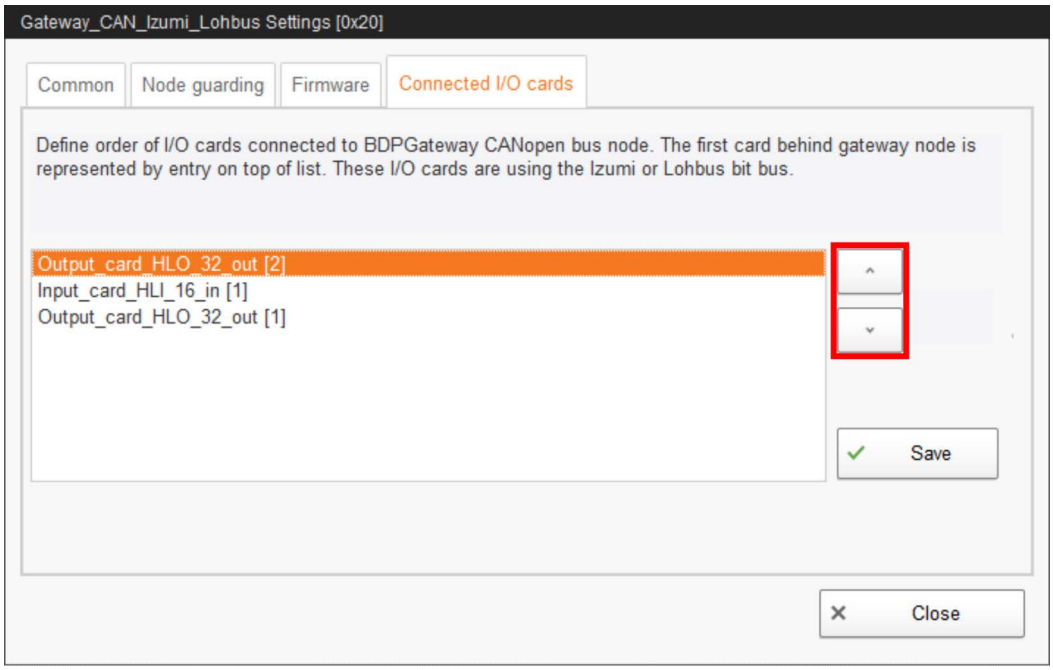



3. Click on the tab "Connected I/O cards".

4. Sort the IO cards that appear in the small view window:
   a) Click on one IO card.
   b) Change the position of the IO card using the arrows pointing upwards and downwards.

**NOTICE!**

Number the IO cards consecutively, starting with the first card behind the gateway when sorting the IO cards.




   c) Save the defined order by clicking on "Save".
5. Close the dialog window for settings by clicking on the button "Close".

### 3.3.2 Creating links

To set up the required IO links, it is possible to either load the default mapping or to define all connections manually.

1. Change one or more inputs to outputs with the supply voltage +24 V in the "Channel" area, where necessary.

   The default shows only inputs at first.

   This function is only possible for IO cards type BDDIO32 and BDDIO32LC.

   a) Select one input or select multiple inputs by holding the Ctrl key.

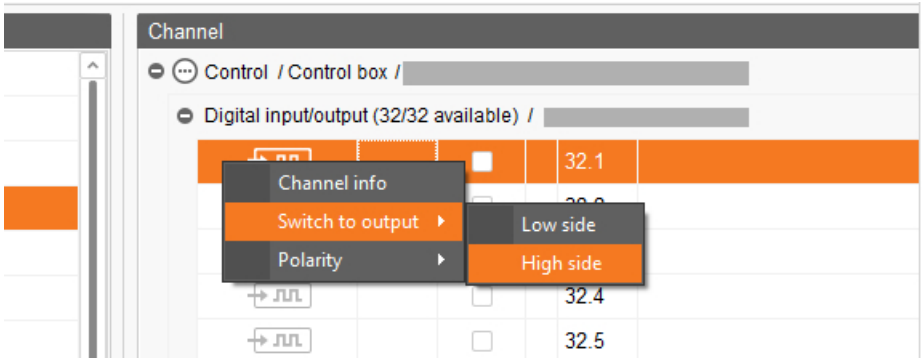
      Multiple editing is only possible for channels of the same type.

   b) Right-click into the marked area.

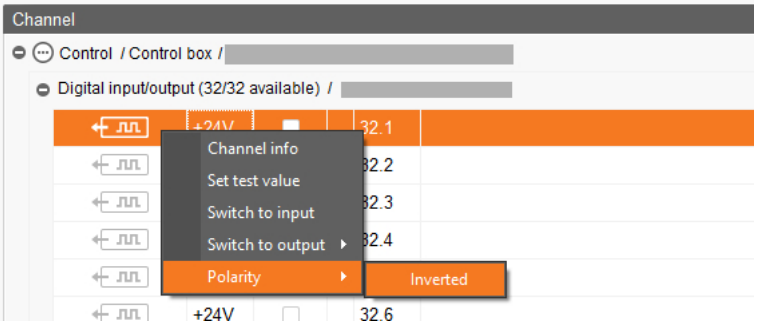
   c) In the context menu, select "Switch to output" > "High side", if the new output should switch to high side (24 V).

      OR:

      In the context menu, select "Switch to output" > "Low side", if the new output should switch to low side (ground).




   d) If necessary, you can invert the polarity of the signal by clicking on "Polarity" > "Inverted" in the context menu.



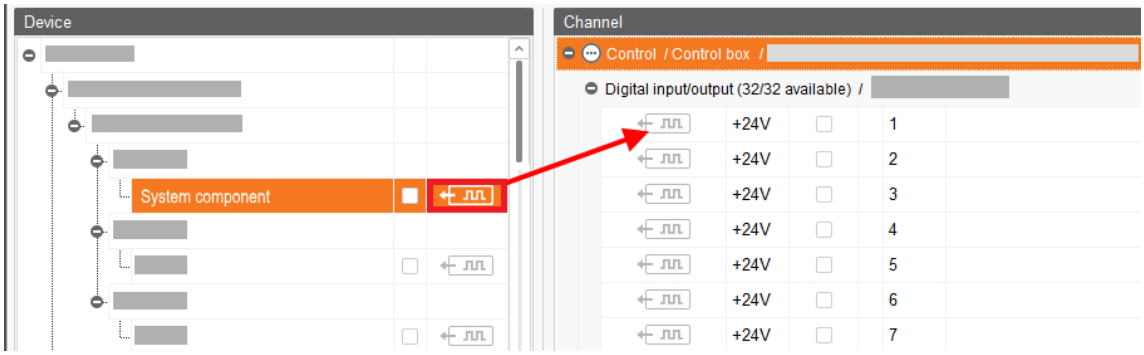

2. Select one of the following options to link the interfaces:

   **Option 1:**

a) Click on the interface of the respective system component and hold the mouse button.

b) Hold the mouse button and move the mouse to the interface of the correct channel, then release the button.

The system component and the channel are now linked. The icons are colored  .

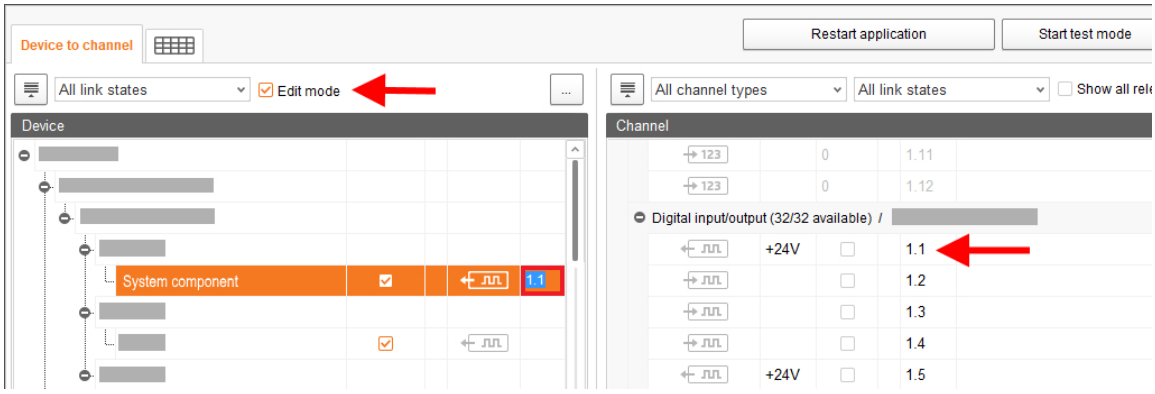



**Option 2:**

a) Activate the edit mode in the upper bar.

b) The IO card interfaces have numbers. Enter the corresponding number for the system component's interface.

The system component and the channel are now linked. The icons are colored  .




3. If you have created an incorrect link, right-click on the corresponding linking icon. Click on "Delete connection" in the context menu.

**NOTICE!**

Checking links:

Double-click on the respective device to mark the linked channel.

4. Click on "Save" in the bottom command bar after having established all links.

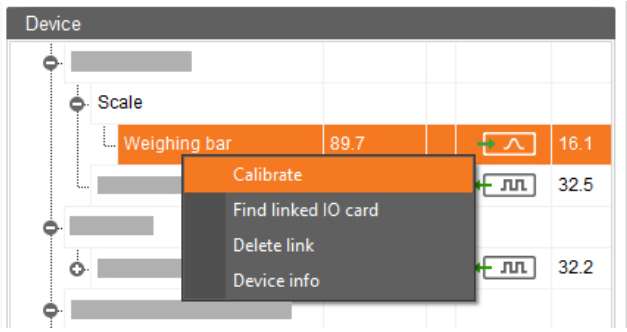
5. Click on "Restart application" at the top of the window to start the control.

### 3.3.3 Calibrating the scale

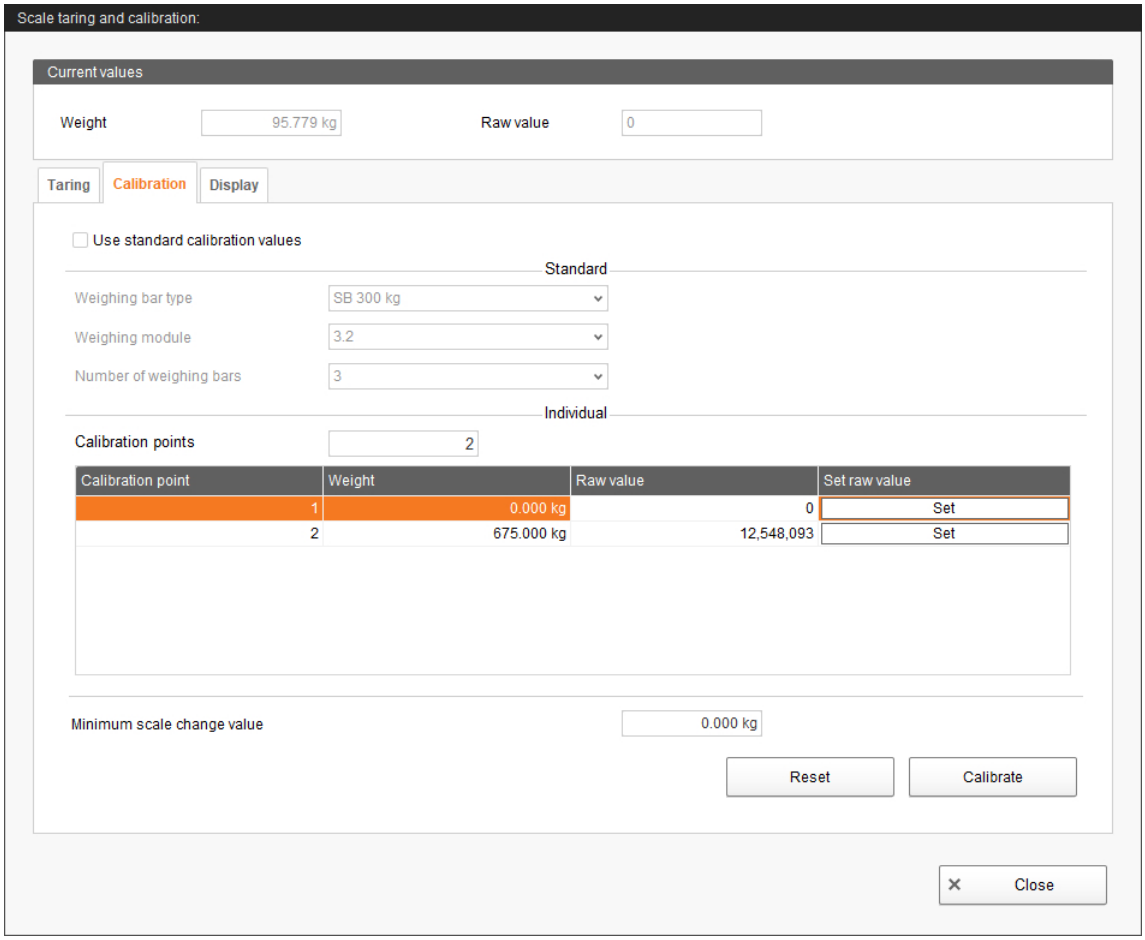
You may calibrate the scale as soon as you have created a link between the scale or its weighing bars and the respective weighing box.

1. Right-click on the connected scale or its subordinate weighing bars in the "Device" area.
2. In the context menu, click on "Calibrate".

   This opens a new dialog window.




3. To calibrate, click on the "Calibration" tab.




4. Enter the weight (usually the value 0) for calibration point 1 and click on "Set" in the "Set raw value" column.
5. Enter the weight used for calibration for calibration point 2.
6. Load HydroMix with the calibration weight.
7. Click on "Set" in the "Set raw value" column in the row for calibration point 2.
8. Remove the calibration weight.
9. If you have defined further calibration points, repeat steps 5 to 8 with these points.
10. Click on "Calibrate" to complete the calibration process.
11. Close the dialog.

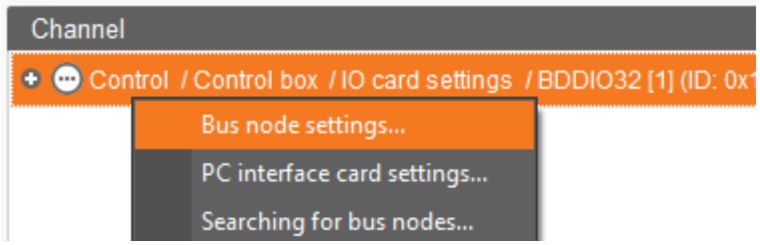
### 3.3.4 Changing the node ID

Please refer to the enclosed wiring diagram for information on the devices' CAN addresses. Assign the CAN addresses in accordance with the wiring diagram.

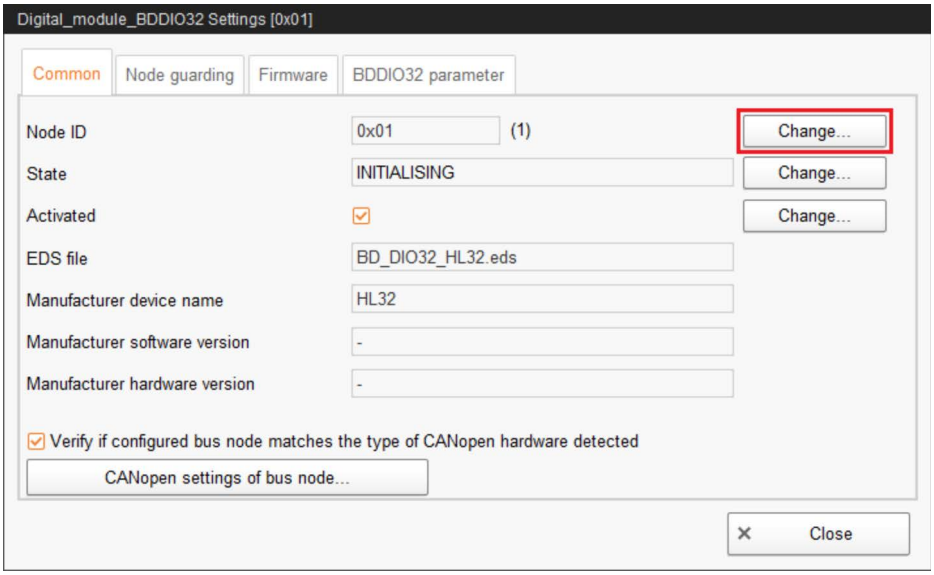
1. On the IO cards to be assigned, check to which CAN ID the rotary switch of each card is set (in the control box).

2. Open the context menu by right-clicking on the IO card (top level) and click on "Bus node settings...".

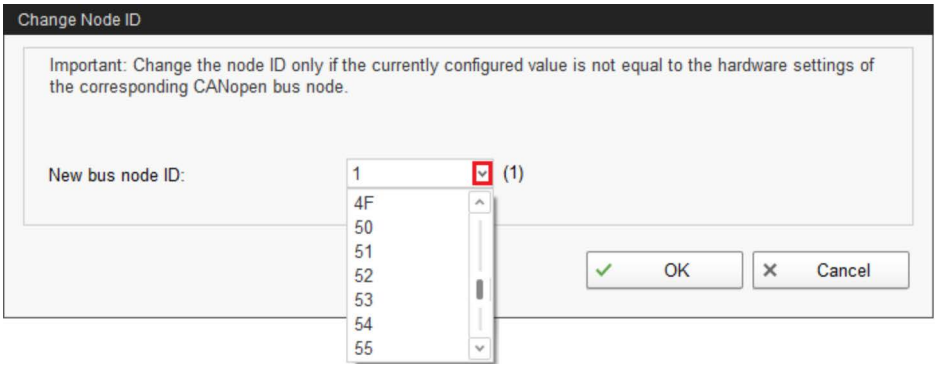
   This opens a new dialog.



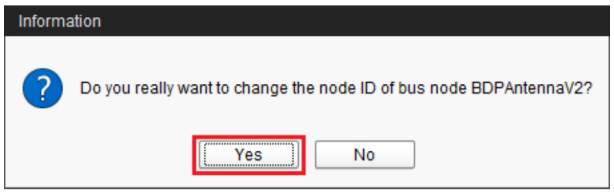

3. In the first tab, click on "Change..." next to "Node ID".




4. Select the new node ID and click on "OK".




5. Confirm the prompt for confirmation.




6. Click on "Close" to close the dialog.
7. Click on the button "Restart application" to accept the settings.

### 3.3.5 Importing a wiring diagram

Wiring diagrams can be loaded in CSV format.

1. Click on the arrow pointing downwards next to the button "Default mapping" in the lower bar.

   This opens a context menu.

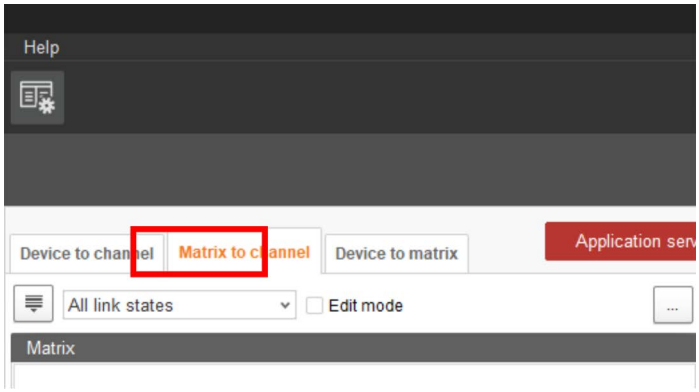

2. Select "Load control cabinet mapping".


### 3.3.6 Creating a valve matrix

The digital modules BDDIO32 and BDDIO32LC can control the feed valves. In total, 32 channels are available, and the IO Manager can be used to configure each channel as either input or output. The outputs can be switched to either +24 V or to GND, depending on the configuration. This makes it possible to realise a valve matrix for the actuation of the feed valves. A valve matrix can control a maximum of 220 valves per digital module.

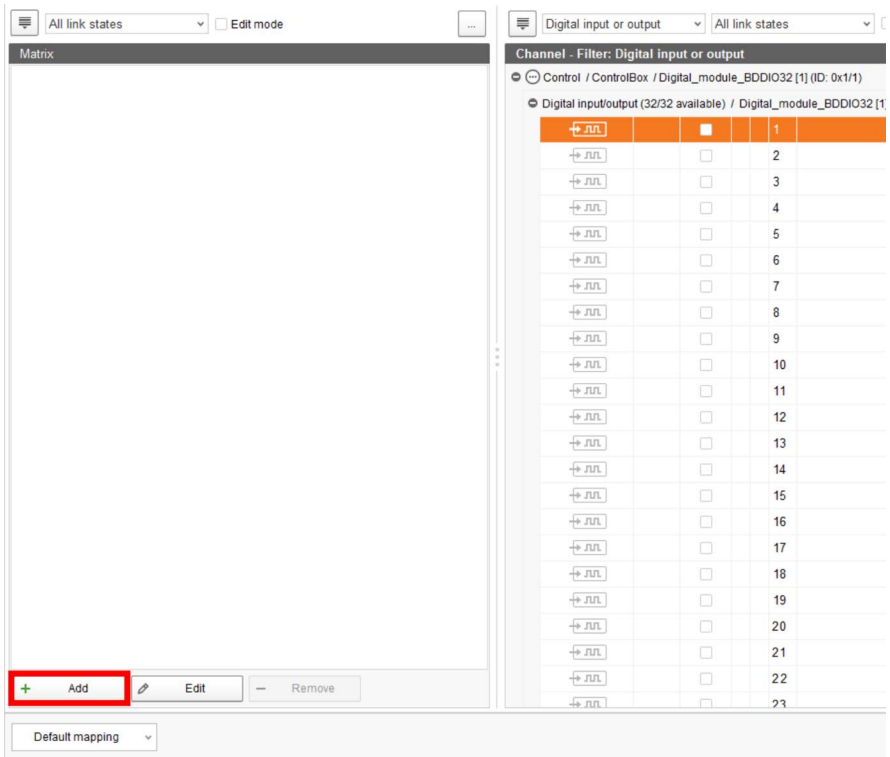
1. Select the "Matrix to channel" tab in the upper area.

   The application window is divided into matrix (on the left) and channel (on the right).

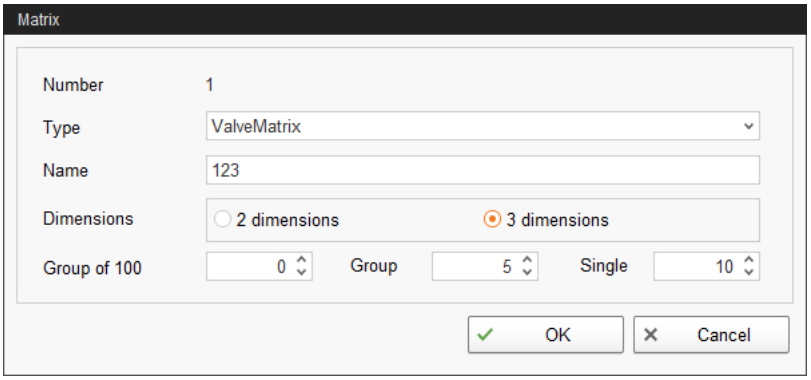



2. In the matrix area, click on "Add".

   This opens the dialog window "Matrix".




3. Define the matrix and generate the matrix dimension based on the feed valves to be controlled:
   - "Type": Valve matrix
   - "Name" of the valve matrix: freely selectable
   - "Dimensions" > "Group": 5 (exemplary value)
   - "Dimensions" > "Single": 10 (usually matrices of 10)




4. Accept these inputs by clicking on "OK".

   The group outputs and the single outputs are shown on the left in the area "Matrix".

5. Define the outputs +24 V and GND on the right in the area "Channel". Potentials for the group outputs and single outputs must be opposed.

   a) Select one input or select multiple inputs by holding the Ctrl key.

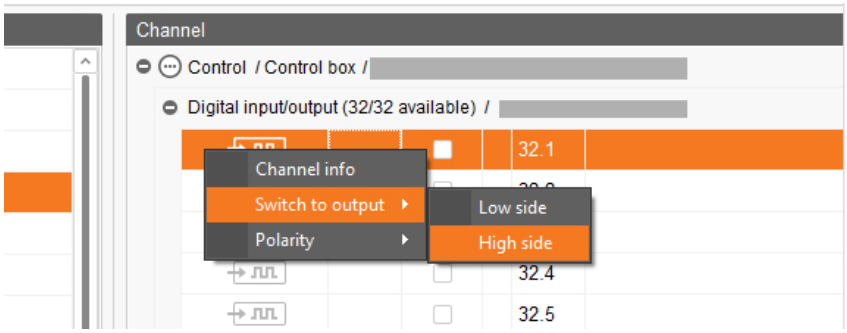
      Multiple editing is only possible for channels of the same type.

   b) Right-click into the marked area.

   c) In the context menu, select "Switch to output" > "HighSide", if the new output should switch to high side (24 V).

      OR:

      In the context menu, select "Switch to output" > "LowSide", if the new output should switch to low side (ground).

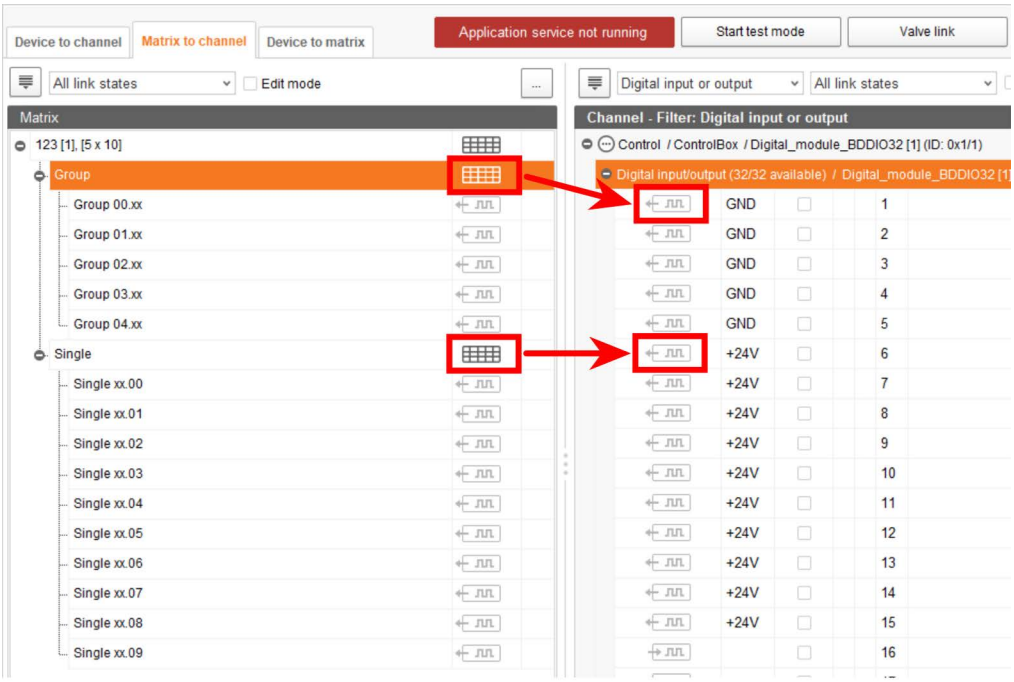



6. Link the group outputs and single outputs in the area "Matrix" with the corresponding outputs in the area "Channel":

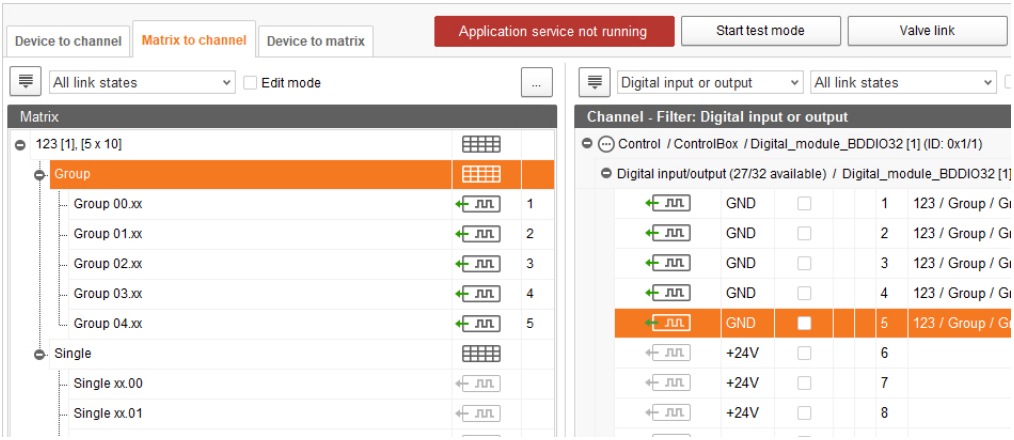
   a) Create each link individually, see point 2, chapter 3.3.2 ”Creating links”.

      OR:

      Use multiple linking by clicking on the matrix icon and dragging it to the **first** linking icon of the corresponding output group.




The links are thus created all at once, one after another.

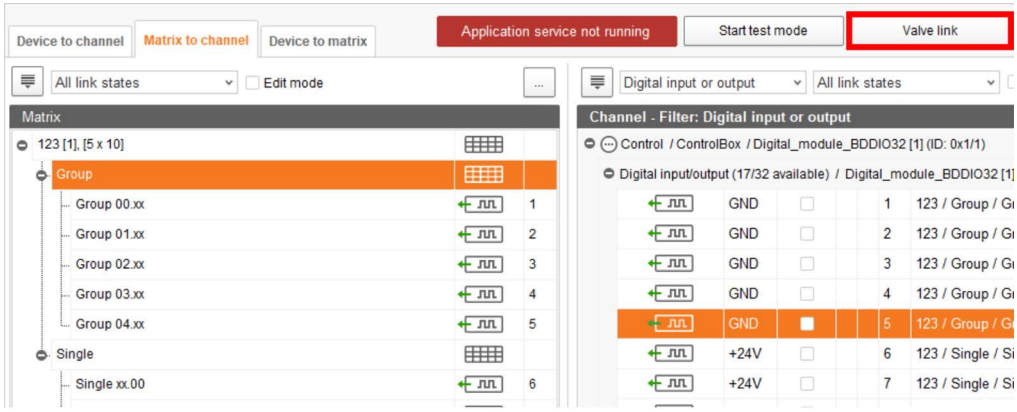



7. Click on "Save" in the lower command bar to save the settings.

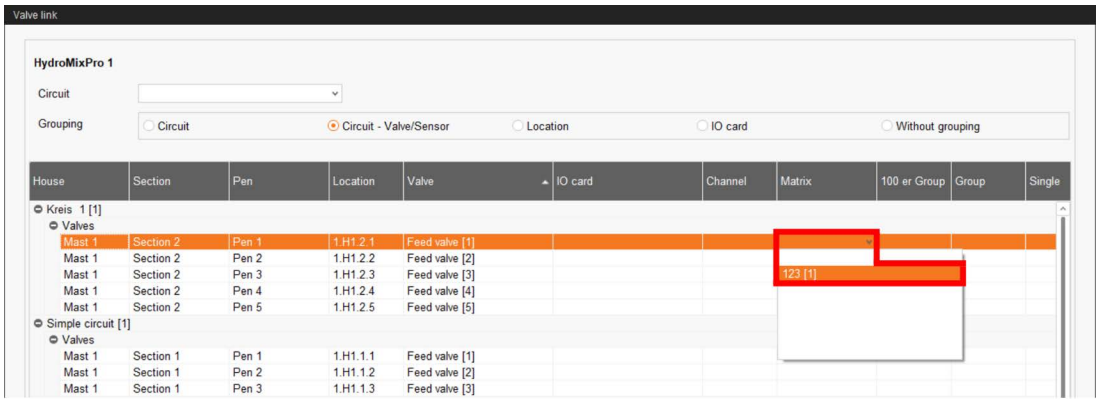
8. Define the valve link:

   a) Click on "Valve link" in the upper command bar.

   This opens the dialog window "Valve link".

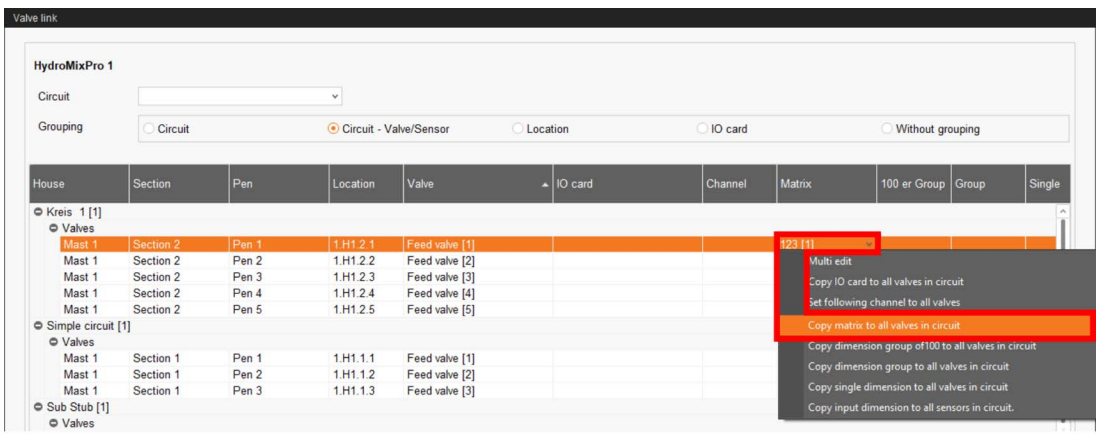



   b) Assign the valves in the column "Matrix" to the created matrix by clicking into the input field and selecting the correct matrix.




   c) As soon as you have assigned the first valve to a matrix, you can multi-edit the other valves:

   Right-click on the selected matrix to open the context menu and select "Copy matrix to all valves in circuit".

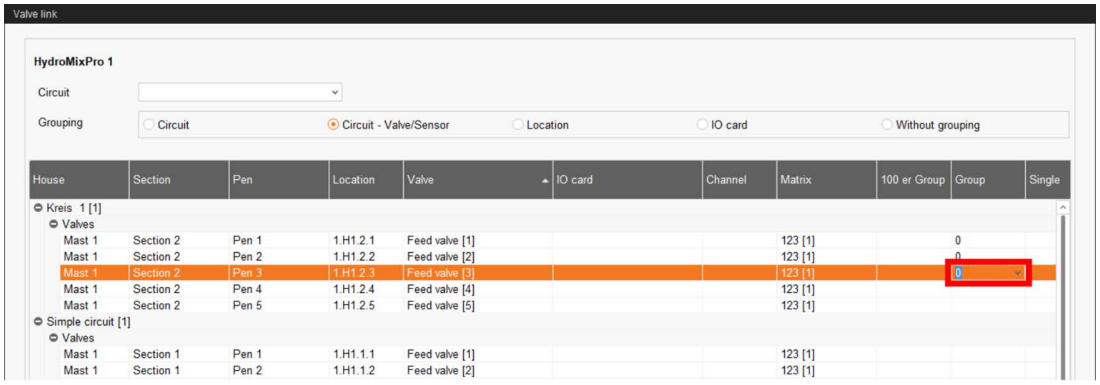


d) Assign the valves in the column "Group" to one each of the created group outputs:

Click into the input field and enter the number using your keyboard.

OR:

Click on the arrow pointing downwards and select the number from the list.

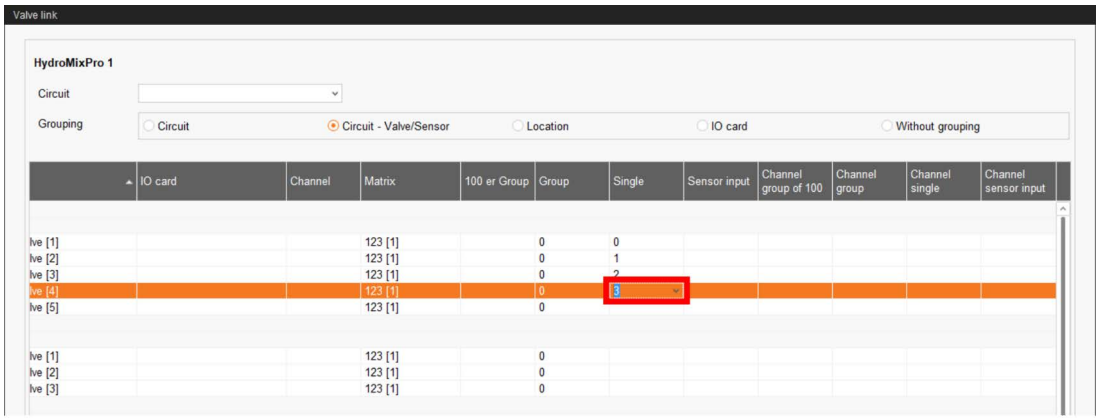



e) Assign the valves in the column "Single" to one each of the created single outputs:

Click into the input field and enter the number using your keyboard.

OR:

Click on the arrow pointing downwards and select the number from the list.



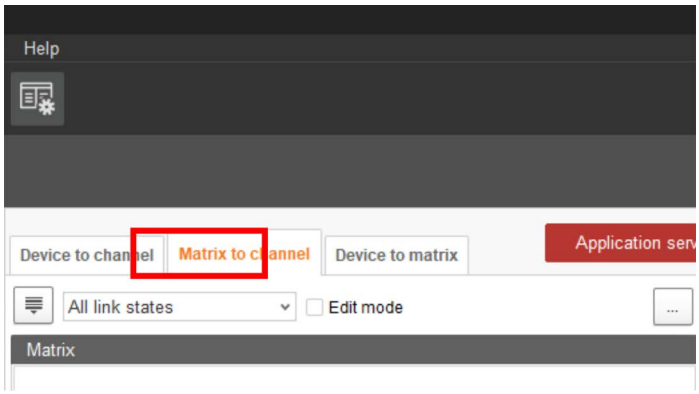

9. Click on "Save" to save all settings.

### 3.3.7 Creating a sensor matrix

In case of sensor feeding, the sensor installed in the trough reports whether the trough is empty or not empty. You can create a sensor matrix to read the sensor inputs.

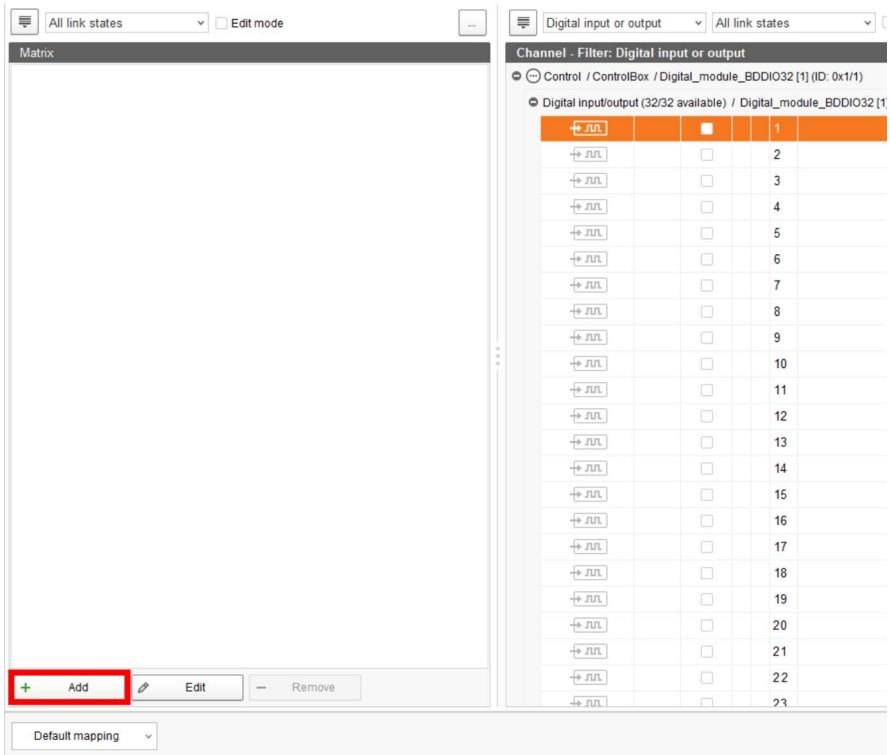
1. Select the "Matrix to channel" tab in the upper area.

   The application window is divided into matrix (on the left) and channel (on the right).




2. In the matrix area, click on "Add".

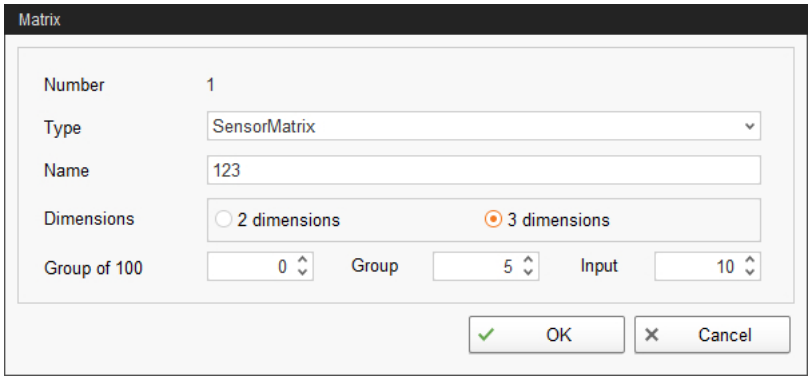
   This opens the dialog window "Matrix".




3. Define the matrix and generate the matrix dimension based on the sensor inputs to be read:
   - "Type": Sensor matrix
   - "Name" of the sensor matrix: freely selectable

– "Dimensions" > "Group": 5 (exemplary value)

– "Dimensions" > "Input": 10 (usually matrices of 10)




4. Accept these inputs by clicking on "OK".

   The group outputs and the sensor inputs are shown on the left in the area "Matrix".

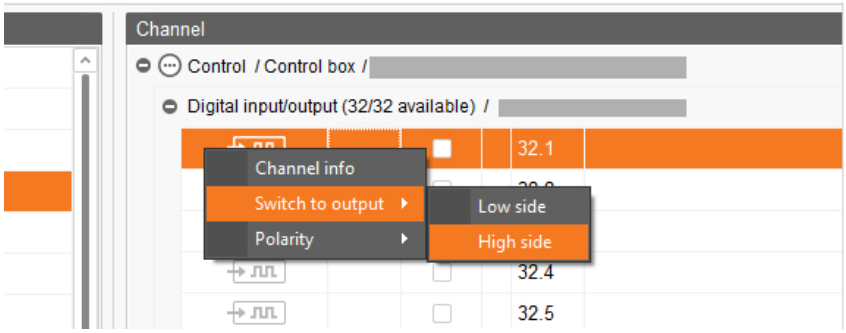
5. Define the outputs +24 V for the groups on the right in the area "Channel".

   a) Select one input or select multiple inputs by holding the Ctrl key.

      Multiple editing is only possible for channels of the same type.

   b) Right-click into the marked area.

   c) Select "Switch to output" > "HighSide" (+24 V) in the context menu.



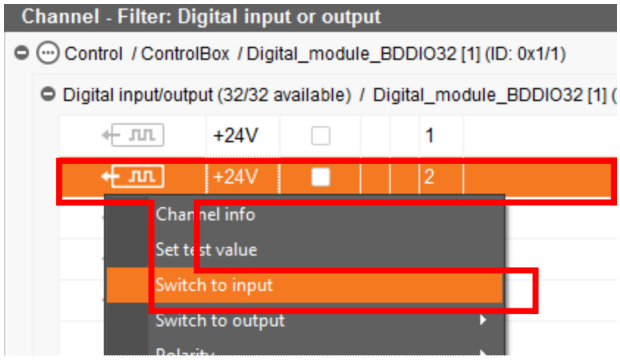

6. Change existing outputs to inputs in the "Channel" area, where necessary.

   a) Select one output or select multiple outputs by holding the Ctrl key.

      Multiple editing is only possible for channels of the same type.

   b) Right-click into the marked area.

   c) Select "Switch to input" in the context menu.

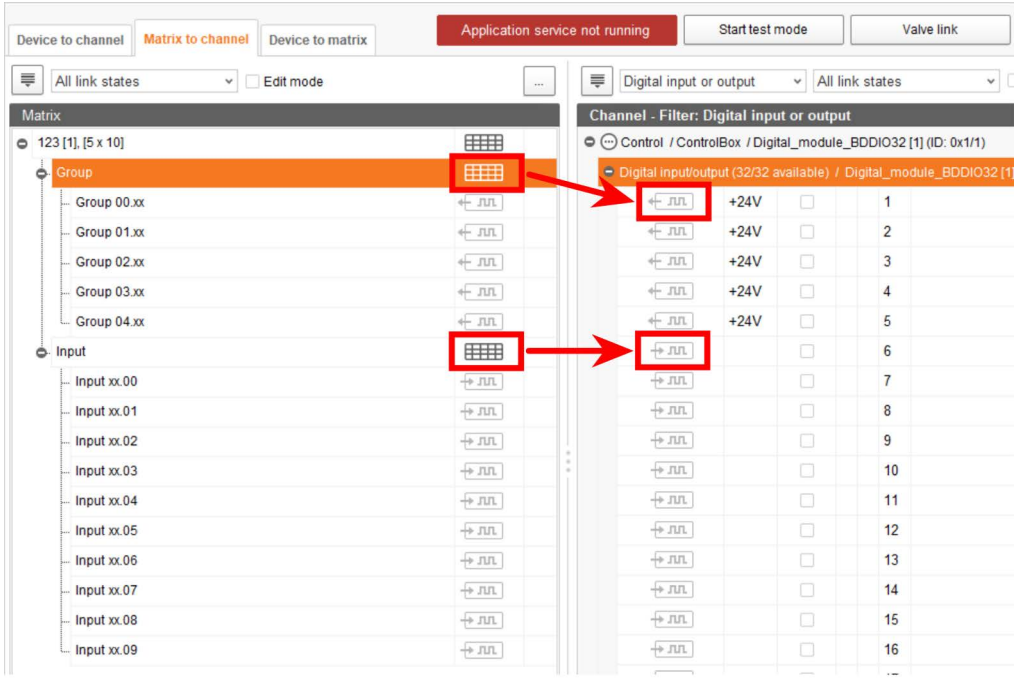



7. Link the group outputs and the sensor inputs with the corresponding channels in the area "Matrix".

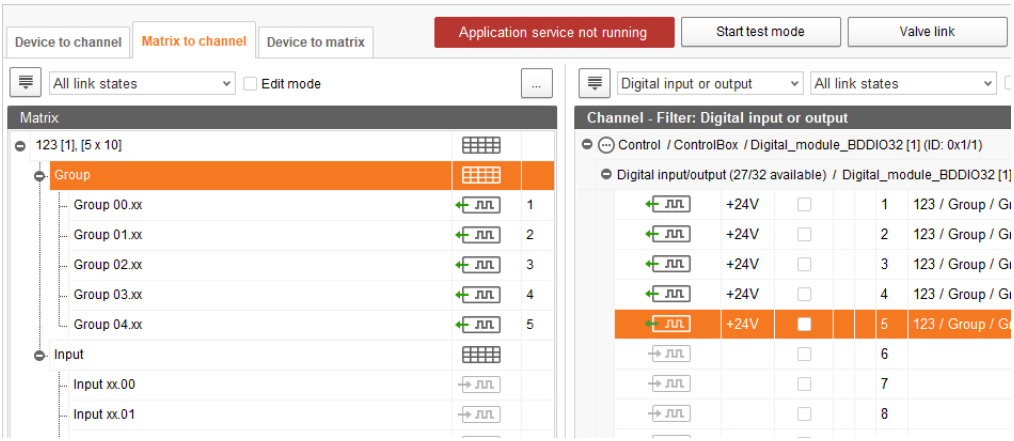
   a) Create each link individually, see point 2, chapter 3.3.2 ”Creating links”.

   OR:

   Use multiple linking by clicking on the matrix icon and dragging it to the **first** linking icon of the corresponding channel group.

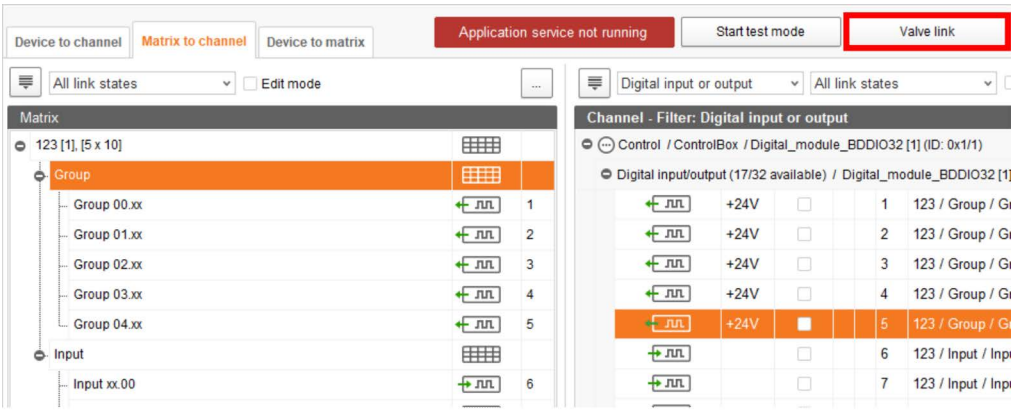



The links are thus created all at once, one after another.

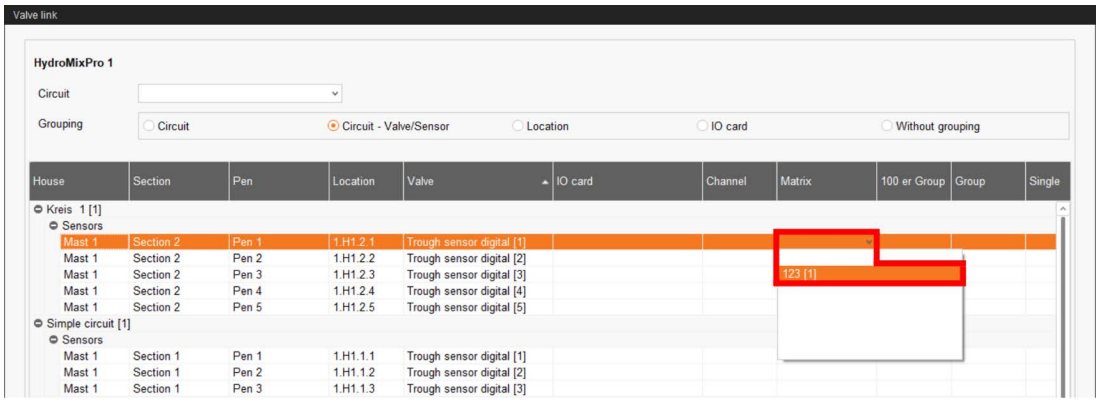



8. Click on "Save" in the lower command bar to save the settings.
9. Define the valve link:
   a) Click on "Valve link" in the upper command bar.

      This opens the dialog window "Valve link".

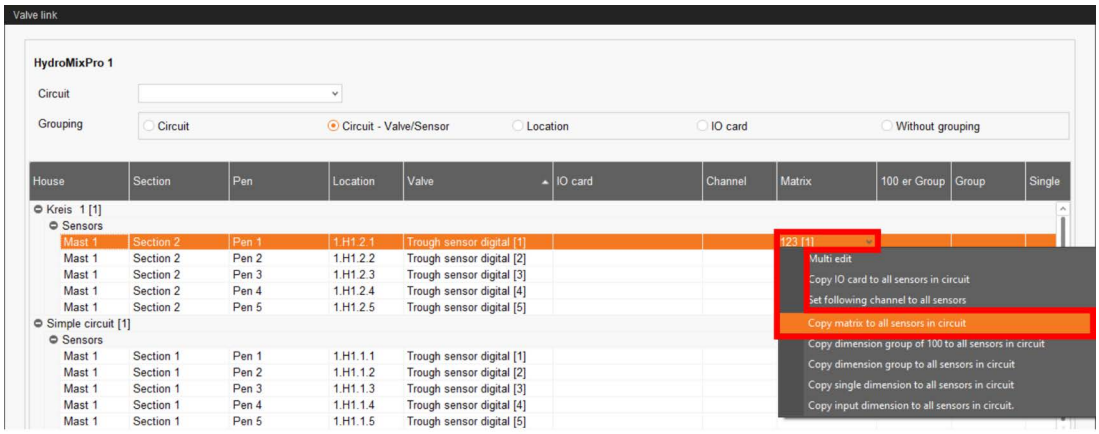



   b) Assign the sensors in the column "Matrix" to the created matrix by clicking into the input field and selecting the correct matrix.



c) As soon as you have assigned the first sensor to a matrix, you can multi-edit the other sensors:

Right-click on the selected matrix to open the context menu and select "Copy matrix to all sensors in circuit".

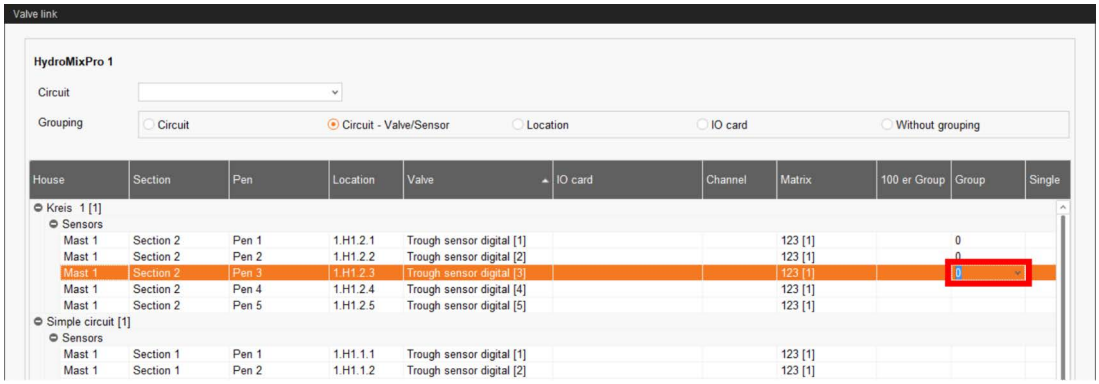



d) Assign the sensors in the column "Group" to one each of the created group outputs:

Click into the input field and enter the number using your keyboard.

OR:

Click on the arrow pointing downwards and select the number from the list.

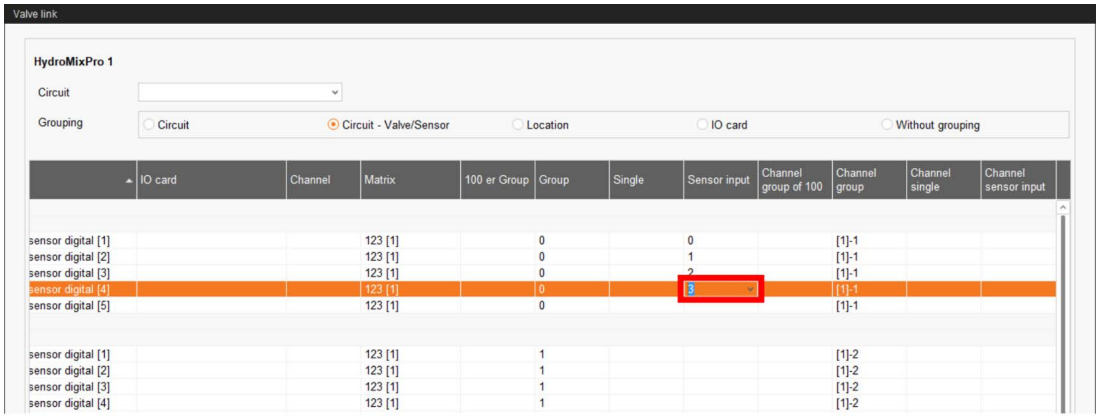


e) Assign the sensors in the column "Sensor input" to one each of the created sensor inputs:

Click into the input field and enter the number using your keyboard.

OR:

Click on the arrow pointing downwards and select the number from the list.




10. Click on "Save" to save all settings.

### 3.3.8 Using the test mode

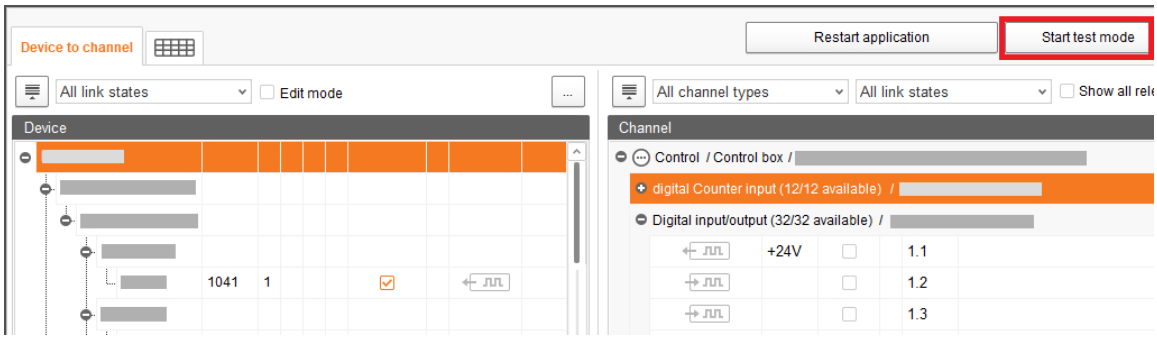
In the test mode of the IO Manager, all devices can be turned on and off to check the correct setup of the control before starting to operate the system.

**⚠ CAUTION!**

Only service technicians may use the test mode. Devices may start in case the system is connected. Make sure that no persons or animals are located in or around the station while using the test mode.

Deactivate the test mode when finished.

1. Click on "Start test mode" in the upper bar.



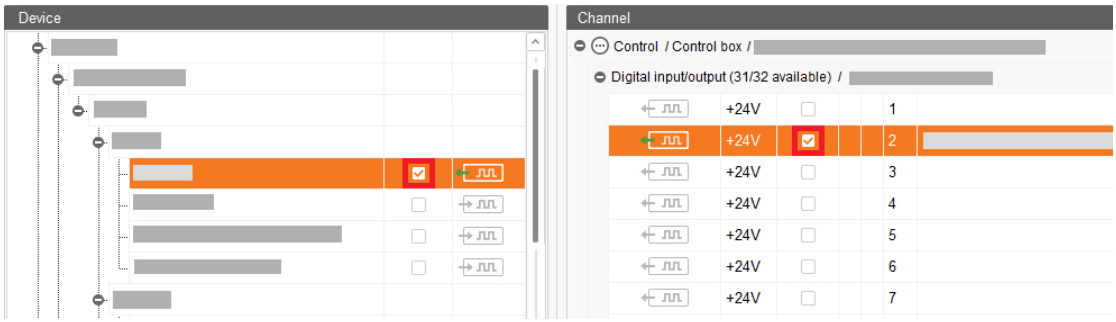
2. In the "Device" part of the window, double-click on the interface of the device you want to turn on  .

   The linked channel is marked accordingly.

3. Click on the check boxes of the selected device and respective channel to activate them.

   The actual device is now turned on.

   If the actual device does not turn on or if another actual device is running instead, correct the links in the IO Manager or reconnect the outputs of the IO card. Always refer to the overview drawing of the IO card attached to the wiring diagram.




4. Turn off the device by deactivating the check box.
5. End the test mode by clicking on Stop test mode in the upper bar.

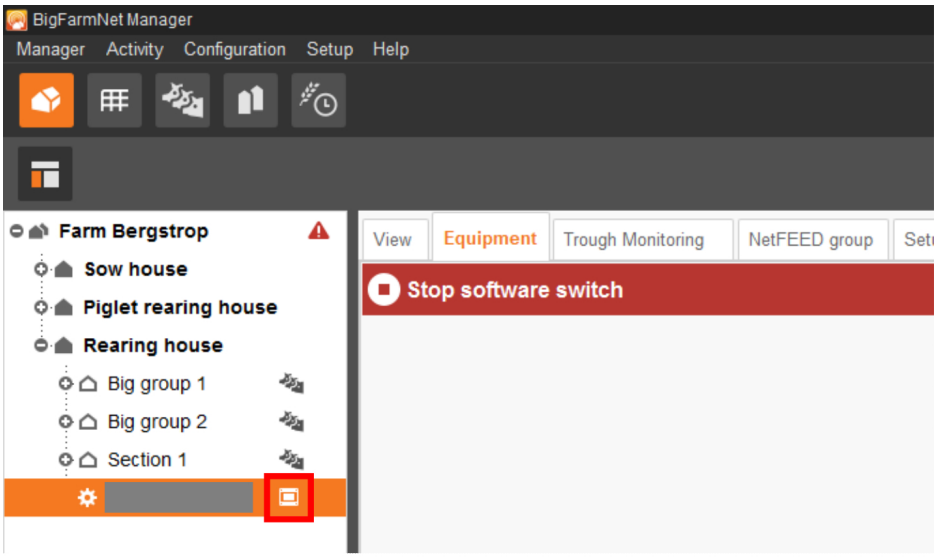
## 3.4 Manually controlling the system components

The system can be controlled manually in the "View" window after you have created the image in the FeedMove Editor (chapter 3.2). You may manually control the HydroMix system via the image by activating or deactivating individual system components.

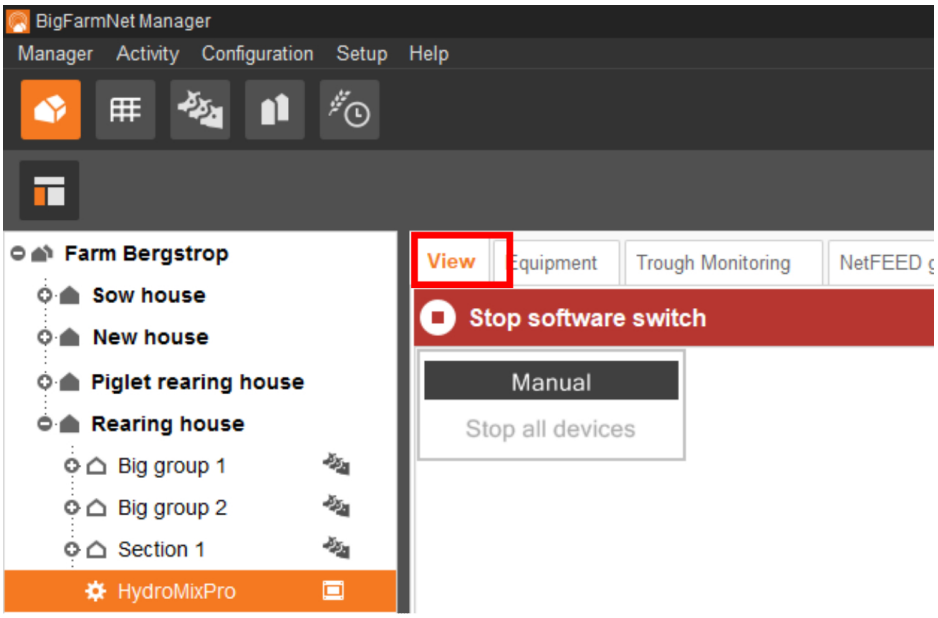
**NOTICE!**

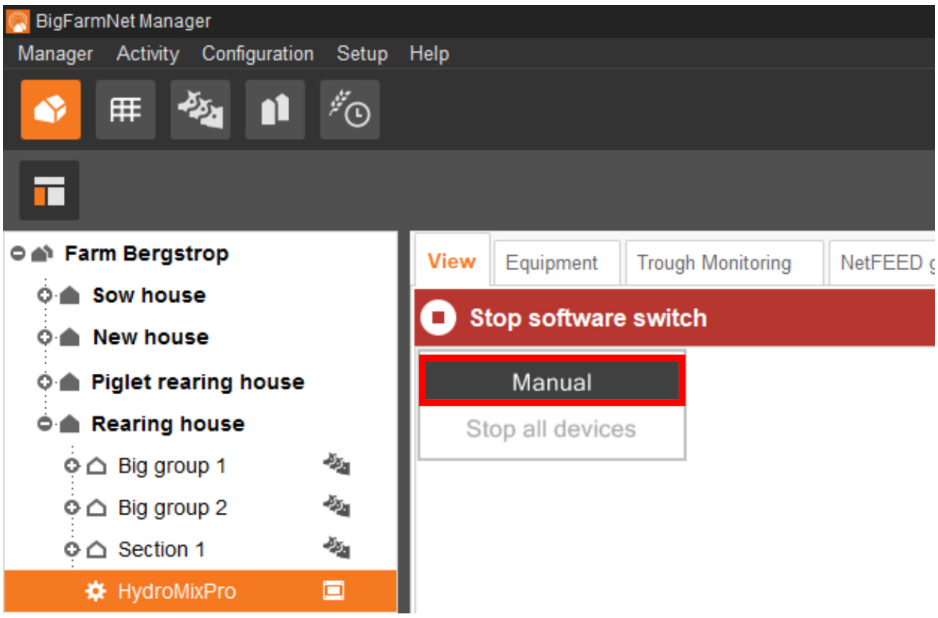
Manual control of system components is done at your own risk and you are liable for any subsequent damage. The control software (application) no longer operates the system when using manual control!

1. Click on the controller icon of the respective system application in the farm structure.




2. Under "View", click on "Manual".



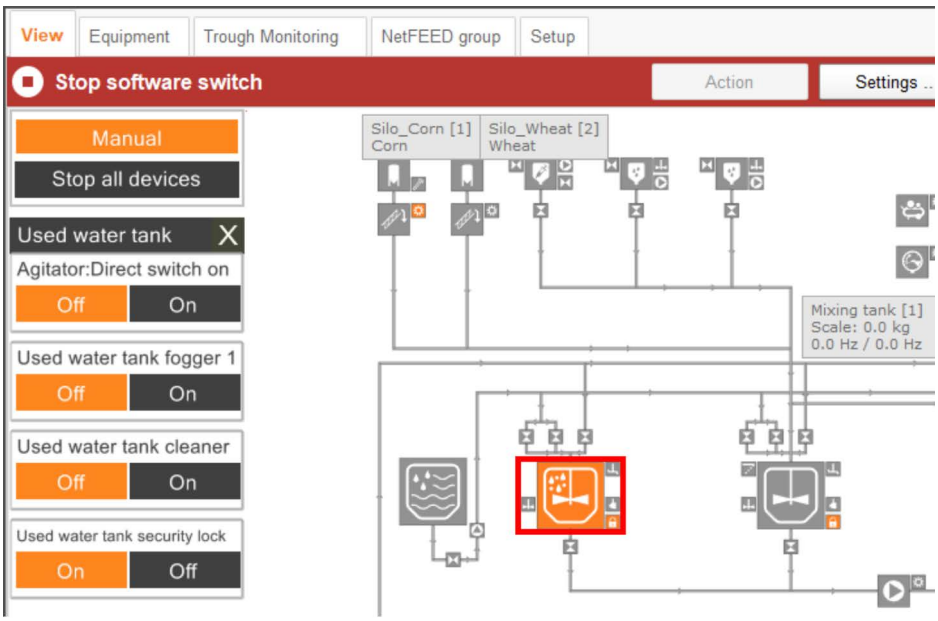



**NOTICE!**

Check whether the system is running. Stop the system by clicking on Stop in the upper bar.

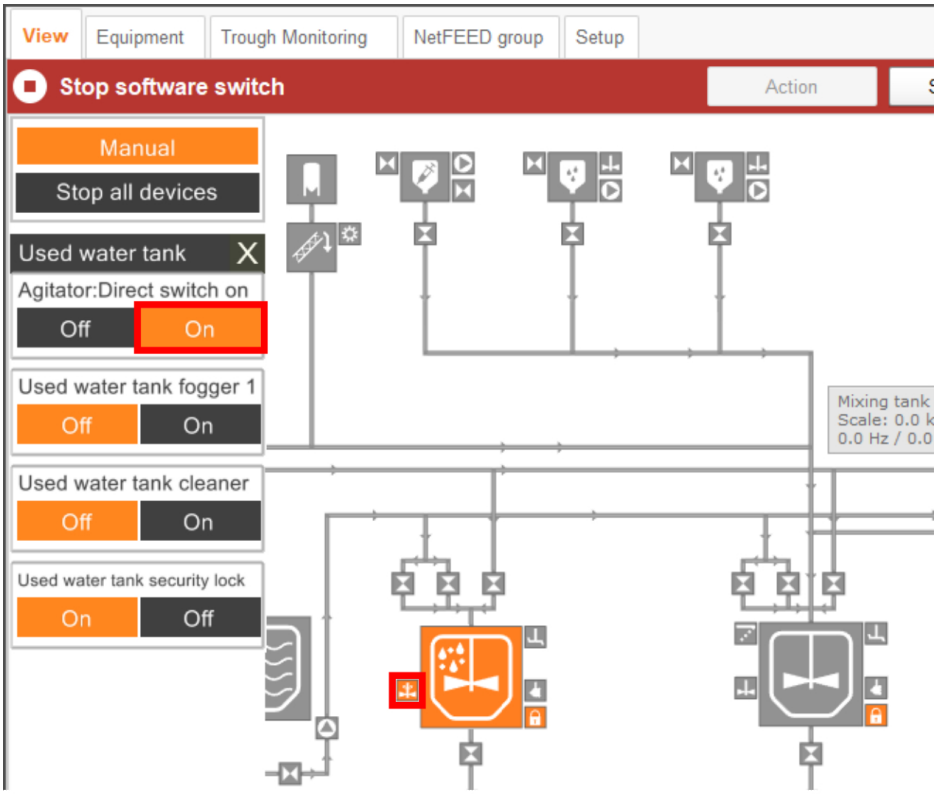
3. If necessary, adjust the view or retrieve one of your saved views using the camera icons, see chapter 3.2.4.
4. You can manually switch on or off functions of the system components as follows:
   a) Click on the respective system component.

      The colour of the system component changes to orange. The elements belonging to this component are displayed in the window to the left.



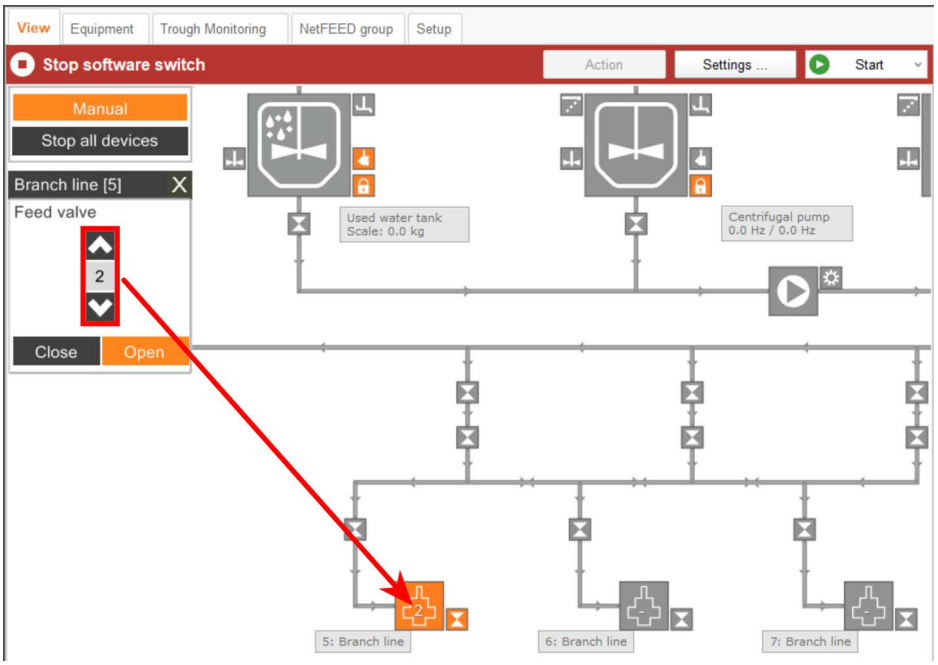
b) Activate or deactivate the required element in the window to the left or by clicking directly on the element icon in the view.

Active elements are orange. Inactive elements are gray.



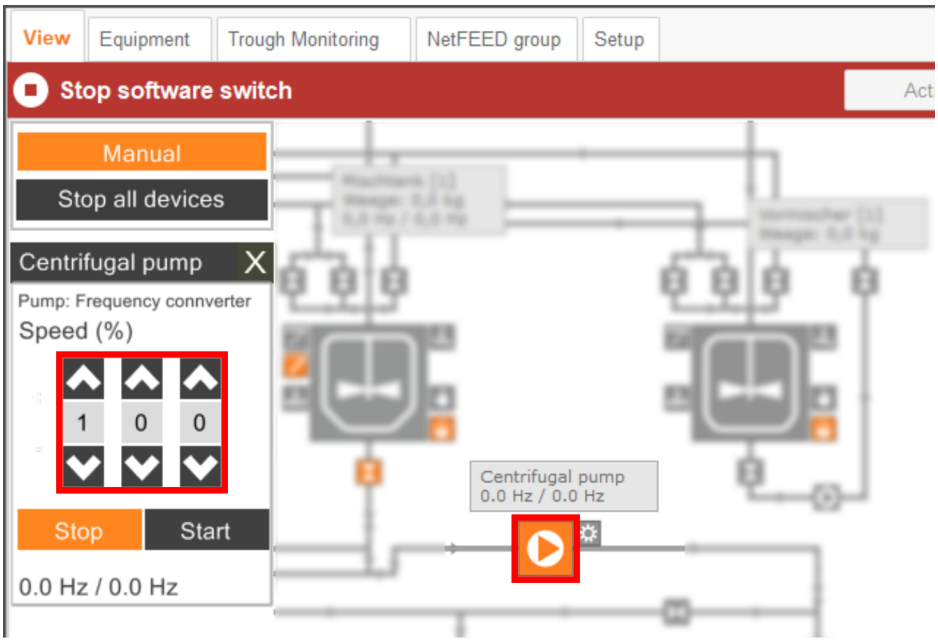

c) If you want to open or close a specific valve in a circuit, select the respective valve using the arrows pointing up and down.

The selected valve is shown in the selected feed circuit in the view.



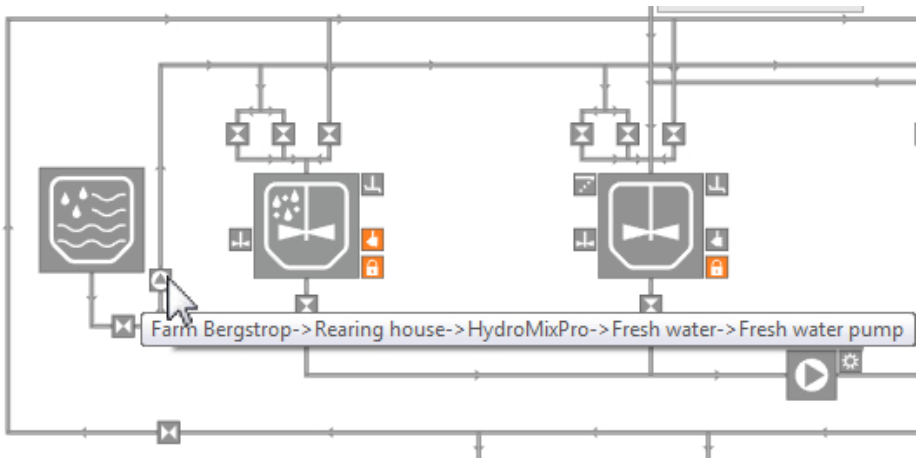
5. Change the frequency of a system component that is controlled by a frequency inverter, e.g. an agitator or a pump, if necessary.

   Click on the respective system component and change the frequency using the arrows pointing upwards and downwards.




6. Move the mouse pointer over the different icons in the depiction to see the full name of the function or the system component.

   A tooltip shows the full name.



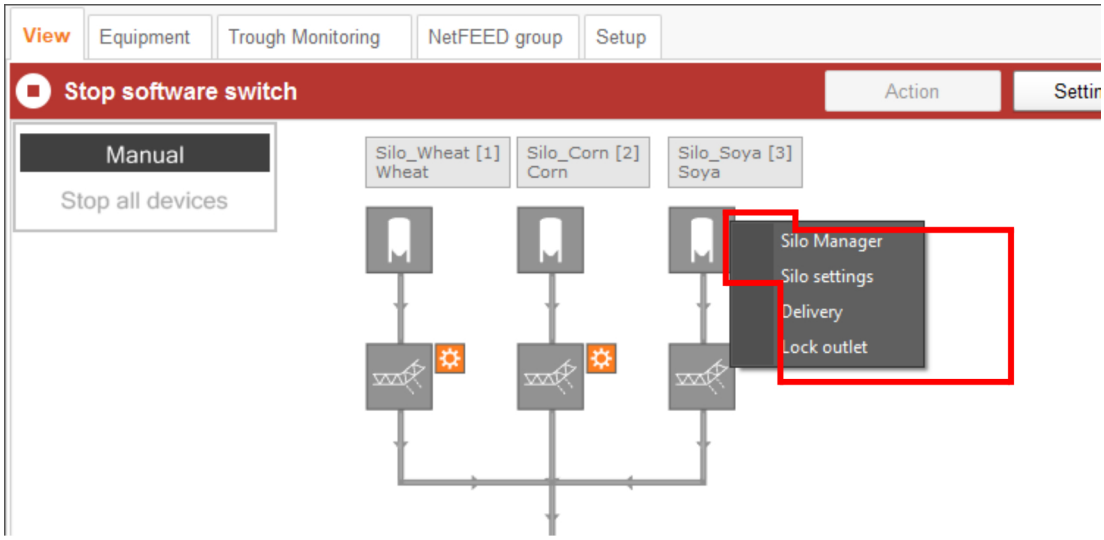

7. Stop manual control by clicking on "Manual" again.

## 3.5 Quick access silos

In the "View" window, you can access the following functions by right-clicking on a silo:

- **Silo Manager:** Direct switch to the Silo Manager (see chapter 7 ”Silo Manager”, page 244).

- **Silo settings:** Direct access to the Settings dialog (see chapter 7.4 ”Settings”, page 248).
- **Delivery:** Direct access to the Delivery dialog (see chapter 7.1 ”Delivery”, page 246).
- **Lock outlet:** The outlet is locked or unlocked immediately.

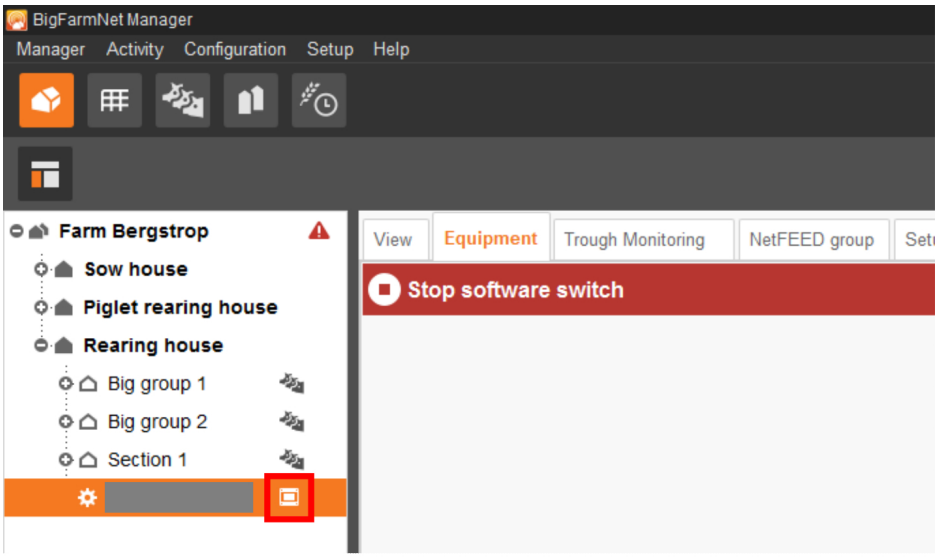



## 3.6 Manual actions for the feed moves

As soon as you have created your system in the FeedMove Editor (see chapter 3.2), the tab "View" is added to the application window.

The system usually runs automatically, based on the configured settings. However, you may access individual feed moves and carry out actions manually, e.g. pumping fresh water into the mixing tank or moving feed from the mixing tank into a branch line. Manual actions can also be defined for multiple feed moves. These actions are then carried out one after another in the desired order.

1. Click on the controller icon of the respective system application in the farm structure.

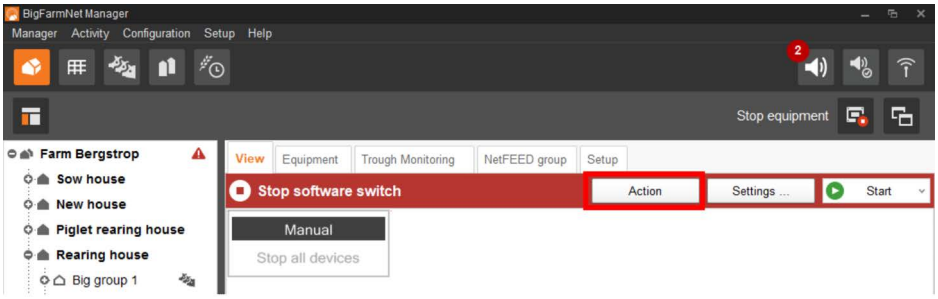



**NOTICE!**

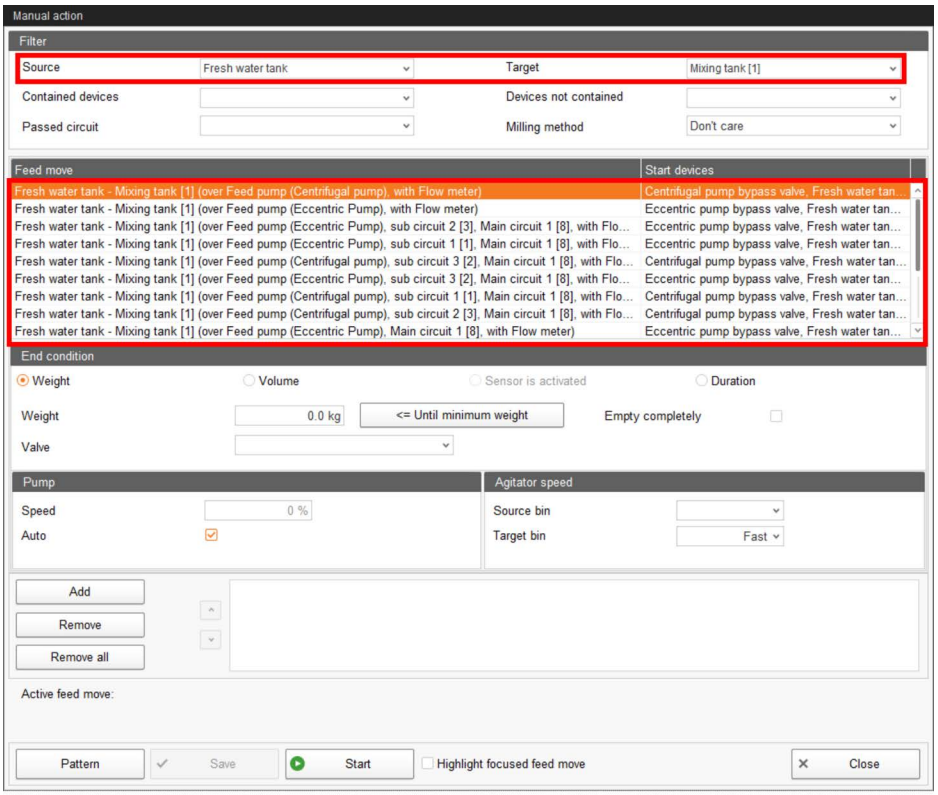
Check whether the system is running. Stop the system by clicking on Stop in the upper bar.

2. Click on the "Action" button in the "Equipment" or "View" tab.

   This opens the dialog window "Manual action".




3. In the upper area, enter the "Source" and the "Target" of the respective feed move and select the feed move from the list.




4. In the central area under "End condition", "Pump" and "Agitator speed", configure the temporary settings.

   Depending on the feed move and the installed system components, the corresponding parameters for the action become active, for example:

   – "Volume" only applies if a flow meter is installed.

   – "Sensor is activated" only applies to branch lines with jet or if the minimum sensor is installed.

   – The button "<= Until minimum weight" is the value of the parameter "Minimum amount" for each tank, e.g. mixing tank, pre-mixing tank, etc. This value is entered in the application settings, see chapter 7.4 ”Settings”, page 248.

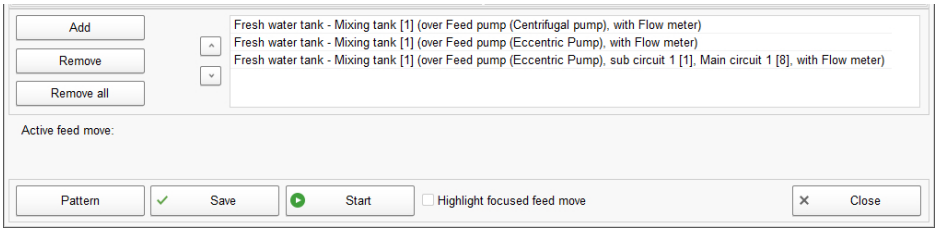
     If you click on this button, the system turns off as soon as the minimum weight has been reached.

   – "Empty completely" simplifies specifying the end condition when processing several actions for interdependent feed moves.

     If you check this box, the system turns off as soon as the respective tank, e.g. mixing tank, pre-mixing tank, etc., has been completely emptied.

5. Click on "Add" in the lower area to add the feed move with the defined action to the field on the right.

   If you add more feed moves with a defined action to the field, you can use the arrows pointing upwards and downwards to determine the order in which the actions are processed.

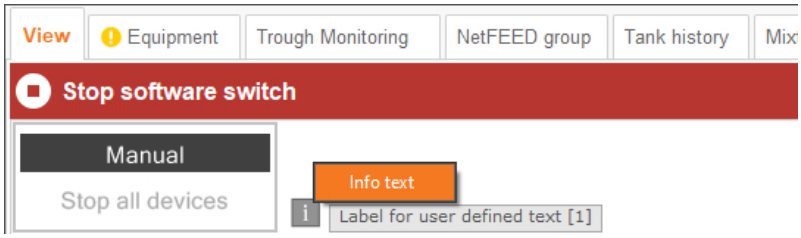



6. Check the box "Highlight focused feed move" in the lower command bar if you want the selected feed move to be highlighted in colour in the "View" tab.
7. Click on "Save" in the lower command bar if you want to save the actions listed in the field as a template for later reuse or for use as a strategy within the Task Manager (see chapter 6.10.2 ”Manual action”, page 243).

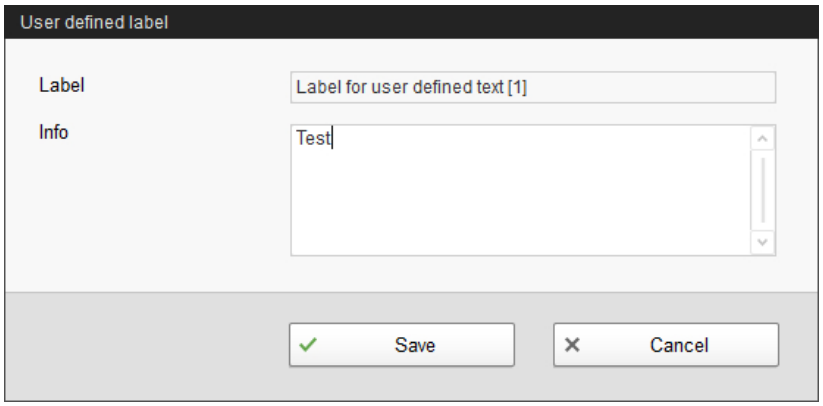
   Under "Patterns", you can open previously saved action templates for editing or to rename, copy or delete them.
8. Click on "Start" in the lower command bar to start the action(s).
9. Click on "Close" in the lower command bar to close the dialog window.

## 3.7 Editing a user-defined label

If you have defined "Label for user-defined text" in the Composer (see chapter 3.1.1.9 ”Accessories”, page 43), open the edit window for the user-defined label under "View" by right-clicking on the corresponding icon or on the label and then clicking on "Info text".



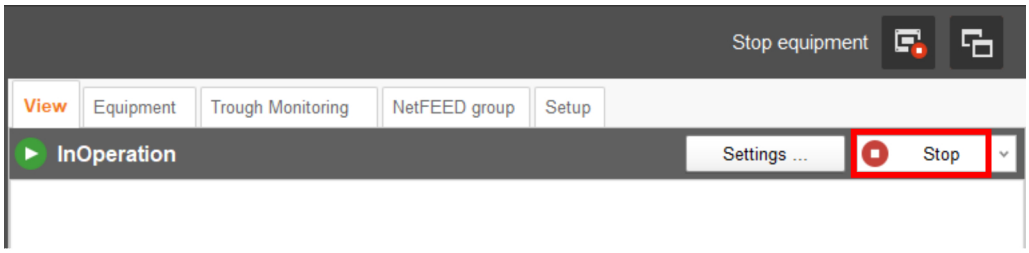

In the edit window, edit the label and the info text of the user-defined label and confirm by clicking on "Save".




As soon as an info text has been entered and saved, the info text is displayed as a label under "View".

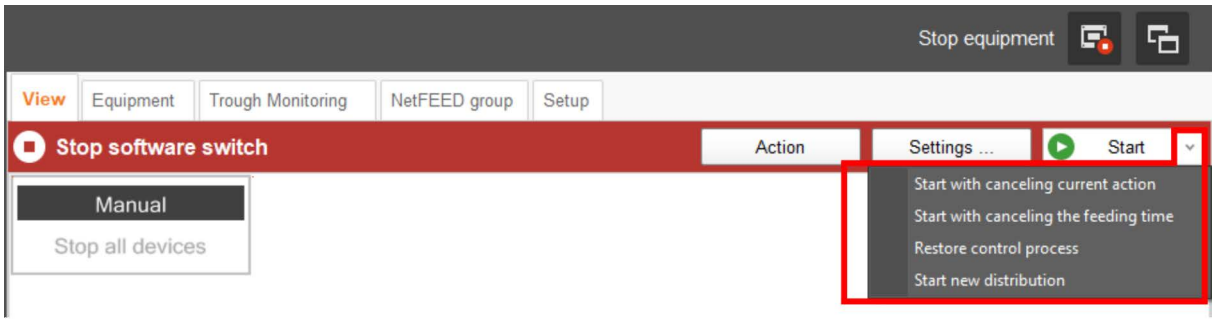
## 3.8 Stopping the system and canceling an action

You may stop the system during operation by clicking on "Stop" in the right-hand corner of the upper bar in the tab "View" or "Equipment". If you click on "Start" again, the system continues to operate with the current action or task.



However, if you do not want to continue the current action, start the system again as follows:

1. Click on the arrow pointing downwards next to the "Start" button" and select the correct option from the context menu.
   - **Start with canceling current action:** The system starts, cancels the current action and continues with the next action. For example, the waiting time for a block feeding will be ignored.
   - **Start with canceling the feeding time:** The system starts and cancels the current task, e.g. feeding or cleaning.
   - **Restore control process:** In case of control errors of the BigFarmNet Manager, use this option to restart the entire system including all processes.
   - **Start new distribution:** Select this option if you want the redistribute the currently (manually) mixed feed in the mixing tank. Select the new feed valves in the dialog window that opens next.

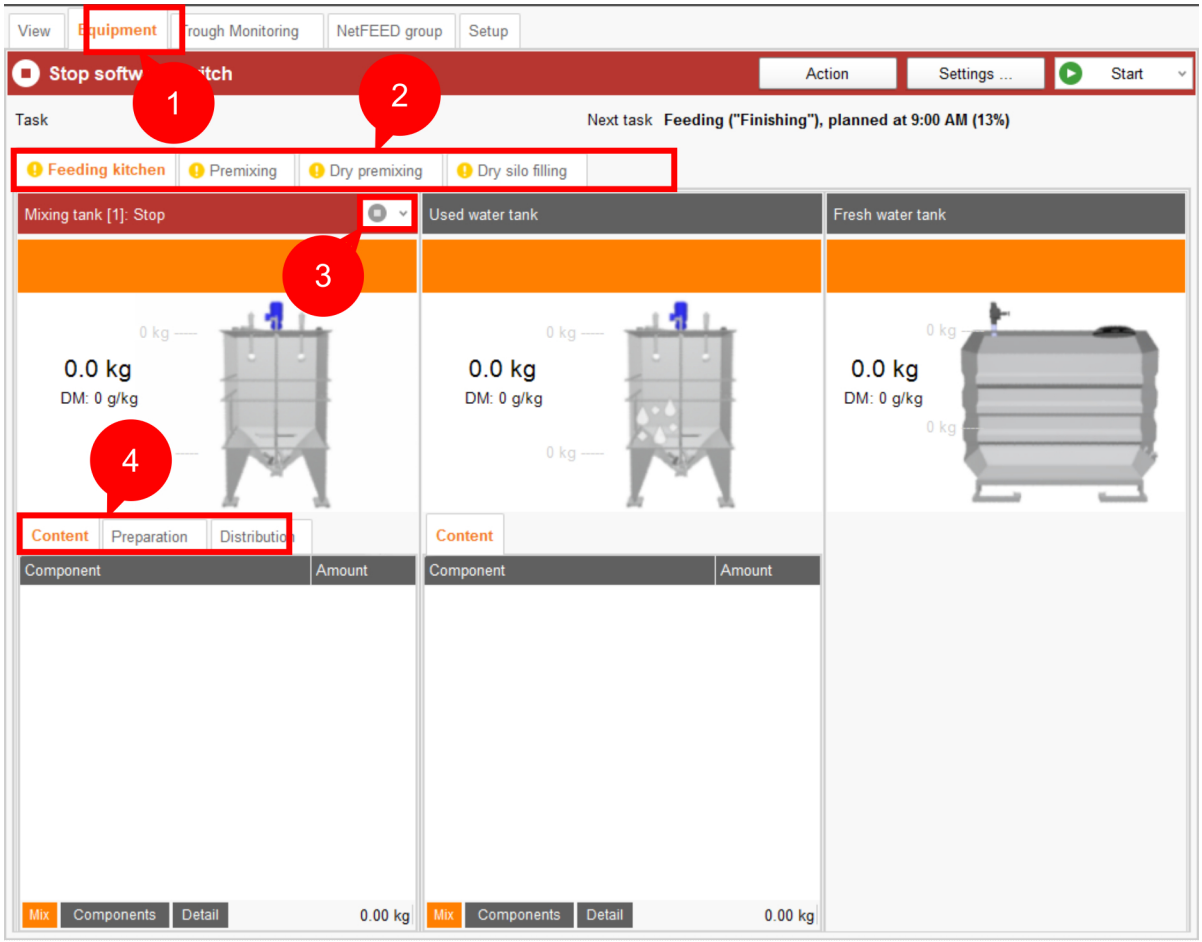



## 3.9 "Equipment" window

In the "Equipment" window, the following system components are displayed based on the configured system:

- Batch mixer with information on the mixture
- Junction / coupling of hoppers
- Circuits with information on distribution

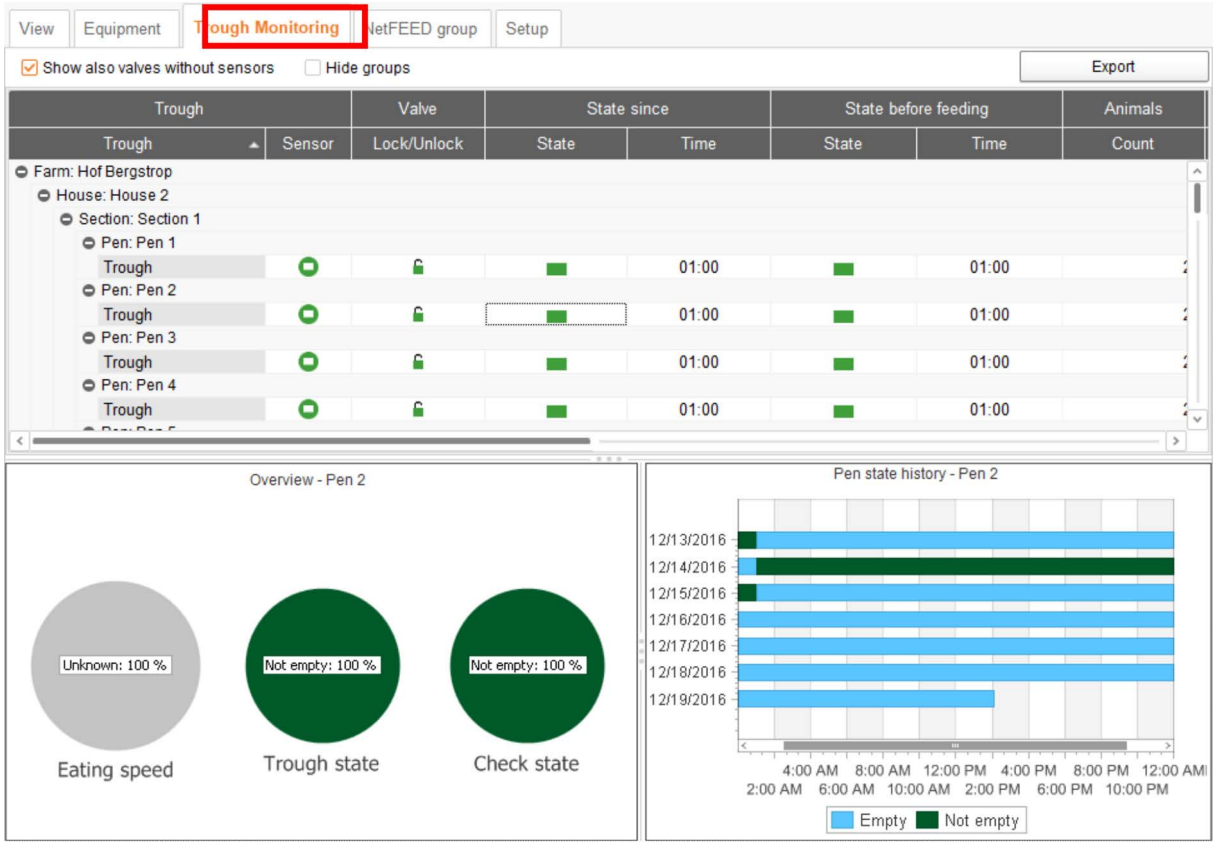
This is simply a view without any options to configure settings.




1. Click on the "Equipment" tab.
2. If necessary, change the view between "Feed kitchen" and, if applicable, "Premixing", "Dry premixing" and "Dry silo filling".
3. Stop the mixing tank, the pre-mixing unit or the dry silo, if necessary.
4. Check the information given under the following tabs:
   - "Content" shows the components in the tank, including the amount.
   - "Preparation" shows the current preparation, including information on the currently available amount and the missing amount of the components.
   - "Distribution" shows for which valves preparation is active, including information on the target amount and the already distributed amount.

## 3.10 Trough monitoring

The trough monitoring tab provides information on the status (empty or not empty) of your sensor troughs. This tab also has information on the eating speed, the eating time and the last feeding according to the sensor. The diagram in the lower right corner shows the state history of the current day and the past six days.




Even though the trough status is checked regularly, you can also check the current trough status manually at any time:

1. Click on the colored block of the correct trough in the "State since" > "State" column.

   This opens the dialog window "Refresh trough state".

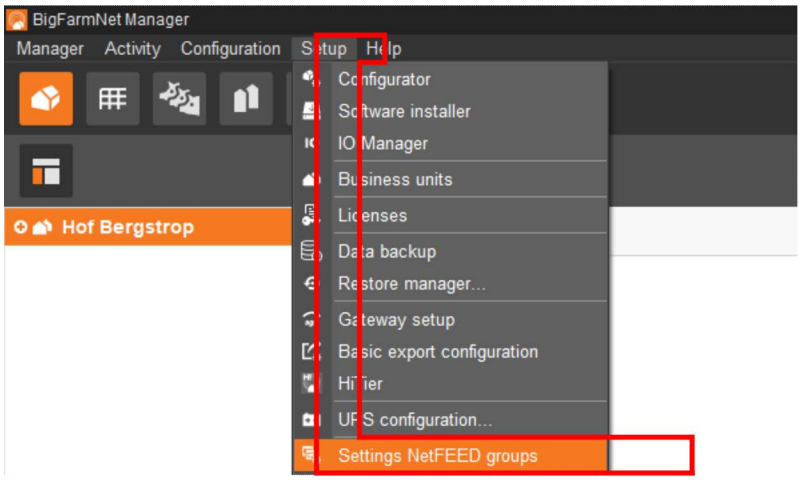

2. Confirm the dialog by clicking on "OK".

## 3.11 NetFEED

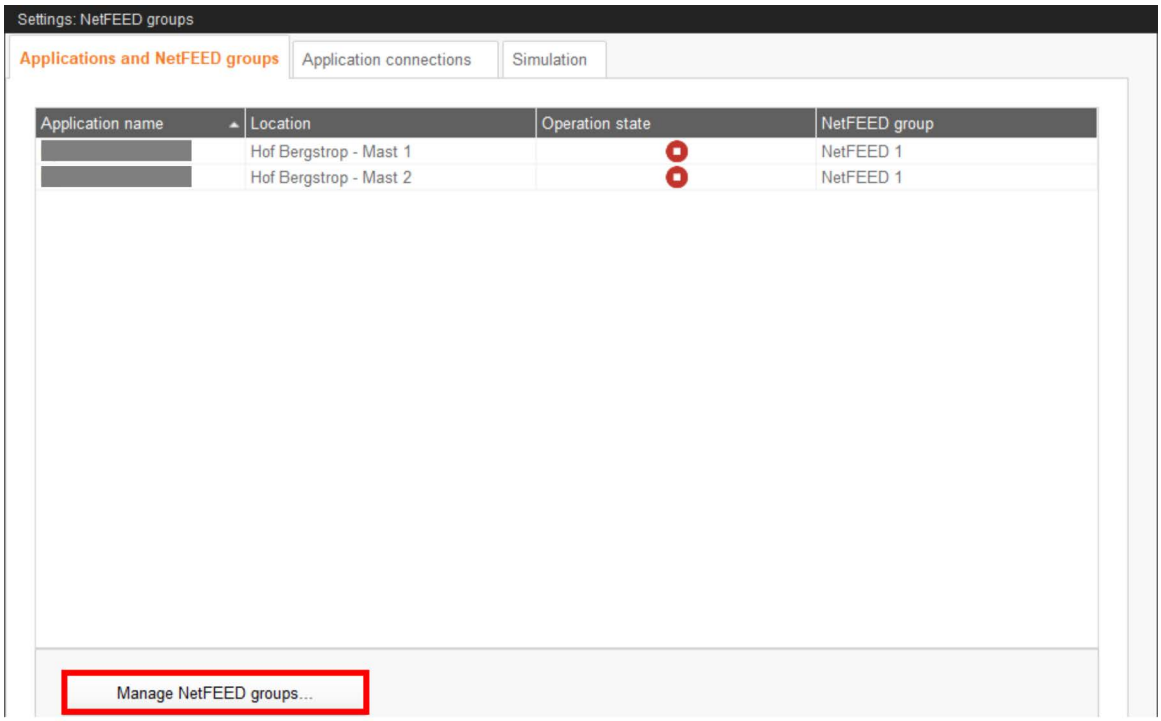
NetFEED is an optional function that allows you to establish app connections between system applications within a farm. For example, an application's mixing tank can also serve other applications on the farm, provided you have assigned the applications to the same NetFEED group.

You can configure the settings for the NetFEED groups as follows:

1. Click on "Settings NetFEED groups" in the "Setup" menu.



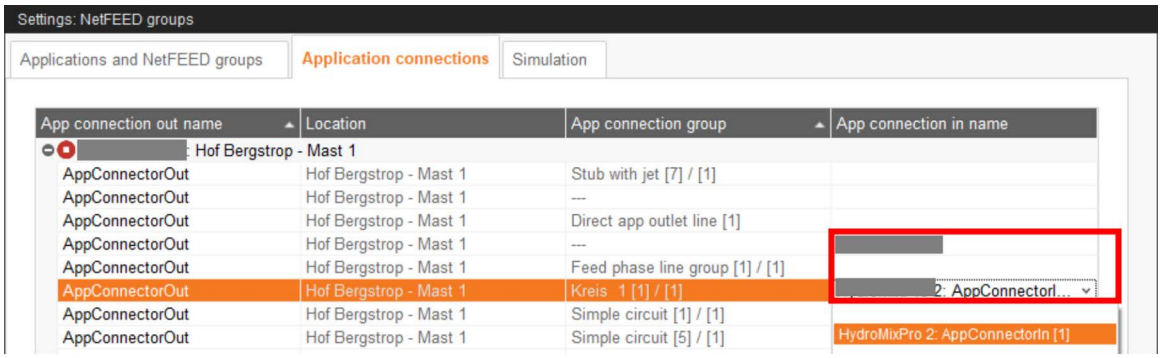

2. Click on "Manage NetFEED groups...".




3. Click on "Add", enter the group name and click on "OK" to create a new group.
4. Click on "Close".

5. Select a joint group for the applications to be connected under "NetFEED group".


6. Under "Application connections", assign the desired incoming app connection of an application to the outgoing app connections of another application.

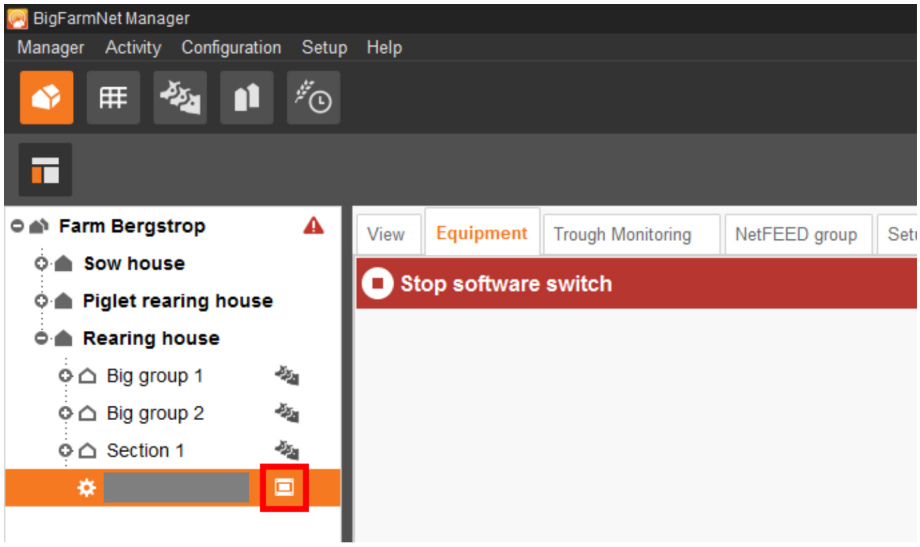



7. Click on "Save".

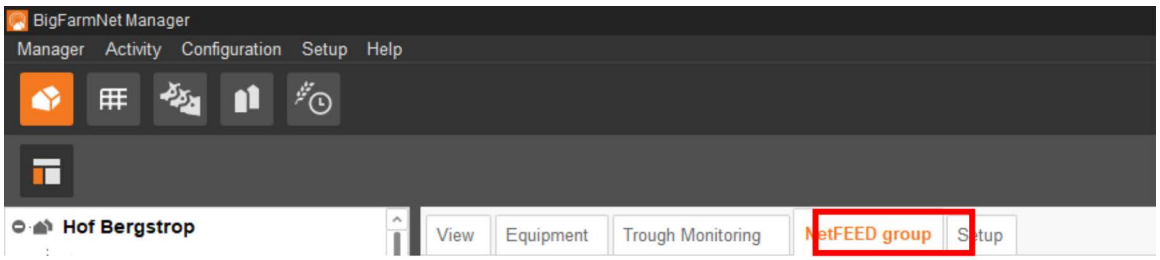
You can configure further NetFEED settings under "Settings" > "General" > "Application settings" > "NetFEED" (see chapter 5.2.2 ”Application settings”, page 112).

To access the options for controlling a NetFEED group, proceed as follows:

1. Click on the controller icon of the respective system application in the farm structure.




2. Click on "NetFEED group".



# 4 Container chains

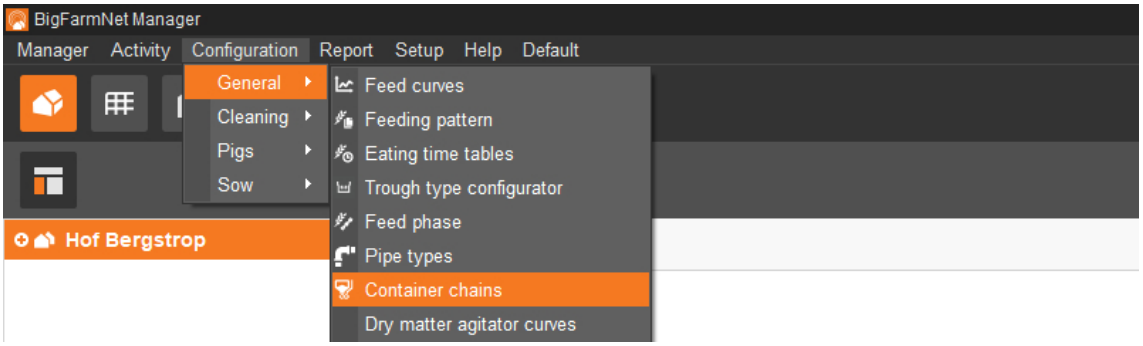
The sequence of containers (silos and/or pre-mixing tanks) from which components are removed can be configured using so-called container chains.

It is advisable to include only containers with the same component and priority in a container chain. However, a container chain may also include containers with different components and priorities.

Container chains belong to the application or to the NetFEED group to which the application belongs. They are only created once for every NetFEED group. All silos and pre-mixing units of all NetFEED group applications can be selected. If an application is not part of a NetFEED group, only the silos and pre-mixing tanks of the application can be selected.

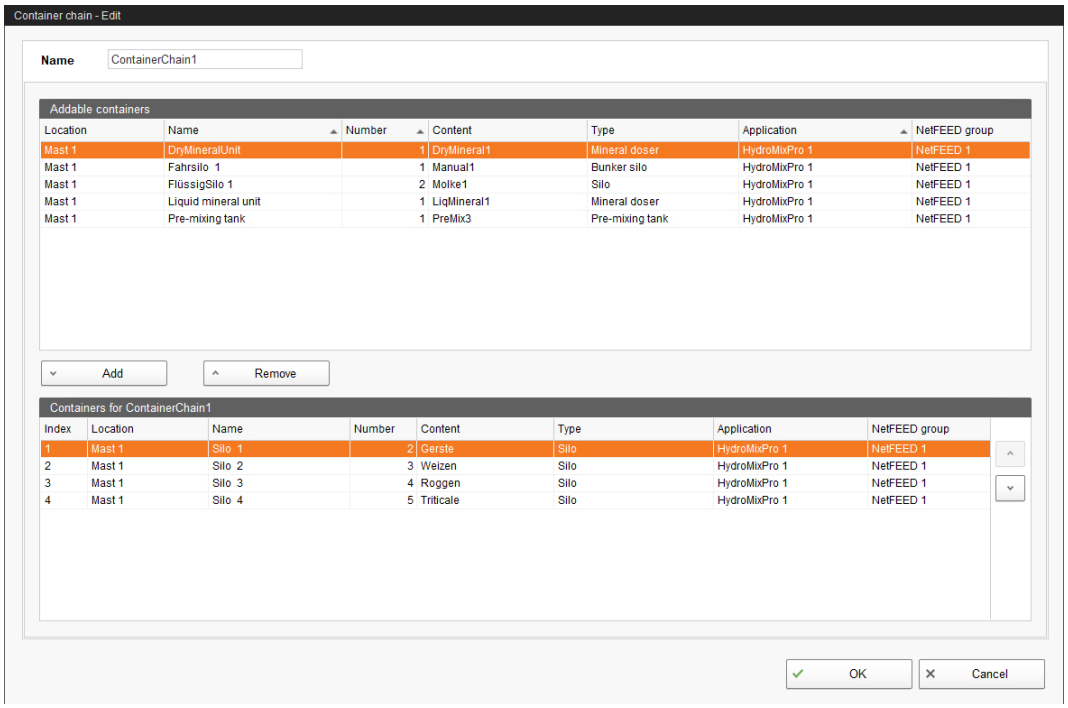
After configuring the container chains, their priority can be adjusted (see chapter 5.13.4 ”Priority of container chains”, page 174).

1. In the menu "Configuration" > "General", click on "Container chains".

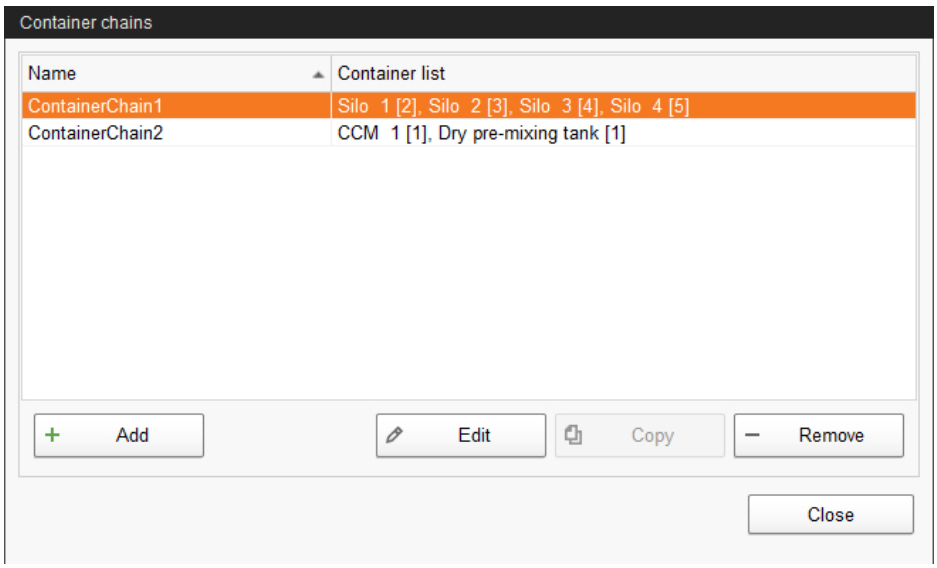



2. In the dialog window "Container chains", click on "Add".
3. Enter a name for the container chain.

4. From the top list of containers that can be added, select the desired containers and click on "Add" to add them to the container chain below.




5. Sort the containers within the container chain using the arrows pointing upwards and downwards.
6. Confirm the container chain by clicking on "OK".




The containers that were listed from top to bottom during configuration of the container chain are listed from left to right in the "Container list" column of the "Container chains" dialog window.

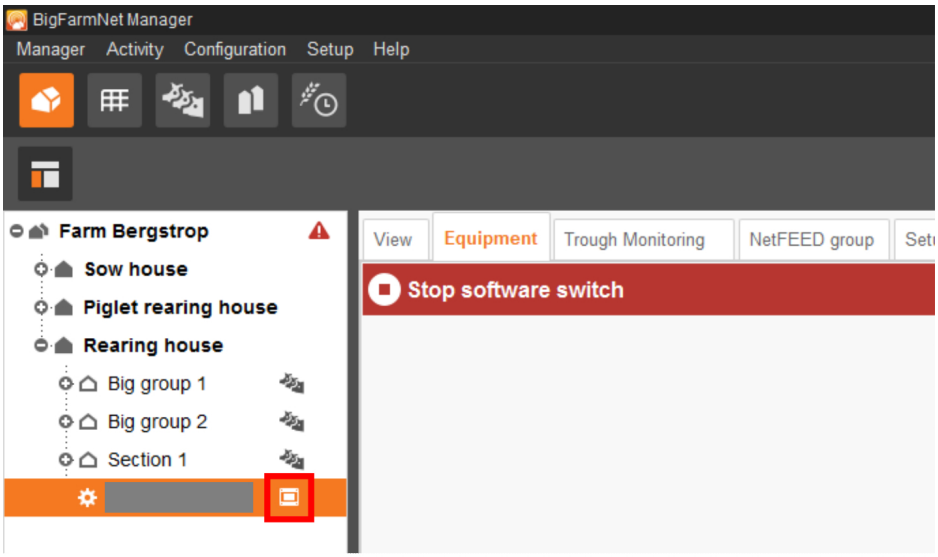
7. Configure additional container chains, if required.
8. Confirm the container chains by clicking on "Close".

# 5 HydroMix*pro* settings

Settings regarding the application are configured under the "Equipment" tab. You may for example define the parameters for feed moves, feed distribution and dosing at the valves here. The setting parameters can be changed as required at any time.

Open the setting parameters as follows:

1. Click on the controller icon of the respective system application in the farm structure.




**NOTICE!**

Check whether the system is running. Stop the system by clicking on Stop in the upper bar.

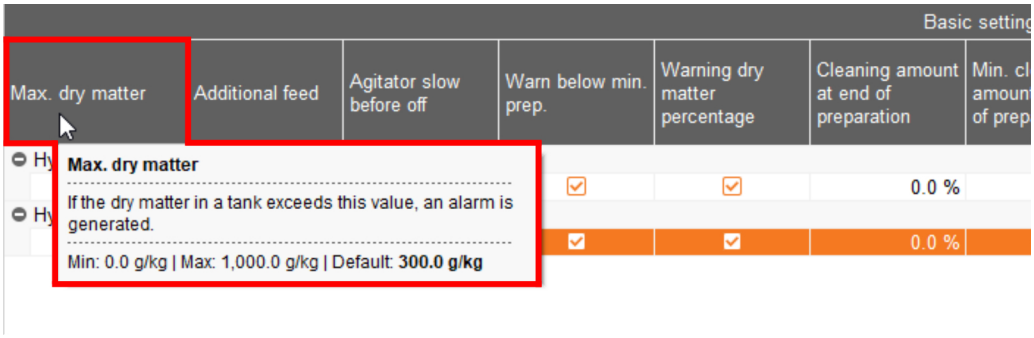
2. Under "Equipment", click on "Settings...".

   This opens the settings dialog, which contains all settings for the system components you defined in the Composer beforehand. The settings are grouped and may have pre-set values. The different parameters are described in the following chapters.

   Only save after you have defined all settings of the tabs. The "Save" function affects the entire settings dialog. Saved changes are immediately applied to the system(s)!

   **NOTICE!**

   Tooltips available! Move the mouse pointer over the input fields or the parameters in the head line to see a more detailed description.

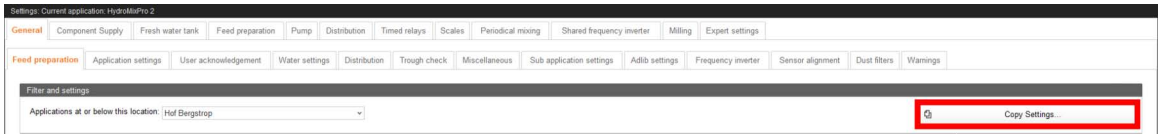



## 5.1 Copying the settings of a system

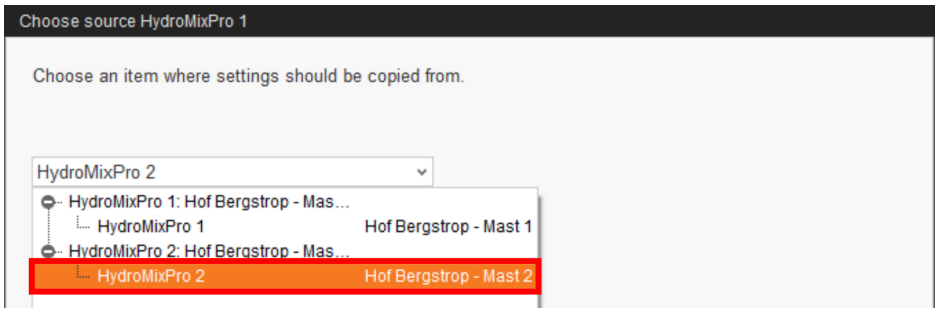
If multiple systems (applications) of the same type are to be configured with the same settings, you can define the settings for one system and copy them to other systems. The copy function is permanently available in the settings dialog. It can only be used for the settings of the currently active tab.

Proceed as follows:

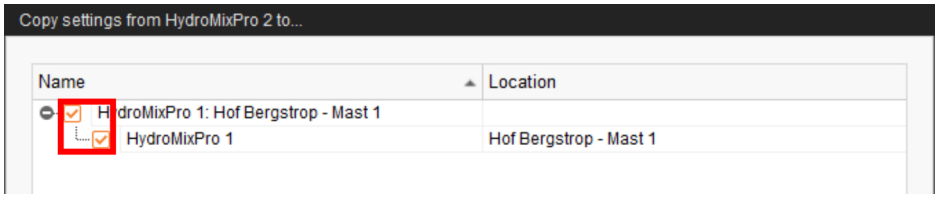
1. Configure the settings for one system.
2. Click on the button "Copy Settings..." in the top part of the window.




3. In the next dialog window, select the system whose settings you want to copy.




4. Click on "Next".
5. Select all systems to which you want to transfer these settings in the next dialog window.



6. Click on "Copy". The settings are now transferred to all selected systems.

   Only save after you have defined all settings of the tabs. The "Save" function affects the entire settings dialog. Saved changes are immediately applied to the system(s)!

## 5.2 General

### 5.2.1 Feed preparation

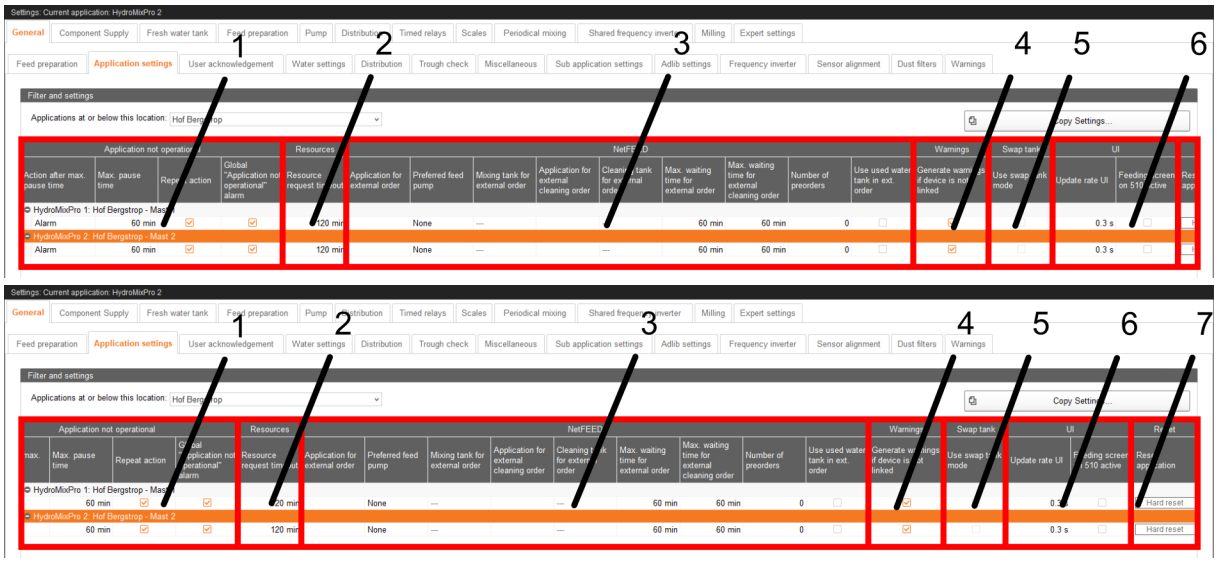

The "Feed preparation" dialog is divided into 2 areas, which are explained below.

1. **Basic settings**
   - **Max. dry matter:** If this value is exceeded during filling of the mixing tank, an alarm is generated.
   - **Additional feed:** Amount of additional feed that is added with each preparation.
   - **Agitator slow before off:** When a component is conveyed into a mixing tank or a pre-mixing tank while the agitator is running, the agitator mixes quickly at first. As soon as the remaining amount that still needs to be dispensed corresponds to this value, the agitator switches to a slower mode. If the value is greater than the total amount, the agitator mixes slowly from the beginning.
   - **Warning below minimum preparation:** If the preparation amount is below the minimum mixing amount or preparation amount, a warning is generated.

- **Warning dry matter percentage:** If the desired dry matter percentage cannot be achieved, a warning is generated.
- **Cleaning amount at end of preparation:** If water is used as replacement component, this proportion of water is dispensed by the cleaning valve after preparation. Prerequisite: The amount is greater than minimum amount set under "Min. cleaning amount at end of preparation".
- **Min. cleaning amount at end of preparation:** If the calculated percentage "Cleaning amount at end of preparation" is below this value, no water is dispensed by the cleaning valve after preparation.
- **Allowed temperature difference:** Permitted temperature difference after preparation if a target temperature of > 0 °C or > 32 °F is set in recipes, pre-mix recipes or feed curves.
- **Adjustment water at start:** Proportion of the water used at the start in relation to the total amount of water. With the remaining proportion, the target temperature of the mixture can be reached after all components have been dispensed. (Only when preparing with a target temperature.)
- **Max. temperature deviation (cold water):** Maximum temperature deviation during preparation when dispensing cold water into the mixing tank. The lower the value, the more frequently the system switches between cold and warm water.
- **Prohibited to use used water for preparation:** The preparation process only uses sufficient used water to leave enough water for pushing.
- **Dry matter for extra adjustment (% of max. DM):** If the calculated dry matter content exceeds this value after dispensing a component via the circuits, water is dispensed directly into the mixing tank to achieve the desired dry matter content. "0.0 %" means that no such adjustment is made.
- **Use replacement if sub-application of silo goes out of operation while dosing:** If the sub-application of a silo or pre-mixing-tank stops operating while dispensing a prepared mixture from the silo or pre-mixing unit, the prepared amount is not stopped with an alarm, but switches to another tank with the same component or to a replacement component.
- **Component via circuit for each batch:** Preparation in a system with several mixing tanks also retrieves components via the circuits for all feeding batches following the first batch, as long as preparation of the first batch has not yet been completed.

2. **pH levelling**
   - **Setting time:** Time to level the pH value after dispensing into the mixing tank.
   - **Dosing time:** Time for dispensing the component to level the pH value in the mixing tank.
   - **Number of trials:** Maximum number of attempts to level the pH value in the mixing tank.
   - **Ingredient:** The component used for levelling.
   - **pH alarm level:** Action if the pH level in the mixing tank has not been reached after the maximum number of dispensing attempts ("No" = no action, "Warning" = warning is generated, "Alarm" = alarm is generated).

### 5.2.2 Application settings




The "Application settings" dialog is divided into 7 areas, which are explained below.

1. **Application not operational**
   - **Action after max. pause time:** Action after the time set under "Max. pause time" has elapsed ("Alarm" = alarm is generated, "No" = no action, "Warning" = warning is generated).
   - **Max. pause time:** If the application does not run for a time longer than specified here (pause or error), the action set under "Action after max. pause time" is carried out. When "0 min" is set, there is no maximum pause time.
   - **Repeat action:** The action set under "Action after max. pause time" is repeated each time the time set under "Max. pause time" elapses.

- **(Global "Application not operational" alarm:** No function.)

2. **Resources**
   - **Resource request timeout:** Waiting time after which an alarm is generated if, for example, a component of an external system cannot be accessed.

3. **NetFEED**
   - **Application for external order:** Application for the external order.
   - **Preferred feed pump:** Preferred feed pump for transporting the liquid feed between applications. (Only if the supplying application has two different feed pumps.)
   - **Mixing tank for external order:** Fixed assignment of the mixing tank for an external order.
   - **Application for external cleaning order:** Assigned application for which an external cleaning order can be requested.
   - **Cleaning tank for external order:** Cleaning tank in which an external order is to be prepared. If not specified, any mixing tank is used.
   - **Max. waiting time for external order:** Maximum waiting time for an external order.
   - **Maximum waiting time for external cleaning order:** Maximum waiting time for an external cleaning order.
   - **Number of preorders** (only valid for **HydroMixPro**): Maximum number of pre-orders of the ordering application.
   - **Use used water tank in external order:** Enables the external application to access the used water tank of the ordering application.

4. **Warnings**
   - **Generate warnings if device is not linked:** When the software is restarted, a warning is generated if devices are not connected in the IO Manager.

5. **Swap tank**
   - **Use swap tank mode:** The mixing tank and the used water tank are automatically exchanged for preparation based on the tank contents. Components must be available in both tanks.

6. **UI**

   - **Update rate UI:** Time after which the display of the amount change is updated during feed moves (e.g. amount of a component currently added during preparation). When "0.0 s" is set, any change is displayed.
   - **Feeding screen on 510 active:** Displays the animal management on the 510 controller.

7. **Reset**

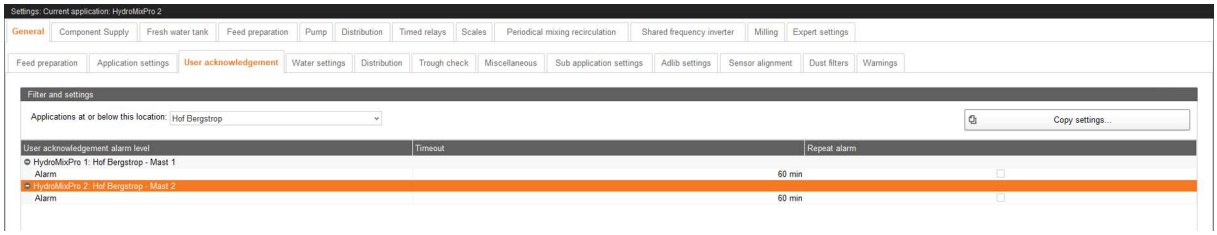
   **⚠ CAUTION!**

   **Risk of data loss!**

   All settings are deleted and cannot be restored!

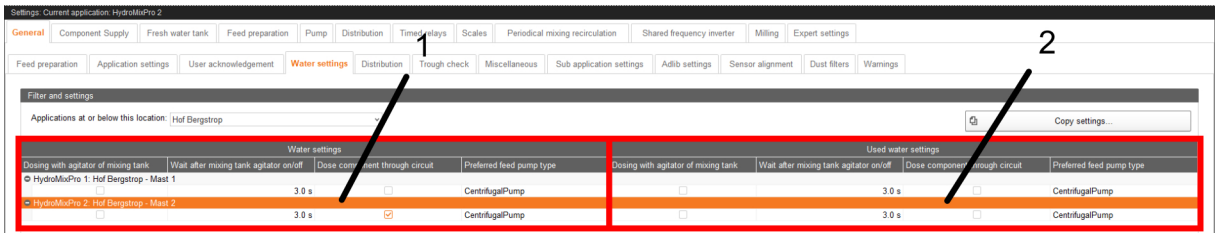
   - **Reset application:** Triggers a "hard reset". All active tasks are canceled and the controller is restarted. Afterwards, manual intervention may be necessary, e.g. when feed remains in the pipes.

### 5.2.3 User acknowledgement




- **User acknowledgement alarm level:** Action when thre is no user acknowledgement within the period set under "Timeout" ("Alarm" = alarm is generated, "No" = no action, "Warning" = warning is generated).
- **Timeout:** Maximum waiting time for a user acknowledgement. Once this time has elapsed, the action set under "User acknowledgement alarm level" is performed.
- **Repeat alarm:** The action set under "User acknowledgement alarm level" is repeated each time the time set under "Timeout" elapses.

## 5.2.4 Water settings

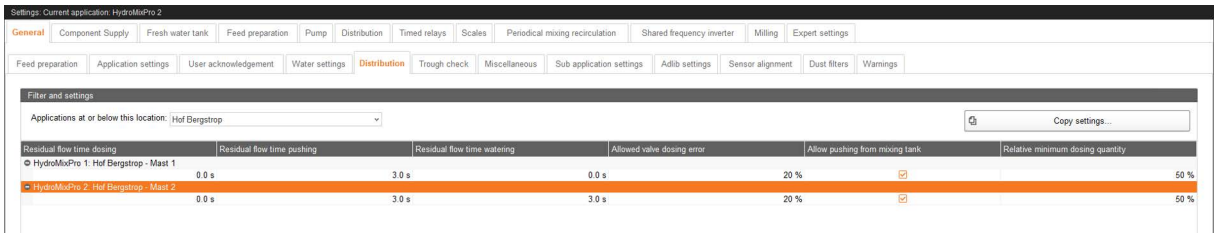



The "Water settings" dialog is divided into 2 areas, which are explained below.

1. **Water settings**
   - **Dosing with agitator of mixing tank:** The agitator runs while water is added into the mixing tank.
   - **Wait after mixing tank agitator on/off:** Delay time between switching the agitator on/off and adding water into the mixing tank.
   - **Dose component through circuit:** Enables adding water into the mixing tank via a ring line during preparation.
   - **Preferred feed pump type:** Preferred feed pump for adding water into the mixing tank via a ring line. (Only if different feed pumps are available.)

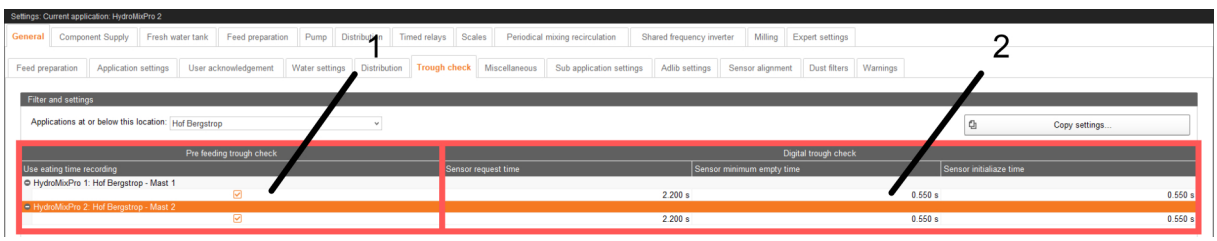
2. **Used water settings**
   - **Dosing with agitator of mixing tank:** The agitator runs while used water is added into the mixing tank.
   - **Wait after mixing tank agitator on/off:** Delay time between switching the agitator on/off and adding used water into the mixing tank.
   - **Dose component through circuit:** Enables adding used water into the mixing tank via a ring line during preparation.
   - **Preferred feed pump type:** Preferred feed pump for adding used water into the mixing tank via a ring line. (Only if different feed pumps are available.)

## 5.2.5 Distribution




- **Residual flow time dosing:** The system only closes the feed valve after this residual flow time after feeding so the scale can accept the correct value. The difference between the scale value at closing of the feed valve and the scale value after the end of the residual flow time is the residual flow volume. This volume is determined, adjusted and saved for each feed valve. During dispensing, the feed valve is closed earlier corresponding to the stored residual flow volume so the desired feed amount is reached as exactly as possible after the residual flow time.
- **Residual flow time pushing:** Residual flow time for pushing to a specific stop point (feed valve), see also "Residual flow time dosing".
- **Residual flow time watering:** Residual flow time during watering, see also "Residual flow time dosing".
- **Allowed valve dosing error:** If the percentage of "non-feed" (pushing component) of the dispensed amount is higher than this value, a warning is generated.
- **Allow pushing from mixing tank:** If the used water tank runs empty when positioning the feed in the circuit and the stop point has not yet been reached, the positioning of the feed from the mixing tank is continued instead of retrieving the additional amount of pushing component into the used water tank and continuing the positioning of the feed from there.
- **Relative minimum dosing quantity:** A feeding task without preparation is only carried out if the distribution amount's proportion in the current tank contents is at least equal to this value.

## 5.2.6 TroughCheck



The "TroughCheck" dialog is divided into 2 areas, which are explained below.

1. **Pre-feeding trough check**
   - **Use eating time recording:** If an eating time has been determined for a trough with sensor, this trough is considered empty. For the next feeding, the trough is not checked again during the trough pre-check, as it has already been determined to be empty.

2. **Digital trough check**
   - **Sensor request time:** Time required to determine the trough status from the time the sensor is ready for use.
   - **Sensor minimum empty time:** Minimum time for which a sensor must report empty during the "Sensor request time" for the sensor to be recognized as empty.
   - **Sensor initialize time:** Time between activation of a trough sensor and the start of the time set under "Sensor request time".

### 5.2.7 Miscellaneous


The "Miscellaneous" dialog is divided into 10 areas, which are explained below.

1. **Small circuit**

- **Max. recirculation time:** Maximum time for recirculation in the small circuit. The actual recirculation time results from this value and a percentage value of a feeding or recirculation task in the Task Manager.

2. **Content**
   - **Content of pipes:** Defines the contents in the pipes as water. This may be necessary if the contents have become mixed up (manual intervention) or if lines have been extended/changed (e.g. adjusted circuit lengths).
   - **Drain mix-up time:** Mix-up time of the mixing tank contents

     • before the contents are pumped into the used water tank at the beginning of preparation,

     • after the "Maximum waiting time" at the end of preparation has elapsed,

     • after watering if the remaining amount in the mixing tank is used for watering first,

     • before the transfer of an external order,

     • before distribution from a mixing tank starts.

3. **Tank cleaning**
   - **Delay fogging and emptying:** Time between two different fogging processes (acid, lye).
   - **Clean all tanks after feeding:** Not only the tanks used for feed preparation are cleaned as part of a feeding task, but all selected tanks (to prevent an accumulation of water in the pipes).
   - **Acid threshold for cleaning with lye:** A cleaning programme with lye is not started if the acid concentration in the pipes or in the mixing tanks exceeds this value.

4. **Feed phase**
   - **Default feed phase:** If the pigs have not been assigned a feed phase via the feed curve, this feed phase is used instead. This feed phase defines all necessary parameters.

5. **Technical amount** (only valid for **HydroMixPro**.)

- **Technical amount warning:** A warning is generated if it is necessary to mix an additional amount of feed so the required feed can be dispensed correctly at the valves used for feeding.

6. **Pressure monitoring**
   - **Max. allowed pressure:** If the pressure in the pipes as determined by a pressure sensor exceeds this value for the duration of the time set under "High pressure monitoring time", the feed pump is switched off.
   - **High pressure monitoring time:** If the value set under "Max. allowed pressure" is exceeded for this time while a feed move is executed, the feed move is stopped and an alarm is generated. When "0 s" is set, an alarm is generated immediately upon exceeding this value.
   - **Critical pressure:** If this value is exceeded, the system stops immediately.

7. **Stirring between preparation and distribution** (only valid for **HydroMixPro**)
   - **Mix state:** Type of mixing ("Interval mixing", "Non-stop mixing", "Without mixing").
   - **Speed:** Speed of the agitator during the mixing interval ("Slow", "Fast").
   - **Interval mix time:** Duration of the mixing phase between 2 pauses. (Only for interval mixing.)
   - **Interval pause time:** Duration of the pause between 2 mixing phases. (Only for interval mixing.)

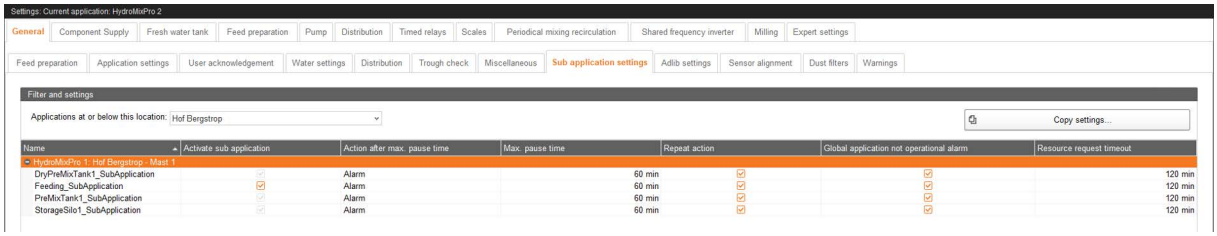
8. **Frequency inverter**
   - **Gap target frequency reached:** If a frequency inverter in the application does not reach the target frequency within this time, a warning is generated. When "0 s" is set, no warning is generated.

9.
   - **Bin usage check:** Tank use is only permitted if the (sub-) application of the tank is in operation.

10. **Cleanup data**

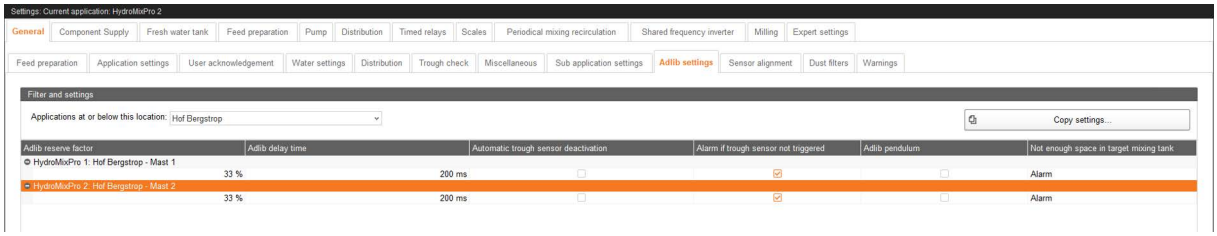
- **Alarms and warnings:** Alarms and warnings are deleted from the alarm log after this time has elapsed.
- **Scheduler data:** Tasks are deleted from the Task Manager after this time has elapsed.

### 5.2.8 Sub-application settings




- **Name:** Name of the sub-application.
- **Activate sub-application:** Activates the selected sub-application.
- **Action after max. pause time:** Action after the time set under "Max. pause time" has elapsed ("Alarm" = alarm is generated, "No" = no action, "Warning" = warning is generated).
- **Max. pause time:** If the sub-application does not run for longer than specified here (pause or error), the action set under "Action after max. pause time" is carried out. When "0 min" is set, there is no maximum pause time.
- **Repeat action:** The action set under "Action after max. pause time" is repeated each time the time set under "Max. pause time" elapses.
- **Global "Application not operational" alarm:** If "Action after max. pause time" is set to "Alarm", this alarm is generated for the entire application. The application is stopped, including all sub-applications.
- **Resource request timeout:** Waiting time after which an alarm is generated for the sub-application if a component cannot be accessed because it is already being used by another process.

### 5.2.9 Adlib settings

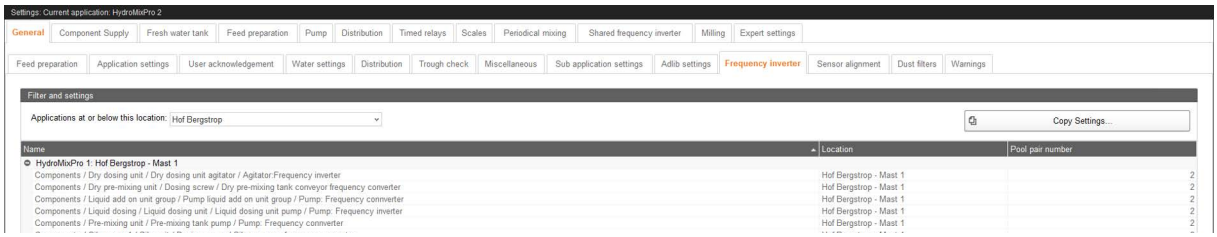


- **Adlib reserve factor:** Factor for weighting the current feeding deviation when adjusting the valve factor for additional adlib feed. When "0 %" is set, the factors per valve are not adjusted. When "100 %" is set, the factor per valve is set to the deviation of the last feeding. See also "Expert settings" > "HydroMixPro circuit" > "Valves" > "Adlib factor".
- **Adlib delay time:** Time the system waits until the trough sensor delivers a stable signal. This time is not used for the pre-feeding check of the trough sensor.
- **Automatic trough sensor deactivation:** If the trough sensor is not triggered during dispensing and the amount dispensed at the valve exceeds the maximum trough content, the trough sensor is automatically deactivated and dispensing at the trough is stopped.
- **Alarm if trough sensor not triggered:** If the trough sensor is not triggered during dispensing and the amount dispensed at the valve exceeds the maximum trough content, an alarm is generated.
- **Adlib pendulum:** Two options of pendulum adlib feeding can be used. Which of these is used depends on the structure of the system and possibly on settings in the feeding task itself.
  - **Option 1:** Separate feeding lines for each mixing tank

    Each house (trough) has 2 feed valves located at 2 different feeding lines. For distribution, each mixing tank uses the feeding line assigned to it.
  - **Option 2:** Shared feeding line for both mixing tanks

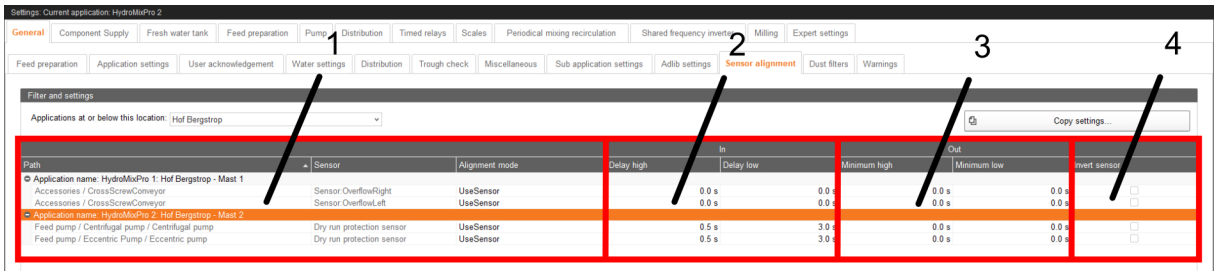
    The mixing tanks share a feeding lined to distribute the feed. After distribution, the feed from one mixing tank remains in the shared feeding line. Before distribution from another mixing tank, the foreign feed in the feeding line is replaced by the feed in the mixing tank. For this purpose, the feed is pushed from the mixing tank through the feeding line into a different mixing tank. The pushing amount corresponds to the volume of the feeding line. If another feeding is active in the target mixing tank and there is not enough space in this mixing tank to replace the contents in the feeding line, dispensing in this round is skipped for these valves and an attempt is made to replace the feed in the next round. If the feeding line is used by a mixing tank other than the current mixing tank, the preparation amount is increased by the amount required to replace the feed in the shared feeding line.
- **Not enough space in target mixing tank:** Action if there is not enough space in the target mixing tank to replace the contents in the feeding line when "Adlib pendulum" is activated, using option 2 ("Alarm" = alarm is generated, "None" = no action, "Warning" = warning is generated).

## 5.2.10 Frequency transformer




- **Name** (only an information): Name of the frequency inverter.
- **Location** (only an information): Location of the frequency inverter on the farm.
- **Pool pair number:** Number of pole pairs of the frequency inverter. This value can only be changed by a service technician when installing a different motor.

## 5.2.11 Sensor alignment




The "Sensor alignment" dialog is divided into 4 areas, which are explained below.

1.

- **Path** (only an information): Location or part of the system where the sensor is installed.
- **Sensor** (only an information): Type of the sensor.
- **Alignment mode:**

  **UseSensor** (standard setting): The adjusted sensor value is based (with delay times) on the actual sensor value.

  **Low**: The adjusted value is always and constantly "Low".

  **High**: The adjusted value is always and constantly "High".

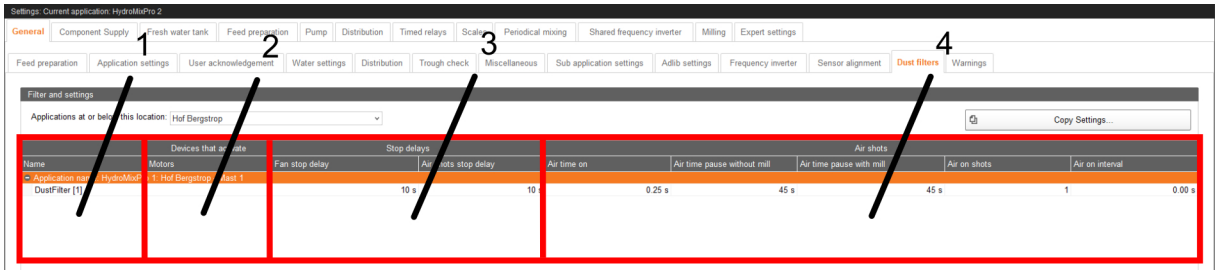
  "Low" and "High" can be useful temporarily if the sensor does not work and the system cannot otherwise continue to run. The below settings are not relevant for "Low" and "High".

2. **In**
    - **Delay high:** Delay time at the input of the IO. The input must be activated at least until the "High" signal is transmitted to the control system. The control system does not respond to a "High" signal that is shorter than this time.
    - **Delay low:** Delay time at the input of the IO. The input must be deactivated at least until the "Low" signal is transmitted to the control system. The control system does not react to a signal drop that is shorter than this time (e.g. if an alarm sensor signal only drops for a short time).

3. **Out**
    - **Minimum high:** The adjusted "High" signal remains "High" for at least this period of time. (The standard setting is "0.0 s".)
    - **Minimum low:** The adjusted "Low" signal remains "Low" for at least this period of time. (The standard setting is "0.0 s".)

4.
    - **Invert sensor:** The real signal is inverted before the adjustments are made.

### 5.2.12 Dust filters




The "Dust filters" dialog is divided into 4 areas, which are explained below.

1.
    - **Name:** Name of the dust filter.

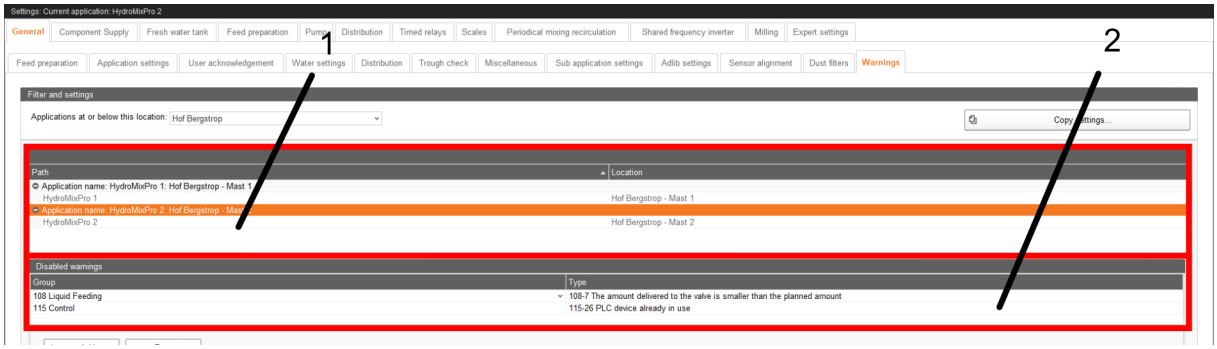
2. **Devices that activate**

- **Motors:** Motors/devices that switch on the dust filter. The dust filter runs for as long as the specified motors are activated.

3. **Stop delays**
   - **Fan stop delay:** After-runtime of the fan in the dust filter after the last motor/device has been switched off.
   - **Air shots stop delay:** After-runtime of the duster filter's cleaning process after the last motor/device has been switched off.

4. **Air shots**
   - **Air time on:** Switch-on duration per air valve during filter cleaning.
   - **Air time pause without mill:** Time between 2 air shots of consecutive air valves during filter cleaning when the mill is not one of the active motors.
   - **Air time pause with mill:** Time between 2 air shots of consecutive air valves during filter cleaning when the mill is one of the active motors.
   - **Air on shots:** Number of air shots per air valve during filter cleaning.
   - **Air on interval:** Time between 2 air shots of the same air valve during filter cleaning.

### 5.2.13 Warnings




The "Warnings" dialog is divided into 2 areas, which are explained below.

1.
   - **Path:** Application for which the warnings set under "Disabled warnings" are deactivated.

- **Location:** Location on the farm of the application for which the warnings set under "Disabled warnings" are deactivated.

2. **Disabled warnings**
   - **Group:** Superordinate groups to which the warnings set under "Type" belong.
   - **Type:** Disabled warnings.

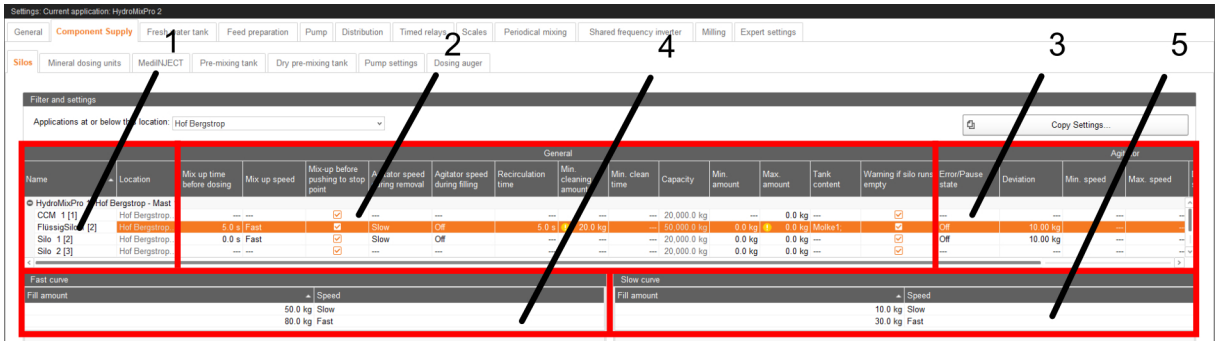
## 5.3 Component supply

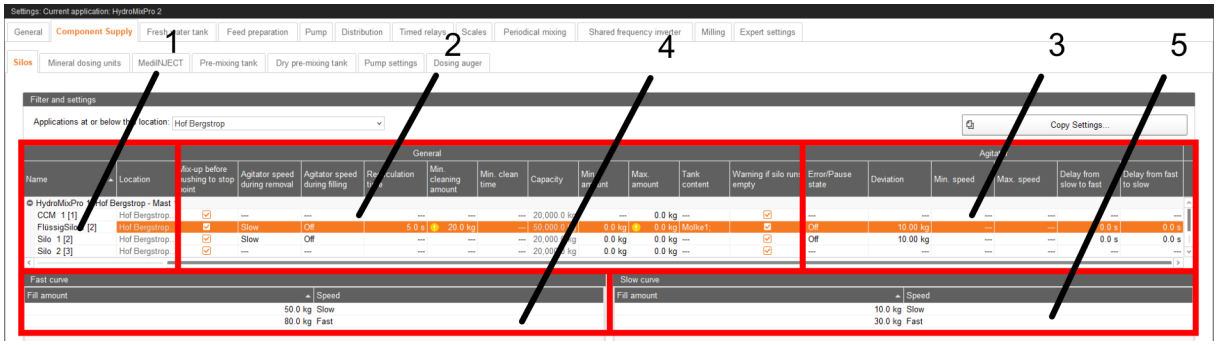
The settings under "Component supply" are applicable for the following system components:

- Silo (dry, liquid)
- Mineral dosing unit (dry, liquid)
- MediINJECT, dispensing into the mixing tank
- Pre-mixing tank (dry, liquid)
- Pump
- Dosing auger

Setting parameters appear depending on the components that are part of your system and that you configured in the Composer. In many cases, the same setting parameters apply to different system components.

### 5.3.1 Silos






The "Silos" dialog is divided into 5 areas, which are explained below.

1.

- **Name:** Name of the silo.
- **Location** (only an information): Location of the silo on the farm.

2. **General**

- **Mix-up time before dosing:** Duration for which the silo contents are mixed before the component is dispensed into the mixing tank or pre-mixing tank. (Only for silos with agitator.)
- **Mix-up speed:** Speed of the agitator when mixing the silo contents before dispensing. (Only for silos with agitator.)

  **On** (fixed setting): Agitators with direct switch-on

  **Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
- **Mix-up before pushing to stop point:** The silo contents are mixed before being pushed to the stop point. (Only for silos with agitator.)
- **Agitator speed during removal:** Speed of the agitator during removal from the silo. (Only for silos with agitator.)

  **On**/**Off**: Agitators with direct switch-on

  **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter

- **Agitator speed during filling:** Speed of the agitator during filling of the silo. (Only for silos with agitator.)

  **On**/**Off**: Agitators with direct switch-on

  **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
- **Recirculation time:** Duration for recirculation in the liquid silo before the component is dispensed into the mixing tank. (Only for liquid silos in which recirculation is possible.)
  If mixing is also planned for the liquid silo, the contents are recirculated after mixing.
- **Min. cleaning amount:** Amount of cleaning component used for silo cleaning if the specified amount for silo cleaning is less than this value. This amount is used for rinsing the silo after fogging. If fogging was part of cleaning and cleaning is canceled, the tank is still rinsed with this amount before the safety switch is released.
  This value should be smaller than the value set under "Max. amount".
- **Min. clean time:** Minimum duration of silo cleaning.
- **Capacity:** Capacity of the silo.
- **Min. amount:** Minimum amount that should remain in the silo during removal. (Only for weighed silos.)
- **Max. amount:** Maximum filling amount of the silo.
  This value should be greater than the value set under "Min. cleaning amount".
- **Tank content:** Displays and adjusts the silo contents.
- **Warning if silo runs empty:** Generates a warning if the silo runs empty during removal.

3. **Agitator** (only for silos with agitator)
   - **Error/Pause state:** Speed of the agitator in the event of an error or during a pause.

     **On**/**Off**: Agitators with direct switch-on

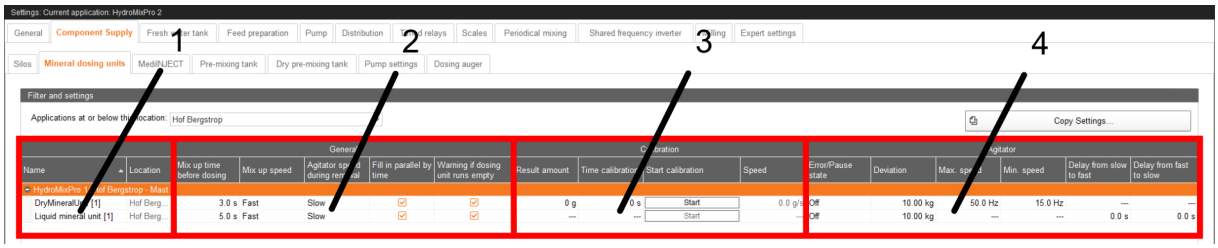
     **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter

- **Deviation:** The speed of the agitator is maintained for as long as the weight does not deviate by more than this value from a supporting point of the agitation curve. (Only for agitators in weighed silos and with an agitation curve already created.)
- **Min. speed:** Minimum frequency of the agitator. (Only for agitators with frequency inverter.)
  If the silo is not weighed, the minimum frequency is used for slow mixing.
- **Max. speed:** Maximum frequency of the agitator. (Only for agitators with frequency inverter.)
  If the silo is not weighed, the maximum frequency is used for fast mixing.
- **Delay from slow to fast:** Delay time when switching from slow mixing to fast mixing. (Only double-stage agitators with tapped winding.)
- **Delay from fast to slow:** Delay time when switching from fast mixing to slow mixing. (Only double-stage agitators with tapped winding.)

4. **Fast curve** (only for silos with agitator)
   - **Fill amount:** Setting of the fast agitation curve. From this amount in the silo, the agitator runs at the speed set under "Speed".
   - **Speed:** Setting of the fast agitation curve. From the amount set under "Fill amount" in the silo, the agitator runs at this speed.

5. **Slow curve** (only for silos with double-stage agitator with tapped winding or agitator with frequency inverter)
   - **Fill amount:** Setting of the slow agitation curve. From this amount in the silo, the agitator runs at the speed set under "Speed".
   - **Speed:** Setting of the slow agitation curve. From the amount set under "Fill amount" in the silo, the agitator runs at this speed.

## 5.3.2 Mineral dosing unit




The "Mineral dosing units" dialog is divided into 4 areas, which are explained below.

1.

- **Name:** Name of the mineral dosing unit.
- **Location** (only an information): Location of the mineral dosing unit on the farm.

2. **General**

- **Mix-up time before dosing:** Duration for mixing of the component before it is dispensed into the mixing tank.
- **Mix-up speed:** Speed of the agitator for mixing before dispensing.

  **On** (fixed setting): Agitators with direct switch-on

  **Slow/Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
- **Agitator speed during removal:** Speed of the agitator when removing the component from the mineral dosing unit.

  **On/Off**: Agitators with direct switch-on

  **Off/Slow/Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
- **Fill in parallel by time:** Mineral dosing unit dispenses in parallel according to time. The correct dosing speed must be configured in the feed move settings.
- **Warning if dosing unit runs empty:** Generates a warning if the mineral dosing unit runs empty during removal.

3. **Calibration**

- **Result amount:** Delivery rate of the mineral dosing unit during the runtime set under "Time calibration".

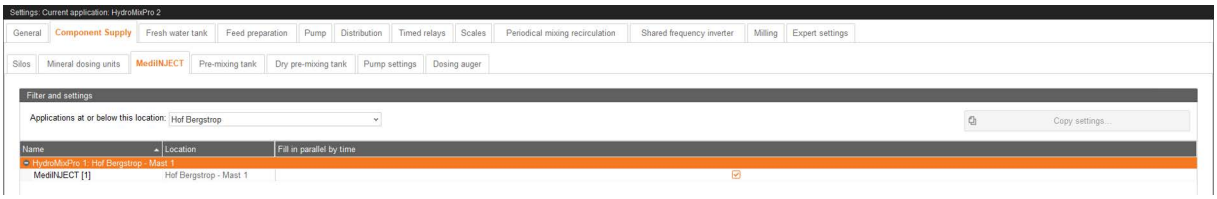
- **Time calibration:** Runtime for calibrating the mineral dosing unit.
- **Start calibration:** Starts calibration of the mineral dosing unit.
- **Speed** (only an information): Calculated speed of the mineral dosing unit after calibration.

4. **Agitator**
   - **Error/Pause state:** Speed of the agitator in the event of an error or during a pause.

     **On**/**Off**: Agitators with direct switch-on

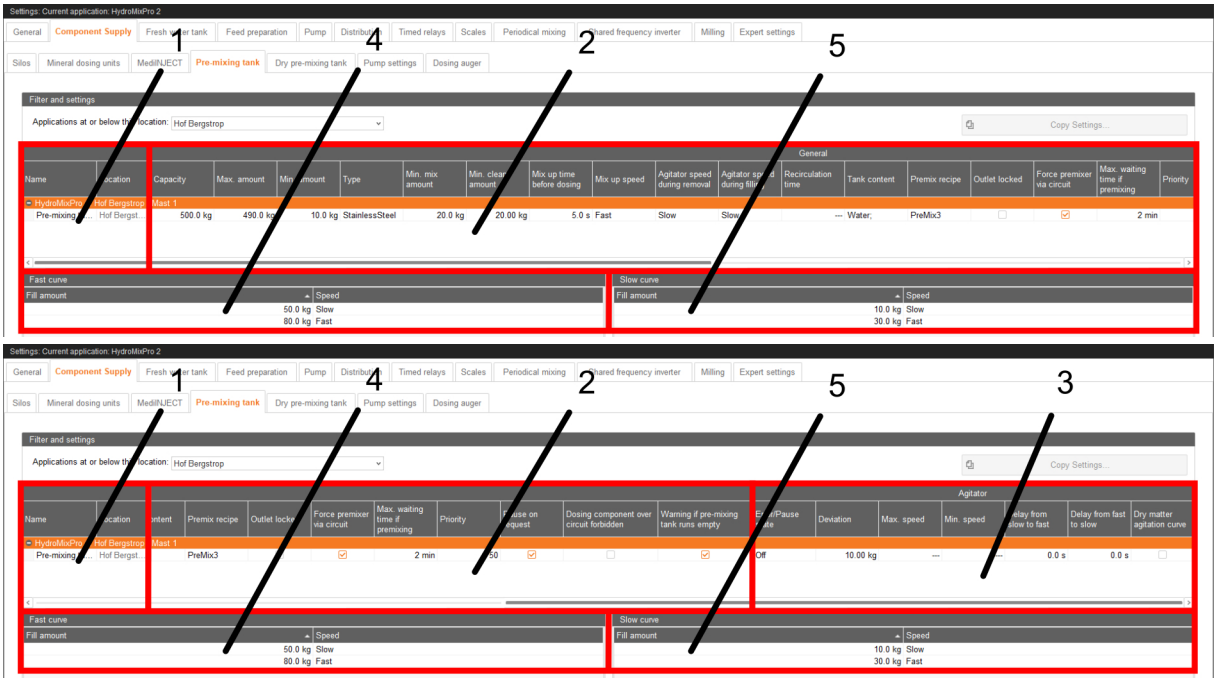
     **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
   - **Deviation:** The speed of the agitator is maintained for as long as the weight does not deviate by more than this value from a supporting point of the agitation curve. (Only for agitators with an agitation curve already created.)
   - **Max. speed:** Maximum frequency of the agitator. (Only for agitators with frequency inverter.)
   - **Min. speed:** Minimum frequency of the agitator. (Only for agitators with frequency inverter.)
   - **Delay from slow to fast:** Delay time when switching from slow mixing to fast mixing. (Only double-stage agitators with tapped winding.)
   - **Delay from fast to slow:** Delay time when switching from fast mixing to slow mixing. (Only double-stage agitators with tapped winding.)

### 5.3.3 MediINJECT




- **Name:** Name of the MediINJECT dosing station.
- **Location** (only an information): Location of the MediINJECT dosing station on the farm.
- **Fill in parallel by time:** MediINJECT dosing station dispenses in parallel into the mixing tank according to time. The correct dosing speed must be configured in the feed move settings. The amount to be dosed is dispensed into the mixing tank in parallel with another component.

### 5.3.4 Pre-mixing tank




The "Pre-mixing tank" dialog is divided into 5 areas, which are explained below.

1.

- **Name:** Name of the pre-mixing tank.
- **Location** (only an information): Location of the pre-mixing tank on the farm.

2. **General**

- **Capacity:** Capacity of the pre-mixing tank. If the amount in the pre-mixing tank exceeds this value, an alarm is generated. This value should be greater than the value set under "Max. amount" due to the residual flow volume.
- **Max. amount:** Maximum amount up to which the pre-mixing tank is filled. This value should be smaller than the value set under "Capacity" due to the residual flow volume.
- **Min. amount:** Minimum amount which should remain in the pre-mixing tank during removal, e.g. to prevent the pump from running dry.
- **Type:** Visualization of the pre-mixing tank in the Equipment plug-in.
- **Min. mix amount:** Minimum amount for mixing in the pre-mixing tank.
- **Min. cleaning amount:** Amount of cleaning component used for tank cleaning if the specified amount for tank cleaning is less than this value. This amount is used for rinsing the pre-mixing tank after fogging. If fogging was part of cleaning and cleaning is canceled, the pre-mixing tank is still rinsed with this amount before the safety switch is released.
- **Mix-up time before dosing:** Duration for which the tank contents are mixed before removal.
- **Mix-up speed:** Speed of the agitator when mixing the tank contents before removal.

  **On** (fixed setting): Agitators with direct switch-on

  **Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
- **Agitator speed during removal:** Speed of the agitator when removing a mixture from the pre-mixing tank.

  **On**/**Off**: Agitators with direct switch-on

  **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
- **Agitator speed during filling:** Speed of the agitator when transferring a pre-mixture prepared in the mixing tank from the mixing tank to the pre-mixing tank.

  **On**/**Off**: Agitators with direct switch-on

  **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter

- **Recirculation time:** Duration for recirculation in the pre-mixing tank before removal. The feed in the pipe system is blended in the process.
- **Tank content:** Displays and adjusts the tank contents.
- **Premix recipe:** Premix recipe of the pre-mixing tank. Is set automatically by the control system after preparation in the pre-mixing tank, but can be adjusted.
- **Outlet locked:** The pre-mixing tank is locked and not used.
  In addition, the pre-mixing tank is locked automatically if it runs empty during removal or if feed is mixed inside of it. At the end of the mixing process, the automatically locked pre-mixing tank is unlocked again.
- **Force premixer via circuit:** If a component can be moved into the pre-mixing tank via the circuits, the system waits for the required resources for the time set under "Max. waiting time if premixing".
- **Max. waiting time if premixing:** If a component can be moved into the pre-mixing tank via the circuits and the option "Force premixer via circuit" is activated, the system waits for the required resources for this time. If the required resources are not released within this time, the component is dispensed directly into the pre-mixing tank if a direct connection to the pre-mixing tank exists.
- **Priority:** Priority with which the pre-mixing tank is selected if other processes (e.g. preparation in the mixing tank) require the premix recipe of this pre-mixing tank. If there are several pre-mixing tanks with this premix recipe, the pre-mixing tank with the highest priority is used. If the priority is identical, the pre-mixing tank from which the component was last removed is used.
- **Pause on request:** If another process (e.g. in a mixing tank) needs a component currently being used by the pre-mixing tank, the pre-mixing tank pauses the preparation process.
- **Dosing component over circuit forbidden:** Components cannot be dispensed via the circuits.
- **Warning if pre-mixing tank runs empty:** Generates a warning if the pre-mixing tank runs empty during removal.

3. **Agitator**

- **Error/Pause state:** Speed of the agitator in the event of an error or during a pause.

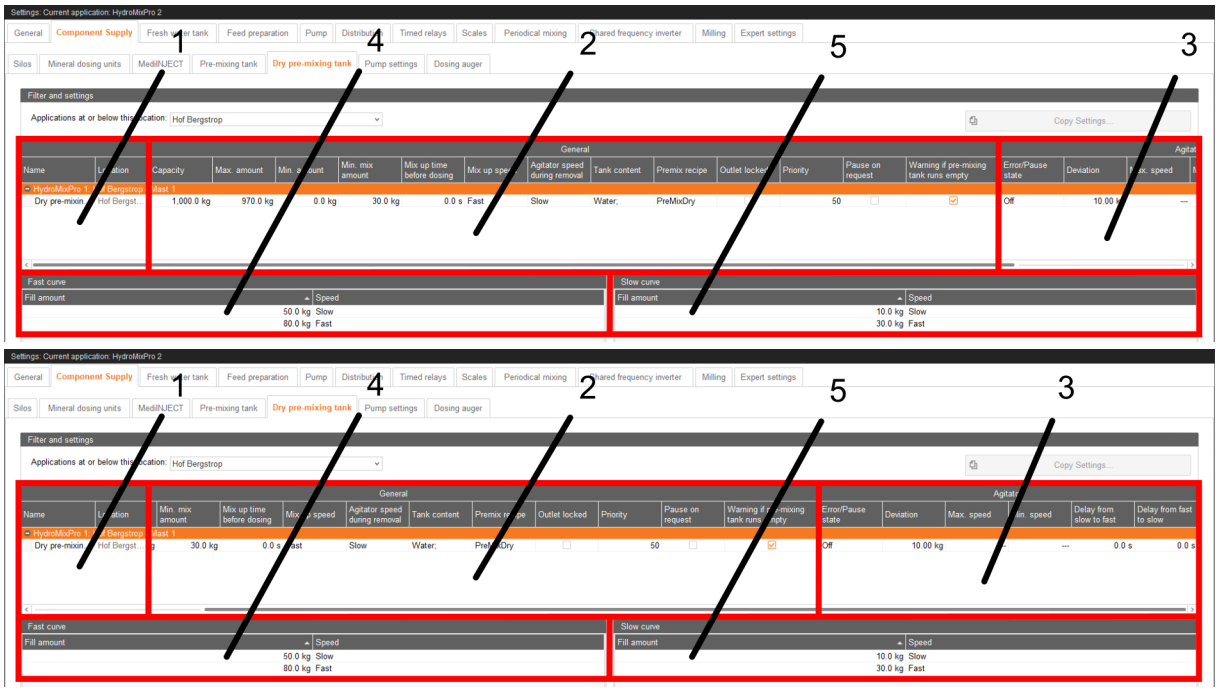
  **On**/**Off**: Agitators with direct switch-on

  **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
- **Deviation:** The speed of the agitator is maintained for as long as the weight does not deviate by more than this value from a supporting point of the agitation curve. (Only for agitators with an agitation curve already created.)
- **Max. speed:** Maximum frequency of the agitator. (Only for agitators with frequency inverter.)
- **Min. speed:** Minimum frequency of the agitator. (Only for agitators with frequency inverter.)
- **Delay from slow to fast:** Delay time when switching from slow mixing to fast mixing. (Only double-stage agitators with tapped winding.)
- **Delay from fast to slow:** Delay time when switching from fast mixing to slow mixing. (Only double-stage agitators with tapped winding.)
- **Dry matter agitation curve:** The mixing speed is not only based on the fill amount, but also on the dry matter content.

4. **Fast curve**
   - **Fill amount:** Setting of the fast agitation curve. From this amount in the pre-mixing tank, the agitator runs at the speed set under "Speed".
   - **Speed:** Setting of the fast agitation curve. From the amount set under "Fill amount" in the pre-mixing tank, the agitator runs at this speed.

5. **Slow curve** (only for pre-mixing tanks with double-stage agitator with tapped winding or agitator with frequency inverter)
   - **Fill amount:** Setting of the slow agitation curve. From this amount in the pre-mixing tank, the agitator runs at the speed set under "Speed".
   - **Speed:** Setting of the slow agitation curve. From the amount set under "Fill amount" in the pre-mixing tank, the agitator runs at this speed.

## 5.3.5 Dry pre-mixing tank




The "Dry pre-mixing tank" dialog is divided into 5 areas, which are explained below.

1.

- **Name:** Name of the pre-mixing tank.
- **Location** (only an information): Location of the pre-mixing tank on the farm.

2. **General**

- **Capacity:** Capacity of the pre-mixing tank. If the amount in the pre-mixing tank exceeds this value, an alarm is generated. This value should be greater than the value set under "Max. amount" due to the residual flow volume.
- **Max. amount:** Maximum amount up to which the pre-mixing tank is filled. This value should be smaller than the value set under "Capacity" due to the residual flow volume.
- **Min. amount:** Minimum amount which should remain in the pre-mixing tank during removal, e.g. to prevent the pump from running dry.
- **Min. mix amount:** Minimum amount for mixing in the pre-mixing tank.
- **Mix-up time before dosing:** Duration for which the tank contents are mixed before removal.

- **Mix-up speed:** Speed of the agitator when mixing the tank contents before removal.

  **On** (fixed setting): Agitators with direct switch-on

  **Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter

- **Agitator speed during removal:** Speed of the agitator when removing a mixture from the pre-mixing tank.

  **On**/**Off**: Agitators with direct switch-on

  **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter

- **Tank content:** Displays and adjusts the tank contents.
- **Premix recipe:** Premix recipe of the pre-mixing tank. Is set automatically by the control system after preparation in the pre-mixing tank, but can be adjusted.
- **Outlet locked:** The pre-mixing tank is locked and not used.
  In addition, the pre-mixing tank is locked automatically if it runs empty during removal or if feed is mixed inside of it. At the end of the mixing process, the automatically locked pre-mixing tank is unlocked again.
- **Priority:** Priority with which the pre-mixing tank is selected if other processes (e.g. preparation in the mixing tank) require the premix recipe of this pre-mixing tank. If there are several pre-mixing tanks with this premix recipe, the pre-mixing tank with the highest priority is used. If the priority is identical, the pre-mixing tank from which the component was last removed is used.
- **Pause on request:** If another process (e.g. in a mixing tank) needs a component currently being used by the pre-mixing tank, the pre-mixing tank pauses the preparation process.
- **Warning if pre-mixing tank runs empty:** Generates a warning if the pre-mixing tank runs empty during removal.

3. **Agitator**

- **Error/Pause state:** Speed of the agitator in the event of an error or during a pause.

  **On**/**Off**: Agitators with direct switch-on

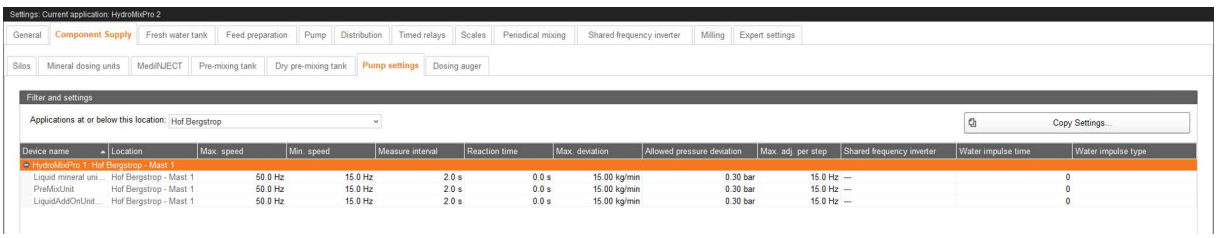
  **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter

- **Deviation:** The speed of the agitator is maintained for as long as the weight does not deviate by more than this value from a supporting point of the agitation curve. (Only for agitators with an agitation curve already created.)
- **Max. speed:** Maximum frequency of the agitator. (Only for agitators with frequency inverter.)
- **Min. speed:** Minimum frequency of the agitator. (Only for agitators with frequency inverter.)
- **Delay from slow to fast:** Delay time when switching from slow mixing to fast mixing. (Only double-stage agitators with tapped winding.)
- **Delay from fast to slow:** Delay time when switching from fast mixing to slow mixing. (Only double-stage agitators with tapped winding.)

4. **Fast curve**
   - **Fill amount:** Setting of the fast agitation curve. From this amount in the pre-mixing tank, the agitator runs at the speed set under "Speed".
   - **Speed:** Setting of the fast agitation curve. From the amount set under "Fill amount" in the pre-mixing tank, the agitator runs at this speed.

5. **Slow curve** (only for pre-mixing tanks with double-stage agitator with tapped winding or agitator with frequency inverter)
   - **Fill amount:** Setting of the slow agitation curve. From this amount in the pre-mixing tank, the agitator runs at the speed set under "Speed".
   - **Speed:** Setting of the slow agitation curve. From the amount set under "Fill amount" in the pre-mixing tank, the agitator runs at this speed.

### 5.3.6 Pump settings

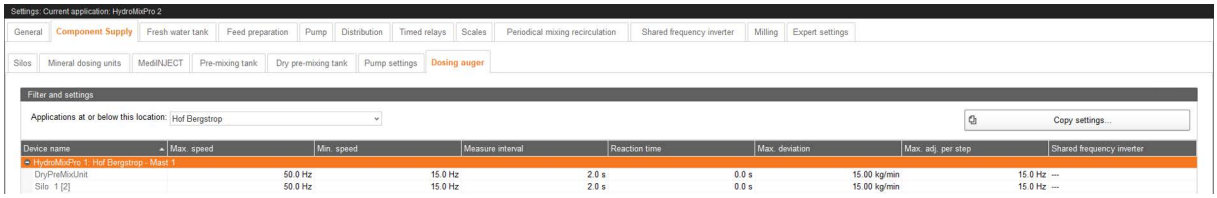



The "Pump settings" dialog is only displayed for pumps with frequency inverter.

- **Device name** (only an information): Name of the pump.

- **Location** (only an information): Location of the pump on the farm.
- **Max. speed:** Maximum frequency of the pump.
- **Min. speed:** Minimum frequency of the pump.
- **Measure interval:** Interval for speed measurement.
- **Reaction time:** Waiting time between speed change and start of the next measurement.
- **Max. deviation:** The speed (Hz) of the pump is maintained for as long as the speed (kg/min) does not deviate by more than this value from the speed (kg/min) set in the "Expert settings".
- **Allowed pressure deviation:** The speed of the pump is maintained for as long as the pressure does not deviate by more than this value from the pressure set in the "Expert settings".
- **Max. adj. per step:** Maximum step size for speed adjustment.
- **Shared frequency inverter:** Shared frequency inverter to be used.
- **Water impulse time:** Duration of the water pulse before the pump starts.
- **Water impulse type:** How the water pulse valve works.
  - **Everytime:** Water pulse before each pump start.
  - **WhenPumpIsDry:** Water pulse before pump start only if the pump has previously run dry.

### 5.3.7 Dosing auger

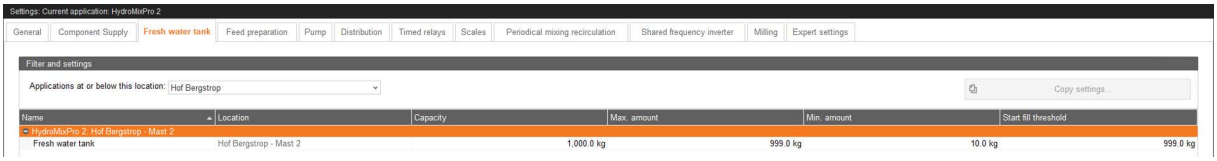



The "Dosing auger" dialog is only displayed for dosing augers with frequency inverter.

- **Device name** (only an information): Name of the dosing auger.
- **Max. speed:** Maximum frequency of the dosing auger.
- **Min. speed:** Minimum frequency of the dosing auger.
- **Measure interval:** Interval for speed measurement.
- **Reaction time:** Waiting time between speed change and start of the next measurement.

- **Max. deviation:** The speed (Hz) of the dosing auger is maintained for as long as the speed (kg/min) does not deviate by more than this value from the speed (kg/min) set in the "Expert settings".
- **Max. adj. per step:** Maximum step size for speed adjustment.
- **Shared frequency inverter:** Shared frequency inverter to be used.

## 5.4 Fresh water tank

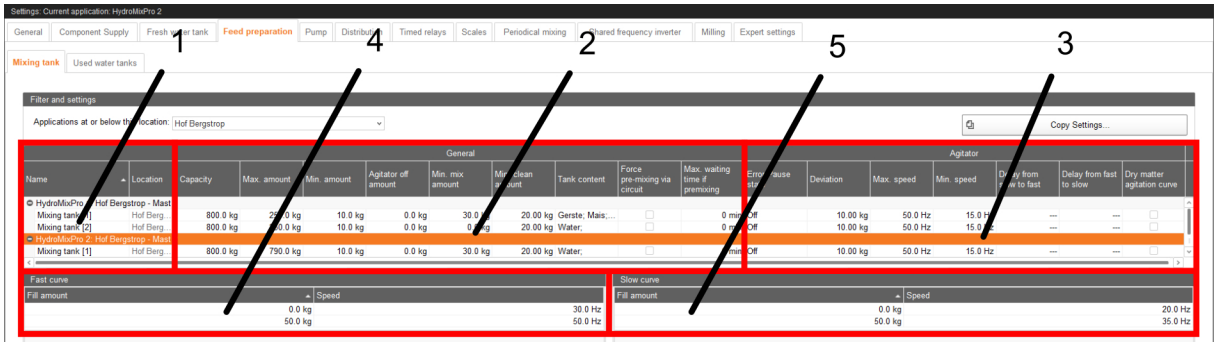



The "Fresh water tank" dialog is only available if there is at least one weighed fresh water tank.

- **Name:** Name of the weighed fresh water tank.
- **Location** (only an information): Location of the weighed fresh water tank on the farm.
- **Capacity:** Capacity of the weighed fresh water tank. If the amount in the fresh water tank exceeds this value, an alarm is generated. This value should be greater than the value set under "Max. amount".
- **Max. amount:** Maximum amount up to which the weighed fresh water tank is filled. This value should be smaller than the value set under "Capacity".
- **Min. amount:** Minimum amount that should remain in the weighed fresh water tank during removal.
- **Start fill threshold:** The weighed fresh water tank is filled automatically when the amount in the tank falls below this value.

## 5.5 Feed preparation

### 5.5.1 Mixing tank




The "Mixing tank" dialog is divided into 5 areas, which are explained below.

1.

- **Name:** Name of the mixing tank.
- **Location** (only an information): Location of the mixing tank on the farm.

2. **General**

- **Capacity:** Capacity of the mixing tank. If the amount in the mixing tank exceeds this value, an alarm is generated. This value should be greater than the value set under "Max. amount" due to the residual flow volume.
- **Max. amount:** Maximum amount up to which the mixing tank is filled. This value should be smaller than the value set under "Capacity" due to the residual flow volume.
- **Min. amount:** Minimum amount which should remain in the mixing tank during removal, e.g. to prevent the pump from running dry.
- **Agitator off amount:** The agitator is switched off if the amount in the mixing tank is below this value during distribution.
- **Min. mix amount:** Minimum amount for mixing in the mixing tank.
- **Min. clean amount:** Amount of cleaning component used for tank cleaning if the specified amount for tank cleaning is less than this value. This amount is used for rinsing the mixing tank after fogging. If fogging was part of cleaning and cleaning is canceled, the mixing tank is still rinsed with this amount before the safety switch is released.
- **Tank content:** Displays and adjusts the tank contents.

- **Force pre-mixing via circuit:** The liquid component for pre-mixing is moved into the mixing tank via the circuits. The system waits for the required resources.
- **(Max. waiting time if premixing:** No function.)

3. **Agitator**
   - **Error/Pause state:** Speed of the agitator in the event of an error or during a pause.

     **On**/**Off**: Agitators with direct switch-on

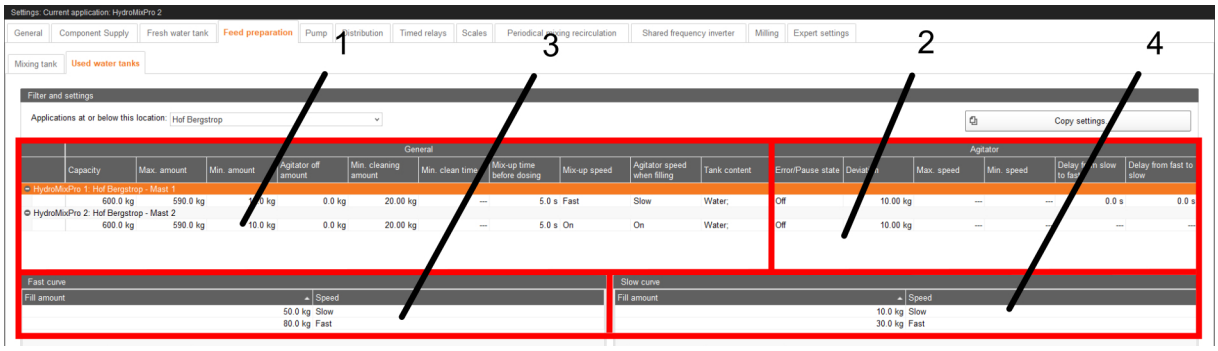
     **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
   - **Deviation:** The speed of the agitator is maintained for as long as the weight does not deviate by more than this value from a supporting point of the agitation curve. (Only for agitators with an agitation curve already created.)
   - **Max. speed:** Maximum frequency of the agitator. (Only for agitators with frequency inverter.)
   - **Min. speed:** Minimum frequency of the agitator. (Only for agitators with frequency inverter.)
   - **Delay from slow to fast:** Delay time when switching from slow mixing to fast mixing. (Only double-stage agitators with tapped winding.)
   - **Delay from fast to slow:** Delay time when switching from fast mixing to slow mixing. (Only double-stage agitators with tapped winding.)
   - **Dry matter agitation curve:** The mixing speed is not only based on the fill amount, but also on the dry matter content.

4. **Fast curve**
   - **Fill amount:** Setting of the fast agitation curve. From this amount in the mixing tank, the agitator runs at the speed set under "Speed".
   - **Speed:** Setting of the fast agitation curve. From the amount set under "Fill amount" in the mixing tank, the agitator runs at this speed.

5. **Slow curve** (only for mixing tanks with double-stage agitator with tapped winding or agitator with frequency inverter)
   - **Fill amount:** Setting of the slow agitation curve. From this amount in the mixing tank, the agitator runs at the speed set under "Speed".

- **Speed:** Setting of the slow agitation curve. From the amount set under "Fill amount" in the mixing tank, the agitator runs at this speed.

## 5.5.2 Rinse water tanks




The "Used water tanks" (or "rinse water tanks") dialog is divided into 4 areas, which are explained below.

1. **General**
   - **Capacity:** Capacity of the used water tank. If the amount in the used water tank exceeds this value, an alarm is generated. This value should be greater than the value set under "Max. amount" due to the residual flow volume.
   - **Max. amount:** Maximum amount up to which the used water tank is filled. This value should be smaller than the value set under "Capacity" due to the residual flow volume.
   - **Min. amount:** Minimum amount which should remain in the used water tank during removal, e.g. to prevent the pump from running dry.
   - **Agitator off amount:** The agitator is switched off if the amount in the used water tank is below this value during distribution. (Only for used water tanks with agitator.)
   - **Min. cleaning amount:** Amount of water used for tank cleaning if the specified amount for tank cleaning is less than this value. This amount is used for rinsing the used water tank after fogging. If fogging was part of cleaning and cleaning is canceled, the used water tank is still rinsed with this amount before the safety switch is released.
   - **Min. clean time:** Minimum duration of tank cleaning.
   - **Mix-up time before dosing:** Duration for which the tank contents are mixed before the used water is dispensed into the mixing tank or pre-mixing tank. (Only for used water tanks with agitator.)

- **Mix-up speed:** Speed of the agitator when mixing the tank contents before dispensing. (Only for used water tanks with agitator.)

  **On**/**Off**: Agitators with direct switch-on

  **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
- **Agitator speed when filling:** Speed of the agitator during removal from the tank. (Only for used water tanks with agitator.)

  **On**/**Off**: Agitators with direct switch-on

  **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
- **Tank content:** Displays and adjusts the tank contents.

2. **Agitator** (only for used water tanks with agitator)
   - **Error/Pause state:** Speed of the agitator in the event of an error or during a pause.

     **On**/**Off**: Agitators with direct switch-on

     **Off**/**Slow**/**Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
   - **Deviation:** The speed of the agitator is maintained for as long as the weight does not deviate by more than this value from a supporting point of the agitation curve. (Only for agitators with an agitation curve already created.)
   - **Max. speed:** Maximum frequency of the agitator. (Only for agitators with frequency inverter.)
   - **Min. speed:** Minimum frequency of the agitator. (Only for agitators with frequency inverter.)
   - **Delay from slow to fast:** Delay time when switching from slow mixing to fast mixing. (Only double-stage agitators with tapped winding.)
   - **Delay from fast to slow:** Delay time when switching from fast mixing to slow mixing. (Only double-stage agitators with tapped winding.)

3. **Fast curve** (only for used water tanks with agitator)
   - **Fill amount:** Setting of the fast agitation curve. From this amount in the used water tank, the agitator runs at the speed set under "Speed".

- **Speed:** Setting of the fast agitation curve. From the amount set under "Fill amount" in the used water tank, the agitator runs at this speed.

4. **Slow curve** (only for used water tanks with double-stage agitator with tapped winding or agitator with frequency inverter)
   - **Fill amount:** Setting of the slow agitation curve. From this amount in the used water tank, the agitator runs at the speed set under "Speed".
   - **Speed:** Setting of the slow agitation curve. From the amount set under "Fill amount" in the used water tank, the agitator runs at this speed.

## 5.6 Pump

### 5.6.1 Pump

There are three different pump types. The type of each pump is defined in the Composer.

- Pump with direct switch-on
- Pump with frequency inverter
- Pump with shared frequency inverter

No settings must be configured for pumps with direct switch-on. In the case of pumps with shared frequency inverter, multiple pumps share one frequency inverter. This is only possible if pumps never operate at the same time for process reasons.

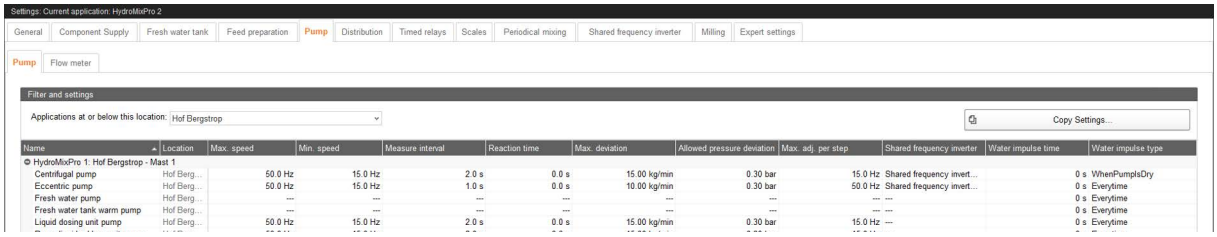
**Speed control for pumps with frequency inverter**

For all feed moves carried out with a pump with frequency inverter, set the following parameters under "Expert settings" > "Feed move settings" in a specific case:

- standard speed
- slow speed (speed for fine dosing)

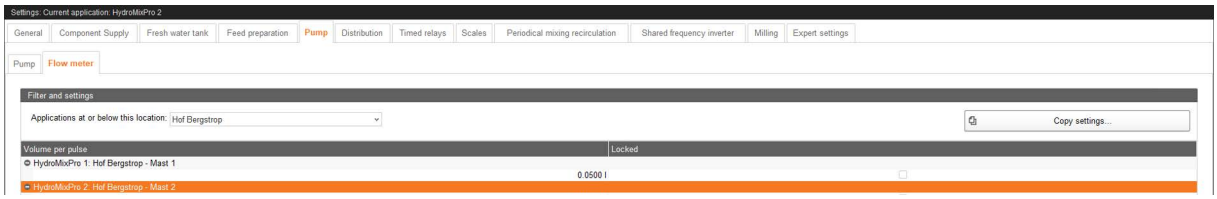
This is the case where the control system can determine a speed, i.e. source and target differ and at least one of the two tanks is weighed or the feed move has a flow meter.

If no speeds are specified, i.e. the speeds are 0, the components are pumped at maximum frequency for "standard speed" and at minimum frequency for "slow speed" (speed for fine dosing). The control system memorizes the best frequency it was able to determine for standard and low speeds for each feed move and for each feed valve where feed is dispensed after a feed move. The control system uses this memorized value for the next feed move.




- **Name:** Name of the feed pump.
- **Location** (only an information): Location of the feed pump on the farm.
- **Max. speed:** Maximum frequency of the feed pump.
- **Min. speed:** Minimum frequency of the feed pump.
- **Measure interval:** Interval for speed measurement.
- **Reaction time:** Waiting time between speed change and start of the next measurement.
- **Max. deviation:** The speed (Hz) of the feed pump is maintained for as long as the speed (kg/min) does not deviate by more than this value from the speed (kg/min) set in the "Expert settings".
- **Allowed pressure deviation:** The speed of the feed pump is maintained for as long as the pressure does not deviate by more than this value from the pressure set in the "Expert settings".
- **Max. adj. per step:** Maximum step size for speed adjustment.
- **Shared frequency inverter:** Shared frequency inverter to be used.
- **Water impulse time:** Duration of the water pulse before the feed pump starts.
- **Water impulse type:** How the water pulse valve works.
  - **Everytime:** Water pulse before each start of the feed pump.
  - **WhenPumpIsDry:** Water pulse before the feed pump starts only if the feed pump has previously run dry.

### 5.6.2 Flow meter




- **Volume per pulse:** The flow meter's flow rate per pulse.

- **Locked:** The flow meter is not used during the dispensing processes.

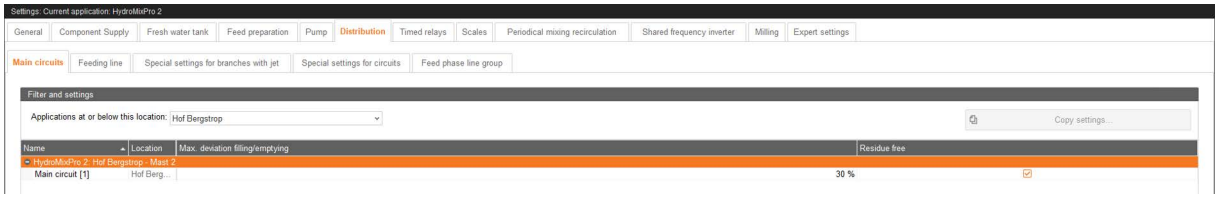
## 5.7 Distribution

The settings under "Distribution" affect the following system components:

- main circuit
- simple circuit
- branch line
- branch line with jet

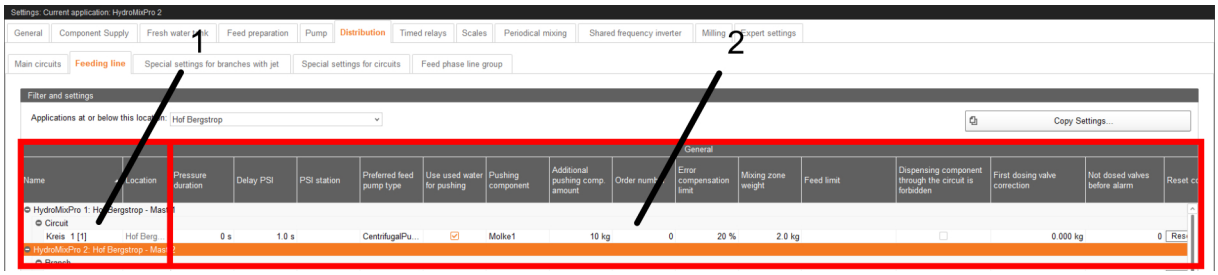
Setting parameters appear depending on the components that are part of your system and that you configured in the Composer. In many cases, the same setting parameters apply to different system components.

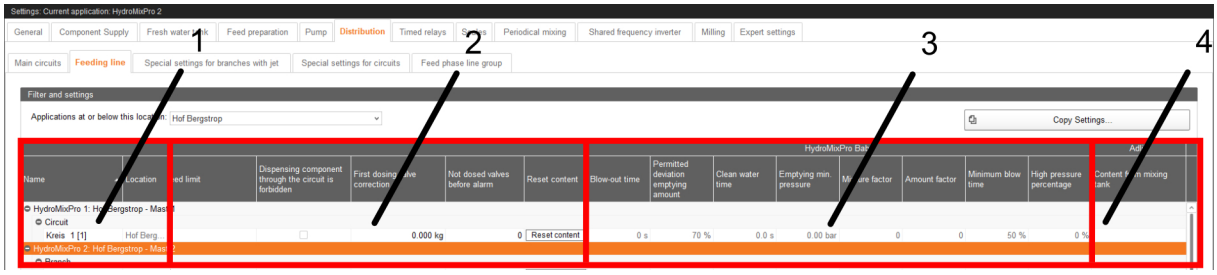
### 5.7.1 Main circuits




- **Name:** Name of the main circuit.
- **Location** (only an information): Location of the main circuit on the farm.
- **(Max. deviation filling/emptying:** No function.)
- **Residue-free:** The main circuit and associated sub-circuits dipense their contents without residues.

### 5.7.2 Feeding line






The "Feeding line" dialog is divided into 4 areas, which are explained below.

1.

- **Name:** Name of the feeding line.
- **Location** (only an information): Location of the feeding line on the farm.

2. **General**

- **Pressure duration:** Duration of the pressure build-up in the closed circuit.
- **Delay PSI:** Waiting time between opening the feed valves and working with the PSI counter pressure.
- **PSI station:** PSI station used for this circuit.
- **Preferred feed pump type:** Preferred pump type for distribution in the branch line.
- **Use used water for pushing:** The used water is used for pushing during feeding if pushing starts in the mixing tank. Used water is retrieved first and, if the used water tank runs empty, an additional amount of the pushing component is retrieved instead of directly moving the pushing component into the mixing tank for subsequent pushing.
- **Pushing component:** Component for pushing. If no settings have been configured, the system pushes with water.
- **Additional pushing comp. amount:** Amount of the pushing component that is retrieved in addition to the calculated amount. The option is to prevent that small amounts must be retrieved later on.
- **Order number:** Priority of the feeding line. The feeding sequence of all feeding lines is created based on their order numbers. The smaller the order number, the earlier the feeding line will be supplied.

- **Error compensation limit:** Proportion of the excess or insufficient amount of feed dispensed at a feed valve (e.g. due to a technical error) that is compensated for within the same feeding process at the subsequent feed valves. In case of insufficient feeding with subsequent compensation overfeeding, the troughs are prevented from overflowing. When "0 %" is set, there is no compensation. When "100 %" is set, there is full compensation.

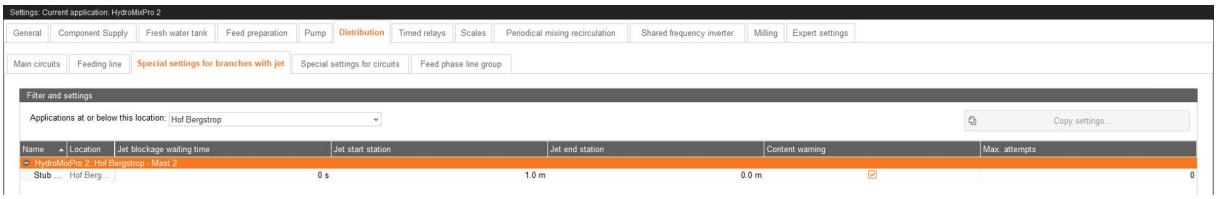
  For residue-free systems: If more than this proportion of used water is dispensed by a valve, a warning is generated.
- **Mixing zone weight:** Mixing zone amount for the circuit. This amount is prepared additionally. For residue-free feeding, half of the amount is pushed at the beginning and the other half at the end of a feed segment. For non-residue-free feeding, this amount corresponds to the additional mixing amount that can be set per feeding line.
- **Feed limit:** Times and associated proportions of the daily feed demand. Up to the set time of day, no more than the set proportion of the daily feed demand is dispensed by the feed valves of the feeding line.
- **Dispensing component through the circuit is forbidden:** Components cannot be retrieved via this circuit during preparation, even if this is generally permitted.
- **First dosing valve correction:** Correction amount at the first dosing valve.
- **Not dosed valves before alarm:** Number of valves for which dispensing may fail without generating an alarm.
- **Reset content:** Resets the contents of the feeding line to water.

3. **HydroMixPro Baby**
   - **Blow-out time:** Blow-out time when emptying (BabyAir) or cleaning the suckling pig feeding line.
   - **Permitted deviation emptying amount:** Amount deviation when emptying the feeding line in the case of BabyAir. If the emptied amount in a weighed target tank falls below this value after emptying, the "Weight loss" alarm is generated.
   - **Clean water time:** Duration for which cleaning water is dispensed into the suckling pig feeding line.

- **Emptying min. pressure:** Minimum emptying air pressure used as a cancellation criterion for blowing out a suckling pig feeding line or feed valve. If the pressure falls below or remains below this value after the time set under "Minimum blow time" has elapsed, the blowing process is terminated. When "0 bar" is set, the drop in air pressure is not a cancellation criterion for the blowing process.
- **Mixture factor:** Factor that extends the blow-out time for a feed valve based on the dry matter content of the feed mixture in HydroAir. When "0" is set, the factor is deactivated.
- **Amount factor:** Factor that extends the blow-out time for a feed valve based on the dosing amount in HydroAir. When "0" is set, the factor is deactivated.
- **Minimum blow time:** Proportion of the time set under "Blow-out time". If the pressure falls below or remains below the pressure set under "Emptying min. pressure" after this proportion of time has elapsed, the blowing process to empty the suckling pig feeding line or feed valve is terminated.
- **High pressure percentage:** Proportion of the time set under "Blow-out time". For this proportion of time, high pressure is used for blowing into the feed valve for BabyAir. The pressure is then reduced.

4. **Adlib**
   - **Content from mixing tank:** Mixing tank from which the contents in the feeding line originate. (Only for pendulum adlib.)
     Set by the control system, but can be changed after a manual intervention, for example.

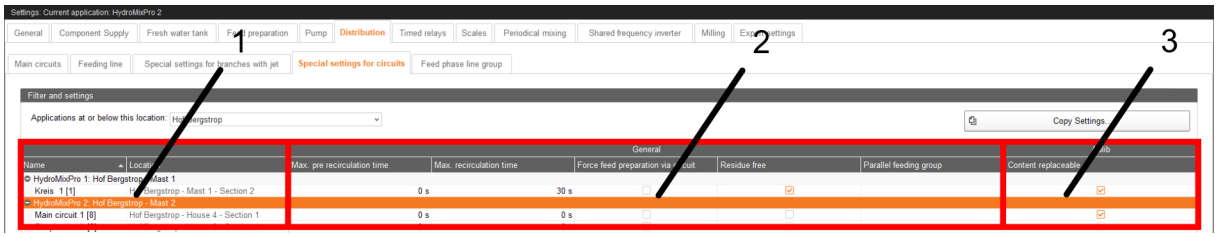
## 5.7.3 Special settings for branch lines with jet




- **Name:** Name of the branch line with jet.
- **Location** (only an information): Location of the branch line with jet on the farm.
- **Jet blockage waiting time:** Pressure build-up time used to release a jet blockage that may occur when filling the branch line.
- **Jet start station:** Size of the start station of the branch line with jet. During emptying, this parameter also serves to differentiate whether a remaining amount in the branch line is due to a blockage or inaccuracies.

  Example: The scale does not show any weight changes while the branch line with jet is emptied. This can either be due to a blockage or a sensor in the start station that has not been triggered (sensor defective or jet too fast). If the content of the branch line is located in the start station, the sensor was probably not triggered. Otherwise, this issue is caused by a blockage.
- **Jet end station:** Size of the end station of the branch line with jet. During filling, the parameter also serves to differentiates whether the jet actually reached the end after receipt of the jet end signal, or whether the jet cannot be at the end based on the calculated content.
- **Content warning:** During filling of a branch line with jet, the end sensor of the branch line may rarely be triggered too early so the branch line with jet is not filled entirely according to the calculations of the control system. The warning is generated if the calculated fill level of the branch line is within the set tolerance limits and is therefore automatically adjusted so that the control system assumes that the branch is completely full.
- **Max. attempts:** Maximum number of attempts to clear a blockage in a branch line with jet. If the blockage persists after this number of attempts has been reached, an alarm is generated.

## 5.7.4 Special settings for circuits




The "Special settings for circuits" dialog is divided into 3 areas, which are explained below.

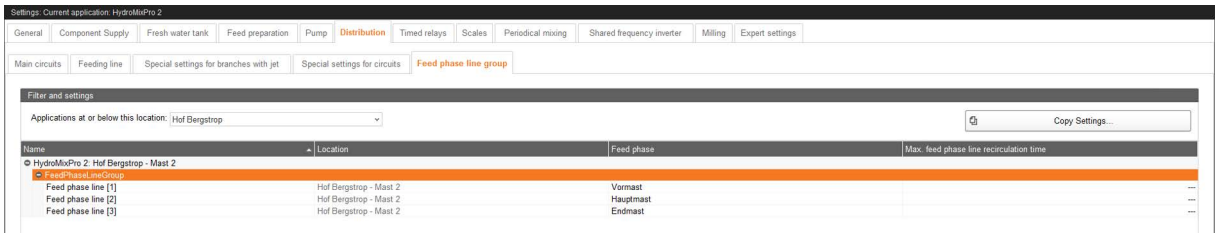
1.

- **Name:** Name of the circuit.
- **Location** (only an information): Location of the circuit on the farm.

2. **General**
   - **Max. pre-recirculation time:** Time for recirculation in the circuit before feeding starts. (Only for non-residue-free feeding.)
   - **Max. recirculation time:** Maximum time for recirculation in the circuit. (Only for non-residue-free feeding.)
     The actual recirculation time results from this value and a percentage value of a feeding task in the Task Manager.
   - **Force feed preparation via circuit:** If water is to be retrieved via the circuit, the system waits for the required resources.
   - **Residue-free:** Circuit distributes feed without residues.
   - **Parallel feeding group:** Grouping of the sub-circuits to be supplied in parallel. Same number = same group.

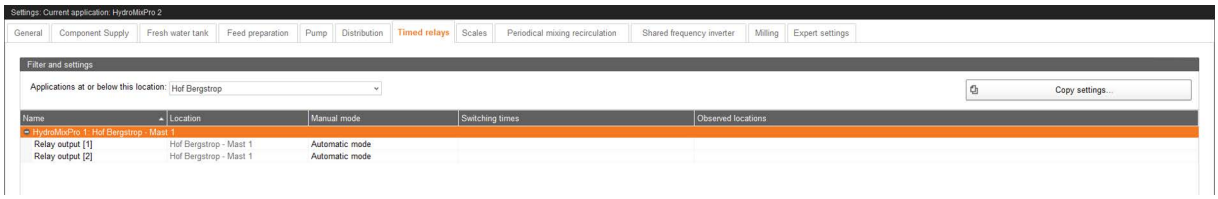
3. **Adlib**
   - **Content replaceable:** Replacement of the feed in the pipes is permitted. (Only for pendulum adlib.)

### 5.7.5 Feed phase line group




- **Name:** Name of the feed phase line.
- **Location** (only an information): Location of the feed phase line on the farm.
- **Feed phase:** Feed phases that use the feed phase line. For each day, a feed phase is assigned to the animals via the feed curve. The animals are fed by the feed phase line which is assigned to the corresponding feed phase.
  The feed phases that can be set here correspond to the feed phases previously created under "Configuration" > "General" > "Feed phase".
- **Max. feed phase line recirculation time:** Maximum recirculation time via the feed phase line.

## 5.8 Time relay

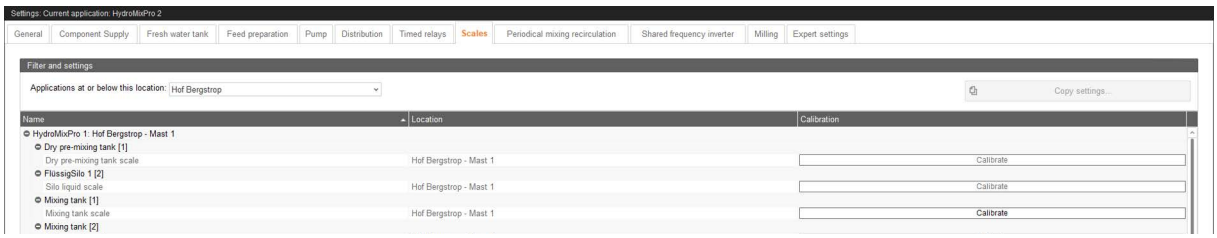



- **Name:** Name of the relay.
- **Location** (only an information): Location of the relay on the farm.
- **Manual mode:** Type of manual control of the relay.
  - **Automatic mode:** The relay switches according to the settings under "Switching times" and "Observed locations".
  - **SwitchRelayOff:** Relay is permanently switched off.
  - **SwitchRelayOn:** Relay is permanently switched on.
- **Switching times:** If "Manual mode" is set to "Automatic mode" and animals are fed within these switching time periods at the locations set under "Observed locations", the relay is switched on for the lights-on time saved in the feeding task.

- **Observed locations:** If "Manual mode" is set to "Automatic mode" and animals are fed within the time periods set under "Switching times" at these, the relay is switched on for the lights-on time saved in the feeding task.

## 5.9 Scales

In the "Scales" dialog, silos and tanks can be tared and calibrated.
Procedures and image sections are valid for different liquid feeding systems.




- **Name:** Name of the silo or tank.
- **Location** (only an information): Location of the silo or tank on the farm.
- **Calibration:** Opens the calibration menu of the scale previously linked under "Setup" > "IO Manager".
  - **Current values** (only an information)

    **Weight:** Current weight on the scale.

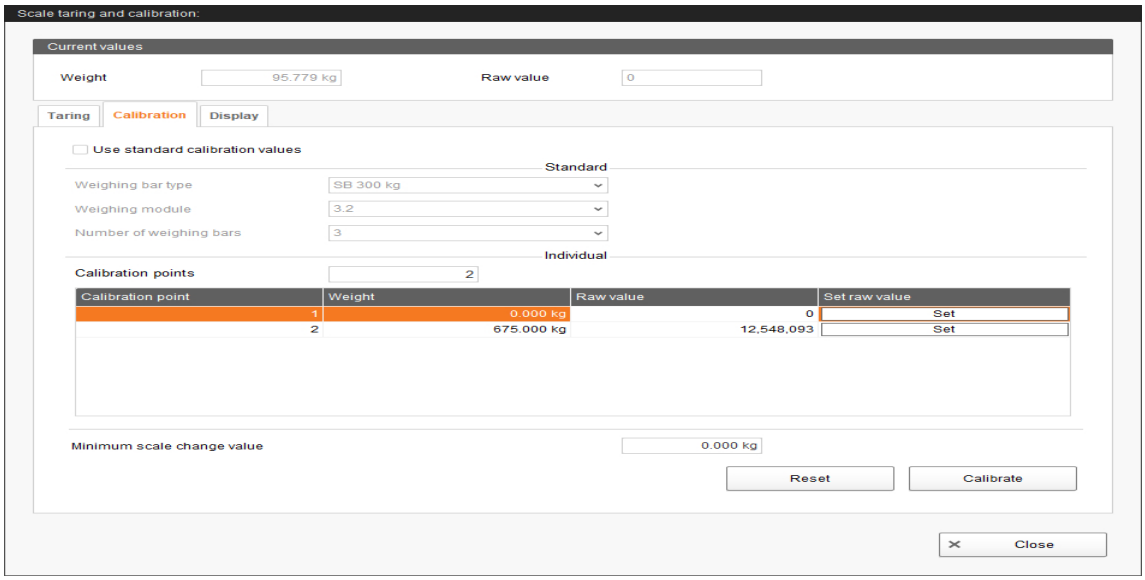
    **Raw value:** Current raw value of the scale.
  - **Taring:** Taring requires successful calibration. After calibration with standard calibration values, taring is mandatory (preferably with a tare value of "0.000 kg"); after calibration with individual calibration values it is optional.

    **Tare value:** Tare value of the scale. This value can be used to reset the zero point of the scale, for example.

    **Raw value deviation** (only an information): Deviation from the raw value of the original calibration

    **Tare scale:** Tares the scale.

- **Calibration** (see see chapter 3.3.3 ”Calibrating the scale”, page 74 for a description of the calibration process)




**Use standard calibration values:** Standard calibration values saved in the software are used instead of individual calibration values.

**Weighing bar type:** Weighing bar type for standard calibration.

**Weighing module:** Type of weighing module installed in UniScale.

**Number of weighing bars:** Number of weighing bars of the scale.

**Calibration points:** Number of calibration points to be used. A minimum of 2 calibration points must be used.

**Calibration point:** List of defined calibration points.

**Weight:** Known weight for individual calibration.

**Raw value:** Raw value for the known weight in case of individual calibration.

**Set raw value:** Sets the value set under "Raw value" for the known weight in case of individual calibration.

**Minimum scale change value:** Minimum change of the scale value.

**Reset:** Resets the calibration.

**Calibrate:** Calibrates the scale, either after selecting standard calibration values or after entering and setting individual calibration values.

- **Display**

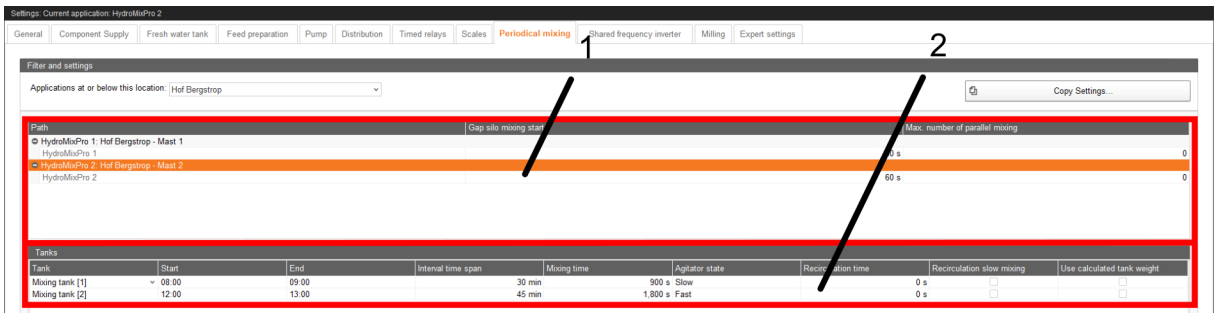
  **Display unit:** Weight unit of the UniScale display (only when used).

  **Decimal places:** Number of decimal places of the value shown on the UniScale display (only when used).

  **Save:** Saves the display settings.

## 5.10 Periodical mixing

"Periodical mixing" defines time periods during which tanks or silos with components are mixed and recirculated at specific intervals.




The "Periodical mixing" dialog is divided into 2 areas, which are explained below.

1.

- **Path** (only an information): Location or part of the system where the tank or silo is installed.
- **Gap silo mixing start:** Delay time between the start of mixing/recirculation of two tanks/silos to prevent overloading of the power grid.
- **Max. number of parallel mixing:** Maximum number of tanks/silos in which mixing/recirculation is permitted at the same time.

2. **Tanks**

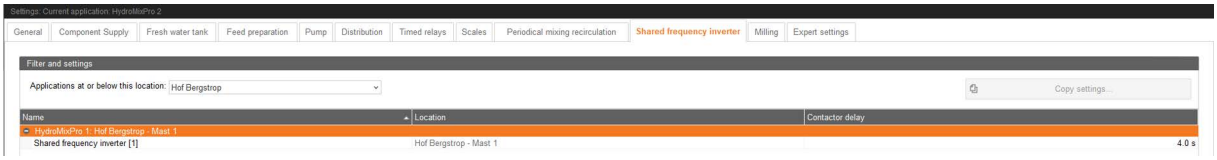
- **Tank:** Name of the tank/silo. Only tanks/silos with agitator or with pipe for recirculation can be selected.
- **Start:** Start time from which the configuration is valid. If the time is later than the time set under "End", the configuration is valid until the next day.
  The start times for the tanks/silos must be different so that not too many pumps are switched on at the same time, since this may cause issues in the power grid.

- **End:** End time until which the configuration is valid. If the time is earlier than the time set under "Start", the configuration is valid until the next day.
- **Interval time span:** Time interval at which agitation/recirculation for the tank or silo is started. Depending on whether another tank or silo was also started in the last minute, mixing/recirculation may be delayed.
- **Mixing time:** Duration for mixing the tank or silo contents.
- **Agitator state:** Speed of the agitator when mixing the tank contents or silo contents.

  **On/Off**: Agitators with direct switch-on

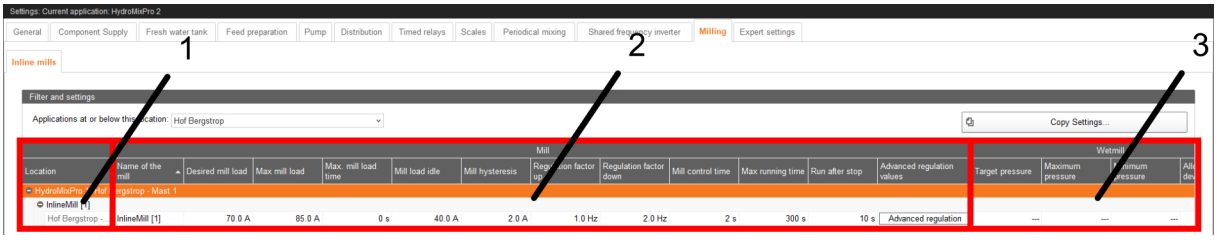
  **Off/Slow/Fast**: Double-stage agitators with tapped winding or agitators with frequency inverter
- **Recirculation time:** Duration for which the contents are recirculated after mixing.
- **Recirculation slow mixing:** Slow mixing only after recirculation.
- **Use calculated tank weight:** Only mix/recirculate tank/silo contents without a scale or empty sensor if the control system calculates a fill weight of > 0.

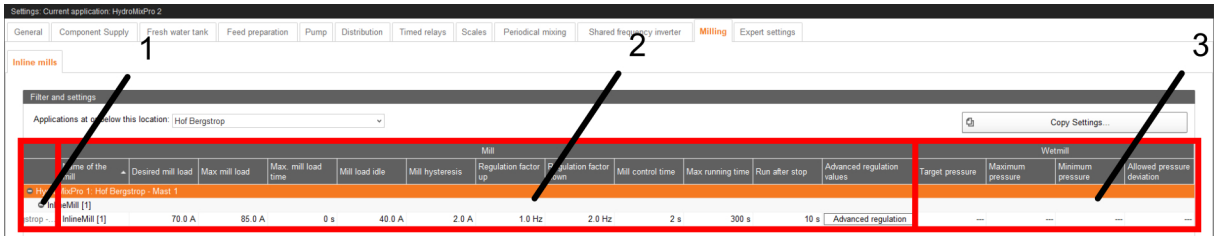
## 5.11 Shared frequency inverter




- **Name:** Name of the shared frequency inverter.
- **Location** (only an information): Location of the shared frequency inverter on the farm.
- **Contactor delay:** Delay time between switching the relay and controlling the frequency inverter between two motors/devices.

## 5.12 Milling






The "Inline mills" dialog is divided into 3 areas, which are explained below.

1.

- **Location** (only an information): Location of the mill on the farm.

2. **Mill**

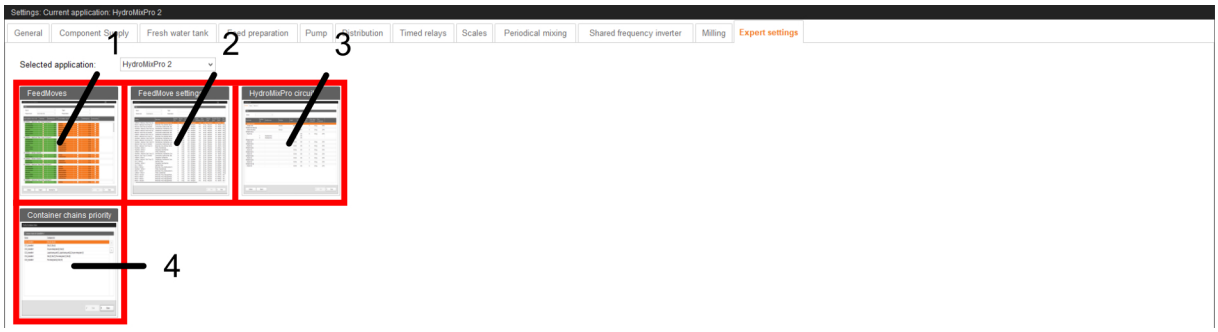
- **Name of the mill:** The name of the mill.
- **Desired mill load:** Motor current of the mill during normal operation.
- **Max. mill load:** Maximally permitted motor current of the mill. If this value is exceeded for the duration set under "Max. mill load time", a warning is generated and the system components supplying the mill are switched off.
- **Max. mill load time:** If the value set under "Max. mill load" is exceeded for this duration, a warning is generated and the system components supplying the mill are switched off.
- **Mill load idle:** Load of the mill in idle mode. Should be set higher than the actual idle load.
- **Mill hysteresis:** Hysteresis of the mill control system. The motor current is brought into this range above and below the value set under "Desired mill load" by regulating the supplying system components. (Frequency inverter required.)
- **Regulation factor up:** The speed of the frequency inverter of the supplying system components increases gradually by this value if the motor current is brought into the range set under "Mill hysteresis" above and below the value set under "Desired mill load".
- **Regulation factor down:** The speed of the frequency inverter of the supplying system components is gradually reduced by this value if the motor current is brought into the range set under "Mill hysteresis" above and below the value set under "Desired mill load".

- **Mill control time:** Time interval at which the speed of the frequency inverter of the supplying system components changes gradually if the motor current is brought into the range set under "Mill hysteresis" above and below the value set under "Desired mill load".
- **(Max. running time:** No function.)
- **Run after stop:** Residual flow time of the mill before switching off, so that the last milling material is processed and the mill is empty before the next start.
- **Advanced regulation values:** Creates/changes advanced regulation values.

3. **Wet mill**
   - **Target pressure:** Target pressure for controlling the pump under the wet mill.
   - **Maximum pressure:** If this value is exceeded, supply to the wet mill is stopped until the value specified under "Target pressure" is reached again.
   - **Minimum pressure:** If the pressure falls below this value, the pump under the wet mill is stopped until the value specified under "Target pressure" is reached again.
   - **Allowed pressure deviation:** Value by which the actual pressure may deviate from the value specified under "Target pressure" without the supply to the wet mill being stopped or the pump under the wet mill being stopped.

## 5.13 Expert settings

Under "Expert settings", you can configure precise settings for each individual feed move.



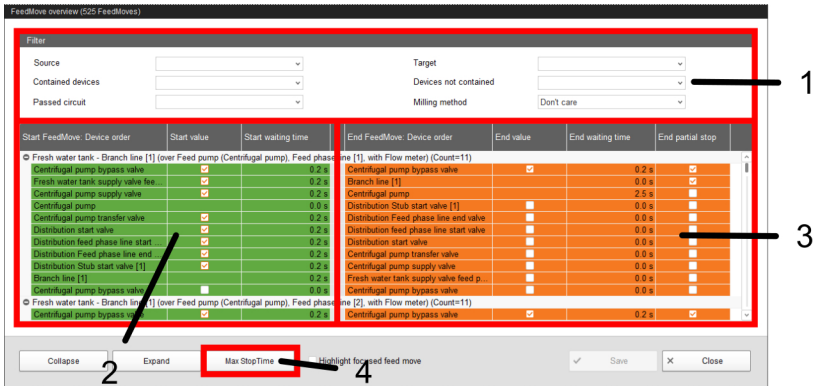

The dialogs "FeedMoves" (1), "FeedMove settings" (2), "HydroMixPro circuit" (3) and "Container chains priority" (4) can be opened from here.

### 5.13.1 Feed moves

Define switch times and the switch order for feed moves under "FeedMoves".

**NOTICE!**

These settings should only be configured by a service technician.




The "FeedMove overview" dialog is divided into 4 areas, which are explained below.

1. **Filter**
   - **Source:** Source of the feed move. In the case of multiple selection, at least one source must be correct.
   - **Contained devices:** Devices included in the feed move. In case of multiple selection, all devices must be contained.
   - **Passed circuit:** Circuits/branch lines included in the feed move. In case of multiple selection, all circuits/branch lines must be contained.
   - **Target:** Destination of the feed move. In case of multiple selection, at least one target must be correct.
   - **Devices not contained:** Devices not included in the feed move. In case of multiple selection, no device may be contained.
   - **Milling method:** Milling method included in the feed move. When "Don't care" is set, the setting is ignored.

2.
   - **Start FeedMove: Device order:** Switch-on sequence of the feed move. This automatic assignment according to the arrangement of the devices in the feed move (defined switch-on path of the devices) can be adjusted manually by right-clicking.

- **Start value** (only an information): Start value of the device (switched on/ switched off).
- **Start waiting time:** Delay time after switching on the device.

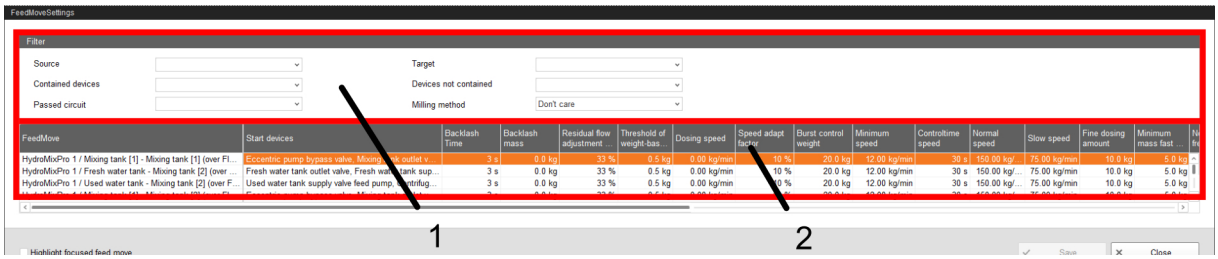
3.

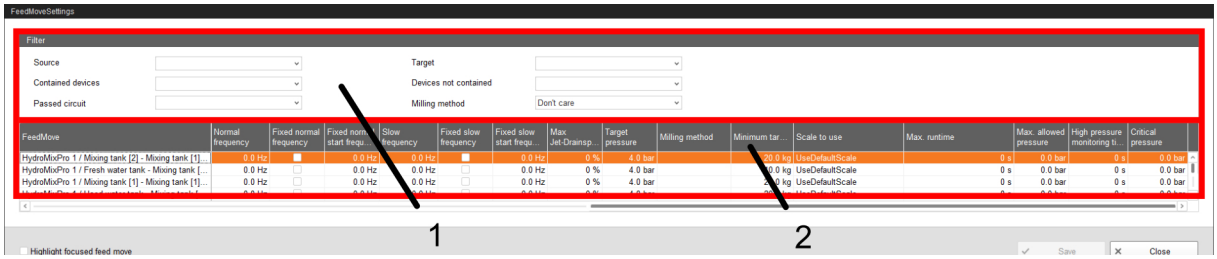
- **End FeedMove: Device order:** Switch-off sequence of the feed move. This automatic assignment according to the arrangement of the devices in the feed move (defined switch-off path of the devices) can be adjusted manually by right-clicking.
- **End value** (only an information): End value of the device (switched on/ switched off).
- **End waiting time:** Delay time after switching off the device.
- **End partial stop:** If the device is used in the next feed move, it remains switched on to prevent the device from switching on and off too often.

4. **Max. stop time**

- **Automatically calculated stop time** (only an information): Sum of the feed move's waiting times plus the residual flow time for the feed move.
- **Additional stop time:** Time for which the system should wait for the feed moves to end when the system stops, in addition to the time displayed under "Automatically calculated stop time".
- **Max. stop time** (only an information): Maximum time for which the system should wait for the feed moves to end when the system stops. Results from the sum of the values under "Automatically calculated stop time" and "Additional stop time".

## 5.13.2 Feed move settings






The "FeedMoveSettings" dialog is divided into 2 areas, which are explained below.

1. **Filter**
   - **Source:** Source of the feed move. In the case of multiple selection, at least one source must be correct.
   - **Contained devices:** Devices included in the feed move. In case of multiple selection, all devices must be contained.
   - **Passed circuit:** Circuits/branch lines included in the feed move. In case of multiple selection, all circuits/branch lines must be contained.
   - **Target:** Destination of the feed move. In case of multiple selection, at least one target must be correct.
   - **Devices not contained:** Devices not included in the feed move. In case of multiple selection, no device may be contained.
   - **Milling method:** Milling method included in the feed move. When "Don't care" is set, the setting is ignored.

2.
   - **FeedMove** (only an information): Name of the feed move, containing at least the source and the target of the feed move. If the source or target is not in the selected application, the application name precedes the source or target.
   - **Start devices** (only an information): Devices required to start or stop the feed move.
   - **Backlash time:** Time for measuring the residual flow time. (This time does not apply to feed moves for feeding or watering at a valve or for pushing to a valve. The corresponding times in the general settings are used for these purposes.)
   - **Backlash mass** Residual flow volume determined by the control system. (This value does not apply to feed moves for feeding or watering at a valve or for pushing to a valve. The measured residual flow volume under "Expert settings" > "HydroMixPro circuit" > "Valves" is used for these purposes.)

- **Residual flow adjustment factor:** Weighting of the last residual flow volume determined by the control system to calculate the value displayed under "Backlash mass".
- **Threshold of weight-based dosing:** If the amount to be dispensed falls below the sum of this value and the value set under "Backlass mass", the system automatically uses time-based dispensing.
- **Dosing speed:**

  Time-based dosing: calculated dosing dispensing.

  Weight-based dispensing: dosing speed determined by the control system.
- **Speed adapt factor:** Weighting of the last dosing speed determined by the control system to calculate the value displayed under "Dosing speed". (Only relevant for weight-based dispensing.)
- **Burst control weight:** Only relevant for feed moves

  • between two weighed tanks,

  • from a weighed tank to itself (recirculation),

  • through a flow meter whose source or target tank is weighed,

  • from a weighed tank that fills a branch line with jet.

  If a weight deviation larger than the value set here is determined while these feed moves are carried out, the alarm "Unexpected weight loss" is generated. For the feed move to fill the branch line with jet, the value set here must be greater than the amount that fits into the branch line.
- **Minimum speed:** If this speed is not reached, an alarm is generated, e.g. "Silo empty", "Blockage".
- **Control time speed:** Time interval in which the speed specified under "Minimum speed" is checked.
- **Normal speed:** Target speed of the feed move. Only relevant for feed moves with a drive that is controlled by a frequency inverter (pump, dosing auger, etc.). The source or target of the feed move is weighed or the feed move contains a flow meter. The feed move empties a branch line with jet into a weighed tank (see also the parameter "Max. jet drain speed deviation").

- **Slow speed:** Target speed of the feed move in case of fine dosing. Only relevant for feed moves with a drive that is controlled by a frequency inverter (pump, dosing auger, etc.). The source or target of the feed move is weighed or the feed move contains a flow meter. The feed move empties a branch line with jet into a weighed tank (see also the parameter "Max. jet drain speed deviation").
- **Fine dosing amount:** If the remaining amount to be dispensed is smaller than this amount, the system switches to fine dosing.
- **Minimum mass fast dosing:** Minimum amount that is dispensed at the speed set under "Normal speed". If the total amount to be dispensed is smaller than the sum of this amount and the amount set under "Fine dosing amount", fine dosing is applied for the entire amount.
- **Normal frequency:** Frequency of the frequency inverter for the speed set under "Normal speed". The normal speed is adjusted by the control system. For feed moves to a feed valve, the corresponding settings under "Expert settings" > "HydroMixPro circuit" > "Valves" are used.
- **Fixed normal frequency:** The control system does not adjust the frequency for the speed set under "Normal speed", but uses the value set under "Normal frequency". For dispensing into the feed valves or for pushing to a valve, the corresponding settings under "Expert settings" > "HydroMixPro circuit" > "Valves" are used.
- **Fixed normal start frequency:** Start frequency for controlling the drive during normal dispensing. "0.0 Hz" means that the start frequency is determined automatically by the control system.
- **Slow frequency:** Frequency of the frequency inverter for the speed set under "Slow speed". The slow speed is adjusted by the control system. For feed moves to a feed valve, the corresponding settings under "Expert settings" > "HydroMixPro circuit" > "Valves" are used.
- **Fixed slow frequency:** The control system does not adjust the frequency for the speed set under "Slow speed", but uses the value set under "Slow frequency". For dispensing into the feed valves or for pushing to a valve, the corresponding settings under "Expert settings" > "HydroMixPro circuit" > "Valves" are used.
- **Fixed slow start frequency:** Start frequency for controlling the drive during fine dosing. "0.0 Hz" means that the start frequency is determined automatically by the control system.

- **Maximum jet drain speed deviation:** Maximum deviation from the target speed for jet emptying ("Normal speed" and "Slow speed"). The compressed air for the jet is switched on when the measured speed is below the target speed by this percentage value, and switched off as soon as the speed is above the target speed by this percentage value.
- **Target pressure:** Target pressure in the feed move. Only active when using a pressure sensor in the feed move and when using e.g. a controlled pump.
- **Milling method:** Milling method in the feed move.
- **Minimum target amount:** If the target amount is greater than the amount specified here and less than 50 % of the target quantity has arrived, an alarm is generated. Only relevant for time-based dispensing.
- **Scale to use:** Scale to be used in the feed move (system-defined "standard scale", "source scale", "target scale").
- **Max. runtime:** Maximum runtime of a feed move if it is not registered by a scale or a flow meter, e.g. filling a silo with switch-off by sensors in the silo.
- **Max. allowed pressure:** If the pressure in the pipes as determined by a pressure sensor exceeds this value for the duration of the time set under "High pressure monitoring time", the feed pump is switched off.
- **High pressure monitoring time:** If the value set under "Max. allowed pressure" is exceeded for this time while a feed move is executed, the feed move is stopped and an alarm is generated. When "0 s" is set, an alarm is generated immediately upon exceeding this value.
- **Critical pressure:** If this value is exceeded, the system stops immediately.

Proceed as follows:

1. Filter the necessary feed moves, if required, e.g. for their start (source), target or device.

   Drag the horizontal scroll bar at the bottom all the way to the right to see any hidden parameters.

2. If you want to define the same setting (value) for multiple feed moves, use one of the following options for multi-editing:

a) Select multiple feed moves:

Hold the Shift key and click on the first and last position to select all positions inbetween.

Hold the Ctrl key and click on the individual positions to select multiple positions.

b) Right-click into the marked area.

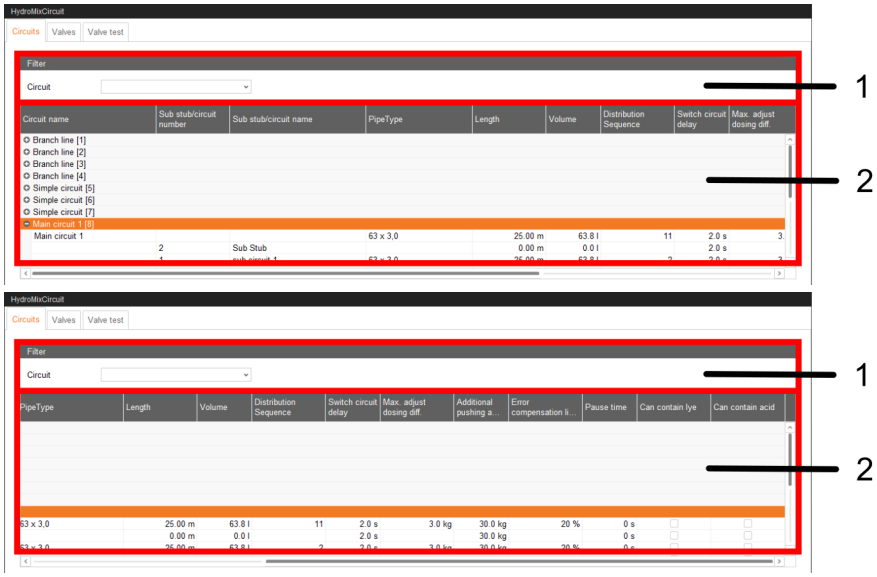
c) Click on "Multi edit".

This opens a dialog you can use to change the values.

3. Change the values either in the multi-edit dialog or directly in the respective input field when editing individual values.
4. Click on "Save" to save all settings.

## 5.13.3 HydroMixPro circuit

### 5.13.3.1 Circuits



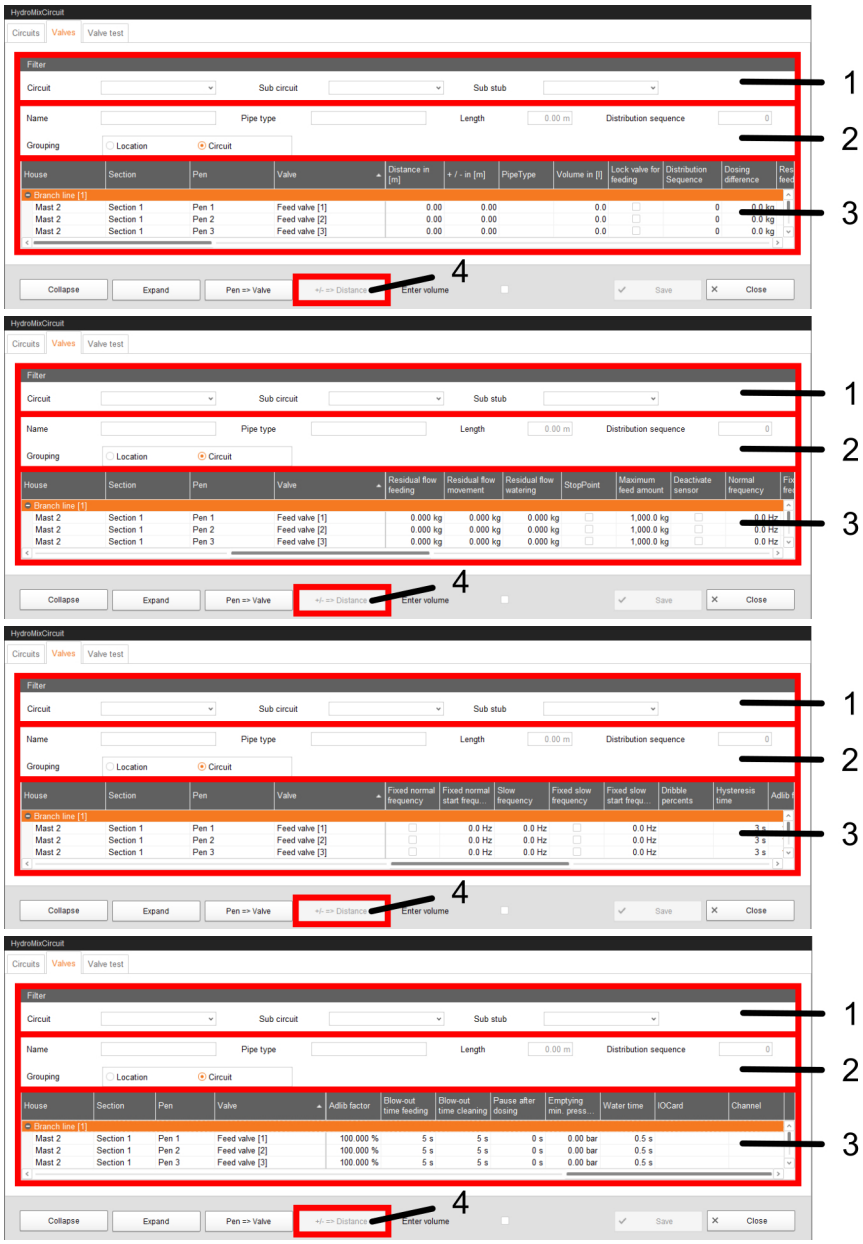

The "Circuits" dialog is divided into 2 areas, which are explained below.

1. **Filter**
   - **Circuit:** Circuit, branch line, PipeJet branch line for selection.

2.
   - **Circuit name:** Name of the circuit, branch line, PipeJet branch line.

- **Sub-stub/circuit number** (only an information): Number of the sub-circuit/ sub-branch (stub).
- **Sub-stub/circuit name:** Name of the sub-circuit/sub-branch (stub).
- **Pipe type:** Pipe type for calculating the pipe volume displayed under "Volume".
- **Length:** Pipe length for defining the pipe volume in case of residue-free feeding or for calculating the pipe volume displayed under "Volume".
- **Volume:** Pipe volume calculated from the values set under "Pipe type" and "Length".
- **Distribution sequence:** Priority of the (sub-)circuit or (sub-)branch line. The values of all (sub-)circuits or (sub-)branch lines are used to determine their distribution sequence. The smaller the value, the earlier the (sub-)circuit or (sub-)branch line is supplied.
- **Switch circuit delay:** Waiting time for dispensing when changing between old and new circuit and closing the start valve of the old circuit. The goal is to prevent blows.
- **Maximum adjust dosing difference:** If too much or too little feed is dispensed at one valve, the next feeding at this valve is compensated for by no more than this amount.
- **Additional pushing amount for cleaning:** Additional amount of the pushing component for positioning and dispensing feed.
- **Error compensation limit:** Proportion of the excess or insufficient amount of feed dispensed at a feed valve (e.g. due to a technical error) that is compensated for within the same feeding process at the subsequent feed valves. In case of insufficient feeding with subsequent compensation overfeeding, the troughs are prevented from overflowing. When "0 %" is set, there is no compensation. When "100 %" is set, there is full compensation.
- **Pause time:** Pause time when changing from one feeding line to another.
- **Can contain lye:** Information for the control system that the pipes contain lye. Safety function when canceling a pipe cleaning with recipe.
- **Can contain acid:** Information for the control system that the pipes contain acid. Safety function when canceling a pipe cleaning with recipe.

### 5.13.3.2 Valves




The "Valves" dialog is divided into 4 areas, which are explained below.

1. **Filter**
   - **Circuit:** Circuit, branch line, PipeJet branch line for selection.
   - **Sub circuit:** Sub-circuit for selection.
   - **Sub stub:** Sub-branch line (stub) for selection.

2.

- **Name** (only an information): Name of the (sub-)circuit, (sub-)branch line, PipeJet branch line.
- **Pipe type** (only an information): Pipe type of the (sub-)circuit, (sub-)branch line, PipeJet branch line.
- **Length** (only an information): Length of the (sub-)circuit, (sub-)branch line, PipeJet branch line.
- **Distribution sequence** (only an information): Position of the (sub-)circuit, (sub-)branch line, PipeJet branch line in the distribution sequence.
- **Grouping:**

  **Location:** Grouping by location on the farm.

  **Circuit:** Grouping by feeding line.

3.

- **House** (only an information): Name of the house.
- **Section** (only an information): Name of the section.
- **Pen** (only an information): Name of the pen.
- **Valve:** Name of the valve.
- **Distance in [m]:** Fixed distance of the valve, usually to the circuit's start valve. Used to calculate the pipe volume displayed under "Volume".
- **+ / - in [m]:** Additional distance of the valve by which the value set under "Distance in [m]" is adjusted. The value can be positive or negative. Several valves can be moved simultaneously by this additional distance without having to add the move to all valves individually (see "+/- => Distance").
- **Pipe type:** Pipe type for calculating the pipe volume displayed under "Volume".
- **Volume in [l]:** Pipe volume calculated from the values set under "Distance in [m]" and "Pipe type".
- **Lock valve for feeding:** Valve is permanently blocked and used during feeding.
- **Distribution sequence:** Priority of the valve. The values of all valves are used to determine their distribution sequence. The smaller the value, the earlier the valve will be supplied. Only relevant if the trough sequence has been set to manual operation in the Task Manager (see chapter 6.6 ”Feeding strategies”, page 185).

- **Dosing difference:** Differences totaled by the control system between the planned and actually dispensed feed amount at the valve. The control system attempts to compensate for the feed amount at the valve by this value over the next few feedings.
- **Residual flow feeding:** Measured residual flow volume after feed dispensing. The valve is closed earlier, depending on the residual flow.
- **Residual flow movement:** Measured residual flow volume after pushing to the stop point. The valve is closed earlier, depending on the residual flow.
- **Residual flow watering:** Measured residual flow volume after watering. The valve is closed earlier, depending on the residual flow.
- **Stop point:** Valve or sub-branch line is marked as an additional manual stop point. This stop point is used in addition to the calculated stop points when dispensing without residues in a circuit.
- **Maximum feed amount:** Maximum amount of feed that can be dispensed for this valve for one feeding.
- **Deactivate sensor:** The trough sensor at this valve is deactivated and no longer used for pre-feeding trough checks or eating time recording.
- **Normal frequency:** Pump frequency for normal dispensing. The normal frequency is adjusted by the control system.
- **Fixed normal frequency:** The control system does not adjust the frequency for normal dispensing, but uses the value set under "Normal frequency".
- **Fixed normal start frequency:** Start frequency for controlling the drive during normal dispensing. "0.0 Hz" means that the start frequency is determined automatically by the control system.
- **Slow frequency:** Pump frequency for fine dosing. The slow frequency is adjusted by the control system.
- **Fixed slow frequency:** The control system does not adjust the frequency for fine dosing, but uses the value set under "Slow frequency".
- **Fixed slow start frequency:** Start frequency for controlling the drive during fine dosing. "0.0 Hz" means that the start frequency is determined automatically by the control system.
- **Dribble percents:** Percentage dispensing for dribble feeding. Used in case of several valves per pen. Dribble feeding is also possible at section level.

- **Hysteresis time:** Adlib feeding: Delay time or residual flow time after a stable sensor message so that the trough is sufficiently filled with feed because the trough sensors are usually placed lower for adlib feeding than for normal feeding.
- **Adlib factor:** Adlib feeding: The amount of feed to be mixed is increased by this percentage. The value is automatically increased or reduced after feeding, depending on whether more or less feed than planned was dispensed at the valve. The adjustment uses the previous value and the current ratio of the actual and target quantity at the valve for a weighted decision. The weighting factor can be set under "General" > "Adlib settings" > "Adlib reserve factor".
- **Blow-out time feeding:** Duration for which feed is blown out of the valve with compressed air.
- **Blow-out time cleaning:** Duration for which compressed air is blown out of the valve for cleaning.
- **Pause after dosing:** Waiting time after dispensing at the feed valve in case of HydroAir. This time is necessary so the air pressure can be built up again the valve's blowing process.
- **Emptying min. pressure:** Minimum emptying air pressure used as a cancellation criterion for blowing out a suckling pig feeding line or feed valve. If the pressure falls or remains below this value after the time set under "Distribution" > "Feeding line" > "HydroMixPro Baby" > "Minimum blow time" has elapsed, the blowing process is terminated. When "0 bar" is set, the drop in air pressure is not a cancellation criterion for the blowing process.
- **Water time:** Duration for which water is retrieved for valve cleaning.
- **IO card:** IO card to which the valve is linked.
- **Channel:** Channel of the IO card to which the valve is linked.

4. **+/- => Distance:** Automatically adjusts the value set under "Distance in [m]" for all associated valves by the value set under "+ / - in [m]".

Proceed as follows:

1. Make sure that you are in the "Valves" dialog.
2. If necessary, filter the circuit and the sub-branch line you want to edit:
   a) Under "Filter", select the correct circuit and sub-branch line from the drop-down menu.

b) The valves can be grouped according to location or circuit by selecting the corresponding option next to "Grouping".

c) Use the buttons "Collapse" and "Expand" in the lower command bar to show or hide valves.

d) Drag the horizontal scroll bar at the bottom all the way to the right to see any hidden parameters.

3. If you want to define the same setting (value) for multiple valves, use one of the following options for multi-editing:

   a) Select multiple valves:

      Hold the Shift key and click on the first and last position to select all positions inbetween.

      Hold the Ctrl key and click on the individual positions to select multiple positions.

   b) Right-click into the marked area.

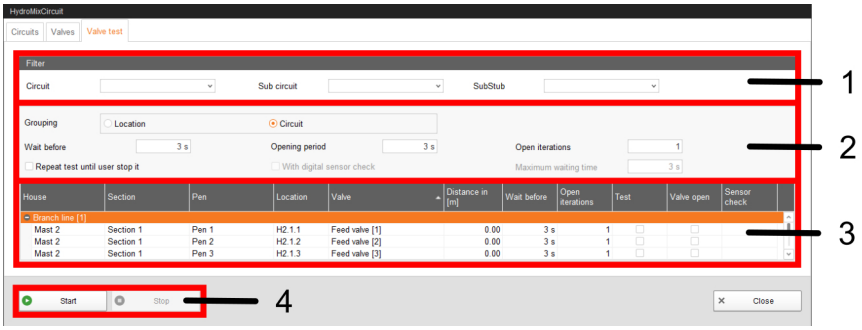
   c) Click on "Multi edit".

      This opens a dialog you can use to change the values.

4. Change the parameters' values directly in the corresponding input field.

5. Click on "Save" to save all settings.

### 5.13.3.3 Valve test




The "Valve test" dialog is divided into 4 areas, which are explained below.

1. **Filter**
   - **Circuit:** Circuit, branch line, PipeJet branch line for selection.
   - **Sub circuit:** Sub-circuit for selection.
   - **SubStub:** Sub-branch line (stub) for selection.

2.
   - **Grouping:**

     **Location:** Grouping by location on the farm.

     **Circuit:** Grouping by feeding line.
   - **Wait before:** Waiting time before opening the feed valve.
   - **Opening period:** Opening time of the feed valve if the test is carried out without a sensor check.
   - **Open iterations:** Number of times the feed valve is opened.
   - **Repeat test until user stops it:** The valve test is repeated until it is stopped by the user.
   - **With digital sensor check:** The valve test includes a sensor check.
   - **Maximum waiting time:** Maximum waiting time for sensor feedback.

3.
   - **House** (only an information): Name of the house.
   - **Section** (only an information): Name of the section.
   - **Pen** (only an information): Name of the pen.

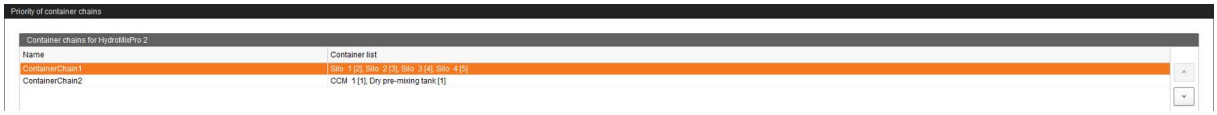
- **Location** (only an information): Location on the farm.
- **Valve** (only an information): Name of the valve.
- **Distance in [m]** (only an information): Fixed distance of the valve, usually to the circuit's start valve.
- **Wait before:** Waiting time before opening the feed valve.
- **Open iterations:** Number of times the feed valve is opened.
- **Test:** The valve is included in the valve test.
- **Valve open** (only an information): The valve is open.
- **Sensor check** (only an information): Feedback from the trough sensor.

4.

- **Start:** Starts the valve test.
- **Stop:** Stops the valve test.

### 5.13.4 Priority of container chains

Container chains configured under "Configuration" > "General" > "Container chains" (see chapter 4 ”Container chains”, page 106) can be ordered here according to descending priority using the arrows pointing upwards and downwards.




When using container chains, the control system selects the containers that contain the requested component following the steps below:

1. Only the containers with the highest container priority are considered.
   **Peculiarity:** For components that are obtained from containers with the corresponding source components by means of special feed moves (e.g. inline milling), the containers that contain the requested component themselves have priority, regardless of the container priority.
2. The top container chain whose containers contain the requested component is considered. Only those containers are considered starting from which a suitable feed move exists.

a) Of these containers, the most recently used container is considered. If or as long as this container is not locked (or can be unlocked) and is not empty according to the minimum sensor or scale, the component is removed from the container. Otherwise, the next container in the container chain is considered, and so on. Starting from the end of the container chain, the next container is the container at the beginning of the chain, unless it is the last container used.

b) If no unlocked (or unlockable) and non-empty container can be found (anymore) in this container chain, the container chain listed next, whose containers contain the requested component, is considered, and so on.

3. The control system makes the container selection in the usual way if no container chain can be found whose containers contain the requested component and from which container a suitable feed move exists and whose container is not locked (or unlockable) and not empty.

The priority of the container chains can be set individually for each application, even if the applications belong to a shared NetFEED group.

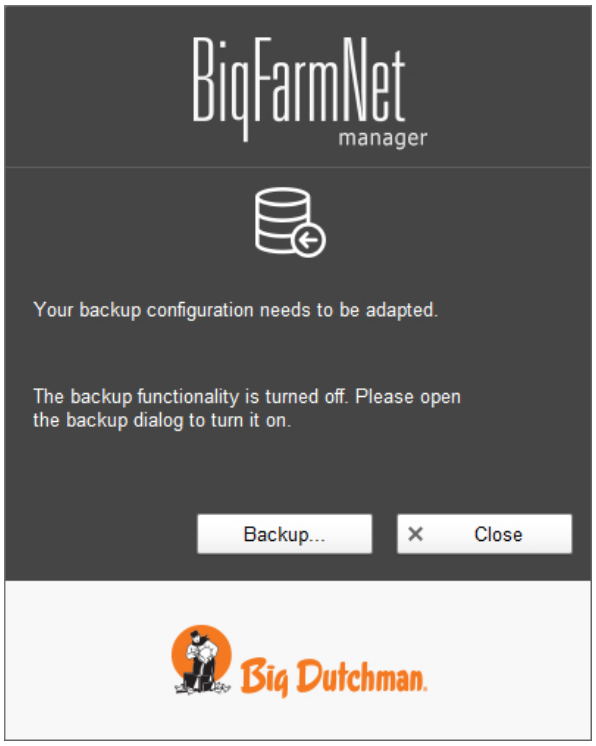
## 5.14 Data backup

From BigFarmNet Manager version 3.2.0, the following message regarding data backup configuration appears after installation or an update. If you only close this message, it will reappear after a short time.

**NOTICE!**

The system requires an external storage location for data backup, e.g. a network drive, an external hard drive or a USB flash drive. As soon as an external storage location has been indicated, the message no longer appears, irrespective of whether automatic data backup has been enabled or disabled.

If an external storage location has already been defined before updating to version 3.2.0, the message does not appear at all.




We recommend data backups in regular intervals. In case of a data loss, the backup can then be used to retrieve saved data.

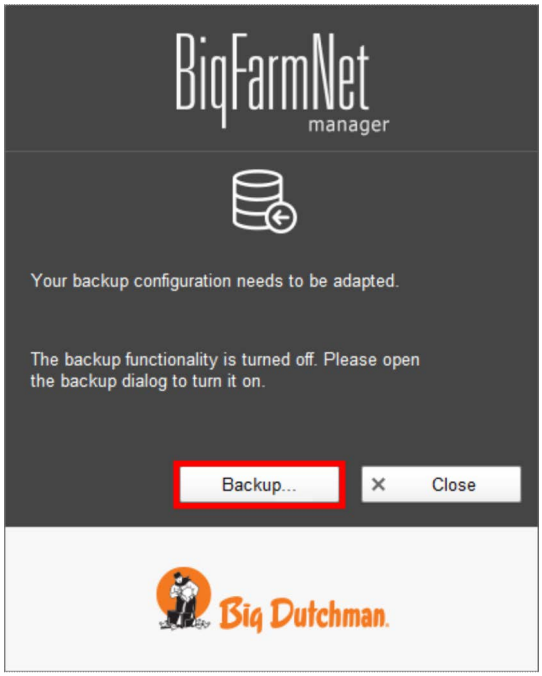
Remember that you can only retrieve the last data backup. Everything you have created or changed since then is not included in this backup. This means that the backup period should be determined depending on the amount of data you produce. You should find the ideal compromise between acceptable data loss and frequency of backups based on your individual needs.

The BigFarmNet Manager provides the following options for data backups:

- Manual backup, which you may carry out at any time when necessary.
- Automatic backup, for which you define a fixed backup period. The data is then backed up automatically according to the settings.

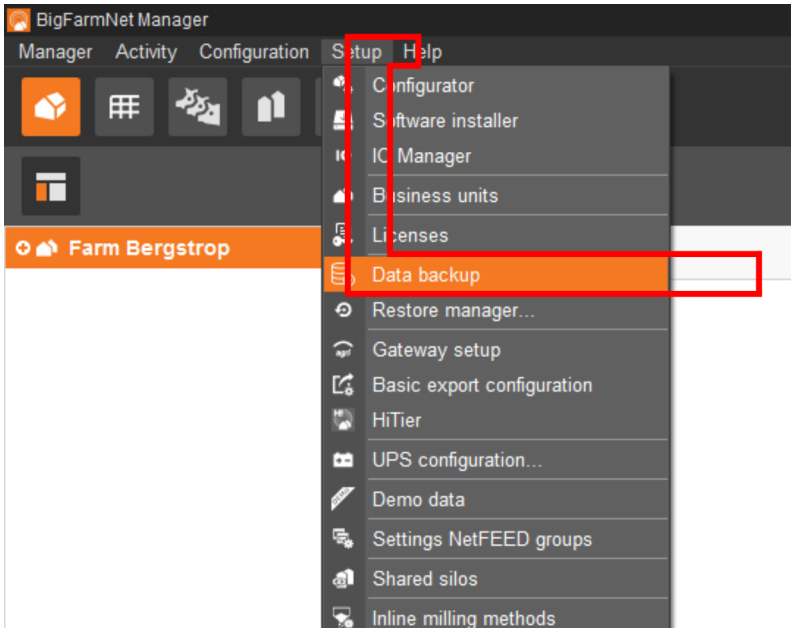
Open the settings dialog as follows:

1. Click on "Backup...".




OR

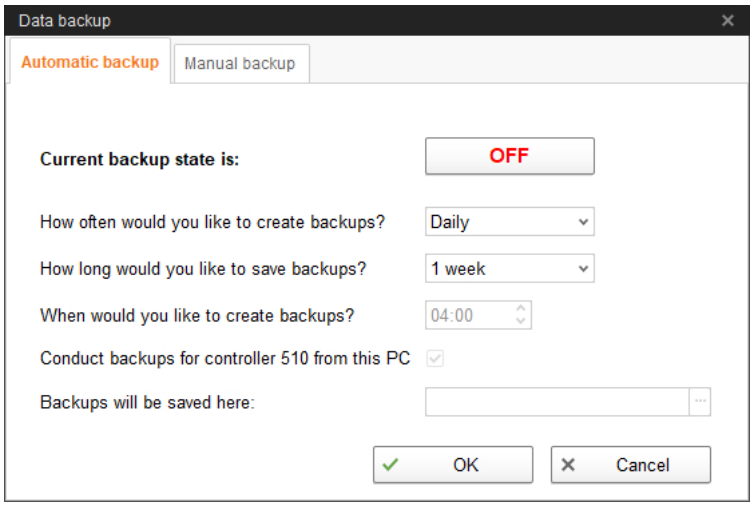
1. Click on "Data backup" in the "Setup" menu.




2. In the window "Data backup", select the desired process using one of the two tabs:

### Automatic backup

The automatic backup is pre-set to "OFF".




a) Click on "OFF" to turn off the deactivation.

   The button then switches to "ON".

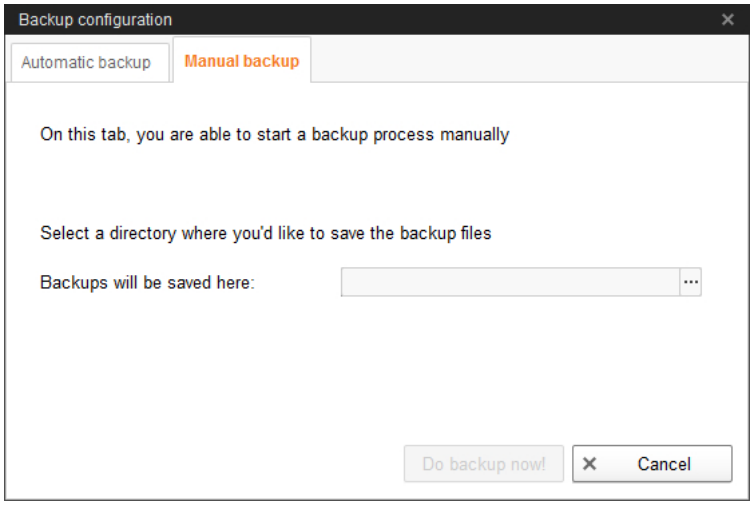
b) Determine the backup period.

c) Select an external storage location.

d) Click on "OK" to accept these settings.

Or:

### Manual backup




a) Select an external storage location.

b) Click on the now active button "Create backup now!"

# 6 Task Manager

Defined automatic processes are stored as tasks in HydroMix*pro*.

In the Task Manager, you can

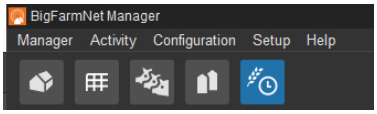
– add new tasks,

– edit existing tasks,

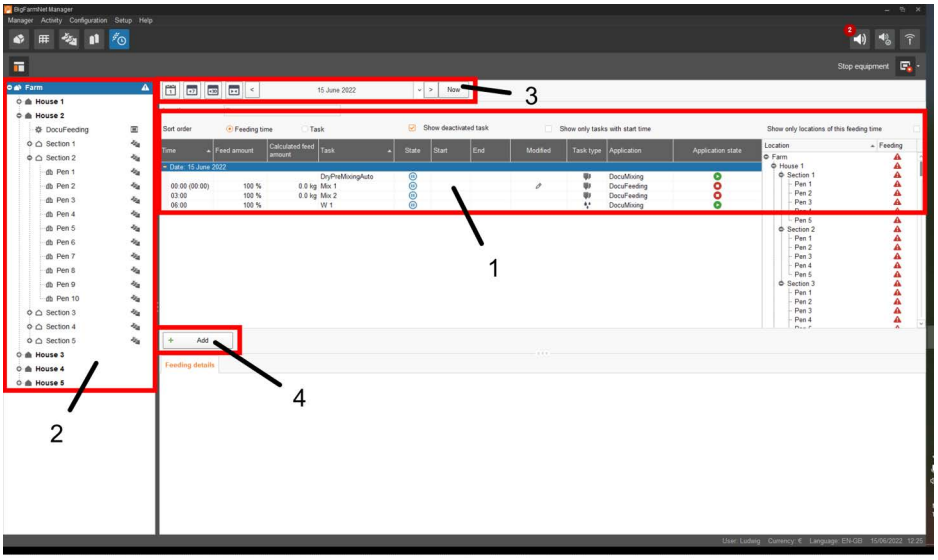
– save created tasks as templates or patterns.

## 6.1 Opening the Task Manager

Open the Task Manager by clicking on the respective icon in the toolbar.




### Task Manager windows




1) **Task list with options for the view**

- Sort by "Feeding time" and "Task"
- "Show deactivated tasks"
- "Show only tasks with start time"
- "Show only locations of this feeding time"

2) **Filter function using the farm structure**

- Only the tasks of the selected locations are displayed.

3) **Filter function using times**

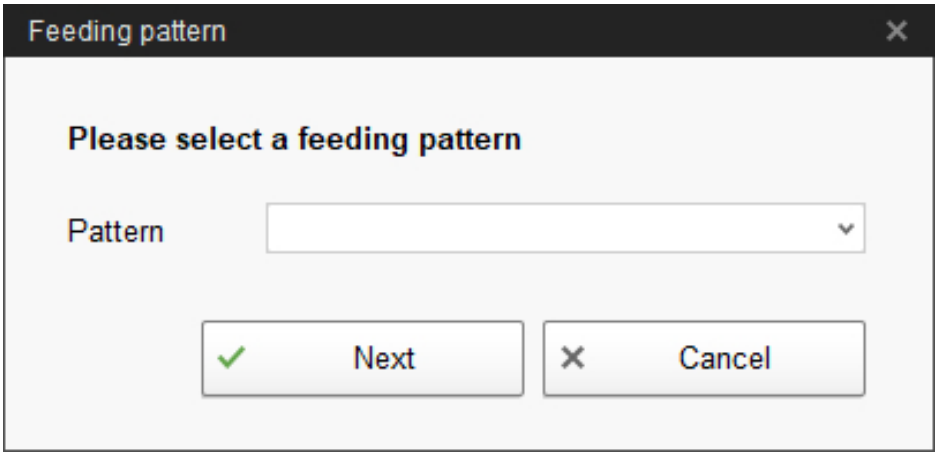
- Display of days, weeks or months
- Display of any time period
- Return to the current date by clicking on "Now"

4) **Add a new task**

## 6.2 Adding tasks

- To create a new task, click on "Add" in the Task Manager.

If feeding patterns exist, you will first be asked whether you want to use a pattern.

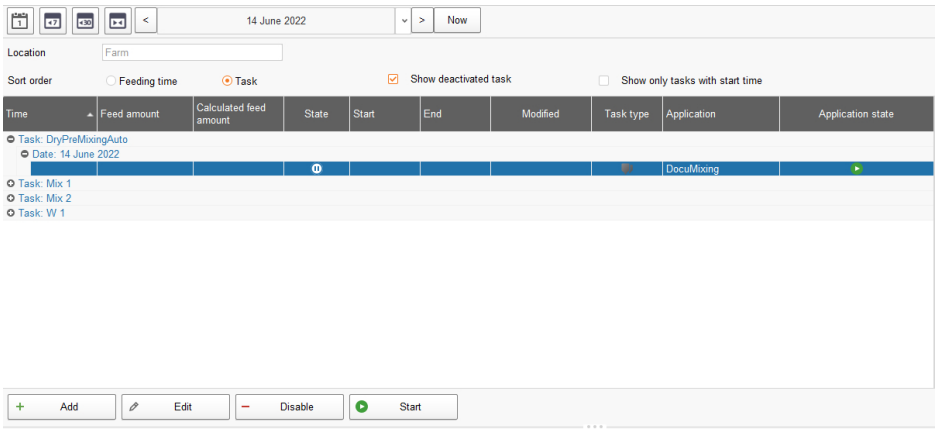



- Select a pattern or click on "Next".

The "Feeding tasks" dialog window (see chapter 6.5) opens.

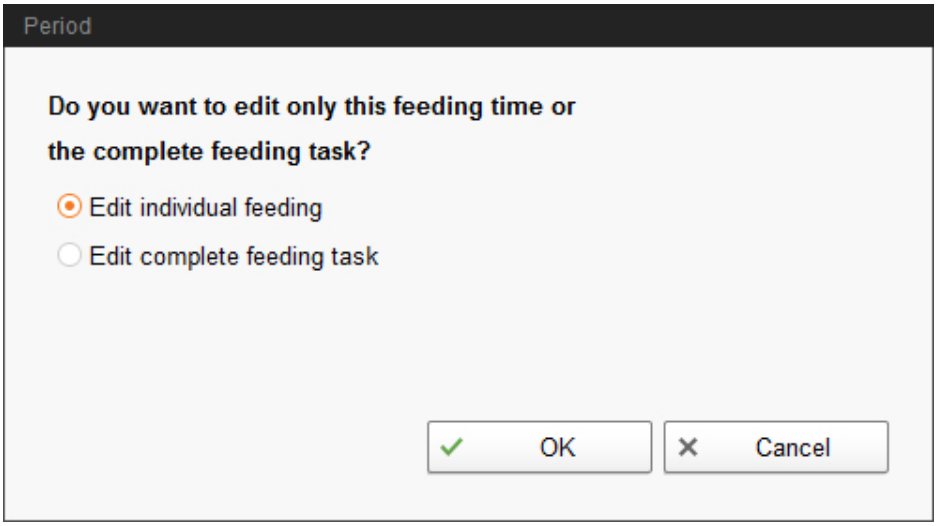
## 6.3 Editing tasks

If you select a task in the Task Manager, additional buttons appear with which you can edit the task.



### 1) Edit

When selected, a prompt appears:

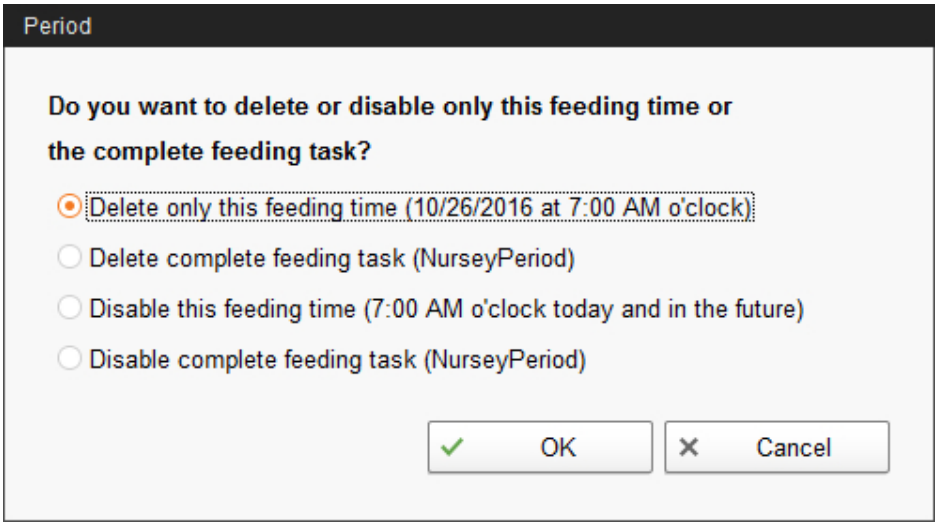



- Edit the current feeding time or
- edit the complete feeding task.

After selection, the "Feeding tasks" dialog window opens (see chapter 6.5).

### 2) Disable

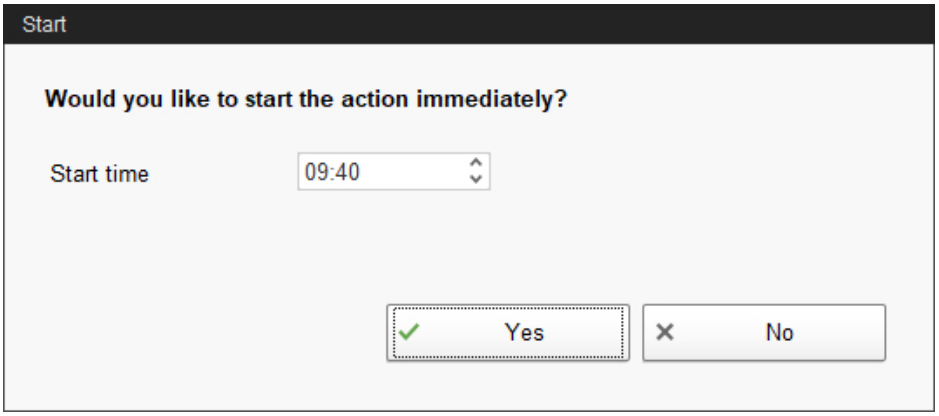
When selected, a prompt appears:




- Delete or disable a selected feeding task:
  - For the current feeding time.
  - The entire feeding task.

### 3) Start

When selected, a prompt appears:

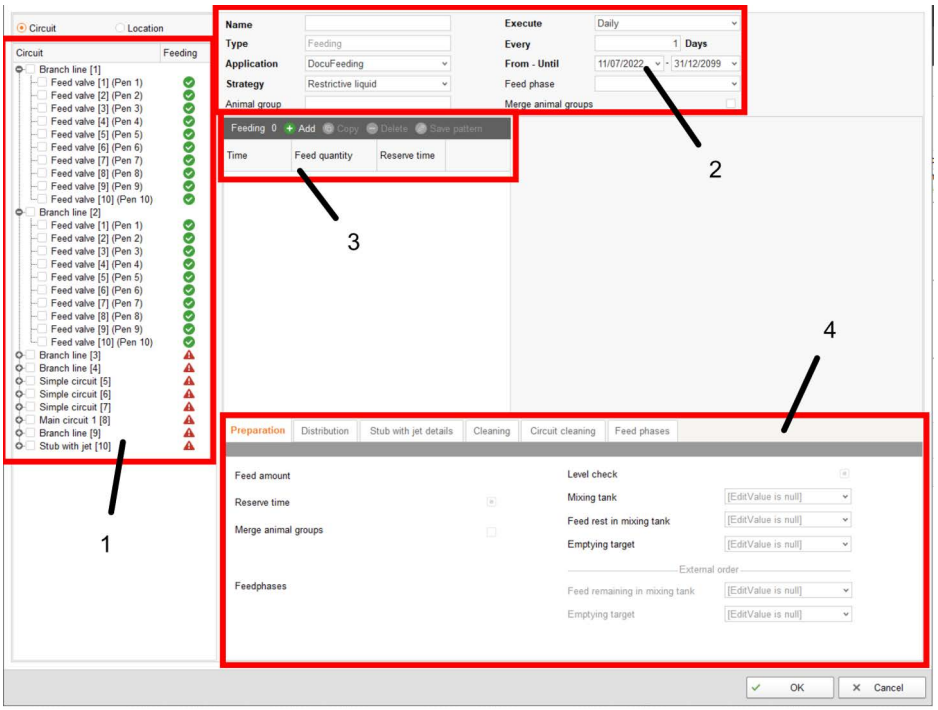



When confirmed, the selected feeding task is started immediately.

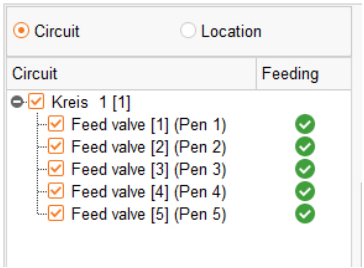
## 6.4 Saving a task as a pattern

Tasks can be saved as a pattern during editing in the "Feeding task" dialog window (see chapter 6.5).

## 6.5 "Feeding tasks" dialog window

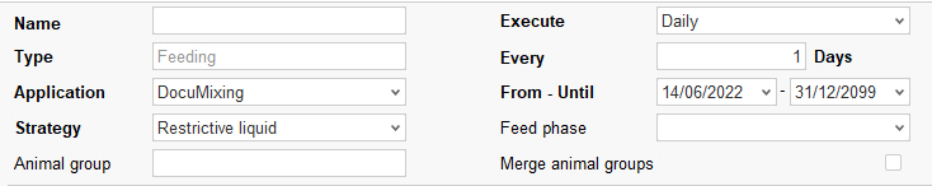



- **Selection list for locations or circuits in which the current task is to be carried out.**




  - **Circuit:** Display of the circuits and branch linees with the respective feed valves for selection in the feeding task.
  - **Location:** Display of the locations with the respective feed valves for selection in the feeding task.

## 3. General information on the feeding task

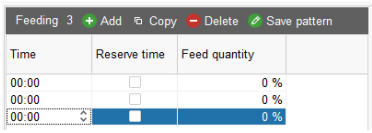



- **Name** of the feeding task.
- **Type** is pre-set to "Feeding".
- **Application**: Selection of the application in which the task is to be executed.
- **Strategy**: Subject of the feeding task: feeding, cleaning or recirculation.
- **Animal group:** You can select individual animal groups from the selected location or circuit. The different group numbers of the animal groups are separated by commas. The animal groups then receive feed in the stated order (grouping e.g. for animal groups of the same age).

  If no information is provided, all available animal groups of the selected location or circuit receive feed.
- **Execute:** every day or once a week.
- **Every ... Days:** Execution at fixed daily intervals.
- **From – Until:** Time period for this task. The task will not be started outside of this time period.
- **Feed phase:** One or more feed phases can be selected from the options "Growing stage", "Main finishing stage" and "Final finishing stage".

  Only the animal groups included in this feed phase will receive feed.
- **Merge animal groups:** If multiple animal groups are fed together, animal groups can be merged, provided they receive the exact same feed.

4. **Execution times for feeding task and saving as pattern**

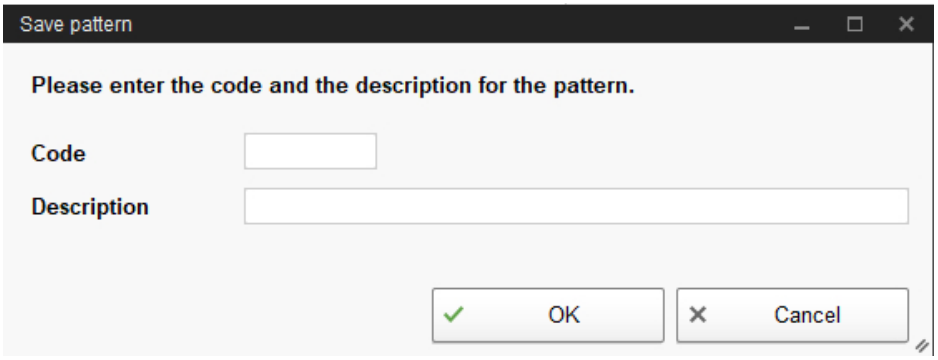



- **Add**: Create a new execution time.
- **Copy**: Create an execution time with the same contents.
- **Delete:** Remove an execution time.

- **Save pattern:**

  Save the feeding task as a pattern.

  The following prompt is displayed when you select this option:




  "Code" and "Description" are freely selectable.

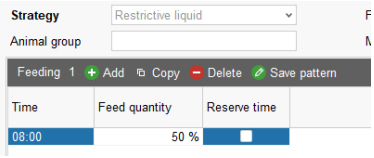
5. **Technical parameters for the task**

   (Depending on strategies, see the corresponding chapters.)

## 6.6 Feeding strategies

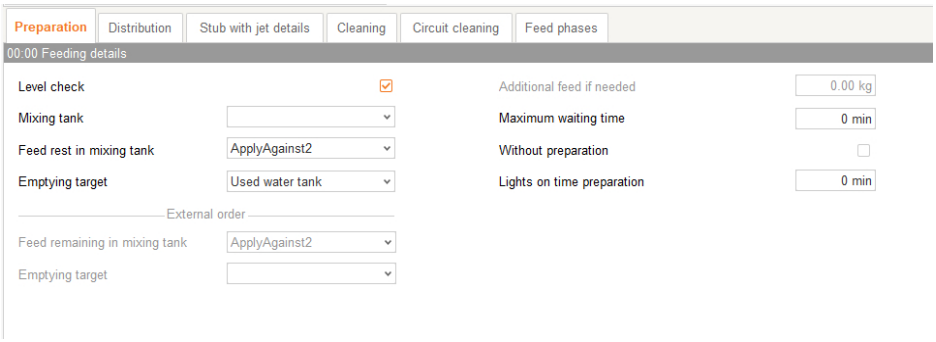
### 6.6.1 Restrictive liquid

When feeding is restrictive (strategy "Restrictive liquid"), feed is mixed for the selected animals and then dispensed in a dosing process.




- **Time:** Start time for executing the strategy.
- **Feed quantity:** Percentage of the daily demand for the animal group or, in the case of percentages by feed phase, the percentages for the animals in the corresponding feed phase.
- The box **Reserve time** (optional) should be checked if the remaining daily demand is to be fed during this feeding time.

### Preparation

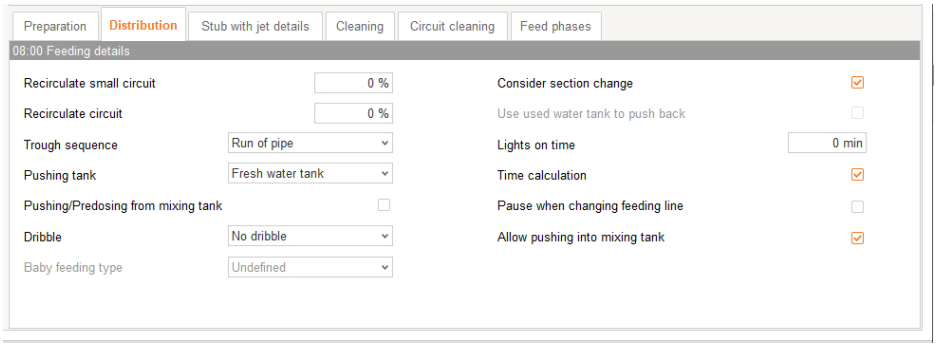



- **Level check:** This request determines the valves for which mixing is actually necessary.
- **Mixing tank:** Selection of the mixing tank for the feeding task. If the selection field is empty, the control system makes the selection.
- **Feed rest in mixing tank:** Treatment of feed remaining in the mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the mixing tank.
- **Additional feed if needed:** Allows more feed to be prepared to compensate for the dry matter content of the feed, if required.
- **Maximum waiting time:** Maximum waiting time in manual mode.
- **Without preparation:** Execution of the feeding task without feed preparation.
- **Lights on time:** Switch-on duration for the lighting in the section, switch-on of the timers (monitored location).

*External order*

- **Feed rest in mixing tank:** Treatment of feed remaining in the external mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the external mixing tank.

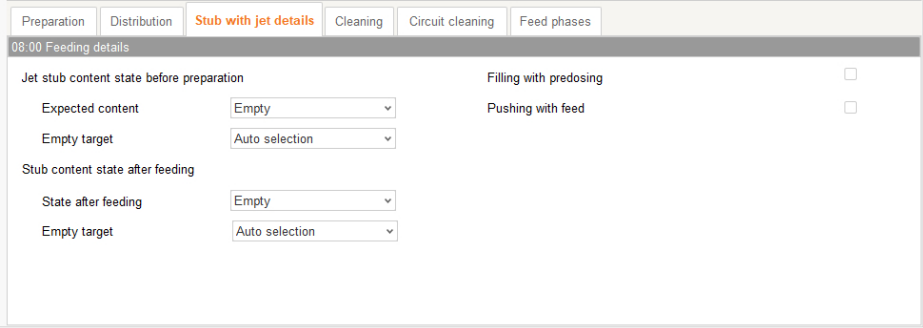
### Distribution




- **Recirculate small circuit:** This parameter determines if and for how long feed is recirculated in the small circuit before distribution. Enter the value in percent of the maximum recirculation time of the small circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %.
- **Recirculate circuit:** This parameter determines if and for how long feed is recirculated in the circuits used for feeding before distribution. Enter the value in percent of the maximum recirculation time of the circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %. Recirculation only occurs in circuits without residue-free feeding.
- **Trough sequence:** This parameter determines the distribution sequence for the valves of a feed line. The options for the distribution sequence are
  - Randomly,
  - Run of pipe,
  - Manual.
- **Pushing tank:** This parameter determines which tank is used for pushing. This tank can be either a weighed fresh water tank or a weighed used water tank.
- **Pushing/Predosing from mixing tank:** This parameter allows pushing and pre-dispensing from the mixing tank.
- **Dribble:** Use of the dribble control when dispensing at the feed valves.

  - No dribbe.
  - Dribble in pen.
  - Dribble in section.
- **Baby feeding type:** This parameter determines the type of suckling pig feeding: BabyAir or HydroAir.
- **Consider section change:** If this box is checked, the control system checks whether there is enough feed in the mixing tank during dispensing when changing sections. If there is not enough feed in the mixing tank and not everything has been prepared yet, the control system behaves as follows:
  - With single-tank systems, post-mixing is started prematurely.
  - With Speed systems, the control system checks whether preparation in the second mixing tank has been completed. If not, dispensing is interrupted and the system waits for the end of preparation in the second mixing tank. This ensures quick changes from one mixing tank to the other.
- **Use used water tank to push back:** This parameter is only relevant for systems with a push-back line into the circuit. This parameter determines whether or not it is permitted to push back from the used water tank.
- **Lights on time:** Switch-on duration for the lighting in the section, switch-on of the timers (monitored location).
- **Time calculation:** Determination of the feeding time from the end of dispensing until the trough sensor at the valve recognizes the trough as empty.
- **Pause when changing feeding line:** If this box is checked, the control system makes a pause if there is a change from one feeding line to the other during dispensing. This pause time allows the operator to keep up with the feeding and change buildings, if necessary.
- **Allow pushing into mixing tank:** Allows the control system to push into the mixing tank (as a target).

### Stub with jet details



*Jet stub content state before preparation*

- **Expected content:** This parameter determines the expected state of the branch lines (stubs) with jet before feeding: "Empty" or "Feed". The current state of the branch line with jet is taken over from the expected state of the previous feeding.
  - "Empty": Before preparation, the branch lines with jet to be filled are emptied according to the settings under "Empty target".
  - "Feed" and branch line is empty: The additional feed is dispensed into the jet after mixing.
  - "Feed" and branch line is filled with water: The branch line is emptied before mixing and then filled with feed.
- **Empty target:** This parameter defines where the branch line with jet is emptied. The contents of the branch line are either emptied into the mixing tank, into the used water tank or automatically divided between the mixing tank and used water tank.

*Stub content state after feeding*

- **State after feeding:** This parameter determines the state of the branch lines (stubs) with jet after feeding. The following options are available:
  - "Empty": Branch lines with jet are emptied after feeding.
  - "Feed": Branch lines with jet remain filled with feed after feeding.
  - "Water": Branch lines with jet remain filled with used water after feeding (only for residue-free feeding).
- **Empty target:** The target is the final branch line with jet. This parameter defines how the branch line with jet is emptied. The contents of the branch line are either emptied into the mixing tank, into the used water tank or automatically divided between the mixing tank and used water tank.

- **Filling with predosing:** This parameter is only applicable for branch lines with jet and for systems with used water tank. If this box is checked, feed is pre-dispensed in the branch line with jet, between the final physical valve and the end of the branch line. This applies to the following two configurations:
  - The parameter "State after feeding" has been set to "Feed".

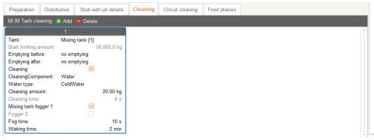
- The parameter "State after feeding" has been set to "Empty" and feed is dispensed at other feed lines during feeding, i.e. the feed intended for the other feed lines can be used to push the feed in the branch line with jet.

This parameter is not applicable (grayed out) for:

- systems without used water tank.
- systems with used water tank if the parameter "State after feeding" has been set to "Water".

- **Pushing with feed:** Feed may be used to push back for the next feed lines. At the end, this feed is pushed back into the mixing tank by emptying the branch line with jet. The generation of additional used water can thus be avoided.

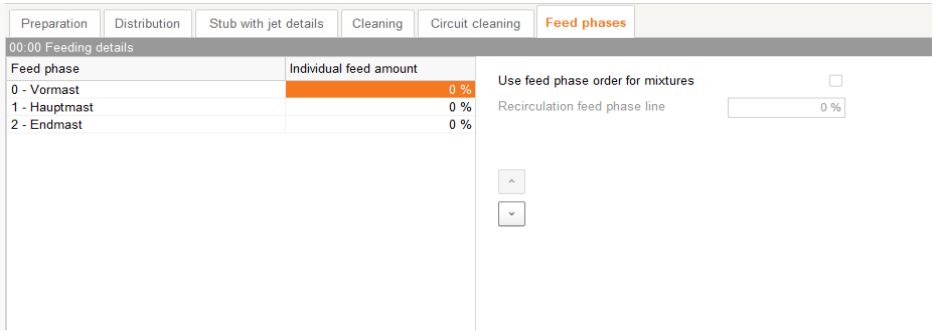
### Cleaning / Circuit cleaning



The parameters for tank cleaning and circuit cleaning can also be defined within this feeding task.

For the description of the cleaning tasks, see chapter 6.7.1 ”Tank cleaning”, page 222 and chapter 6.7.2, page 223.

### Feed phases




- **Feed phase:** Selection option of different feed phases.

  Only feed phases that have been selected in the general details for the feeding task are displayed.

- **Individual feed amount:** If 0 % is set for all feed phases, the feed percentages are not allocated per feed phase. In this case, only the animal groups whose youngest animal is in one of the feed phases are fed. This means that entire groups of animals can automatically switch from one feeding time to another as the youngest animal gets older.

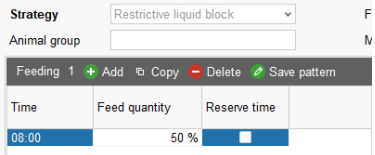
  If the percentages for the feed phases are assigned in the "Feed phases" tab, the animals in the group whose individual feed phase corresponds to one of the selected feed phases are selected for feeding. All animals are then fed with the mixture of the youngest of the selected animals. The amount depends on the percentages of the feed phase. This method is used, for example, to feed animals with the same mixture but with different percentages.

  Example: Young animals receive 50 % twice a day, old animals receive 25 % four times a day.

  Another application for feed phase percentages is the grouping of animals without animal groups according to the age of the animals. This is achieved by specifying only one feed phase, but the percentages for the animals are allocated in this tab. Only the animals that are of the right age for the feed phase are then fed and taken into account in the mixture calculation.
- **Use feed phase order for mixtures:** The mixtures are sorted according to the group's feed phase. Use the arrows pointing upwards and downwards to determine the order of the feed phases.
- **Recirculation feed phase line:** Percentage of the maximum recirculation time of the feed phase line (see chapter 5.7.5 ”Feed phase line group”, page 153).

## 6.6.2 Block feeding

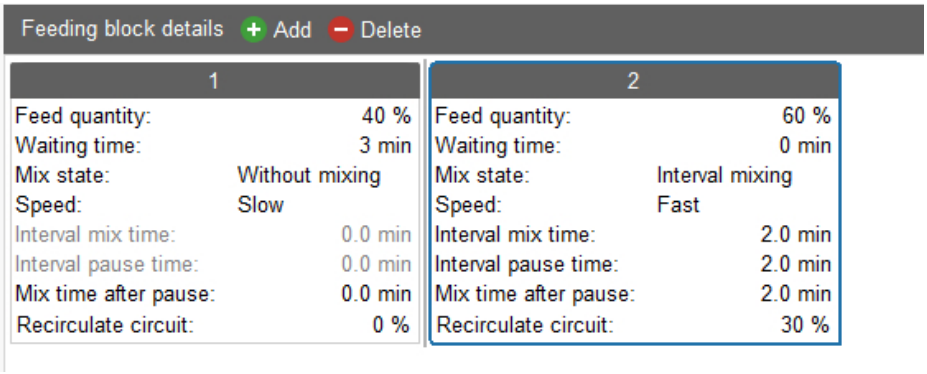
In case of block feeding, feed is mixed and then dispensed for the animals in multiple "blocks" (rations). Block feeding differs from restrictive liquid feeding because mutliple blocks are defined. The total amount of feed of all blocks must add up to 100 %. Between blocks, pause times may be defined.




- **Time:** Start time for executing the strategy.

- **Feed quantity:** Percentage of the daily demand for the animal group or, in the case of percentages by feed phase, the percentages for the animals in the corresponding feed phase.
- The box **Reserve time** (optional) should be checked if the remaining daily demand is to be fed during this feeding time.

### Feeding block details




By default, three blocks are available for each feeding time. You can remove blocks or add further blocks.

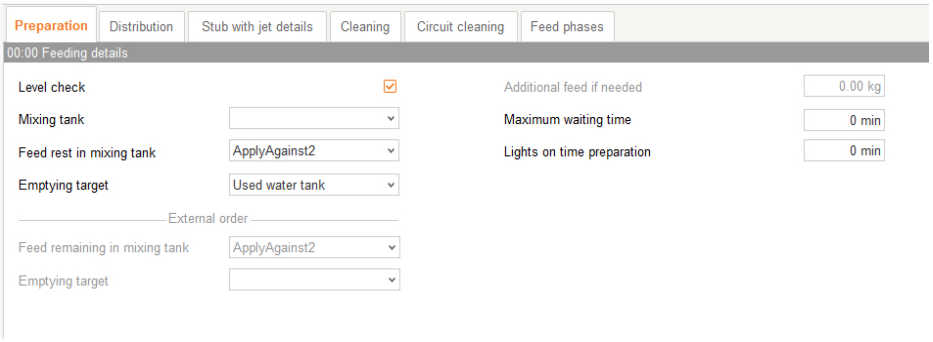
- **Feed quantity:** Percentage of the amount of feed to be fed in this block.
- **Waiting time** until the next block starts.
- **Mix state** includes the following options:

  "Without mixing".

  "Non-stop mixing".

  "Interval mixing" – The parameters "Interval mix time" and "Interval pause time" become active with selection of this option.
- **Speed** for mixing.
- **Interval mix time:** Duration of the mix time for interval mixing.
- **Interval pause time:** Duration of the pause time during interval mixing.
- **Mix time after pause:** If the mix time after pause has been set, the feed in the mixing tank is mixed up quickly before the next block.
- **Recirculate circuit:** Applicable for circuits without residue-free feeding.

## Preparation

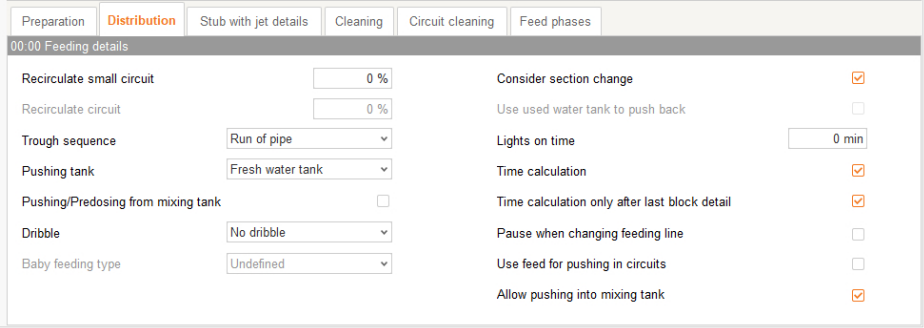



- **Level check:** This request determines the valves for which mixing is actually necessary.
- **Mixing tank:** Selection of the mixing tank for the feeding task. If the selection field is empty, the control system makes the selection.
- **Feed rest in mixing tank:** Treatment of feed remaining in the mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the mixing tank.
- **Additional feed if needed:** Allows more feed to be prepared to compensate for the dry matter content of the feed, if required.
- **Maximum waiting time:** Maximum waiting time in manual mode.
- **Lights on time:** Switch-on duration for the lighting in the section, switch-on of the timers (monitored location).

*External order*

- **Feed rest in mixing tank:** Treatment of feed remaining in the external mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the external mixing tank.

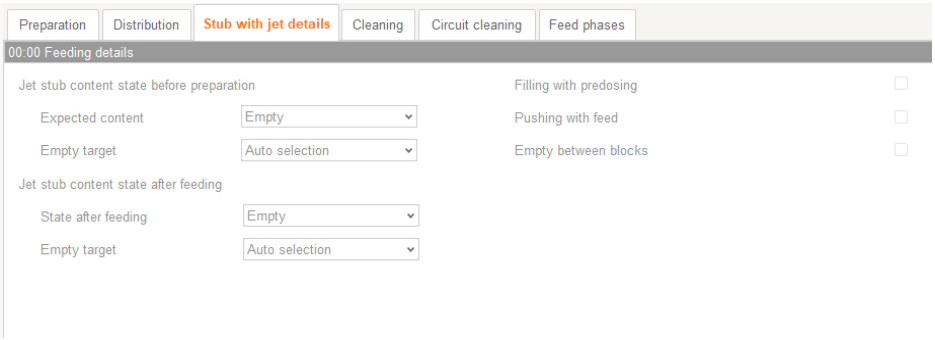
## Distribution




- **Recirculate small circuit:** This parameter determines if and for how long feed is recirculated in the small circuit before distribution. Enter the value in percent of the maximum recirculation time of the small circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %.
- **Recirculate circuit:** This parameter determines if and for how long feed is recirculated in the circuits used for feeding before distribution. Enter the value in percent of the maximum recirculation time of the circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %. Recirculation only occurs in circuits without residue-free feeding.
- **Trough sequence:** This parameter determines the distribution sequence for the valves of a feed line. The options for the distribution sequence are
  - Randomly,
  - Run of pipe,
  - Manual.
- **Pushing tank:** This parameter determines which tank is used for pushing. This tank can be either a weighed fresh water tank or a weighed used water tank.
- **Pushing/Predosing from mixing tank:** This parameter allows pushing and pre-dispensing from the mixing tank.
- **Dribble:** Use of the dribble control when dispensing at the feed valves.
  - No dribbe.
  - Dribble in pen.
  - Dribble in section.
- **Baby feeding type:** This parameter determines the type of suckling pig feeding: BabyAir or HydroAir.

- **Consider section change:** If this box is checked, the control system checks whether there is enough feed in the mixing tank during dispensing when changing sections. If there is not enough feed in the mixing tank and not everything has been prepared yet, the control system behaves as follows:
  - With single-tank systems, post-mixing is started prematurely.
  - With Speed systems, the control system checks whether preparation in the second mixing tank has been completed. If not, dispensing is interrupted and the system waits for the end of preparation in the second mixing tank. This ensures quick changes from one mixing tank to the other.
- **Use used water tank to push back:** This parameter is only relevant for systems with a push-back line into the circuit. This parameter determines whether or not it is permitted to push back from the used water tank.
- **Lights on time:** Switch-on duration for the lighting in the section, switch-on of the timers (monitored location).
- **Time calculation:** Determination of the feeding time from the end of dispensing until the trough sensor at the valve recognizes the trough as empty.
- **Time calculation only after last block detail:** Determination of the feeding time from the end of dispensing of the last feeding block until the trough sensor at the valve recognizes the trough as empty.
- **Pause when changing feeding line:** If this box is checked, the control system makes a pause if there is a change from one feeding line to the other during dispensing. This pause time allows the operator to keep up with the feeding and change buildings, if necessary.
- **Use feed for pushing in circuits:** Allows pushing with feed for the next blocks. If this box is checked, the feed of the following blocks is used for pushing. For technical reasons, more feed may have to be mixed in special cases. Otherwise, the circuits between the blocks with used water are emptied by pushing.
- **Allow pushing into mixing tank:** Allows the control system to push into the mixing tank (as a target).

## Stub with jet details




*Jet stub content state before preparation*

- **Expected content:** This parameter determines the expected state of the branch lines (stubs) with jet before feeding: "Empty" or "Feed". The current state of the branch line with jet is taken over from the expected state of the previous feeding.
  - "Empty": Before preparation, the branch lines with jet to be filled are emptied according to the settings under "Empty target".
  - "Feed" and branch line is empty: The additional feed is dispensed into the jet after mixing.
  - "Feed" and branch line is filled with water: The branch line is emptied before mixing and then filled with feed.
- **Empty target:** This parameter defines where the branch line with jet is emptied. The contents of the branch line are either emptied into the mixing tank, into the used water tank or automatically divided between the mixing tank and used water tank.

*Stub content state after feeding*

- **State after feeding:** This parameter determines the state of the branch lines (stubs) with jet after feeding. The following options are available:
  - "Empty": Branch lines with jet are emptied after feeding.
  - "Feed": Branch lines with jet remain filled with feed after feeding.
  - "Water": Branch lines with jet remain filled with used water after feeding (only for residue-free feeding).
- **Empty target:** The target is the final branch line with jet. This parameter defines how the branch line with jet is emptied. The contents of the branch line are either emptied into the mixing tank, into the used water tank or automatically divided between the mixing tank and used water tank.

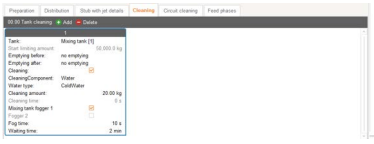
- **Filling with predosing:** This parameter is only applicable for branch lines with jet and for systems with used water tank. If this box is checked, feed is pre-dispensed in the branch line with jet, between the final physical valve and the end of the branch line. This applies to the following two configurations:
  - The parameter "State after feeding" has been set to "Feed".
  - The parameter "State after feeding" has been set to "Empty" and feed is dispensed at other feed lines during feeding, i.e. the feed intended for the other feed lines can be used to push the feed in the branch line with jet.

  This parameter is not applicable (grayed out) for:
  - systems without used water tank.
  - systems with used water tank if the parameter "State after feeding" has been set to "Water".

- **Pushing with feed:** Feed may be used to push back for the next feed lines. At the end, this feed is pushed back into the mixing tank by emptying the branch line with jet. The generation of additional used water can thus be avoided.

- **Empty between blocks:** The jet branch line should be emptied between blocks.

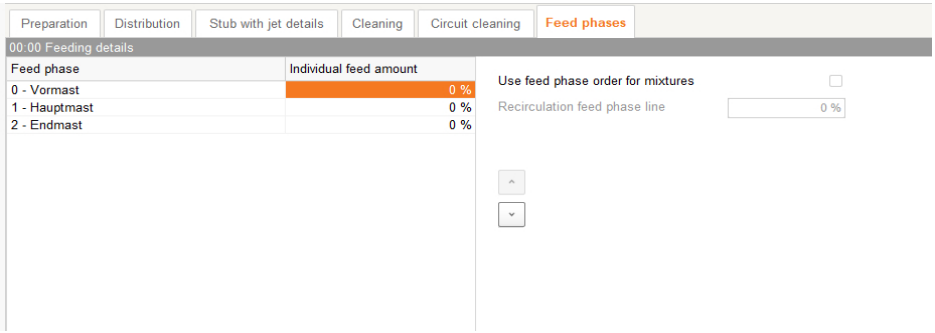
### Cleaning / Circuit cleaning



The parameters for tank cleaning and circuit cleaning can also be defined within this feeding task.

For the description of the cleaning tasks, see chapter 6.7.1 ”Tank cleaning”, page 222 and chapter 6.7.2, page 223.

## Feed phases




- **Feed phase:** Selection option of different feed phases.

  Only feed phases that have been selected in the general details for the feeding task are displayed.

- **Individual feed amount:** If 0 % is set for all feed phases, the feed percentages are not allocated per feed phase. In this case, only the animal groups whose youngest animal is in one of the feed phases are fed. This means that entire groups of animals can automatically switch from one feeding time to another as the youngest animal gets older.

  If the percentages for the feed phases are assigned in the "Feed phases" tab, the animals in the group whose individual feed phase corresponds to one of the selected feed phases are selected for feeding. All animals are then fed with the mixture of the youngest of the selected animals. The amount depends on the percentages of the feed phase. This method is used, for example, to feed animals with the same mixture but with different percentages.

  Example: Young animals receive 50 % twice a day, old animals receive 25 % four times a day.

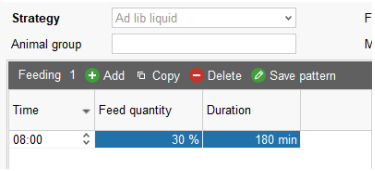
  Another application for feed phase percentages is the grouping of animals without animal groups according to the age of the animals. This is achieved by specifying only one feed phase, but the percentages for the animals are allocated in this tab. Only the animals that are of the right age for the feed phase are then fed and taken into account in the mixture calculation.

- **Use feed phase order for mixtures:** The mixtures are sorted according to the group's feed phase. Use the arrows pointing upwards and downwards to determine the order of the feed phases.

- **Recirculation feed phase line:** Percentage of the maximum recirculation time of the feed phase line (see chapter 5.7.5 ”Feed phase line group”, page 153).

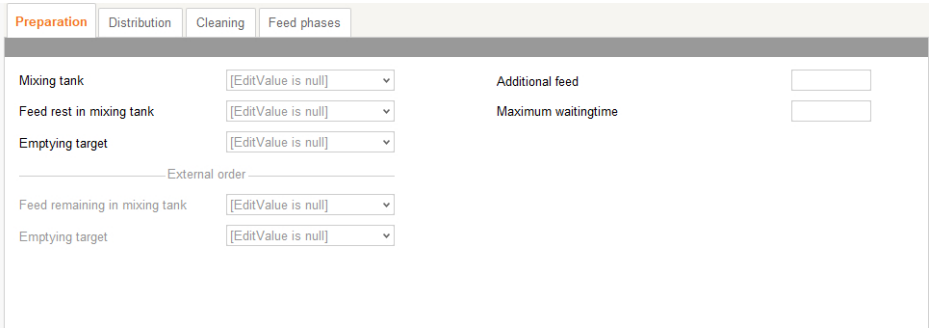
### 6.6.3 Ad lib liquid

For ad libitum feeding, a defined amount of feed is prepared and fed to the animals over a defined period of time. All troughs are equipped with trough sensors. As soon as the trough sensor reports an empty trough in the defined time frame, feed is dispensed into the trough until the trough sensor reports full again.




- **Time:** Start time for executing the strategy.
- **Feed quantity:** Percentage of the daily demand for the animal group or, in the case of percentages by feed phase, the percentages for the animals in the corresponding feed phase.
- **Duration:** Maximum duration of feeding.

#### Preparation

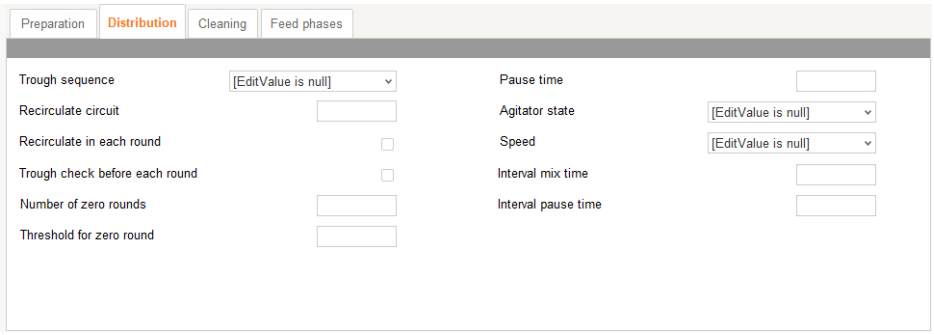



- **Mixing tank:** Selection of the mixing tank for the feeding task. If the selection field is empty, the control system makes the selection.
- **Feed rest in mixing tank:** Treatment of feed remaining in the mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the mixing tank.
- **Additional feed if needed:** Allows more feed to be prepared to compensate for the dry matter content of the feed, if required.
- **Maximum waiting time:** Maximum waiting time in manual mode.

*External order*

- **Feed rest in mixing tank:** Treatment of feed remaining in the external mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the external mixing tank.

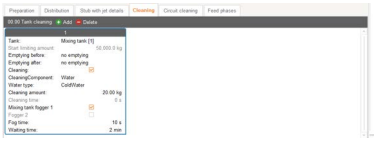
### Distribution




- **Trough sequence:** This parameter determines the distribution sequence for the valves of a feed line. The options for the distribution sequence are
  - Randomly,
  - Run of pipe,
  - Manual.
- **Recirculate circuit:** This parameter determines if and for how long feed is recirculated in the circuits used for feeding before distribution. Enter the value in percent of the maximum recirculation time of the circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %. Recirculation only occurs in circuits without residue-free feeding.
- **Recirculate in each round:** If this box is checked, the feed recirculates in the circuit before each dispensing round.
- **Trough check before each round:** Checks the fill level of the troughs before each dispensing round.
- **Number of zero rounds:** Number of small dispensing rounds (zero rounds) to complete the feeding task.
- **Threshold for zero round:** Threshold value amount that defines a zero round. A zero round is a dispensing round in which the dispensed amount is below this threshold value.

- **Pause time:** Pause time between dispensing rounds.
- **Agitator state:** How the agitator operates during the pause time.
  - 1. Without mixing.
  - 2. Non-stop mixing.
  - 3. Interval mixing.
- **Speed:** Speed of the agitator.
  - 1. Slow.
  - 2. Fast.
- **Interval mix time:** Mixing time of the interval.
- **Interval pause time:** Pause time of the interval.

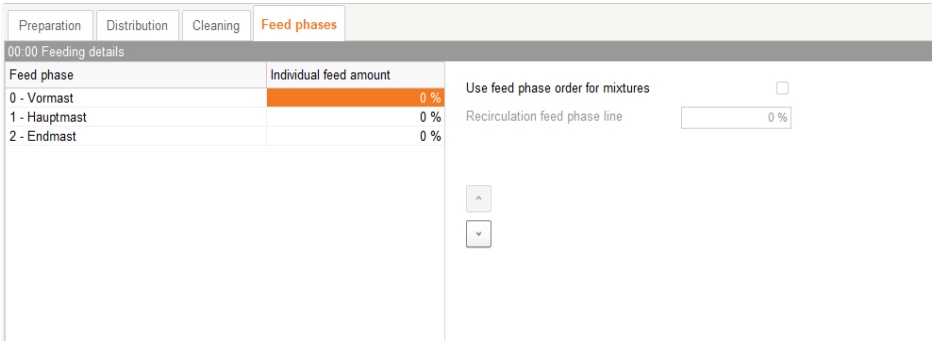
### Cleaning



The parameters for tank cleaning can also be defined within this feeding task.

For the description of the cleaning task, see chapter 6.7.1 ”Tank cleaning”, page 222.

### Feed phases



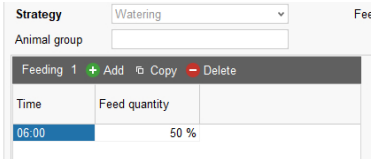

- **Feed phase:** Selection option of different feed phases.

  Only feed phases that have been selected in the general details for the feeding task are displayed.
- **Individual feed amount:** Feeding of individual amounts of the different feed phases.

- **Use feed phase order for mixtures:** The mixtures are sorted according to the group's feed phase. Use the arrows pointing upwards and downwards to determine the order of the feed phases.
- **Recirculation feed phase line:** Percentage of the maximum recirculation time of the feed phase line (see chapter 5.7.5 ”Feed phase line group”, page 153).

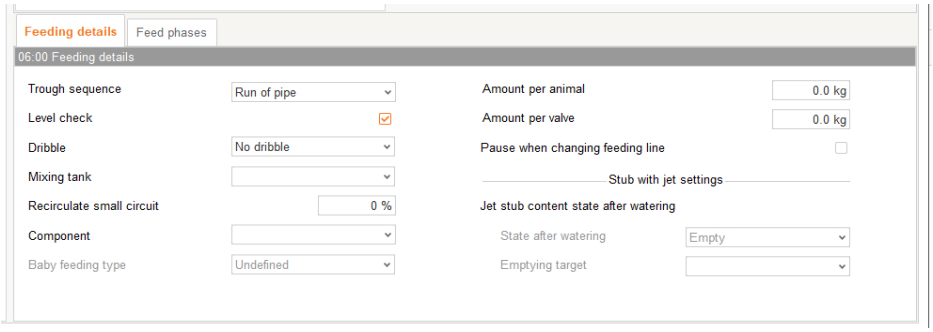
## 6.6.4 Watering

This task defines watering of the animals.




- **Time:** Start time for executing the strategy.
- **Feed quantity:** Percentage of the daily demand for the animal group or, in the case of percentages by feed phase, the percentages for the animals in the corresponding feed phase.

### Feeding details



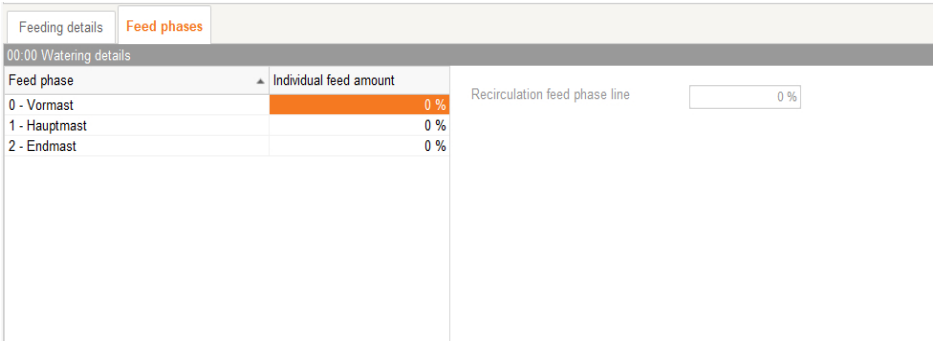

- **Trough sequence:** This parameter determines the distribution sequence for the valves of a feed line. The options for the distribution sequence are
  - Randomly,
  - Run of pipe,
  - Manual.
- **Level check:** Preliminary check of the trough sensors.
- **Dribble:** Use of the dribble control when dispensing at the feed valves.
  - No dribbe.
  - Dribble in pen.
  - Dribble in section.
- **Mixing tank:** Selection of the mixing tank for the feeding task. If the selection field is empty, the control system makes the selection.

- **Recirculate small circuit:** This parameter determines if and for how long feed is recirculated in the small circuit before distribution. Enter the value in percent of the maximum recirculation time of the small circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %.
- **Component:** Component used for watering.
- **Baby feeding type:** This parameter determines the type of suckling pig feeding: BabyAir or HydroAir.
- **Amount per animal:** Amount to be dispensed per animal. The total dispensed amount is the sum of the dispensed amount per animal, the dispensed amount per valve and the percentage of the daily feed demand.
- **Amount per valve:** Amount to be dispensed per valve. The total dispensed amount is the sum of the dispensed amount per animal, the dispensed amount per valve and the percentage of the daily feed demand.
- **Pause when changing feeding line:** If this box is checked, the control system makes a pause if there is a change from one feeding line to the other during dispensing. This pause time allows the operator to keep up with the feeding and change buildings, if necessary.

*Stub with jet settings*

- **State after watering:** Condition of the branch line with jet after watering.
- **Emptying target:** Emptying target of the branch line with jet if the branch line with jet is to be emptied.

### Feed phases



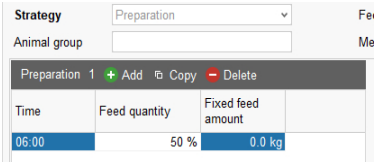

- **Feed phase:** Selection option of different feed phases.

  Only feed phases that have been selected in the general details for the feeding task are displayed.

- **Individual feed amount:** Feeding of individual amounts of the different feed phases.
- **Recirculation feed phase line:** Percentage of the maximum recirculation time of the feed phase line (see chapter 5.7.5 ”Feed phase line group”, page 153).

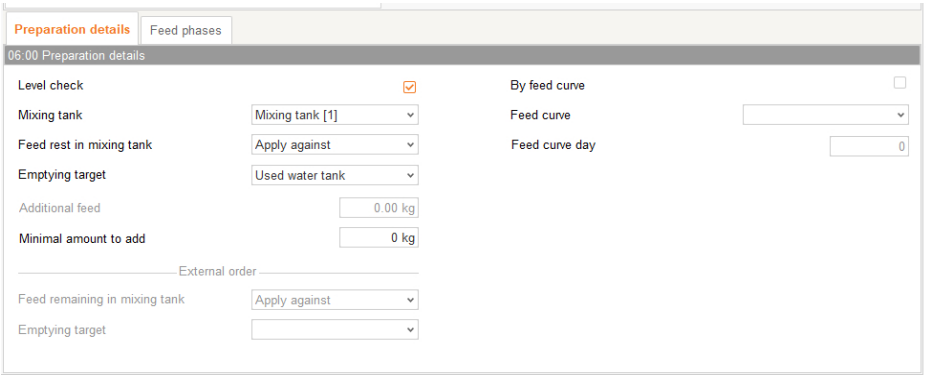
### 6.6.5 Preparation

The goal of this task is mixing a specific amount of feed in the mixing tank. However, this feed is not dispensed for the animals. The amount to be mixed results either from the animals' feed demand or is set as "Fixed feed amount". The feed composition is based on the selected animals. If the feed amount cannot be mixed, the task ends with an error message.




- **Time:** Start time for executing the strategy.
- **Feed quantity:** Percentage of the daily demand for the animal group or, in the case of percentages by feed phase, the percentages for the animals in the corresponding feed phase.
- **Fixed feed amount:** This amount of feed is prepared.

#### Preparation details




- **Level check:** Preliminary check of the trough sensors.
- **Mixing tank:** Selection of the mixing tank for the feeding task. If the selection field is empty, the control system makes the selection.
- **Feed rest in mixing tank:** Treatment of feed remaining in the mixing tank.
  - No consideration.

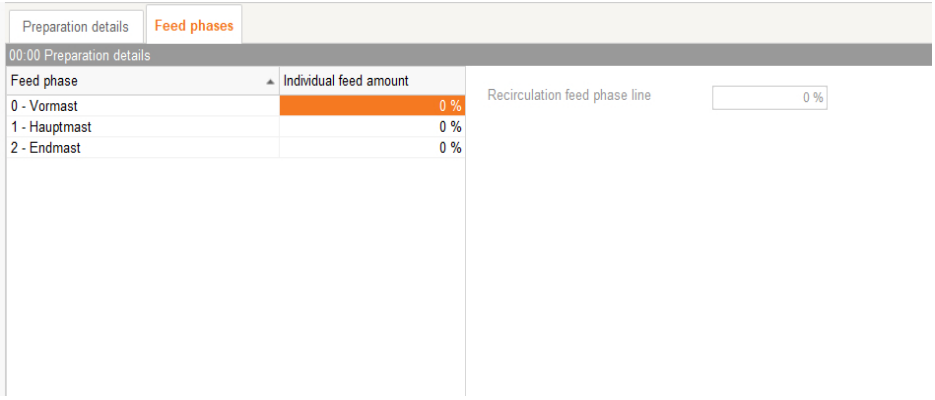
- Clear container.
- Apply against.

- **Emptying target:** Emptying target for feed remaining in the mixing tank.
- **Additional feed if needed:** Allows more feed to be prepared to compensate for the dry matter content of the feed, if required.
- **Minimum amount to add:** Minimum amount to add: Minimum preparation amount required to reach the specified "Fixed feed amount". Preparation is skipped if a smaller additional amount is required.
- **By feed curve:** Preparation according to the feed curve.
- **Feed curve:** Selection of the feed curve.
- **Feed curve day:** Selection of the feed curve day.

*External order*

- **Feed rest in mixing tank:** Treatment of feed remaining in the external mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the external mixing tank.

**Feed phases**



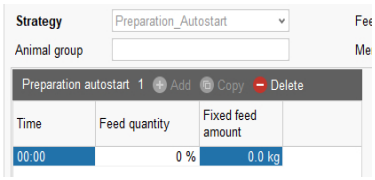

- **Feed phase:** Selection option of different feed phases.

  Only feed phases that have been selected in the general details for the feeding task are displayed.
- **Individual feed amount:** Feeding of individual amounts of the different feed phases.

- **Recirculation feed phase line:** Percentage of the maximum recirculation time of the feed phase line (see chapter 5.7.5 ”Feed phase line group”, page 153).

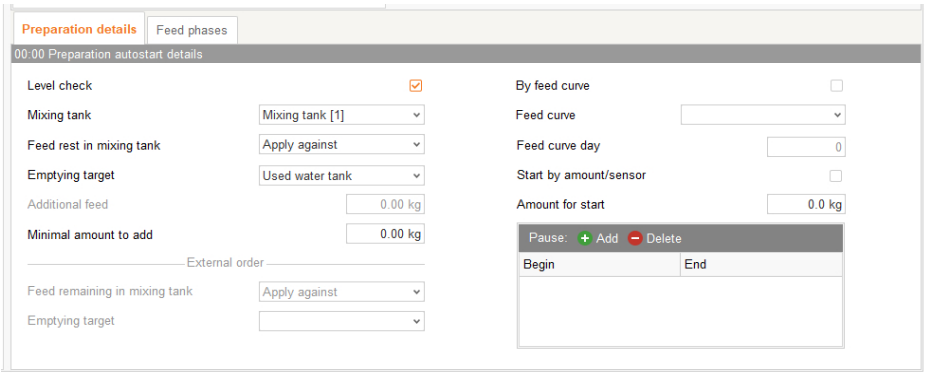
## 6.6.6 Preparation autostart

This task is identical to the "Preparation" task in 6.6.5, but its start is triggered by a sensor or by weighing.




- **Time:** Start time for executing the strategy.
- **Feed quantity:** Percentage of the daily demand for the animal group or, in the case of percentages by feed phase, the percentages for the animals in the corresponding feed phase.
- **Fixed feed amount:** This amount of feed is prepared.

### Preparation details




- **Level check:** This request determines the valves for which mixing is actually necessary.
- **Mixing tank:** Selection of the mixing tank for the feeding task. If the selection field is empty, the control system makes the selection.
- **Feed rest in mixing tank:** Treatment of feed remaining in the mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.

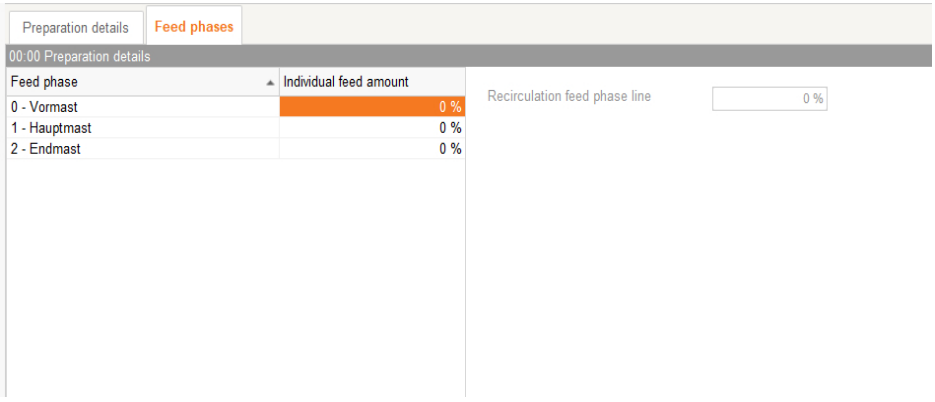
- **Emptying target:** Emptying target for feed remaining in the mixing tank.
- **Additional feed if needed:** Allows more feed to be prepared to compensate for the dry matter content of the feed, if required.
- **Minimum amount to add:** Minimum amount to add: Minimum preparation amount required to reach the specified "Fixed feed amount". Preparation is skipped if a smaller additional amount is required.
- **By feed curve:** Preparation according to the feed curve.
- **Feed curve:** Selection of the feed curve.
- **Feed curve day:** Selection of the feed curve day.
- **Start by amount/sensor:** Option to start the task by sensor or by weight.
- **Amount for start:** Weight for the start.

- **Begin pause time:** Start of the pause time for the task.
- **End pause time:** End of the pause time for the task.

*External order*

- **Feed rest in mixing tank:** Treatment of feed remaining in the external mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the external mixing tank.

### Feed phases



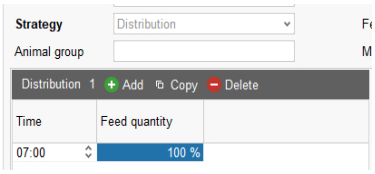

- **Feed phase:** Selection option of different feed phases.

  Only feed phases that have been selected in the general details for the feeding task are displayed.

- **Individual feed amount:** Feeding of individual amounts of the different feed phases.
- **Recirculation feed phase line:** Percentage of the maximum recirculation time of the feed phase line (see chapter 5.7.5 ”Feed phase line group”, page 153).

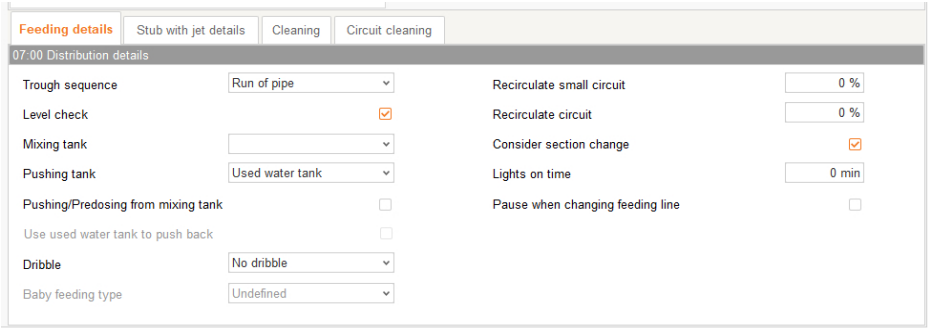
### 6.6.7 Distribution

This task distributes the mixing tank content to the selected valves.




- **Time:** Start time for executing the strategy.
- **Feed quantity:** Percentage of the daily demand for the animal group or, in the case of percentages by feed phase, the percentages for the animals in the corresponding feed phase.

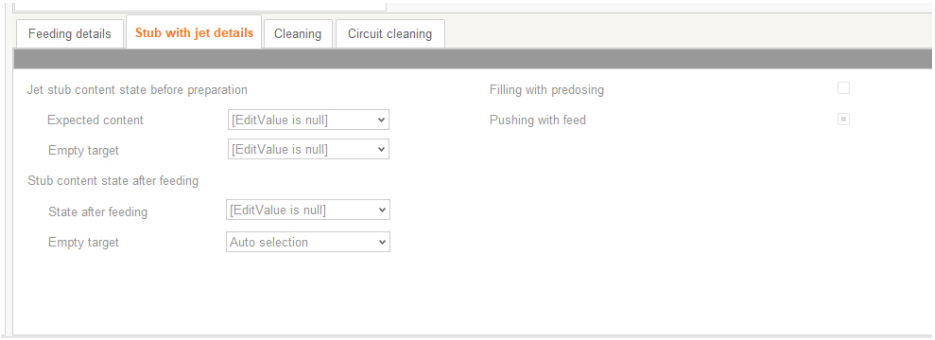
#### Feeding details




- **Trough sequence:** This parameter determines the distribution sequence for the valves of a feed line. The options for the distribution sequence are
  - Randomly,
  - Run of pipe,
  - Manual.
- **Level check:** Preliminary check of the trough sensors.
- **Mixing tank:** Selection of the mixing tank for the feeding task. If the selection field is empty, the control system makes the selection.
- **Pushing tank:** This parameter determines which tank is used for pushing. This tank can be either a weighed fresh water tank or a weighed used water tank.

- **Pushing/Predosing from mixing tank:** This parameter allows pushing and pre-dispensing from the mixing tank.
- **Use used water tank to push back:** This parameter is only relevant for systems with a push-back line into the circuit. This parameter determines whether or not it is permitted to push back from the used water tank.
- **Dribble:** Use of the dribble control when dispensing at the feed valves.
  - No dribbe.
  - Dribble in pen.
  - Dribble in section.
- **Baby feeding type:** This parameter determines the type of suckling pig feeding: BabyAir or HydroAir.
- **Recirculate small circuit:** This parameter determines if and for how long feed is recirculated in the small circuit before distribution. Enter the value in percent of the maximum recirculation time of the small circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %.
- **Recirculate circuit:** This parameter determines if and for how long feed is recirculated in the circuits used for feeding before distribution. Enter the value in percent of the maximum recirculation time of the circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %. Recirculation only occurs in circuits without residue-free feeding.
- **Consider section change:** If this box is checked, the control system checks whether there is enough feed in the mixing tank during dispensing when changing sections. If there is not enough feed in the mixing tank and not everything has been prepared yet, the control system behaves as follows:
  - With single-tank systems, post-mixing is started prematurely.
  - With Speed systems, the control system checks whether preparation in the second mixing tank has been completed. If not, dispensing is interrupted and the system waits for the end of preparation in the second mixing tank. This ensures quick changes from one mixing tank to the other.
- **Lights on time:** Switch-on duration for the lighting in the section, switch-on of the timers (monitored location).
- **Pause when changing feeding line:** If this box is checked, the control system makes a pause if there is a change from one feeding line to the other during dispensing. This pause time allows the operator to keep up with the feeding and change buildings, if necessary.

## Stub with jet details




*Jet stub content state before preparation*

- **Expected content:** This parameter determines the expected state of the branch lines (stubs) with jet before feeding: "Empty" or "Feed". The current state of the branch line with jet is taken over from the expected state of the previous feeding.
  - "Empty": Before preparation, the branch lines with jet to be filled are emptied according to the settings under "Empty target".
  - "Feed" and branch line is empty: The additional feed is dispensed into the jet after mixing.
  - "Feed" and branch line is filled with water: The branch line is emptied before mixing and then filled with feed.
- **Empty target:** This parameter defines where the branch line with jet is emptied. The contents of the branch line are either emptied into the mixing tank, into the used water tank or automatically divided between the mixing tank and used water tank.

*Stub content state after feeding*

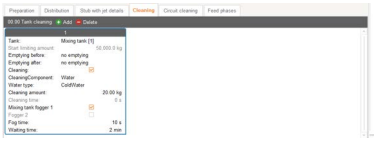
- **State after feeding:** This parameter determines the state of the branch lines (stubs) with jet after feeding. The following options are available:
  - "Empty": Branch lines with jet are emptied after feeding.
  - "Feed": Branch lines with jet remain filled with feed after feeding.
  - "Water": Branch lines with jet remain filled with used water after feeding (only for residue-free feeding).
- **Empty target:** The target is the final branch line with jet. This parameter defines how the branch line with jet is emptied. The contents of the branch line are either emptied into the mixing tank, into the used water tank or automatically divided between the mixing tank and used water tank.

- **Filling with predosing:** This parameter is only applicable for branch lines with jet and for systems with used water tank. If this box is checked, feed is pre-dispensed in the branch line with jet, between the final physical valve and the end of the branch line. This applies to the following two configurations:
  - The parameter "State after feeding" has been set to "Feed".
  - The parameter "State after feeding" has been set to "Empty" and feed is dispensed at other feed lines during feeding, i.e. the feed intended for the other feed lines can be used to push the feed in the branch line with jet.

  This parameter is not applicable (grayed out) for:
  - systems without used water tank.
  - systems with used water tank if the parameter "State after feeding" has been set to "Water".

- **Pushing with feed:** Feed may be used to push back for the next feed lines. At the end, this feed is pushed back into the mixing tank by emptying the branch line with jet. The generation of additional used water can thus be avoided.

### Cleaning / Circuit cleaning

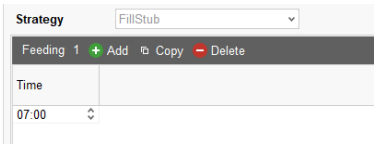


The parameters for tank cleaning and circuit cleaning can also be defined within this feeding task.

For the description of the cleaning tasks, see chapter 6.7.1 ”Tank cleaning”, page 222 and chapter 6.7.2, page 223.

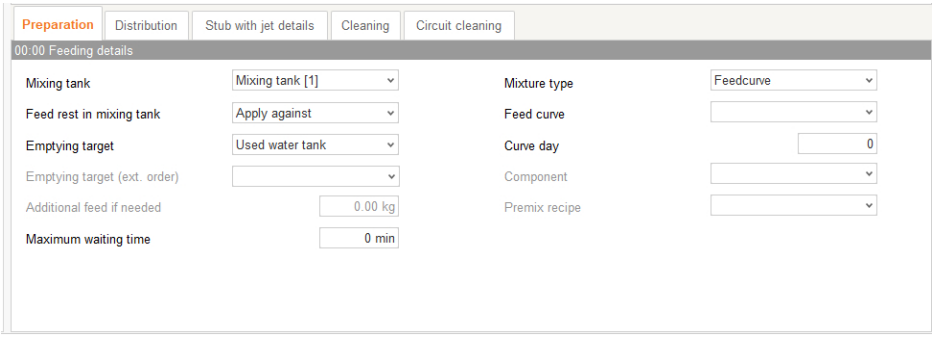
### 6.6.8 Fill stub

With this task, filled branch lines (stubs) can be filled with a component or recipe before the pigs are moved in. The old pipe contents are pumped into the drain or into the trough of the last defined feed valve of the branch line.




- **Time:** Start time for executing the strategy.

#### Preparation



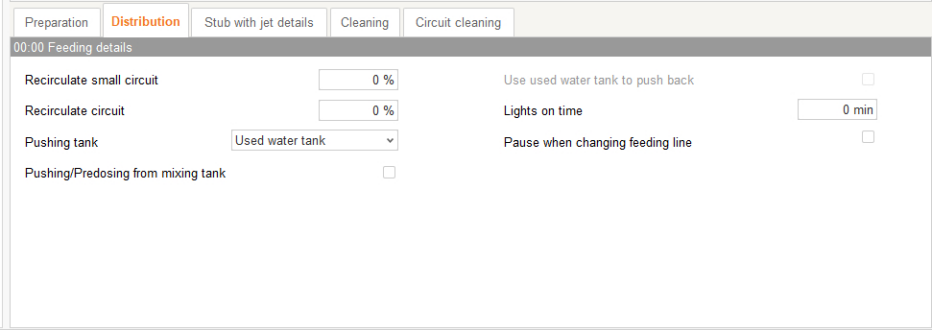

- **Mixing tank:** Selection of the mixing tank for the feeding task. If the selection field is empty, the control system makes the selection.
- **Feed rest in mixing tank:** Treatment of feed remaining in the mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the mixing tank.
- **Emptying target (external order):** Emptying target for feed remaining in the external mixing tank.
- **Additional feed if needed:** Allows more feed to be prepared to compensate for the dry matter content of the feed, if required.
- **Maximum waiting time:** Maximum waiting time in manual mode.
- **Mixture type:** Type of mixture for filling the branch line.
  - 1. Feed curve.
  - 2. Component.

- 3. Premix recipe.

- **Feed curve:** Selection of the feed curve.
- **Feed curve day:** Selection of the feed curve day.
- **Component:** Component used for watering.
- **Premix recipe:** Selection of the premix recipe.

  If no settings are configured for this parameter, the recipe entered for the pre-mixing tank is used, see chapter 5.5 ”Feed preparation”, page 140.

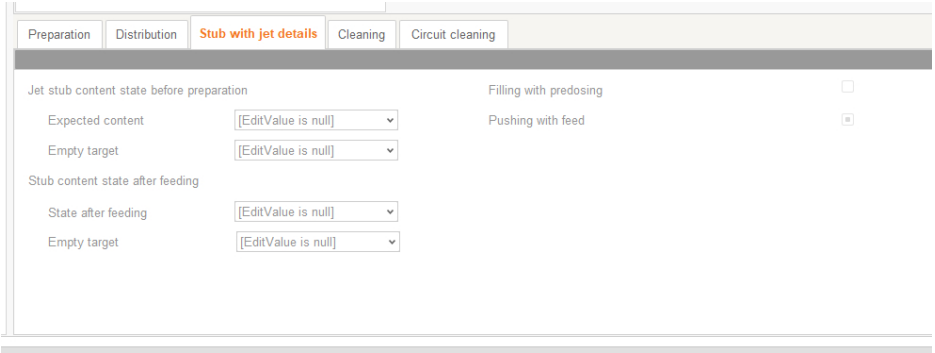
### Distribution




- **Recirculate small circuit:** This parameter determines if and for how long feed is recirculated in the small circuit before distribution. Enter the value in percent of the maximum recirculation time of the small circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %.
- **Recirculate circuit:** This parameter determines if and for how long feed is recirculated in the circuits used for feeding before distribution. Enter the value in percent of the maximum recirculation time of the circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %. Recirculation only occurs in circuits without residue-free feeding.
- **Pushing tank:** This parameter determines which tank is used for pushing. This tank can be either a weighed fresh water tank or a weighed used water tank.
- **Pushing/Predosing from mixing tank:** This parameter allows pushing and pre-dispensing from the mixing tank.
- **Use used water tank to push back:** This parameter is only relevant for systems with a push-back line into the circuit. This parameter determines whether or not it is permitted to push back from the used water tank.
- **Lights on time:** Switch-on duration for the lighting in the section, switch-on of the timers (monitored location).

- **Pause when changing feeding line:** If this box is checked, the control system makes a pause if there is a change from one feeding line to the other during dispensing. This pause time allows the operator to keep up with the feeding and change buildings, if necessary.

### Stub with jet details




*Jet stub content state before preparation*

- **Expected content:** This parameter determines the expected state of the branch lines (stubs) with jet before feeding: "Empty" or "Feed". The current state of the branch line with jet is taken over from the expected state of the previous feeding.
  - "Empty": Before preparation, the branch lines with jet to be filled are emptied according to the settings under "Empty target".
  - "Feed" and branch line is empty: The additional feed is dispensed into the jet after mixing.
  - "Feed" and branch line is filled with water: The branch line is emptied before mixing and then filled with feed.
- **Empty target:** This parameter defines where the branch line with jet is emptied. The contents of the branch line are either emptied into the mixing tank, into the used water tank or automatically divided between the mixing tank and used water tank.

*Stub content state after feeding*

- **State after feeding:** This parameter determines the state of the branch lines (stubs) with jet after feeding. The following options are available:
  - "Empty": Branch lines with jet are emptied after feeding.
  - "Feed": Branch lines with jet remain filled with feed after feeding.

- "Water": Branch lines with jet remain filled with used water after feeding (only for residue-free feeding).

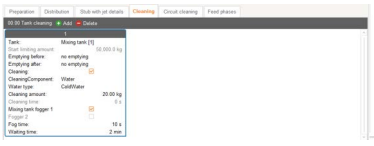
- **Empty target:** The target is the final branch line with jet. This parameter defines how the branch line with jet is emptied. The contents of the branch line are either emptied into the mixing tank, into the used water tank or automatically divided between the mixing tank and used water tank.

- **Filling with predosing:** This parameter is only applicable for branch lines with jet and for systems with used water tank. If this box is checked, feed is pre-dispensed in the branch line with jet, between the final physical valve and the end of the branch line. This applies to the following two configurations:
  - The parameter "State after feeding" has been set to "Feed".
  - The parameter "State after feeding" has been set to "Empty" and feed is dispensed at other feed lines during feeding, i.e. the feed intended for the other feed lines can be used to push the feed in the branch line with jet.

  This parameter is not applicable (grayed out) for:
  - systems without used water tank.
  - systems with used water tank if the parameter "State after feeding" has been set to "Water".

- **Pushing with feed:** Feed may be used to push back for the next feed lines. At the end, this feed is pushed back into the mixing tank by emptying the branch line with jet. The generation of additional used water can thus be avoided.

### Cleaning / Circuit cleaning

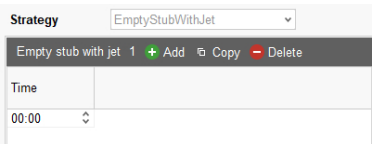


The parameters for tank cleaning and circuit cleaning can also be defined within this feeding task.

For the description of the cleaning tasks, see chapter 6.7.1 ”Tank cleaning”, page 222 and chapter 6.7.2, page 223.

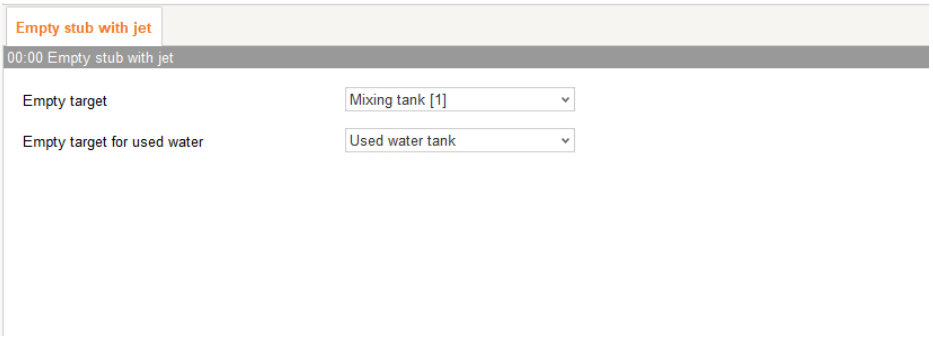
### 6.6.9 Empty stub with jet

With this task, a jet can be pushed back and the branch line (stub) contents behind the jet can be pushed into a selectable tank. Several jets can be edited in one task. For all selected jets, the same emptying targets for jet branch line and for used water are used.




- **Time:** Start time for executing the strategy.

#### Empty stub with jet

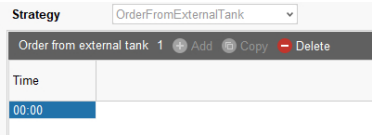



- **Empty target:** Emptying target for the jet branch line. Does not apply to the used water proportion of the contents if "Empty target for used water" is not empty.

- **Empty target for used water:** Emptying target for the used water proportions of the jet branch line contents. Otherwise, the used water proportions are also emptied into the emptying target.

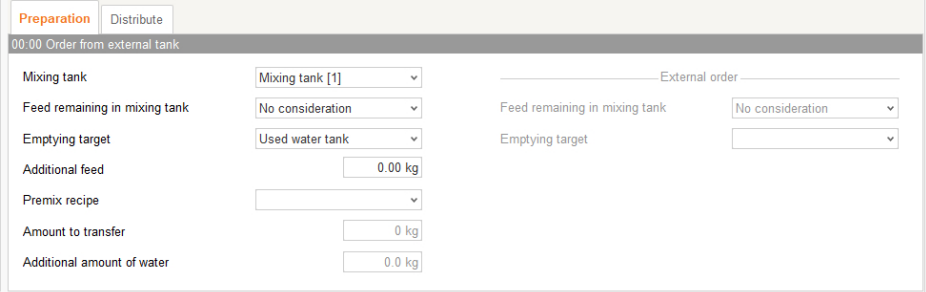
### 6.6.10 Order from external tank

Feeding task for filling a mixing tank of a HydroMixCallmatic system, a dispensing tank for ESF stations with liquid feed.




- **Time:** Start time for executing the strategy.

## Preparation



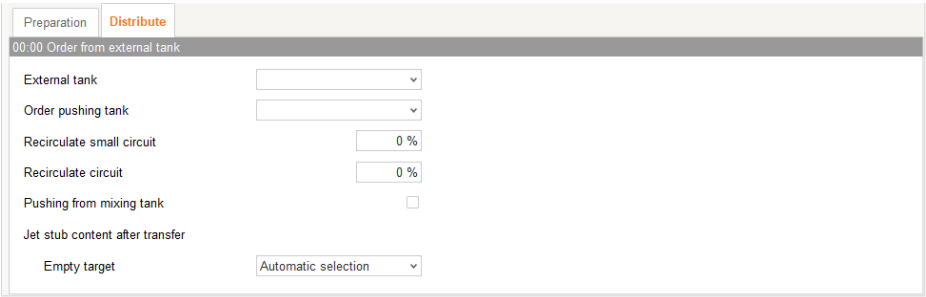

- **Mixing tank:** Selection of the mixing tank for the feeding task. If the selection field is empty, the control system makes the selection.
- **Feed rest in mixing tank:** Treatment of feed remaining in the mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the mixing tank.
- **Additional feed if needed:** Allows more feed to be prepared to compensate for the dry matter content of the feed, if required.
- **Premix recipe:** Selection of the premix recipe.

  If no settings are configured for this parameter, the recipe entered for the pre-mixing tank is used, see chapter 5.5 ”Feed preparation”, page 140.
- **Amount to transfer:** Read-only parameter. Corresponds to the amount of feed ordered externally.
- **Additional amount of water:** Read-only parameter. Corresponds to the amount of water that is already in the external tank and must be deducted from the mixture recipe.

*External order*

- **Feed rest in mixing tank:** Treatment of feed remaining in the external mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the external mixing tank.

### Distribute



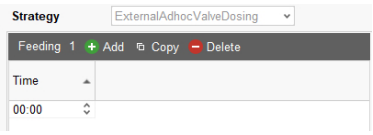

- **External tank**: Selection of the mixing tank for the external order.
- **Order pushing tank:** This parameter determines which tank is used for pushing.
- **Recirculate small circuit:** This parameter determines if and for how long feed is recirculated in the small circuit before distribution. Enter the value in percent of the maximum recirculation time of the small circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %.
- **Recirculate circuit:** This parameter determines if and for how long feed is recirculated in the circuits used for feeding before distribution. Enter the value in percent of the maximum recirculation time of the circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %. Recirculation only occurs in circuits without residue-free feeding.
- **Pushing/Predosing from mixing tank:** This parameter allows pushing and pre-dispensing from the mixing tank.

*Jet stub content after transfer*

- **Empty target:** Emptying target of the jet branch line after the feed transfer.

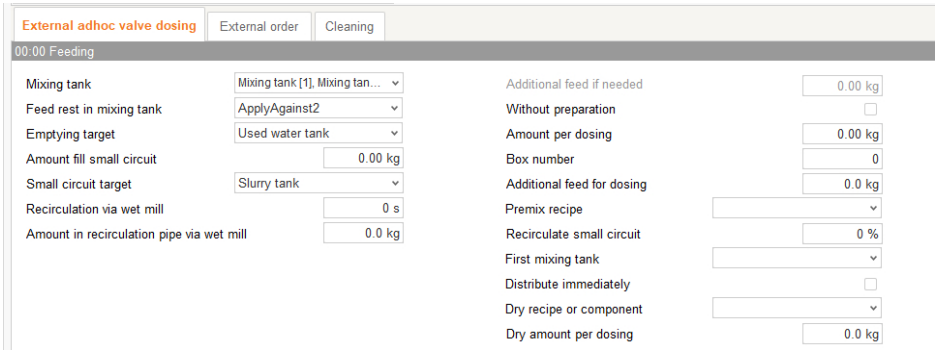
## 6.6.11 External ad hoc valve dosing

With this feeding task, a defined amount of liquid feed is prepared and dispensed in response to an external pulse. The amount to be dispensed per pulse is defined in the task.




- **Time:** Start time for executing the strategy.

## External ad hoc valve dosing



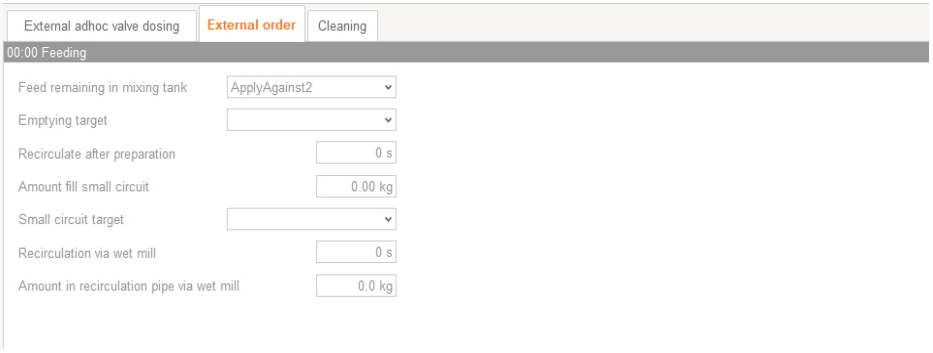

- **Mixing tank:** Selection of the mixing tank for the feeding task. If the selection field is empty, the control system makes the selection.
- **Feed rest in mixing tank:** Treatment of feed remaining in the mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the mixing tank.
- **Amount fill small circuit:** Amount required to empty the contents of the small circuit into the emptying target for the small circuit. This amount is prepared additionally for the first mixture of the day to replace the contents of the small circuit with feed.
- **Small circuit target:** Emptying target for the contents of the small circuit.
- **Recirculation via wet mill:** Time for recirculation via the wet mill after preparation.
- **Amount in recirculation pipe via wet mill:** Amount of water in the recirculation line via the wet mill in the first batch of a feeding process. This amount is used to adjust the dry matter content of the first batch.
- **Additional feed if needed:** Allows more feed to be prepared to compensate for the dry matter content of the feed, if required.
- **Without preparation:** Execution of the feeding task without feed preparation.
- **Amount per dosing:** Amount to be fed per dosing.
- **Box number:** Number of boxes to be filled.
- **Additional feed for dosing:** Amount that is additionally prepared for each mixture to compensate for dispensing inaccuracies.

- **Premix recipe:** Selection of the premix recipe.

  If no settings are configured for this parameter, the recipe entered for the pre-mixing tank is used, see chapter 5.5 ”Feed preparation”, page 140.

- **Recirculate small circuit:** This parameter determines if and for how long feed is recirculated in the small circuit before distribution. Enter the value in percent of the maximum recirculation time of the small circuit. Feed is recirculated once before distribution. Feed is not recirculated if the value is 0 %.
- **First mixing tank:** Mixing tank with which distribution is to begin.
- **Distribute immediately:** Distribution is to begin without prior preparation. Relevant in the event that feed still remains in this tank that is to be fed first.
- **Dry recipe or component:** Dry recipe or component for use in dry feeding stations.
- **Dry amount per dosing:** Dispensed dry amount in each box.

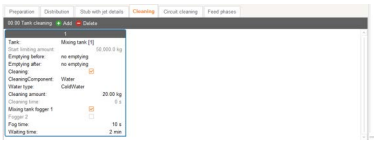
### External order




- **Feed rest in mixing tank:** Treatment of feed remaining in the mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.
- **Emptying target:** Emptying target for feed remaining in the mixing tank.
- **Recirculate after preparation:** Additional recirculation time after preparation for own preparation and for external orders.
- **Amount fill small circuit:** Amount required to empty the contents of the small circuit into the emptying target for the small circuit. This amount is prepared additionally for the first mixture of the day to replace the contents of the small circuit with feed.
- **Small circuit target:** Emptying target for the contents of the small circuit.

- **Recirculation via wet mill:** Time for recirculation via the wet mill after preparation.
- **Amount in recirculation pipe via wet mill:** Amount of water in the recirculation line via the wet mill in the first batch of a feeding process. This amount is used to adjust the dry matter content of the first batch.

### Cleaning



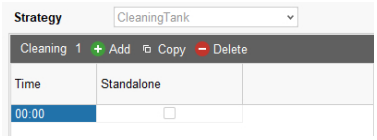
The parameters for tank cleaning can also be defined within this feeding task.

For the description of the cleaning task, see chapter 6.7.1 ”Tank cleaning”, page 222.

## 6.7 Cleaning strategies

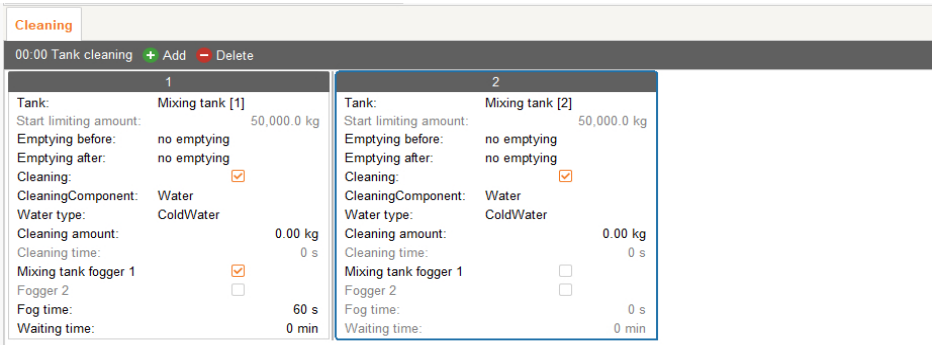
### 6.7.1 Tank cleaning

The goal of this task is the cleaning of the tanks. Cleaning is configured in individual blocks. Each block stands for exactly one tank that must be cleaned. The tanks are cleaned continuously during the entered time. If no recirculation has been configured, the tanks are cleaned at the same time, if possible.




- **Time:** Start time for executing the strategy.
- **Standalone:** The action must be carried out independently.

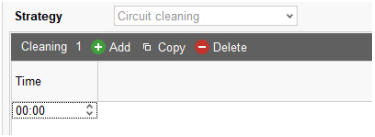
### Cleaning



- **Tank:** Selection of the tank to be cleaned.
- **Start limiting amount:** This parameter only applies to pre-mixing tanks. If the tank contents exceed the specified amount, the tank is not cleaned immediately. Instead, the tank is cleaned as soon as amount in the pre-mixing tank has fallen below this amount.
- **Emptying before:** Emptying target of the tank before tank cleaning.
- **Emptying after:** Emptying target of the tank after tank cleaning.
- **Cleaning**: Refers to the option of cleaning with a cleaning component.
- **Cleaning component:** Selection of the cleaning component.
- **Water type:** Cold water or warm water (if applicable).
- **Cleaning amount:** The cleaning amount of water should be greater than "Min. cleaning amount", see chapter ”Feed preparation”, page 140.
- **Cleaning time**: This parameter is only relevant if the tank to be cleaned is not weighed. In this case, the tank is cleaned with the cleaning component based on time.
- **Mixing tank fogger 1:** Fogger 1 is used for fogging in the tank.
- **Fogger 2:** Fogger 2 is used for fogging in the tank.
- **Fog time:** Duration of the fogging process. The foggers are started with a delay if fogging is carried out in another tank beforehand.
- **Waiting time:** Waiting time after fogging. The tank to be cleaned is always rinsed with water ("Min. cleaning amount") after the waiting time after fogging has elapsed.

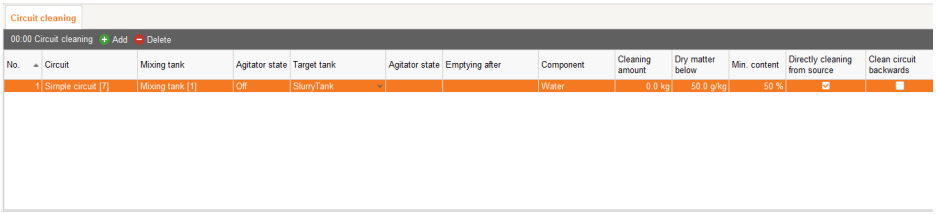
### 6.7.2 Circuit cleaning

This task defines circuit cleaning.




- **Time:** Start time for executing the strategy.

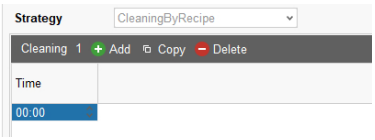
## Circuit cleaning




- **No.** (only an information): Number of the circuit to be cleaned.
- **Circuit:** Name of the circuit.
- **Mixing tank:** Mixing tank from which cleaning is to take place if the cleaning component cannot be pumped directly into the target tank via the circuit. In this case, the cleaning component is first moved to the mixing tank and then pumped via the circuit.
- **Agitator state:** Switching of the mixing tank's agitator for cleaning.
- **Target tank:** Selection of the target tank for circuit cleaning.
- **Agitator state:** Switching of the target tank's agitator for cleaning.
- **Emptying after:** Emptying of the tank after cleaning the circuit.
- **Component:** Component used for cleaning.
- **Cleaning amount:** Cleaning amount for circuit cleaning.
- **Dry matter below:** This is the dry matter amount that may not be exceeded after filling the mixing tank if the mixing tank is used for cleaning. If the value is exceeded, the system does not move any cleaning components into the mixing tank, i.e. the circuit is not cleaned. A warning indicating that the dry matter percentage in the mixing tank is too high for circuit cleaning is generated instead.
- **Min. content:** This is the percentage of the cleaning component that should be in the mixing tank after filling if the mixing tank is used for cleaning. If this value is not reached, the system does not move any cleaning components into the mixing tank, i.e. the circuit is not cleaned. A warning indicating that the minimum percentage of cleaning component could not be reached is generated instead.
- **Directly cleaning from source:** The cleaning component is not moved into the mixing tank first, but is pumped directly from the container with the cleaning component via the circuit. The prerequisite for this is that a corresponding feed move is possible.
- **Clean circuit backwards:** The cleaning component is pumped through the circuit in reverse order, starting with the return valve.

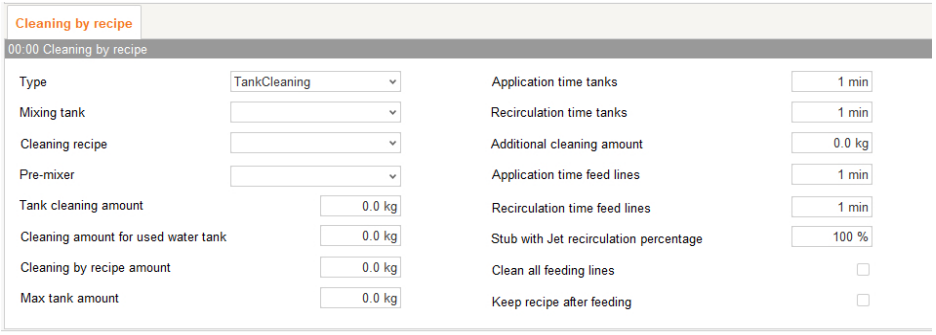
### 6.7.3 Cleaning by recipe

For this cleaning task, a cleaning solution is prepared according to a recipe that consists of water + acid or water + lye in a specified concentration. This cleaning solution is then used to clean the tanks and/or pipes of the feeding system. Cleaning solutions with acid can remain in the tanks, if required, while cleaning solutions with lye must be pumped into the drain.




- **Time:** Start time for executing the strategy.

#### Cleaning by recipe

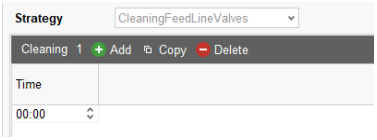



- **Type:** Type of cleaning according to recipe
  - 1. Tank cleaning
  - 2. Feed line cleaning
  - 3. Tank and feed line cleaning
- **Mixing tank:** Mixing tank for preparation of the cleaning mixture.
- **Cleaning recipe:** Selection of the cleaning recipe.
- **Pre-mixer**: Selection of the pre-mixing tanks to be cleaned.
- **Tank cleaning amount:** Water amount for preliminary and final tank cleaning of the mixing tanks and pre-mixing tanks.
- **Cleaning amount for used water tank:** Water volume for preliminary and final tank cleaning of the used water tank.
- **Cleaning by recipe amount:** Amount of the cleaning recipe for tank cleaning.
- **Max. tank amount:** Maximum amount in the tank to start cleaning the individual tank.

- **Application time tanks:** Application time for tank cleaning.
- **Recirculation time tanks:** Recirculation time for tank cleaning.
- **Additional cleaning amount:** Additional cleaning amount for feed line cleaning.
- **Application time feed lines:** Application time for feed line cleaning.
- **Recirculation time feed lines:** Recirculation time for feed line cleaning.
- **Stub with jet recirculation percentage:** Percentage emptying and filling of the jet branch line as recirculation.
- **Clean all feeding lines:** Selection for cleaning of all feed lines.
- **Keep recipe after feeding:** Leaves the cleaning solution in the tanks and feed lines after the cleaning program. Only possible with acid.

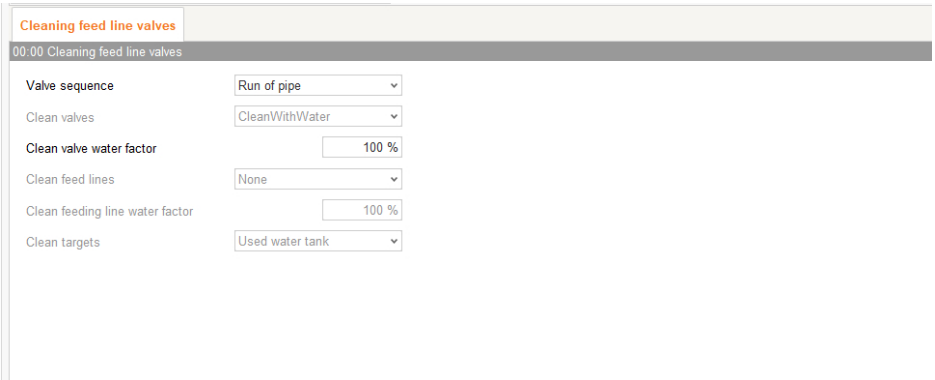
### 6.7.4 Feed line valve cleaning

Cleaning the feed outlets with water, compressed air or additives in a piglet feeding system.




- **Time:** Start time for executing the strategy.

#### Clean feed line valves




- **Valve sequence:** Cleaning sequence of the valves
  - 1. Randomly.
  - 2. Run of pipe.
  - 3. Manual.
- **Clean valves:** Selection of the cleaning type for valve cleaning.

- 1. Only with compressed air.
- 2. With water and compressed air.
- 3. With cleaning additive and compressed air.

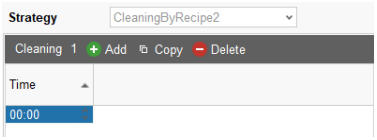
  The valves to be cleaned are determined based on the selected location.

- **Clean valve water factor:** Factor for the cleaning amount per valve for water or additive as a percentage. The total cleaning amount based on time is defined in the valve settings.
- **Clean feed lines:** Selection of the cleaning type for feed line cleaning.
  - 1. Only with compressed air.
  - 2. With water and compressed air.
  - 3. With cleaning additive and compressed air.

    The feed lines to be cleaned are determined based on the selected location.
- **Clean feeding line water factor:** Factor for the cleaning amount of the feed lines as a percentage. The total cleaning amount based on time is defined in the feed line settings.
- **Clean targets:** Target tank for feed line cleaning.

### 6.7.5 CleaningByRecipe2

This task is used for cleaning tanks with a recipe that contains several components. The task is based on the "Cleaning by recipe" task, with adjustments to the cleaning sequence and the option of cleaning silos and ordering the cleaning recipe from a different application.



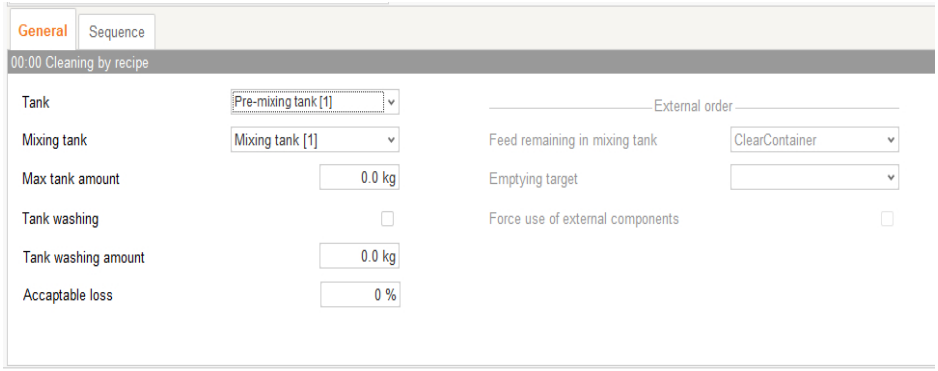

Comparison with "Cleaning by recipe":

- Additional functions:
  - cleaning only of the selected tanks
  - cleaning of silos
  - ordering of the cleaning recipe from a different application
  - optional washing of the tanks before cleaning
  - sequence with several recipes

  - adjustable number of recirculation rounds
- Non-existent functions:
  - cleaning of the supply line
  - tank cleaning after cleaning with recipe
- Restrictions:
  - Silos without a scale or minimum sensor must be emptied and tared before cleaning. Otherwise, cleaning of this silo is skipped.
  - If an external order is used, the spreader disc cannot be used to receive the order. An additional valve must be added.

- **Time:** Start time for executing the strategy.

**General**



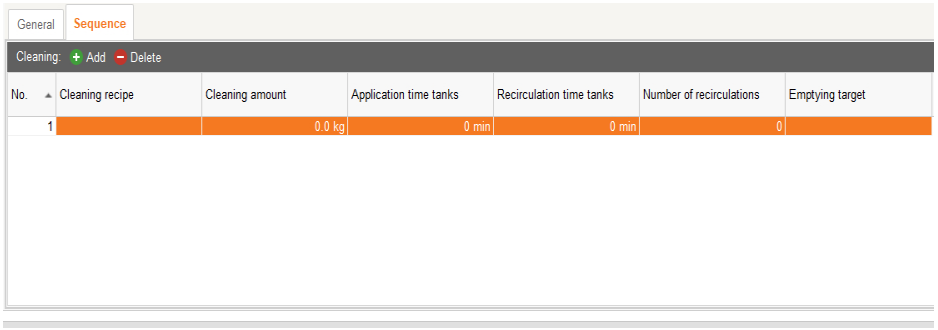

- **Tank:** Tanks to be cleaned.
- **Mixing tank:** Mixing tank for preparation of the cleaning recipe.
- **Max. tank amount:** Maximum amount in the tank to start cleaning the individual tank.
- **Tank washing:** Carries out tank cleaning.
- **Tank washing amount:** Amount used for tank cleaning.
- **Acceptable loss:** Maximum permitted loss during pumping and recirculation.

*External order*

- **Feed rest in mixing tank:** Treatment of feed remaining in the external mixing tank.
  - No consideration.
  - Clear container.
  - Apply against.

- **Emptying target:** Emptying target for feed remaining in the external mixing tank.
- **Force use of external components:** Forces the use of external components for an external order. Own components are not used.

### Sequence

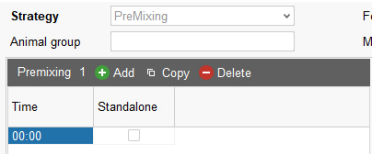



- **No.** (only an information): Number of the tank to be cleaned.
- **Cleaning recipe:** Selection of the cleaning recipe.
- **Cleaning amount:** Amount used for the cleaning recipe.
- **Application time tanks:** Application time in tanks with cleaning recipe. Time between each recirculation.
- **Recirculation time tanks:** Recirculation time in tanks with cleaning recipe.
- **Number of recirculations:** Number of recirculation rounds.
- **Emptying target:** Emptying of the external tank after return transfer of the cleaning recipe.

## 6.8 Pre-mixing strategies

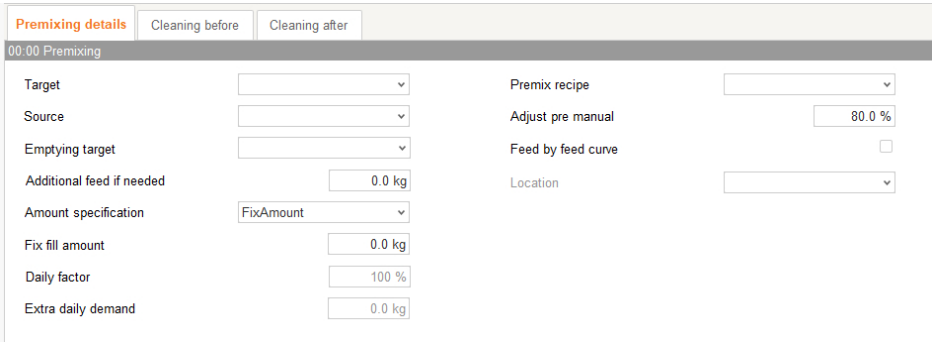
### 6.8.1 Pre-mixing

This task defines fixed times for filling of a pre-mixer. The task "Pre-mixing" is carried out at the same time as other tasks, including other tasks with the "Pre-mixing" strategy.




- **Time:** Start time for executing the strategy.
- **Standalone:** The action must be carried out independently.

## Pre-mixing details



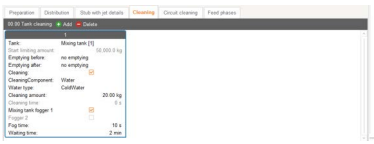

- **Target:** Container in which the pre-mixture is to be stored. Storage tank for liquids.
- **Source:** Container in which the pre-mixture is to be prepared.
- **Emptying target:** Emptying target for feed remaining in the mixing tank.
- **Additional feed if needed:** Allows more feed to be prepared to compensate for the dry matter content of the feed, if required.
- **Amount specification:**
  - 1. Fixed amount: The "Fixed fill amount" is dispensed into the target.
  - 2. Full: The target is filled fully.
  - 3. Remaining daily demand: Calculated using the pre-mix recipe for the animals at the selected locations and valves. The "Daily factor" is only applied to the amount of this pre-mixture that has not yet been dispensed. The resulting amount is dispensed into the target.
  - 4. Total daily demand: Calculated using the pre-mix recipe for the animals at the selected locations and valves. The "Daily factor" is applied to the total amount of this pre-mixture required on this day, regardless of whether any of this amount has already been dispensed. The resulting amount is dispensed into the target.
- **Fixed fill amount:** Defines the target amount for the "Fixed amount" selection.
- **Daily factor:** Percentage of the remaining required amount of the pre-mixture (if "Remaining daily demand" is selected under "Amount specification") or of the total amount required on this day (if "Total daily demand" is selected under "Amount specification") that is to be prepared.
- **Extra daily demand:** Additional amount when selecting "Remaining daily demand" or "Total daily demand".

- **Premix recipe:** Selection of the premix recipe.

  If no settings are configured for this parameter, the recipe entered for the pre-mixing tank is used, see chapter 5.5 ”Feed preparation”, page 140.

- **Adjust (replacement component) pre manual (components):** Percentage of the replacement component that is dispensed into the mixing tank before the manual components.
- **Feed by feed curve:** The mixture and the amount are not determined by the pre-mix recipe, but by the feed curve of the animals moved in at "Location". This is therefore the mixture that is to be created to feed all animals at these locations if feed is prepared directly in the mixing tank.
- **Location:** "Feed by feed curve" is dispensed according to the feed curve of the animals moved in here.
- **Cleaning before:** The target tank and source tank can be cleaned before the mixtures are created.
- **Cleaning after:** The source tanks can be cleaned after pre-mixing.

### Cleaning

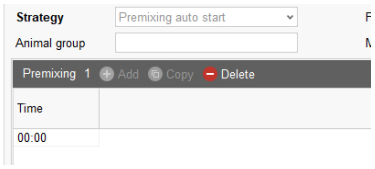


The parameters for tank cleaning can also be defined within this feeding task.

For the description of the cleaning task, see chapter 6.7.1 ”Tank cleaning”, page 222.

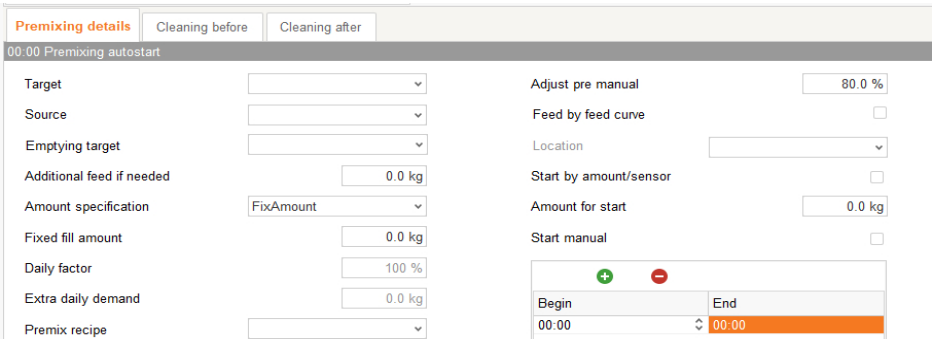
### 6.8.2 Pre-mixing auto start

This strategy can only be executed once a day for each pre-mixer. The strategy has the same parameters as the "Pre-mixing" strategy. Additionally, this strategy defines whether the pre-mixer is filled when its weight falls below a certain value, or whether the pre-mixer is filled after pressing a start button.




- **Time:** Start time for executing the strategy.

#### Pre-mixing details




- **Target:** Container in which the pre-mixture is to be stored. Storage tank for liquids.
- **Source:** Container in which the pre-mixture is to be prepared.
- **Emptying target:** Emptying target for feed remaining in the mixing tank.
- **Additional feed if needed:** Allows more feed to be prepared to compensate for the dry matter content of the feed, if required.
- **Amount specification:**
  - 1. Fixed amount: The "Fixed fill amount" is dispensed into the target.
  - 2. Full: The target is filled fully.
  - 3. Remaining daily demand: Calculated using the pre-mix recipe for the animals at the selected locations and valves. The "Daily factor" is only applied to the amount of this pre-mixture that has not yet been dispensed. The resulting amount is dispensed into the target.

  - 4. Total daily demand: Calculated using the pre-mix recipe for the animals at the selected locations and valves. The "Daily factor" is applied to the total amount of this pre-mixture required on this day, regardless of whether any of this amount has already been dispensed. The resulting amount is dispensed into the target.
- **Fixed fill amount:** Defines the target amount for the "Fixed amount" selection.
- **Daily factor:** Percentage of the remaining required amount of the pre-mixture (if "Remaining daily demand" is selected under "Amount specification") or of the total amount required on this day (if "Total daily demand" is selected under "Amount specification") that is to be prepared.
- **Extra daily demand:** Additional amount when selecting "Remaining daily demand" or "Total daily demand".
- **Premix recipe:** Selection of the premix recipe.

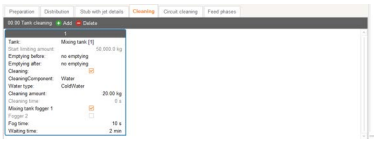
  If no settings are configured for this parameter, the recipe entered for the pre-mixing tank is used, see chapter 5.5 ”Feed preparation”, page 140.
- **Adjust (replacement component) pre manual (components):** Percentage of the replacement component that is dispensed into the mixing tank before the manual components.
- **Feed by feed curve:** The mixture and the amount are not determined by the pre-mix recipe, but by the feed curve of the animals moved in at "Location". This is therefore the mixture that is to be created to feed all animals at these locations if feed is prepared directly in the mixing tank.
- **Location:** "Feed by feed curve" is dispensed according to the feed curve of the animals moved in here.
- **Start by amount/sensor:** If this box is checked, the pre-mixer is automatically refilled when the weight falls below the "Amount for start" or if the "Start new mixture" sensor reports empty at the target. If the box is not checked, this process can only be started manually using a start button at the pre-mixer (hardware), see the parameter "Start manual".
- **Amount for start:** Defines the weight below which the pre-mixing tank is refilled, provided the box "Start by amount/sensor" is checked.
- **Start manual:** Defines whether the pre-mixer is filled by pressing the start button at the pre-mixer. The input "Start button" of the pre-mixer must be connected to the IO card in the IO Manager.

- **Pause:** No pre-mixtures are started automatically during a pause.

- Begin: Start time of the automatic preparation pause.
- End: End of the automatic preparation pause.

- **Cleaning before:** The target tank and source tank can be cleaned before the mixtures are created.
- **Cleaning after:** The source tanks can be cleaned after pre-mixing.

### Cleaning

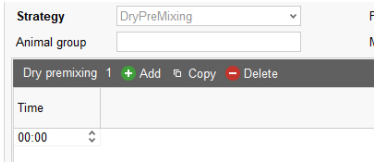


The parameters for tank cleaning can also be defined within this feeding task.

For the description of the cleaning task, see chapter 6.7.1 ”Tank cleaning”, page 222.

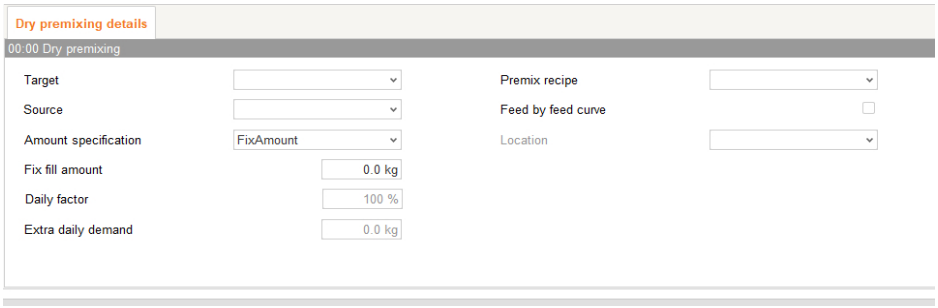
## 6.8.3 Dry pre-mixing

Feeding task for creating a dry pre-mixture in a dry pre-mixing tank with start time specification.




- **Time:** Start time for executing the strategy.

### Dry pre-mixing details



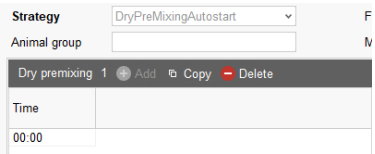

- **Target:** Container in which the pre-mixture is to be stored. For example, silos for dry components.
- **Source:** Container in which the pre-mixture is to be prepared.

- **Amount specification:**
  - 1. Fixed amount: The "Fixed fill amount" is dispensed into the target.
  - 2. Full: The target is filled fully.
  - 3. Remaining daily demand: Calculated using the pre-mix recipe for the animals at the selected locations and valves. The "Daily factor" is only applied to the amount of this pre-mixture that has not yet been dispensed. The resulting amount is dispensed into the target.
  - 4. Total daily demand: Calculated using the pre-mix recipe for the animals at the selected locations and valves. The "Daily factor" is applied to the total amount of this pre-mixture required on this day, regardless of whether any of this amount has already been dispensed. The resulting amount is dispensed into the target.
- **Fixed fill amount:** Defines the target amount for the "Fixed amount" selection.
- **Daily factor:** Percentage of the remaining required amount of the pre-mixture (if "Remaining daily demand" is selected under "Amount specification") or of the total amount required on this day (if "Total daily demand" is selected under "Amount specification") that is to be prepared.
- **Extra daily demand:** Additional amount when selecting "Remaining daily demand" or "Total daily demand".
- **Premix recipe:** Selection of the premix recipe.

  If no settings are configured for this parameter, the recipe entered for the pre-mixing tank is used, see chapter 5.5 ”Feed preparation”, page 140.
- **Feed by feed curve:** The mixture and the amount are not determined by the pre-mix recipe, but by the feed curve of the animals moved in at "Location". This is therefore the mixture that is to be created to feed all animals at these locations if feed is prepared directly in the mixing tank.
- **Location:** "Feed by feed curve" is dispensed according to the feed curve of the animals moved in here.

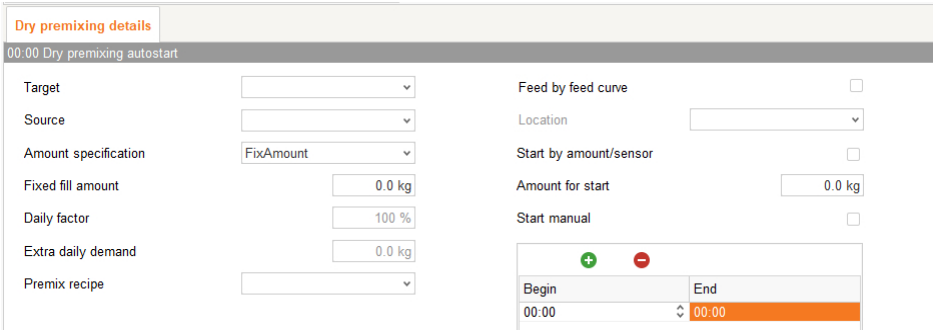
### 6.8.4 Dry pre-mixing autostart

Feeding task for creating a dry pre-mixture in a dry pre-mixing tank with start by sensor or weighing.



- **Time:** Start time for executing the strategy.

### Dry pre-mixing details




- **Target:** Container in which the pre-mixture is to be stored. For example, silos for dry components.
- **Source:** Container in which the pre-mixture is to be prepared.
- **Amount specification:**
  - 1. Fixed amount: The "Fixed fill amount" is dispensed into the target.
  - 2. Full: The target is filled fully.
  - 3. Remaining daily demand: Calculated using the pre-mix recipe for the animals at the selected locations and valves. The "Daily factor" is only applied to the amount of this pre-mixture that has not yet been dispensed. The resulting amount is dispensed into the target.
  - 4. Total daily demand: Calculated using the pre-mix recipe for the animals at the selected locations and valves. The "Daily factor" is applied to the total amount of this pre-mixture required on this day, regardless of whether any of this amount has already been dispensed. The resulting amount is dispensed into the target.
- **Fixed fill amount:** Defines the target amount for the "Fixed amount" selection.
- **Daily factor:** Percentage of the remaining required amount of the pre-mixture (if "Remaining daily demand" is selected under "Amount specification") or of the total amount required on this day (if "Total daily demand" is selected under "Amount specification") that is to be prepared.
- **Extra daily demand:** Additional amount when selecting "Remaining daily demand" or "Total daily demand".

- **Premix recipe:** Selection of the premix recipe.

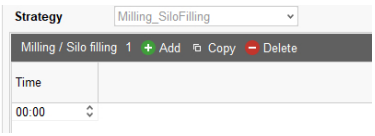
  If no settings are configured for this parameter, the recipe entered for the pre-mixing tank is used, see chapter 5.5 ”Feed preparation”, page 140.

- **Feed by feed curve:** The mixture and the amount are not determined by the pre-mix recipe, but by the feed curve of the animals moved in at "Location". This is therefore the mixture that is to be created to feed all animals at these locations if feed is prepared directly in the mixing tank.
- **Location:** "Feed by feed curve" is dispensed according to the feed curve of the animals moved in here.
- **Start by amount/sensor:** If this box is checked, the pre-mixer is automatically refilled when the weight falls below the "Amount for start" or if the "Start new mixture" sensor reports empty at the target. If the box is not checked, this process can only be started manually using a start button at the pre-mixer (hardware), see the parameter "Start manual".
- **Amount for start:** Defines the weight below which the pre-mixing tank is refilled, provided the box "Start by amount/sensor" is checked.
- **Start manual:** Defines whether the pre-mixer is filled by pressing the start button at the pre-mixer. The input "Start button" of the pre-mixer must be connected to the IO card in the IO Manager.

- **Pause:** No pre-mixtures are started automatically during a pause.
  - Begin: Start time of the automatic preparation pause.
  - End: End of the automatic preparation pause.

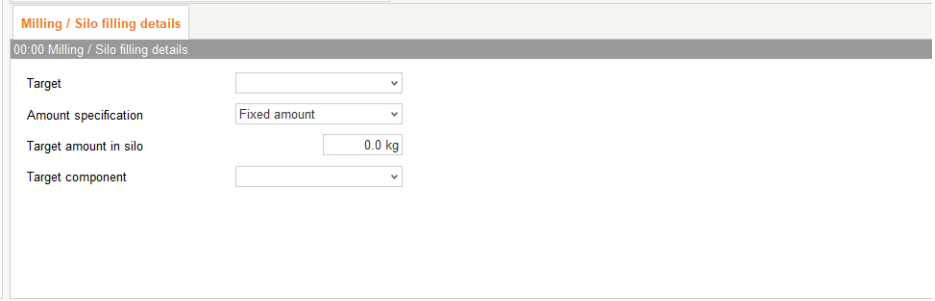
### 6.8.5 Milling: silo filling

Filling of silos with dry components (ground or not ground) after a pre-set start time.




- **Time:** Start time for executing the strategy.

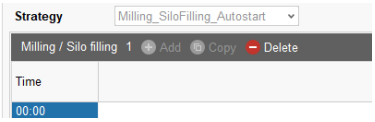
### Milling / Silo filling details




- **Target:** Silo to be filled.
- **Amount specification:**
  - 1. Fixed amount: This amount is filled into the silo.
  - 2. Full: The silo is filled fully.
- **Target amount in silo:** Amount when selecting "Fixed amount".
- **Target component:** Component to be filled into the silo.

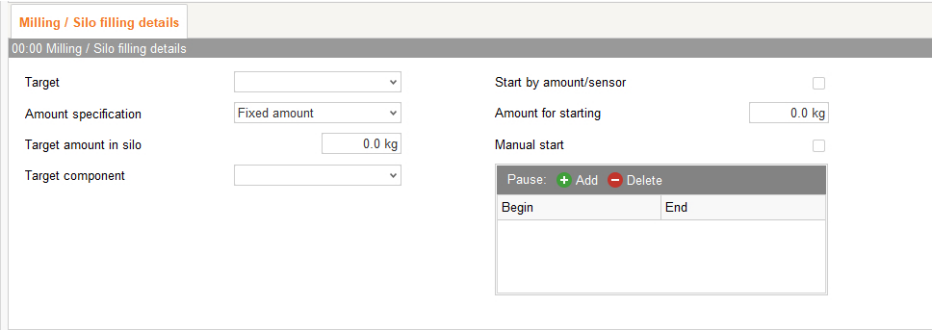
## 6.8.6 Milling: silo filling autostart

Filling of silos with dry components (ground or not ground) with automatic start by sensor or weighing.




- **Time:** Start time for executing the strategy.

### Milling / Silo filling details




- **Target:** Silo to be filled.
- **Amount specification:**

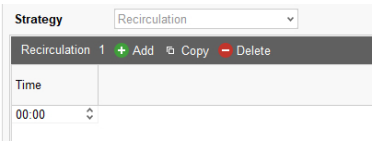
  - 1. Fixed amount:  This amount is filled into the silo.
  - 2. Full: The silo is filled fully.
- **Target amount in silo:** Amount when selecting "Fixed amount".
- **Target component:** Component to be filled into the silo.
- **Start by amount/sensor:** If this box is checked, the pre-mixer is automatically refilled when the weight falls below the "Amount for start" or if the "Start new mixture" sensor reports empty at the target. If the box is not checked, this process can only be started manually using a start button at the pre-mixer (hardware), see the parameter "Start manual".
- **Amount for start:** Defines the weight below which the pre-mixing tank is refilled, provided the box "Start by amount/sensor" is checked.
- **Start manual:** Defines whether the pre-mixer is filled by pressing the start button at the pre-mixer. The input "Start button" of the pre-mixer must be connected to the IO card in the IO Manager.

- **Pause:**
  - Begin: Start time of the pause.
  - End: End of the pause.

## 6.9 Strategies for pumping and recirculation

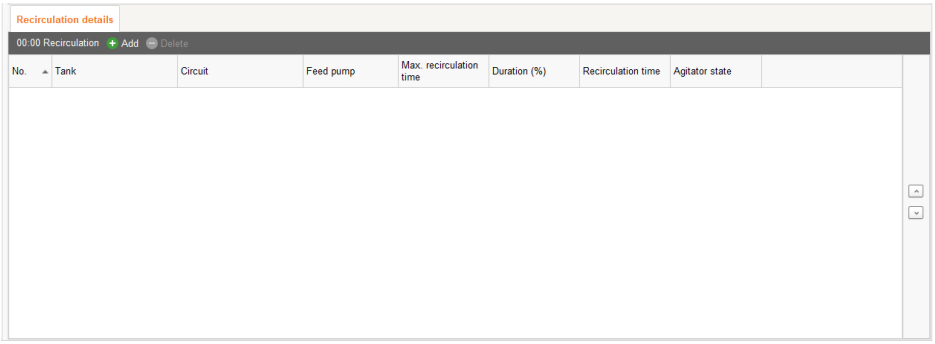
### 6.9.1 Recirculation

This task defines recirculation of the used water and mixing tank's contents.




- **Time:** Start time for executing the strategy.

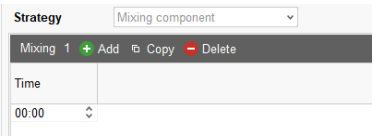
#### Recirculation details




- **No.** (only an information): Consecutive number
- **Tank:** Selection of the tank for recirculation.
- **Circuit:** Circuit used for recirculation.
- **Feed pump:** Selection of the feed pump if a centrifugal pump and an eccentric pump are installed.
- **Max. recirculation time** (only an information): Maximum recirculation time.
- **Duration (%):** Percentage of the maximum recirculation time with recirculation.
- **Recirculation time:** The resulting duration for recirculation.
- **Agitator state**: Switching of the agitator for recirculation.

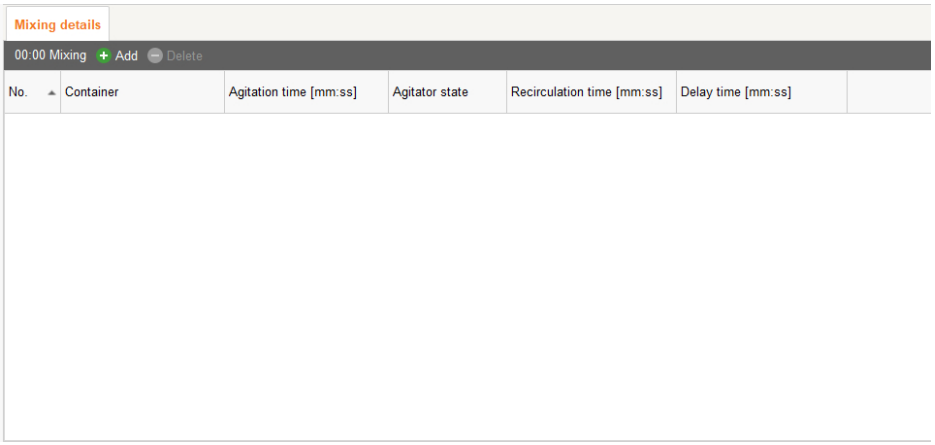
## 6.9.2 Mixing components

This task defines the mixing of components in silos and other containers. A separate mixing process can be defined for each silo or container. The processes are carried out at the given time consecutively, starting with the first process.




- **Time:** Start time for executing the strategy.

### Mixing details

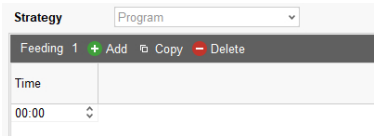



- **No.:** Consecutive number.
- **Container:** Selection of the container for mixing.
- **Agitation time (mm:ss):** Duration of the agitation time.
  (Only available if the container has an agitator.)
- **Agitator state:** Switching the agitator for mixing.
  (Only available if the container has an agitator.)
- **Recirculation time [mm:ss]:** Duration of recirculation.
  (Only available for liquid silos with recirculation valve.)
- **Delay time [mm:ss]:** Waiting time before the next consecutive process starts.

## 6.10 Miscellaneous strategies

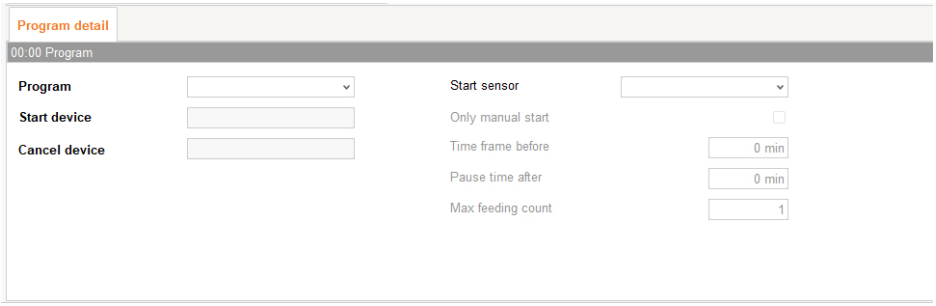
### 6.10.1 Program

The "Program" strategy is used to start PLC programs. Starting with a start sensor (manual start) is currently not supported. Specific parameters are therefore inactive (grayed out).




- **Time:** Start time for executing the strategy.

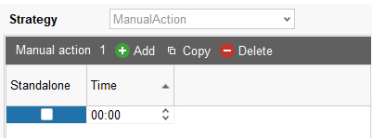
#### Program detail




- **Program:** Defines the PLC program to be started.
- **Start device:** Defines the output that must be set to start the PLC program.
- **Cancel device:** Defines the input to terminate the PLC program.
- **Start sensor:** Sensor for manual start of the task.
- **Only manual start:** The task is started exclusively via a sensor and not based on time.
- **Time frame before:** Time frame for the manual start of the task using the start sensor before the automatic start of the task.
- **Pause time after:** Pause time after completion of the task before it can be restarted.
- **Max. feeding count:** Maximum number to execute the task.

## 6.10.2 Manual action

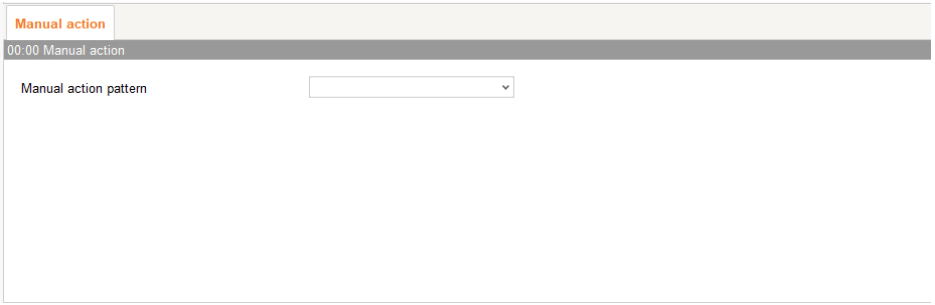
The "Manual action" strategy is used to start manual actions of feed moves that have been saved as a pattern (see chapter 3.6 ”Manual actions for the feed moves”, page 95).




- **Standalone:** The action must be carried out independently.

- **Time:** Start time for executing the strategy.

### Manual action




- **Manual action pattern:** Pattern to be executed for manual feed move actions.

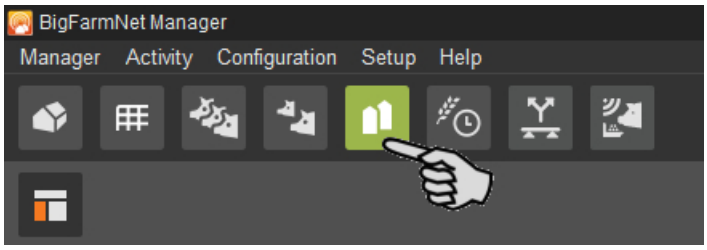
# 7 Silo Manager

With the Silo Manager, you can monitor and manage the data of all your silos.

The Silo Manager offers the following functions:

- registering the amounts of feed unloaded from the silos
- calculating the expected storage duration of the silo contents
- receiving a warning when a silo requires filling
- managing suppliers and prices for each feed component
  - BigFarmNet automatically calculates the total delivery amounts and your feed costs based on this information.

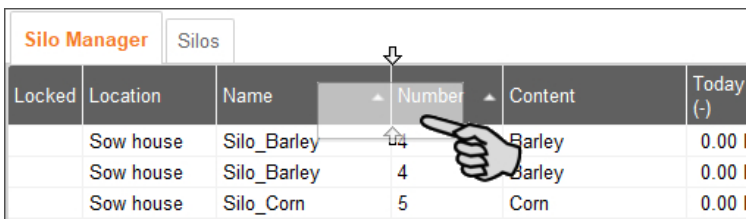
Open the Silo Manager by clicking on the respective icon in the toolbar.




The view "Silo Manager" shows the current data of your silos.

- Hiding and showing columns:
  - **a)** Right-click into the head line to open the context menu with all parameters.
  - **b)** Select or de-select parameters to hide and show the respective columns.
- Rearranging columns:
  - **a)** Click into the head line of the respective column and hold the mouse button.
  - **b)** Drag the column to the desired position.

    The arrows showing up at the head line when you move the columns help you assign the new position.

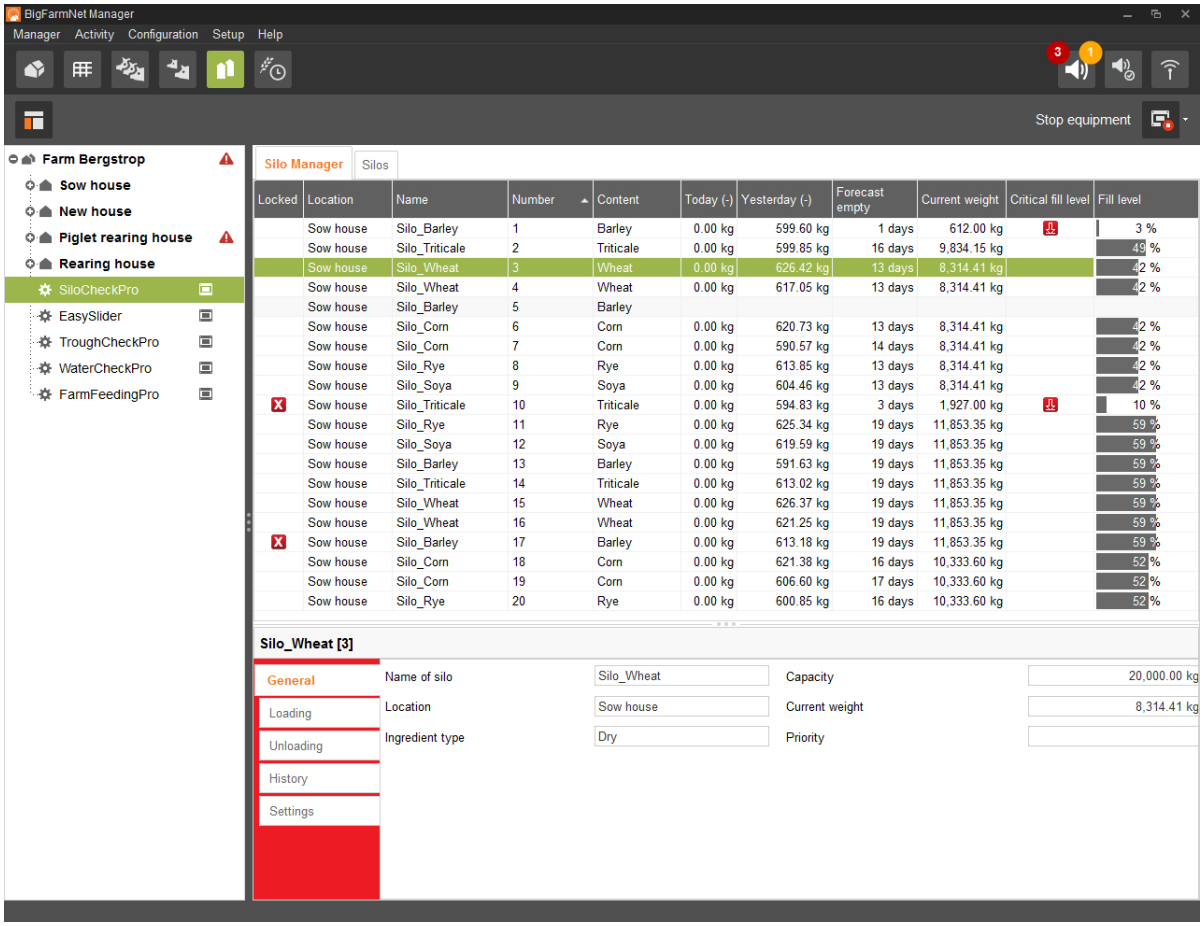



  - **c)** Release the mouse button.

    The column is now at its new position.

- Sorting based on dates:

  Click on the respective parameter in the head line to sort the silos in ascending or descending order according to the given values.

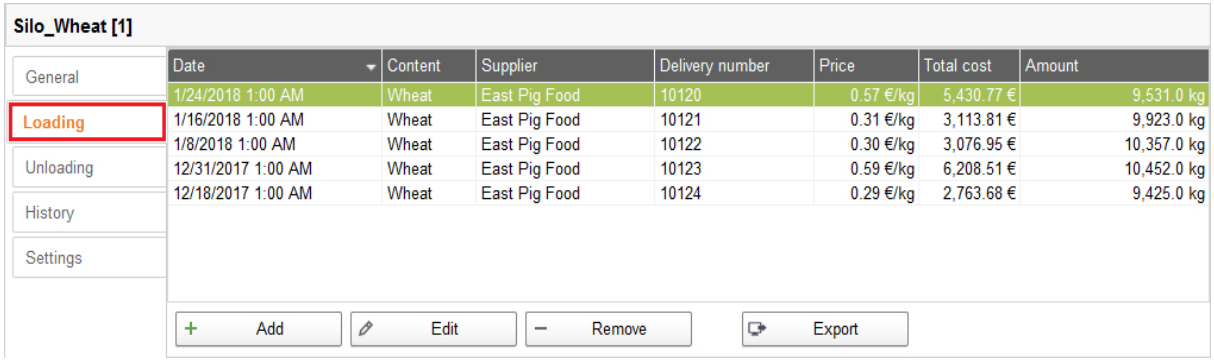



During configuration in the Composer, you assigned the correct locations to the silos. If you click on a house in the farm structure, you will only see the silos of this house.

The lower part of the application window shows additional silo data. The **General** category shows general information about the selected silo. Data under **Loading** (delivery, chapter 7.1) and **Settings** (chapter 7.4) can be edited.

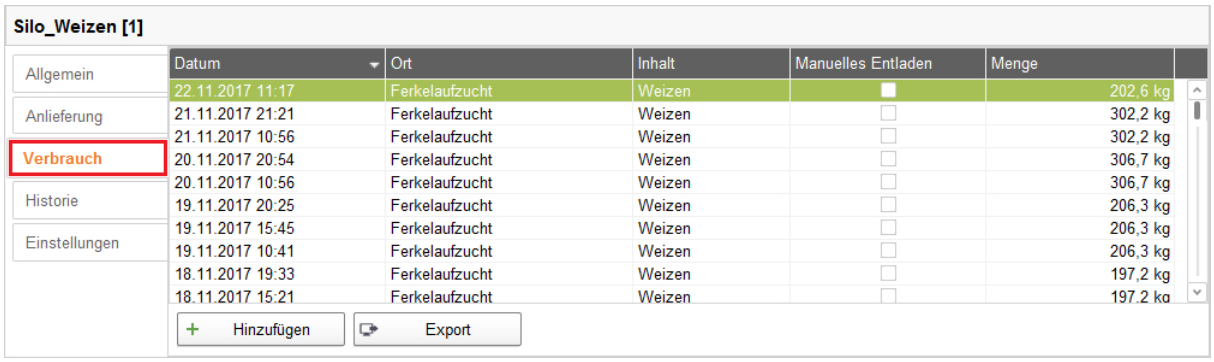
## 7.1 Delivery

The category "Loading" shows previous deliveries to the selected silo. You may add further deliveries, edit or delete them. Click on the button "Export" to export a CSV or XLS file with the data for further use.



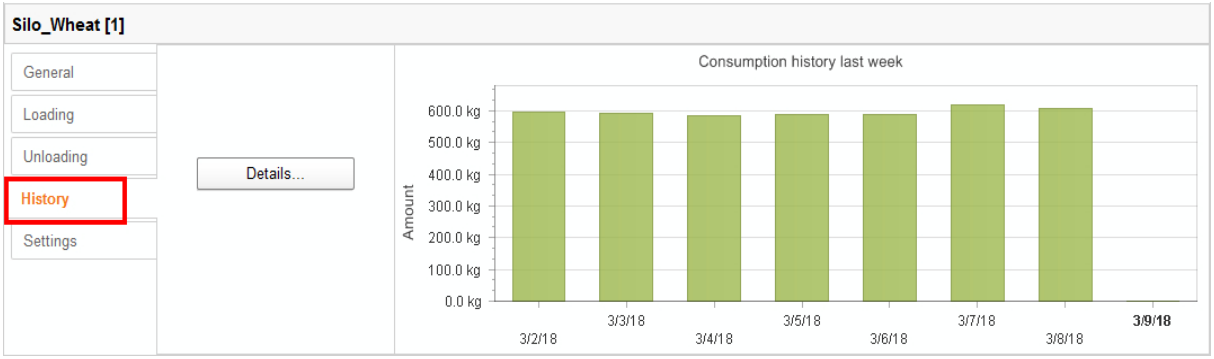

## 7.2 Consumption

The "Unloading" category shows all quantities that have been removed from the selected silo up to now. Click on the button "Export" to export a CSV or XLS file with the data for further use.

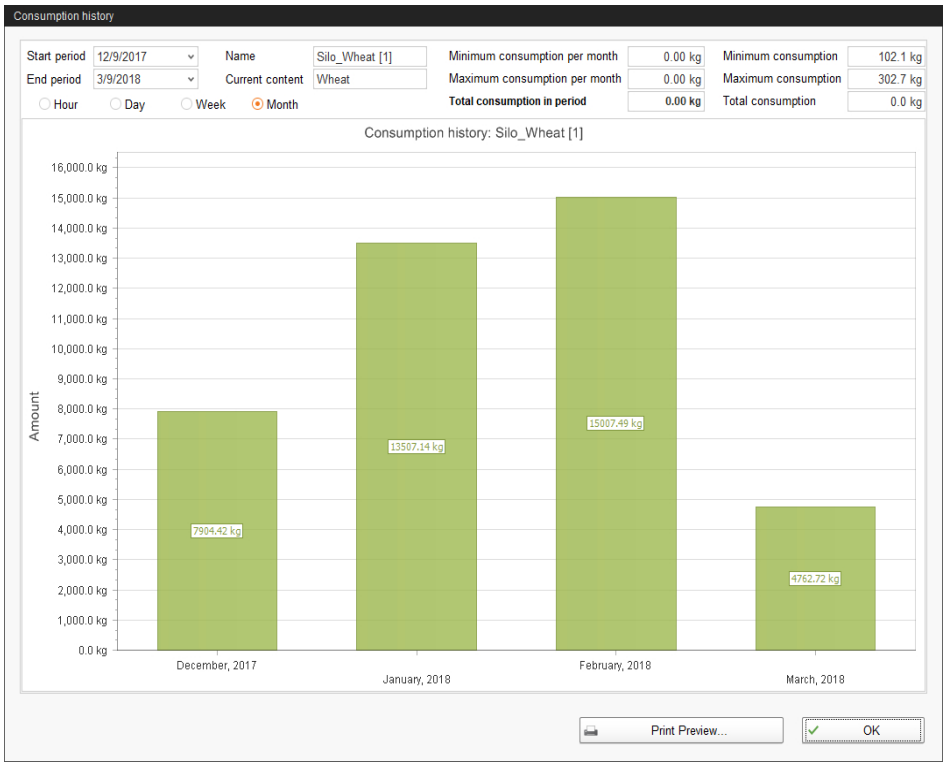


## 7.3 History

All feed removed from the selected silo in the past seven days is displayed in the "History" category as a bar chart.



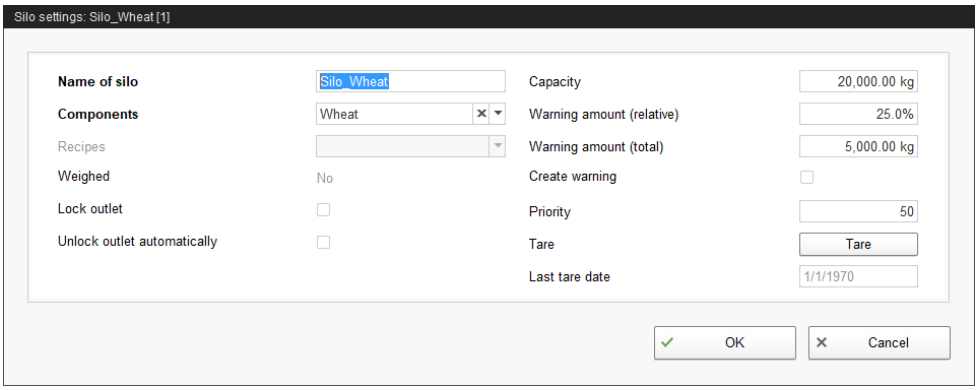

Clicking on the button "Details..." opens the consumption history in a separate window, in which you can select the time period as required. The consumption history can be printed.



## 7.4 Settings

Define the most important information about the selected silo under "Settings".

1. In the table, click on the silo you want to edit.
2. Under the category "Settings", click on "Edit".
3. Change the following settings, if necessary:




- **Name of silo**
- **Components** or **Recipes** indicate the silo's content.
- **Weighed** indicates whether the silo is weighed.
- **Lock outlet** is a manual setting.
- **Unlock outlet automatically** means that the automatic locking is automatically cancelled after delivery. A silo is locked automatically when its contents have been completely used up.
- **Capacity** is the maximum amount which can be filled into the silo.
- **Warning amount (relative)** or **Warning amount (total)**: If you enter one of these values, the other one is calculated automatically.

  The relative warning amount refers to the silo's capacity.

  If the silo weight falls below the (total, i.e. absolute) warning amount, the system can create a warning for a critical fill level (**Create warning**).
- Use the field **Priority** to sort the silos. The higher the priority value, the higher the chance that the component will be removed from this silo.
- **Tare** is used to set the silo's weighing system to zero. This is only possible if the silo is completely empty.
- Information regarding the **Last tare date**

**NOTICE!**

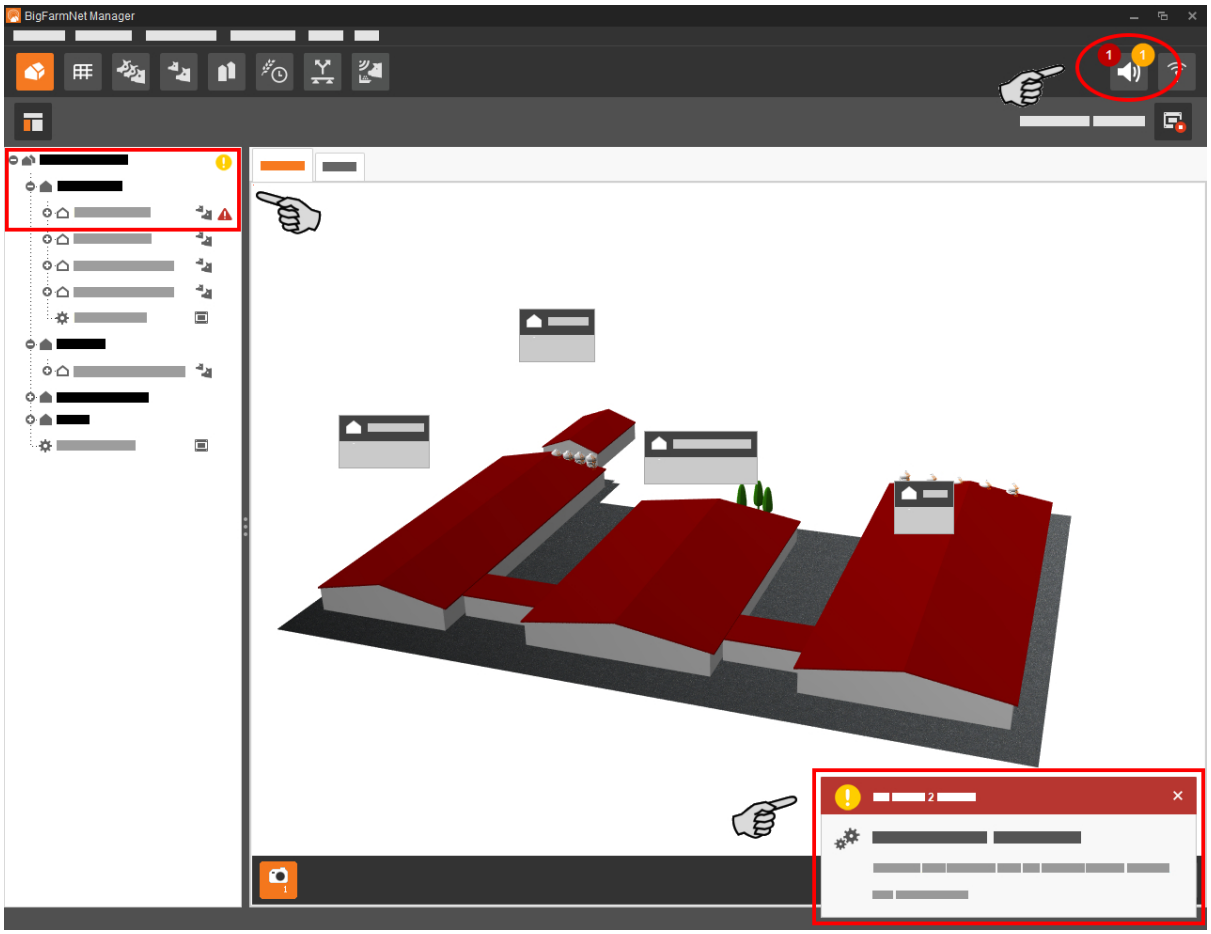
BigFarmNet automatically blocks a silo whose content has been completely used up.

After each delivery, check whether the box next to “Block outlet” has been checked by BigFarmNet and if necessary remove the check.

4. Click on "OK" to accept these settings.

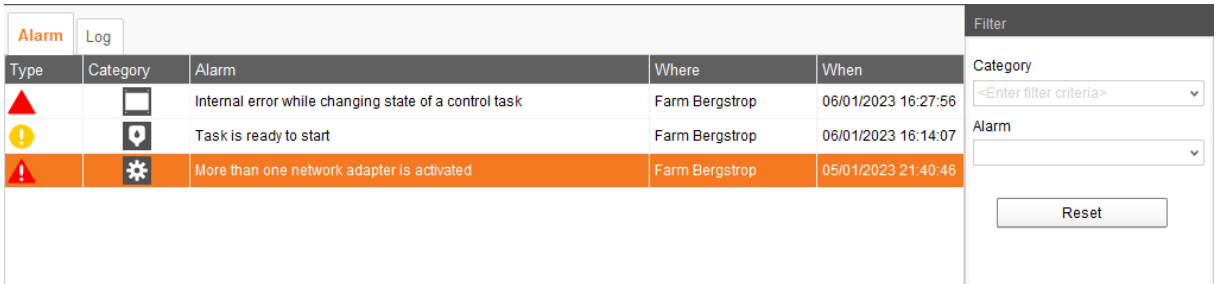
# 8 Alarms and warnings

Alarms and warnings are registered by the control computer, which transmits the message to BigFarmNet Manager. BigFarmNet Manager indicates alarms and warnings as follows:




Clicking on the pop-up window or the alarm icon in the tool bar opens the window for alarms. It shows all active alarms and warnings. Alarms and warnings are listed in the order of their occurrence.

If you click on a location with an alarm or warning icon in the farm structure, only problems active in the respective location are displayed.



## Alarm types

| Icon | | Status | Description |
|---|---|---|---|
| without user note | with user note | | |
|  |  | Active alarm | Not acknowledged: Cause still exists. |
|  |  | Inactive alarm | Not acknowledged: Cause no longer exists. |
|  |  | Deactivated alarm | Acknowledged: Cause still exists. |
|  |  | Ended alarm | Acknowledged: Cause no longer exists. |
|  |  | Active warning | Not acknowledged: Cause still exists. |
|  |  | Ended warning | Acknowledged: Cause no longer exists. |
|  | | Info | Information about an incident that has occurred. |

## Alarm categories

| Icon | Category |
|---|---|
|  | Climate: temperature, humidity |
|  | Control or test (system-specific) |
|  | IO connection |
|  | BigFarmNet system or general |
|  | Dry feeding system |
|  | Liquid feeding system |
|  | Production |
|  | WebAccess |

| Icon | Category |
|---|---|
|  | Gateway (ISOagriNET) |
|  | CallMatic system |
|  | EasySlider system |
|  | HydroMixCallMatic system |
|  | MillAndMix system |
|  | SiloCheck system |
|  | TriSort system |

**NOTICE!**

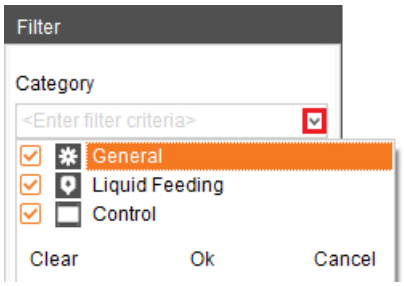
Always eliminate causes for alarms in the "Climate" category first.

## 8.1 Filtering alarms

Alarms can be filtered according to category as well as cause.

1. Open the drop-down menu under "Filter" in the right-hand part of the window.

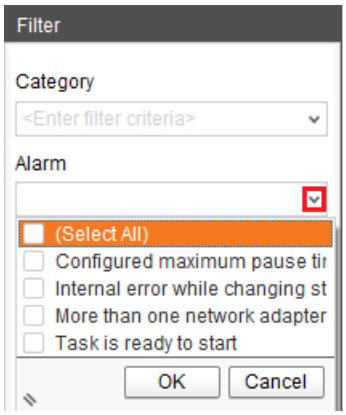
   By default, all categories are selected.




2. Click on "Clear" to delete all check marks.
3. Check the boxes of the correct categories and confirm by clicking on "OK".

4. Select the correct cause from the drop-down menu under "Alarm".

   The alarms will be displayed according to the selected filter.




5. To deselect the alarms, click on "Reset".

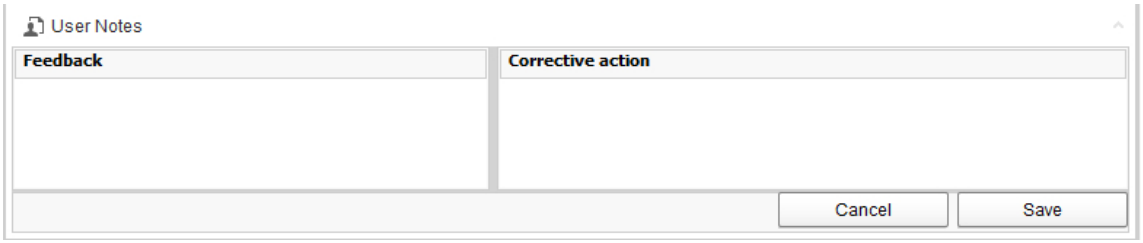
   The selection is discarded and all alarms are listed.

## 8.2 Acknowledging an alarm

Alarms can be acknowledged once their cause has been eliminated. The alarm is marked with the corresponding icon (see alarm types) in the table and the system no longer requires action from the user.

1. Save a note for an alarm before acknowledging it, if required.

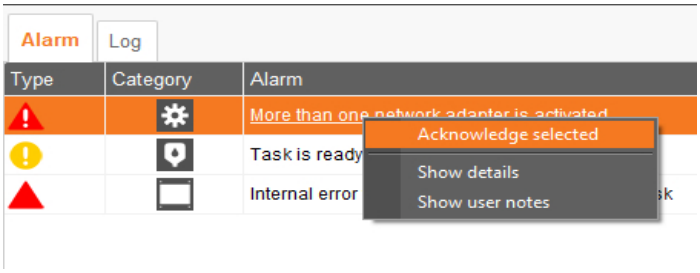
   This note may be helpful to eliminate similar alarms later on. Notes are saved for each alarm in the lower part of the window under **User Notes**. Save the note.




2. Select the alarm you want to acknowledge by clicking on it.

   You may also select multiple alarms to acknowledge them at the same time.

3. Right-click to open the context menu and click on "Acknowledge selected".

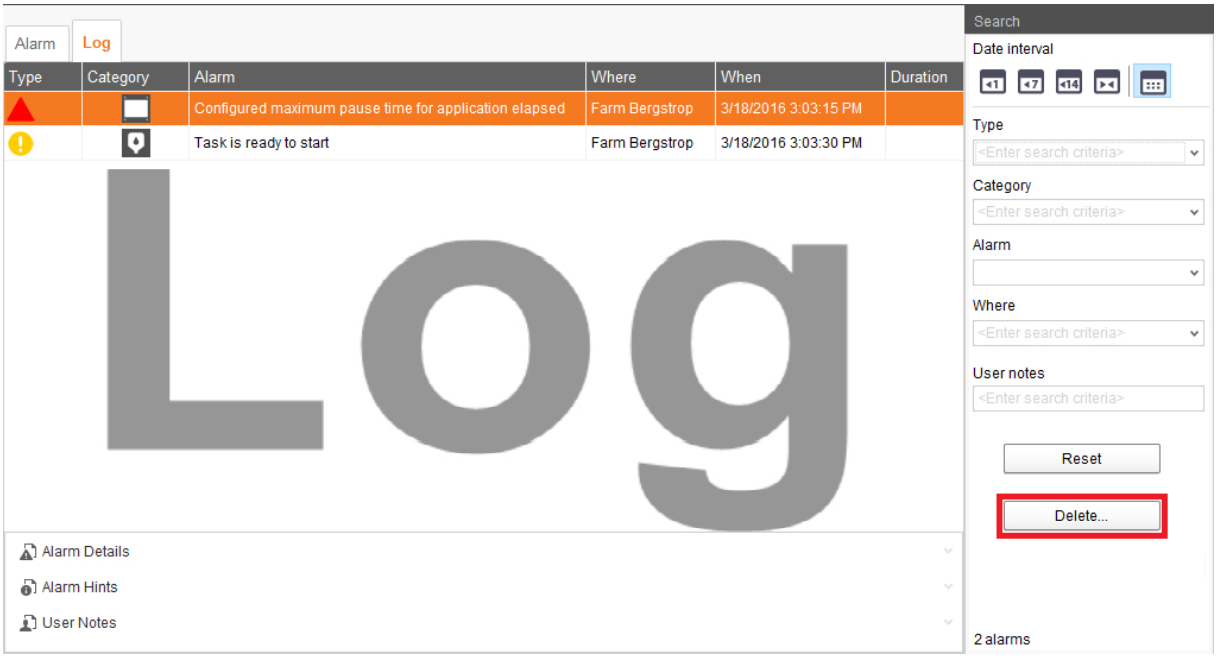



4. Click on "Acknowledge" in the next window.

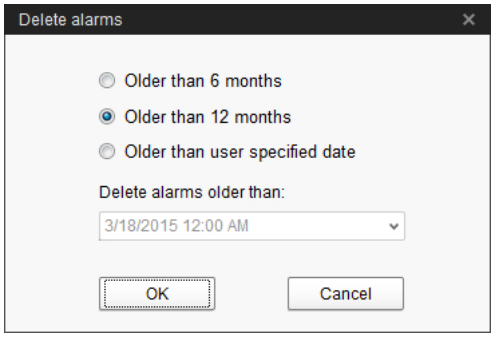
   The alarm is removed from the **Alarm** window.

## 8.3 Alarm log

The log shows all alarms that have occurred since initial operation of BigFarmNet Manager. You may filter for specific alarms or delete alarms that are older than six months as follows:




1. Click on "Delete..." in the right-hand part of the window.
2. Select the desired time period or enter a date.




3. Click on "OK".

   All alarms within the selected time period are deleted.

## 8.4 Alarm Notification

Alarm Notification is a service that sends alarms via email. Alarm notification via SMS is currently not supported.

To use the Alarm Notification service via email, configure the service in BigFarmNet Manager. The following technical conditions must be met for email notifications:

- Internet connection
- running BigFarmNet Manager

**NOTICE!**

The Alarm Notification service cannot replace an autocaller! The service is merely an additional help.

Carry out the following steps to set up the Alarm Notification service:

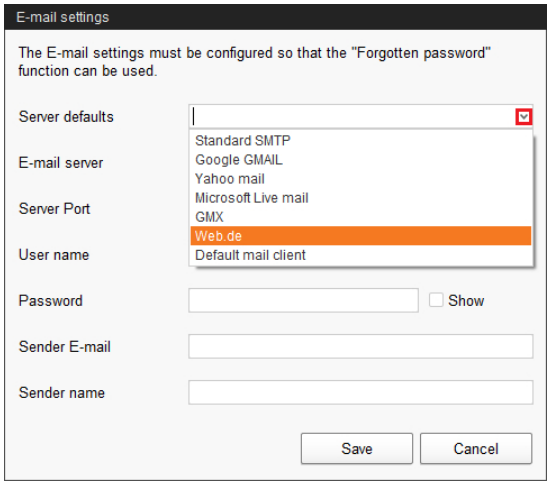
1. In the "Manager" menu, click on "General settings".

   This opens the dialog window "General settings".

2. Click on "Configure general E-mail settings".

   This opens the dialog window "E-mail settings".

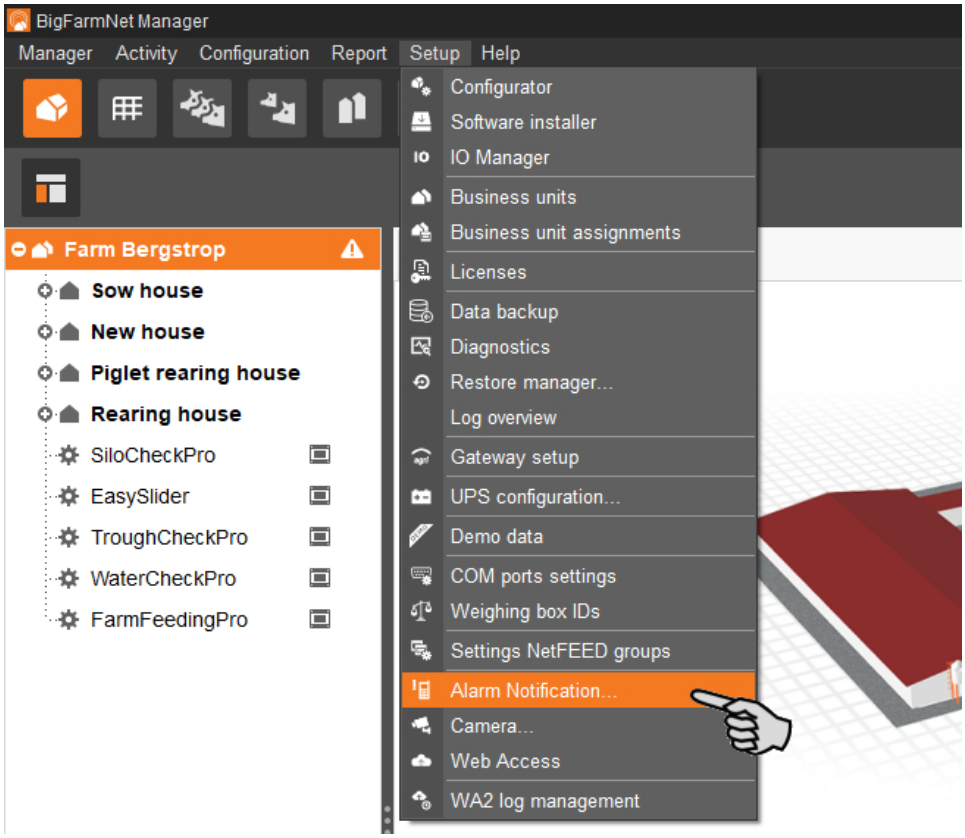
3. Click on the arrow pointing downwards next to **Server defaults** and select your server default from the drop-down menu.




   As soon as you have selected a server default, the email server, the server port and the SSL are filled in automatically.

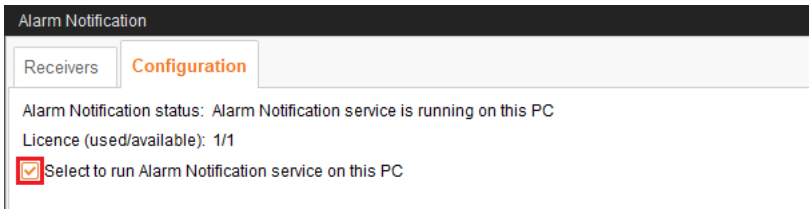
4. Enter the **user name**, the **password** and the **sender email**.
5. Click on "Save" to accept all settings.

6. Click on "Alarm Notification..." in the "Setup" menu.

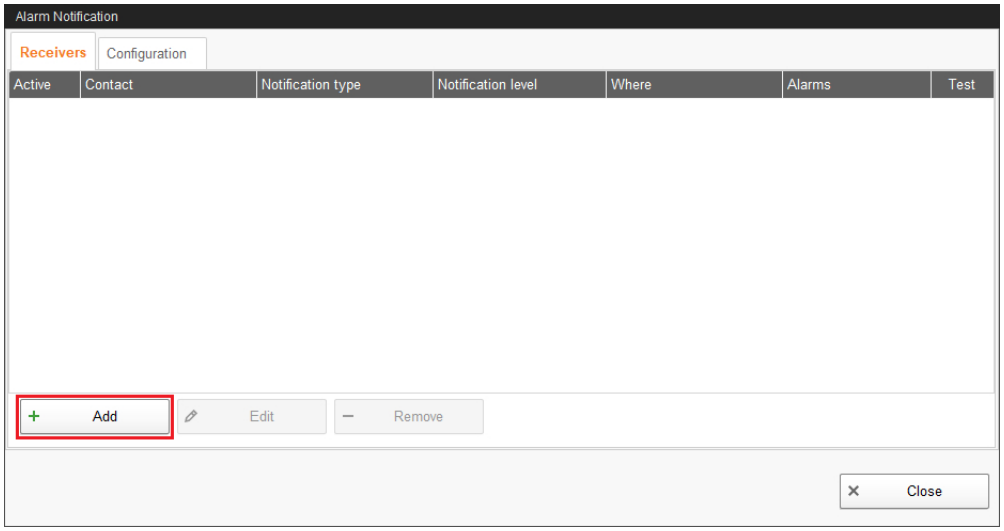



This opens the dialog window "Alarm Notification".

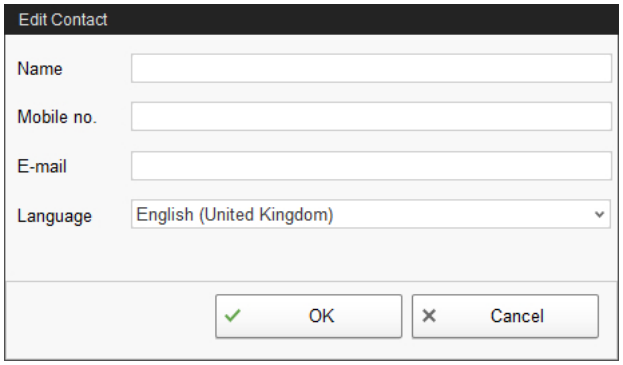
7. Activate the Alarm Notification service in the tab "Configuration".



8. In the tab "Receivers", click on "Add" to add a recipient.



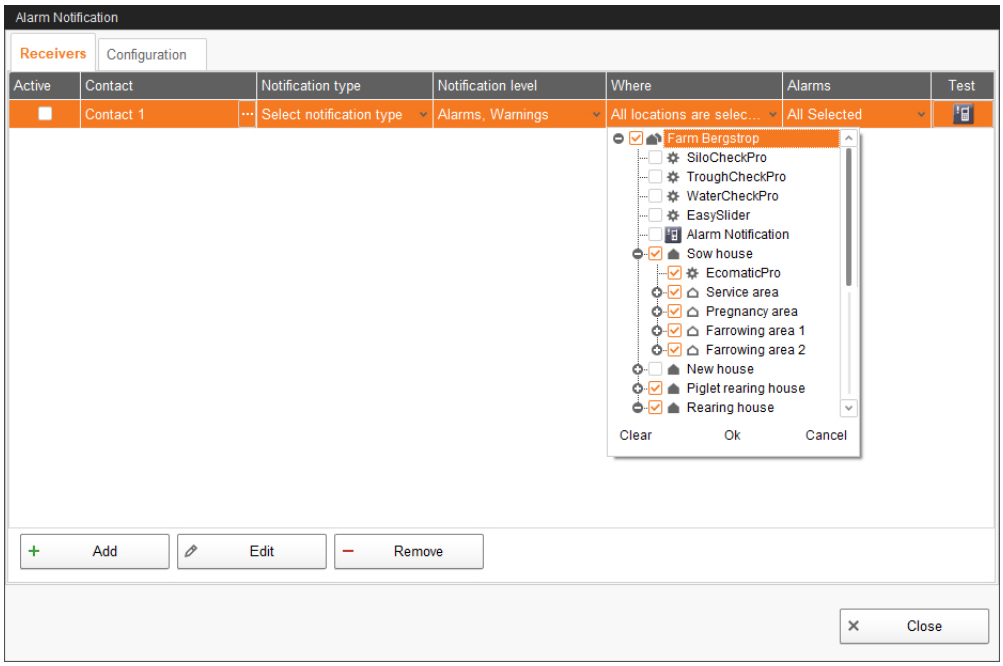

9. Enter the contact details and select the correct language.




10. Confirm your inputs by clicking on "OK".
11. Select "Email" as **notification type** and confirm your selection by clicking on "OK".
12. Select whether the recipient should receive alarm messages, warnings or both under **Notification level** and confirm your selection by clicking on "OK".

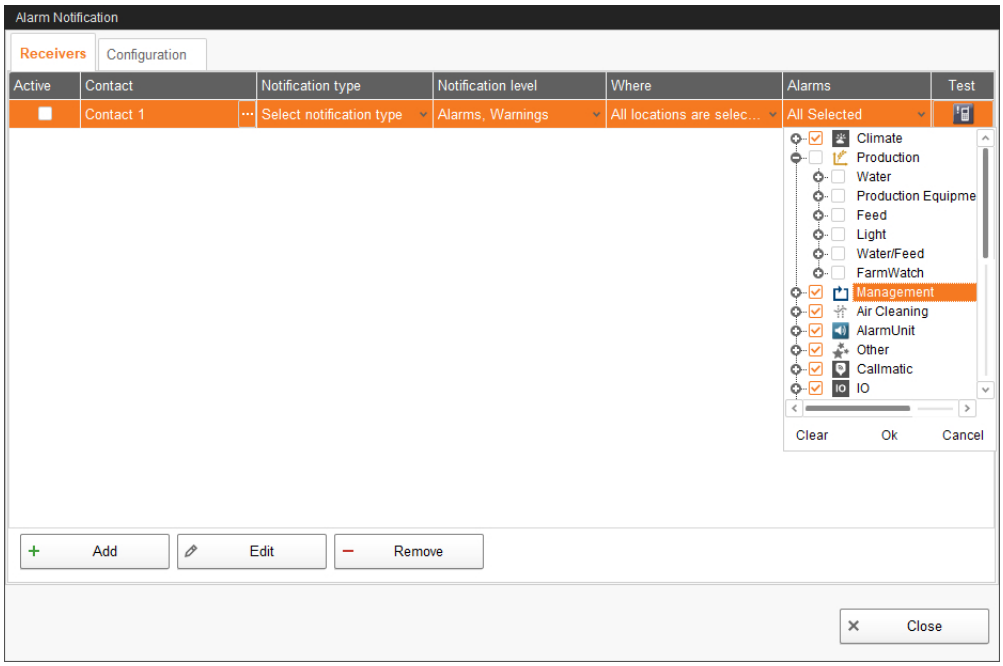
13. Under **Where**, select the location whose alarms the recipient should receive.

    You may select multiple locations.



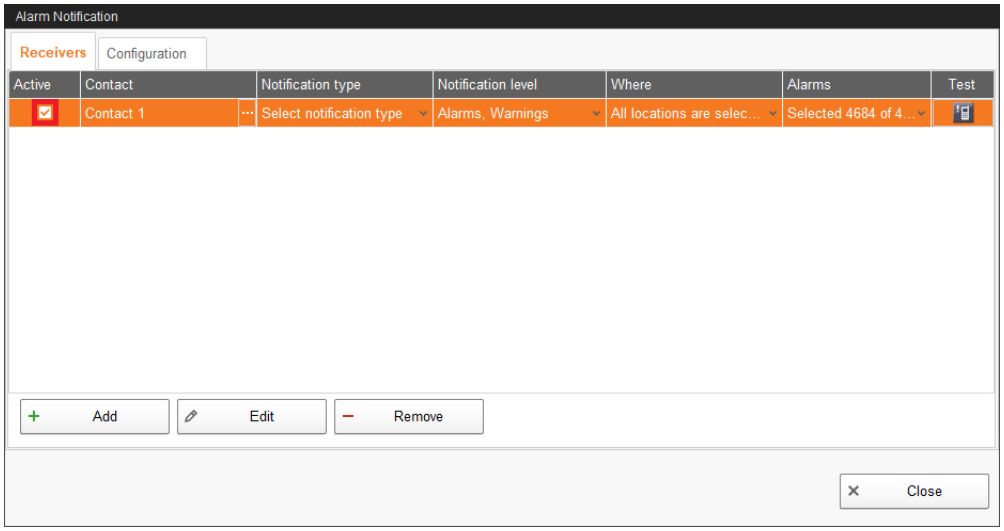

14. Confirm your selection by clicking on "OK" in the drop-down menu.
15. Under **Alarms**, select which alarm categories the recipient should receive.

    You may select multiple alarm categories.



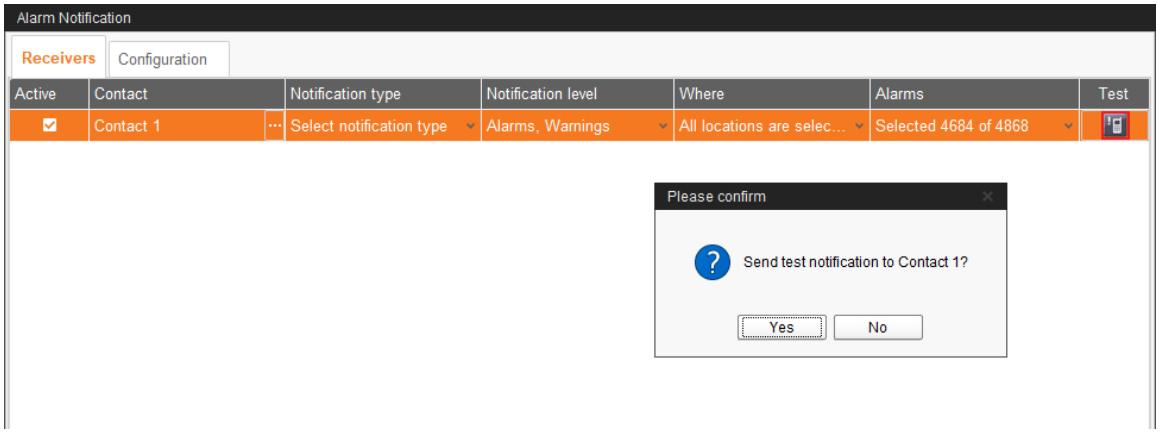

16. Confirm your selection by clicking on "OK" in the drop-down menu.

17. Activate the recipient for alarm notifications.




18. Check the recipient's data by sending the recipient a test message:

    Click on the alarm notification icon and confirm the next dialog with "Yes".




19. Click on "Close" after you have configured all settings.

    This closes the dialog window.

# 9 Service Access

The "Service Access" function mirrors the display of the control computer or climate computer and its control functions in BigFarmNet Manager to provide remote control.

**NOTICE!**

Service Access requires a password which you create as user of BigFarmNet Manager, see the manual "BigFarmNet Manager – Installation/Configuration".

1. Click on the controller icon of the respective system application in the farm structure.
2. In the tool bar, click on  "Service Access".

   The application window shows the display of the connected control computer. Remote control is deactivated for now.
3. Click on "Activate".

   This opens the dialog window for entering the password.
4. Enter the password and confirm by clicking on "OK" to allow remote control.

# 10 Operation of the control computer


The HydroMix*pro* application uses the 510*pro* control computer to control the HydroMix liquid feeding system. The HydroMix liquid feeding system can also be controlled independently of BigFarmNet Manager by the 510*pro* control computer.

The control computer and BigFarmNet Manager constantly exchange data when they are connected. All control computer data is transferred to the Manager PC in the farm office and vice versa.

## 10.1 Technical data

| | |
|---|---|
| Dimensions (H x W x D) | 381 mm x 400 mm x 170 mm |
| Protection rating according to EN 60529 | IP 54 |
| Supply voltage | 115 V, 200 V and 230 V/240 V AC +/- 10 % |
| Supply frequency | 50/60 Hz |
| Power consumption | 75 VA |
| Network | 2 network interfaces, 10/100 BASE+TX RJ 45 |
| USB | 2 USB interfaces, USB 2.0 type A, max. 4 GB |
| Ambient temperature | -10 to +45 °C (+14 to +113 °F) |
| 30 punch holes for metric cable gland M 25 x 1.5 | |
| Code no. | 91-02-4094 |
| Description | Base computer 510pro Quad Core 10" display HW2 |

## 10.2 Icons

Application overview / Start screen

Silo overview

Settings

Alarm


An alarm is active.

Log out

Close the current view and return to the previous view

Open additional information or settings

Scroll up or collapse a sub-menu

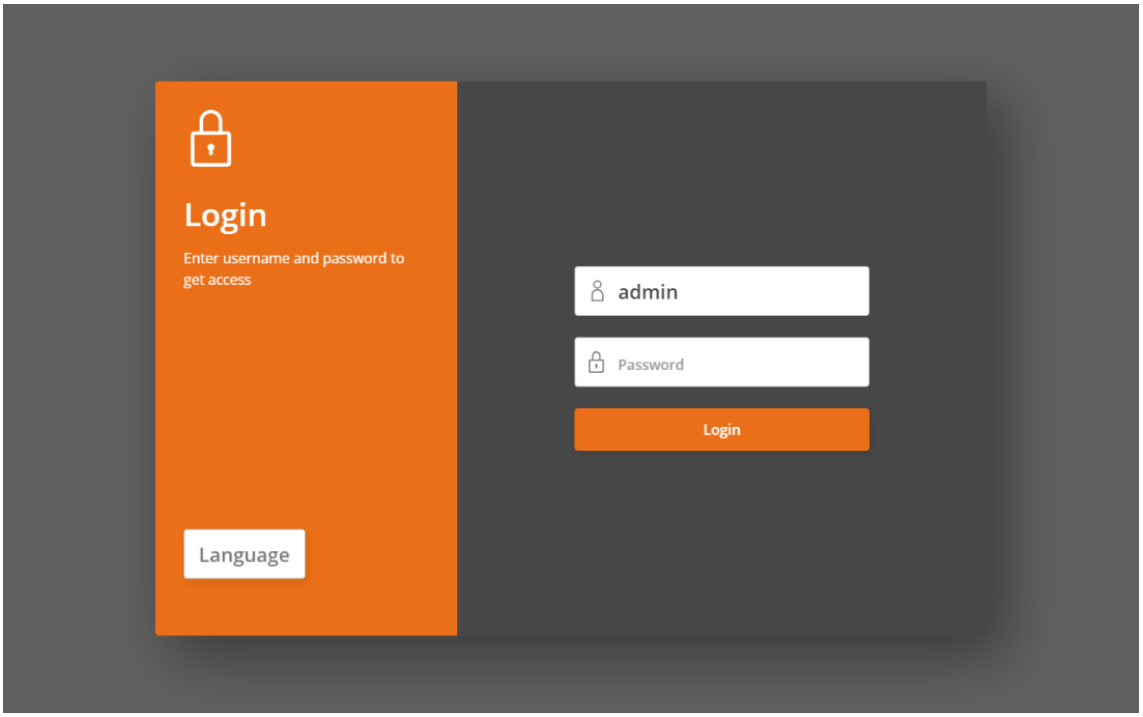
Scroll down or expand a sub-menu

## 10.3 Login

Log into the control computer using the login dialog.

The login dialog appears

- automatically after the software has been installed successfully, when the application starts;
- automatically after a specific time without activity (automatic logout); or
- if you actively log out of the control computer.

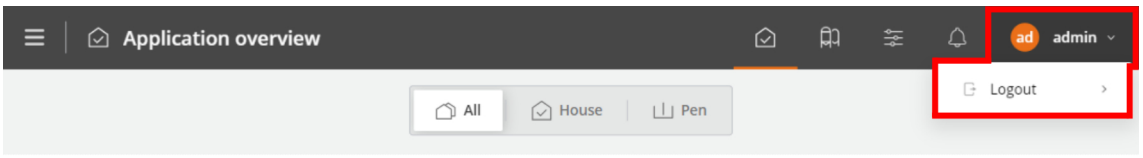



**NOTICE!**

The user name and the password are the same as when logging into BigFarmNet Manager.

## 10.4 Logout

To log out, tap on the button in the top right corner. A new button appears. Tap on the "Logout" icon.



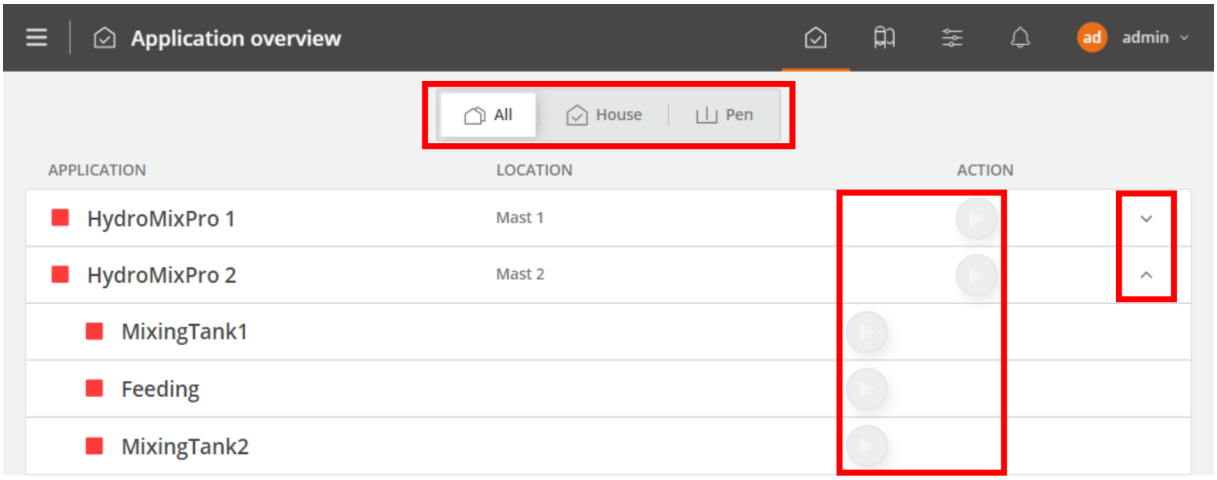

The login dialog appears on the display again.

## 10.5 Application overview

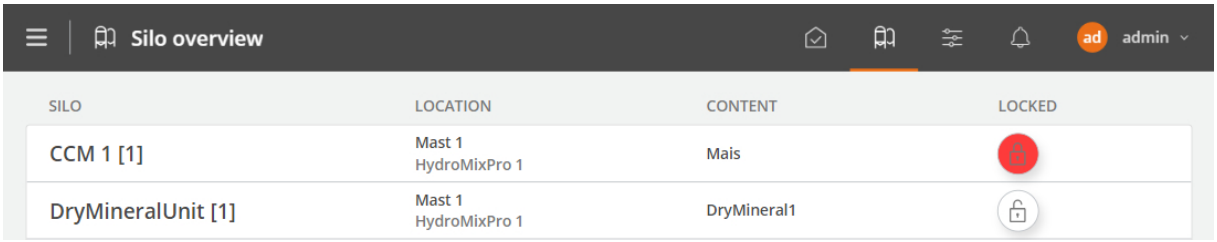
After logging in, the application overview appears with a list of all available applications and the respective location.

If sub-applications are available, they can be expanded and collapsed by tapping on the corresponding icon at the end of the line. In addition, the applications and sub-applications can be started and stopped by tapping on the icon in the "Action" column.

By tapping on the corresponding buttons, the applications can be filtered according to the "House" and "Pen" levels.




## 10.6 Silo overview




The silo overview shows a list of all silos and dosing units with their respective location, content and current outlet status. The outlet status in the "Locked" column can be changed by tapping on or :

- **Lock**: The unlocked outlet is locked immediately after confirmation.
- **Unlock**: The locked outlet is unlocked immediately after confirmation.

## 10.7 Settings

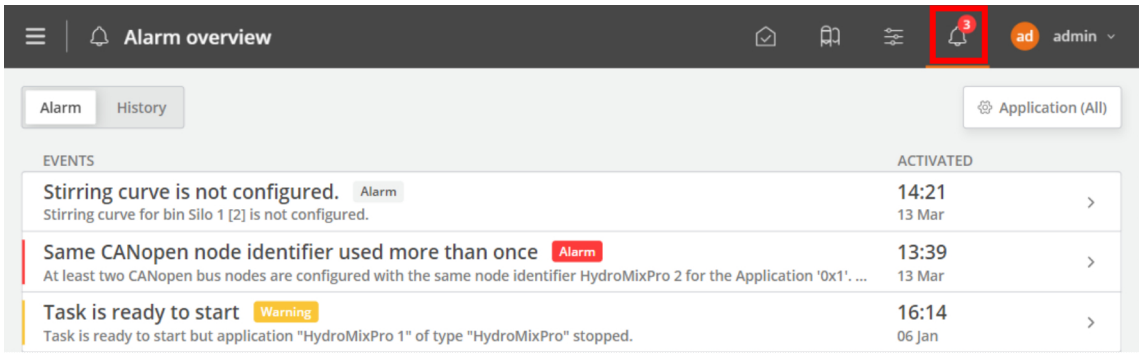
Switch to the settings by tapping on the corresponding icon.


No application settings can be configured here, only general and technical settings.

## 10.8 Alarms

In case of an active alarm or warning, the alarm icon has a red dot indicating the total number of alarms and warnings.

1. Tap on the icon to open the alarm overview.




In the alarm overview, the different alarms and warnings are shown in a list and sorted depending on when they occurred. The list provides the following information:

– Alarm type (see chapter 8 ”Alarms and warnings”)

  Active alarm: Icon Alarm and red vertical line on the left

  Inactive alarm: Icon Alarm

  Active warning: Icon Warning and yellow vertical line on the left

  Deactivated alarm (only in "History"): Icon Alarm

  Ended alarm (only in "History"): Icon Alarm

  Ended warning (only in "History"): Icon Warning

– Description of the alarm or warning

– Time of occurrence

2. Tap on the correct alarm or warning to read the full description and to acknowledge the alarm or warning, if necessary.