

BigFarmNet  
manager

**MillAndMixpro**

Code No. 99-97-4771 GB

Edition: 01/20 v. 3.4



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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

This manual describes how to install and operate the control software *MillAndMixpro* for the MillAndMix milling and mixing system. MillAndMix makes it possible to produce compound feeds directly on the farm. The main tasks are:

- weighing
- milling
- mixing
- conveying
- controlling

A process starts when an order is requested. The requested components are dispensed and weighed on scales to ensure that the correct amount is used. Some components can be milled before mixing. During mixing, the goal is to produce a uniform mix as quickly as possible. The system uses conveyors and augers to transport components and the finished feed.

The MillAndMix milling and mixing system is controlled through the *MillAndMixpro* application using BigFarmNet Manager and the *510pro* control computer.

## 1.1 Software version

Software version 3.4

## 1.2 Licenses

The following software licenses are **required**:

Code no.	BigFarmNet Manager license	Use
91-02-6500	BigFarmNet Manager – Basic installation software	1 per BigFarmNet network
91-02-6617	License 510 – BigFarmNet Mill&Mix	

### 1.3 System limits

2	Mixing towers with optional pre- and post-bins
2	Mill pre-bins
3	Mills per mill pre-bin
2	Inline mills
10	Liquid silos / liquid tanks
1 – ∞	Dosing silos
0 – ∞	Mineral dosing units
1 – ∞	Micromineral dosing units
1 – ∞	Target silos
5	Truck pits
5	Silo groups with max. 30 silos per group

## 2 Installation and configuration of the control computer

### **i** NOTICE!

Please contact the customer's IT administrator to determine the IP addresses in the network.

Carry out the following steps to install and configure the control computer:

1. Wiring, see the enclosed wiring diagram
2. Assigning a static IP address to the control computer, see chapter 2.1
3. Assigning a static IP address to the Manager PC, see chapter 2.2
4. Assigning a network card to the control computer, see chapter 2.3
5. Testing the connection to the control computer, see chapter 2.4
6. Installing the software on the control computer, see chapter 2.5



Figure 2-1: Control computer 510pro

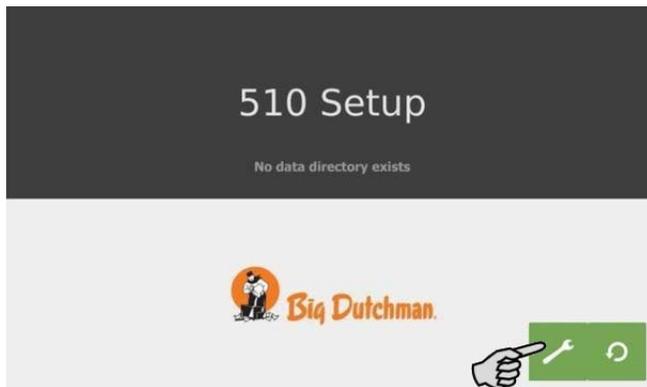
### **i** NOTICE!

Only service technicians may install and configure the control computer.

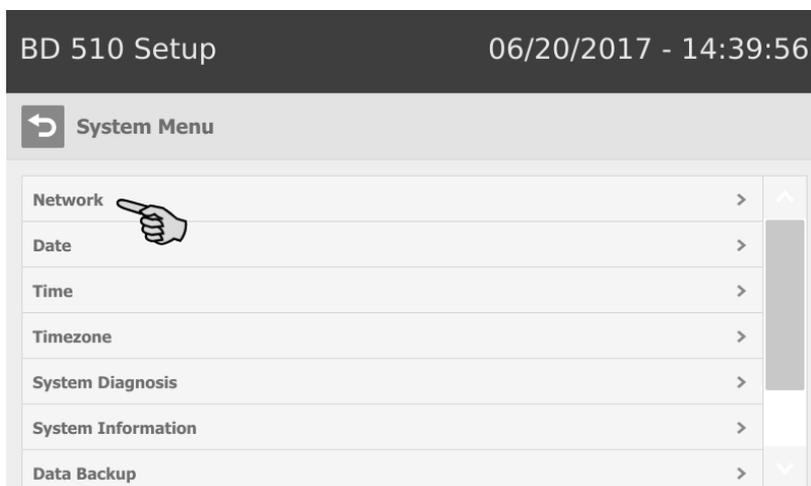
### 2.1 Control computer: assigning a static IP address

1. Start the control computer.

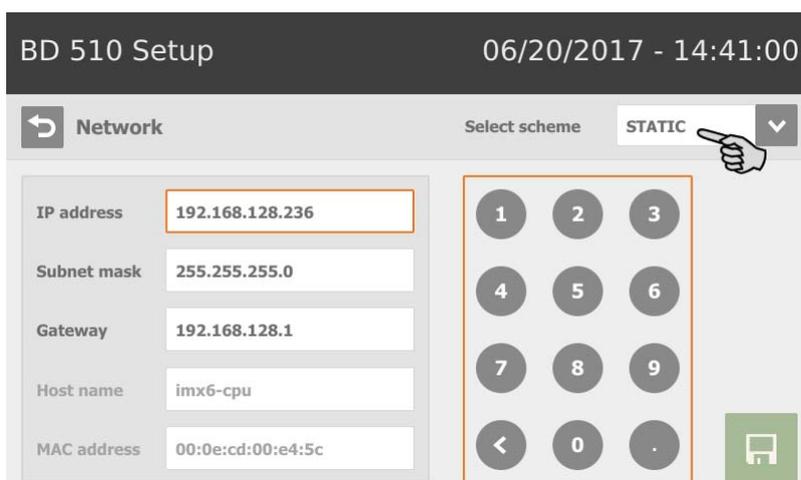
2. Tap on the configuration button on the start screen.



3. Tap on **Network**.



4. Make sure that you have selected "STATIC" for a static IP address under **Select scheme**.



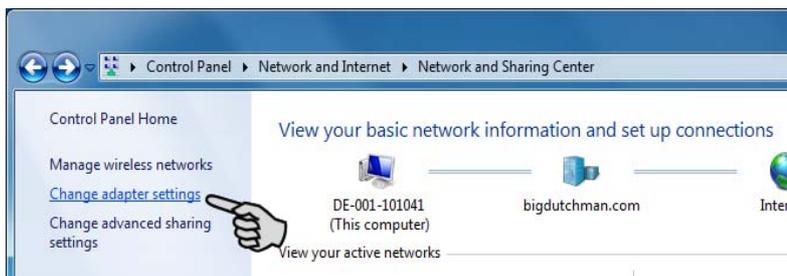
5. Enter the IP address, the subnet mask and the gateway.
6. Save your inputs by tapping on .

## 2.2 Manager PC: assigning a static IP address

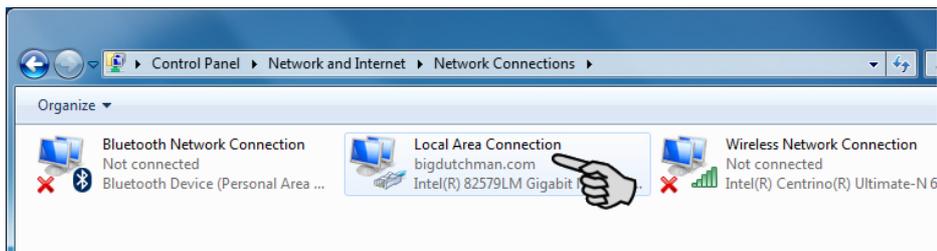
### 2.2.1 Windows 7

Assign a static IP address to the PC on which BigFarmNet Manager is installed or will be installed. The following steps correspond to the Windows 7 operating system.

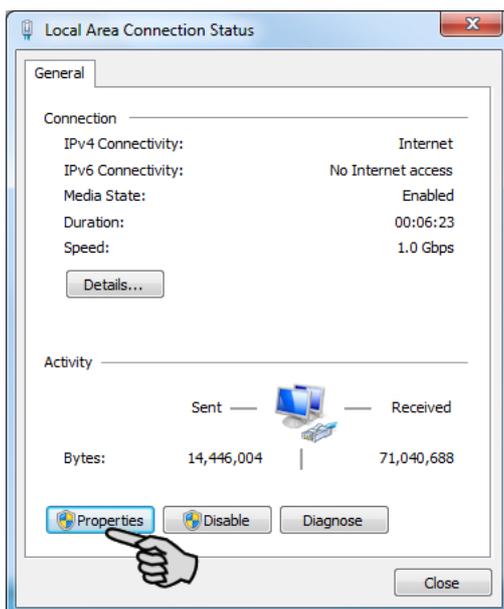
1. Click on **Control Panel** in the start menu .
2. Click on **Network and Sharing Center**.
3. Click on **Change adapter settings**.



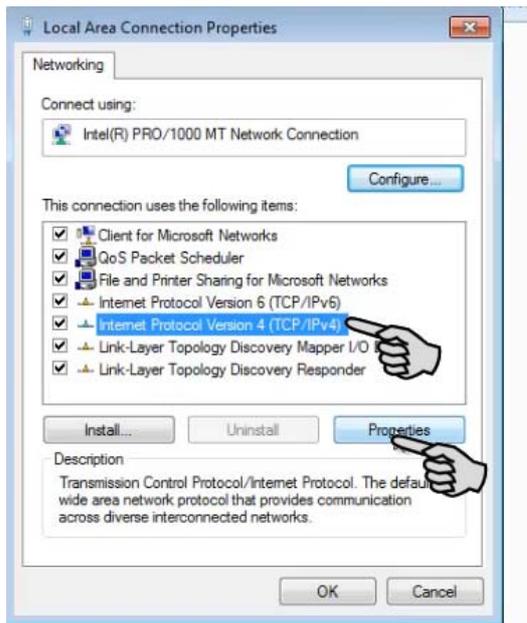
4. Double-click on **Local Area Connection**.



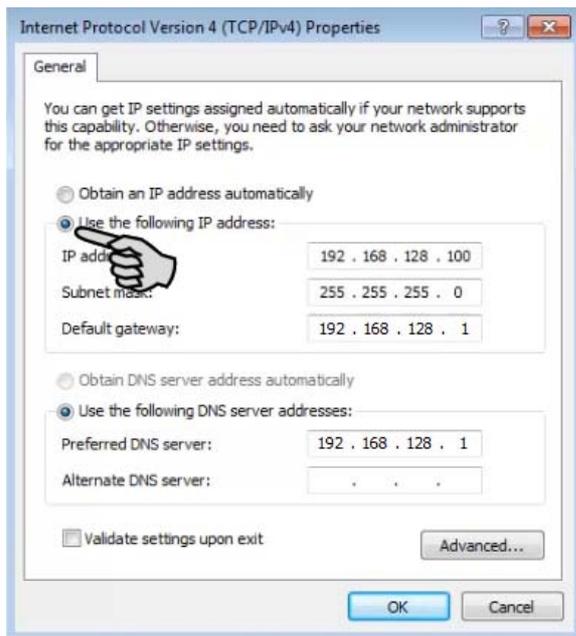
5. Click on **Properties**.



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



7. Enter a static IP address.

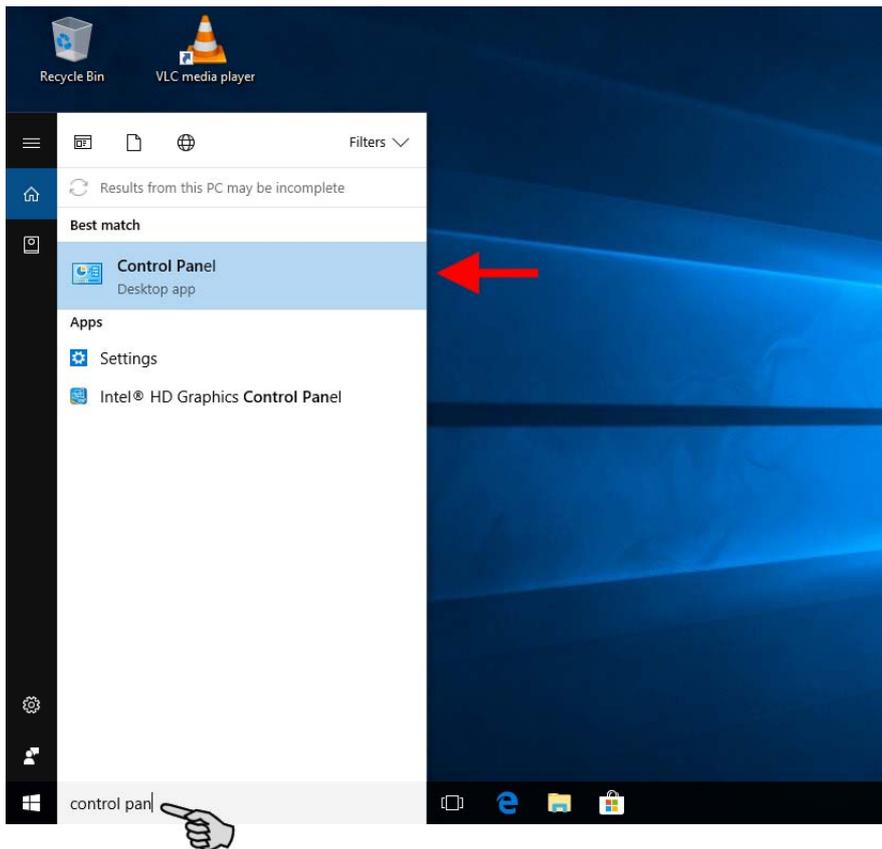


8. Confirm these inputs by clicking on **OK**.

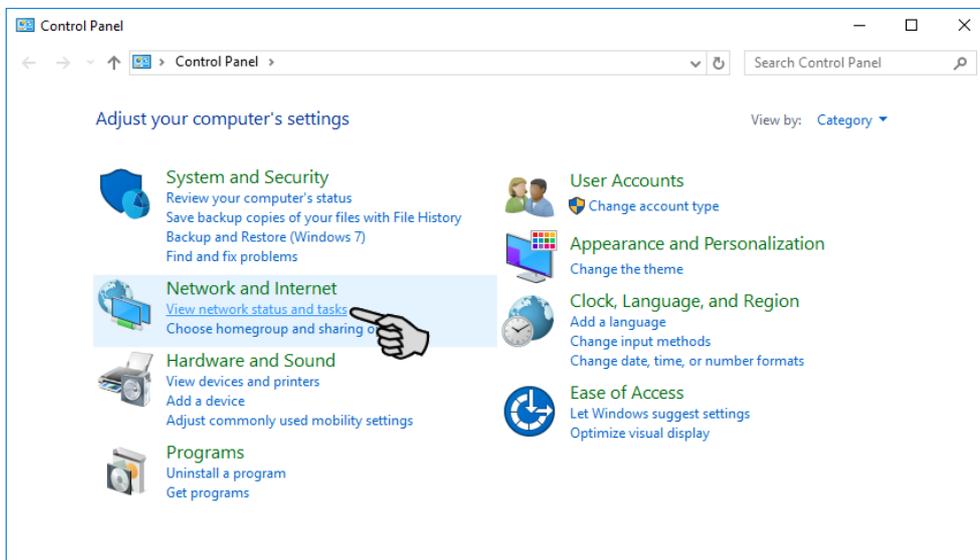
## 2.2.2 Windows 10

Assign a static IP address to the PC on which BigFarmNet Manager is installed or will be installed. The following steps correspond to the Windows 10 operating system.

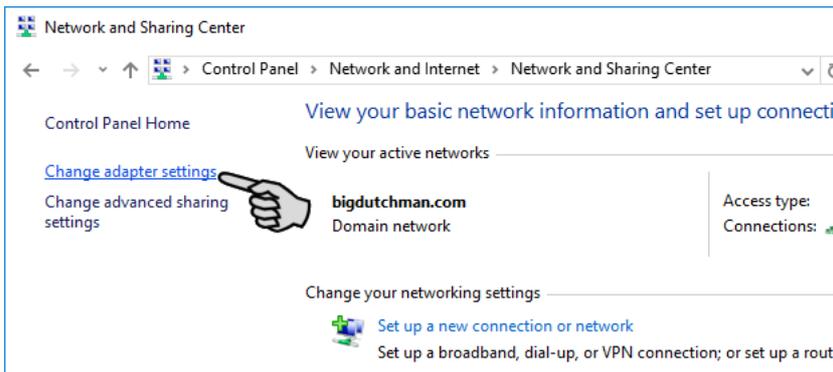
1. Open the **Control Panel** using the search field in the task bar.



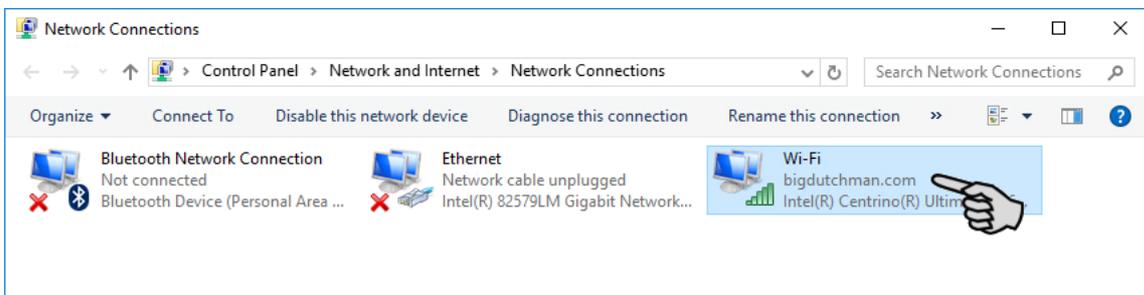
2. Click on **View network status and tasks** under **Network and Internet**.



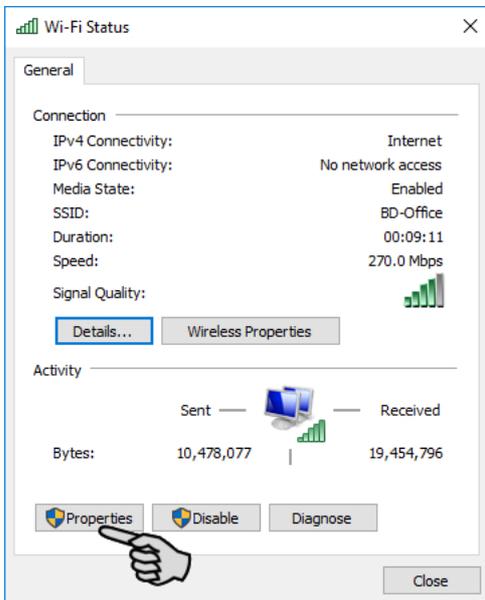
3. Click on **Change adapter settings**.



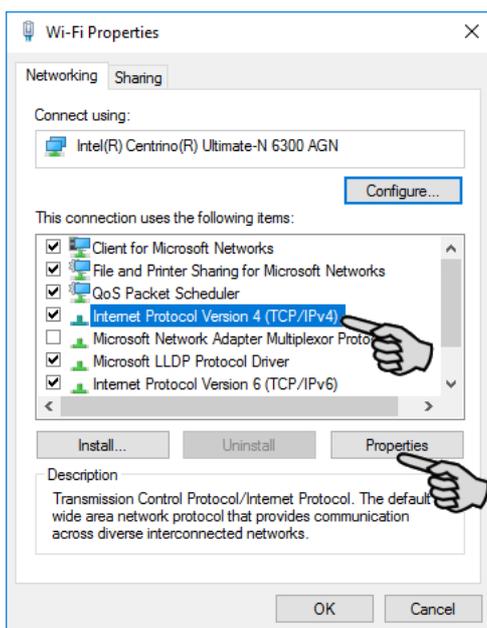
4. Double-click on **Wi-Fi**.



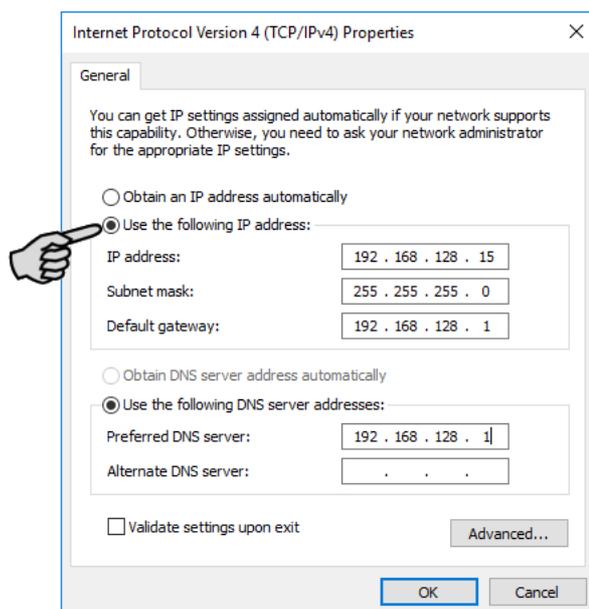
5. Click on **Properties**.



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



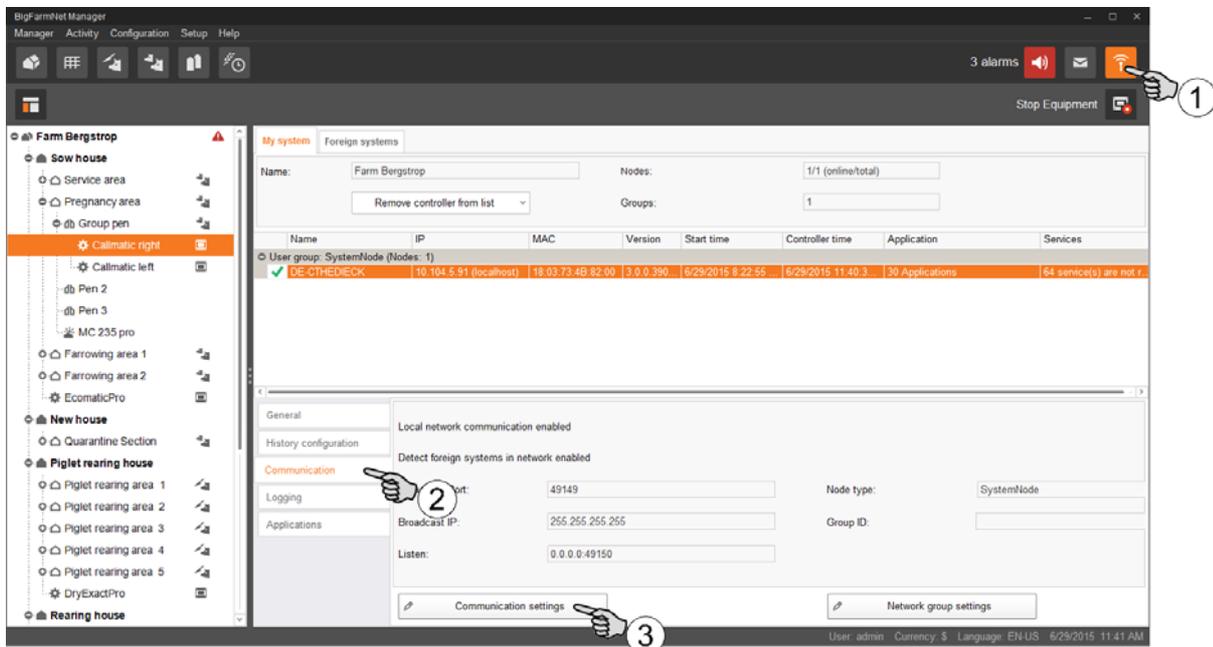
7. Enter a static IP address.



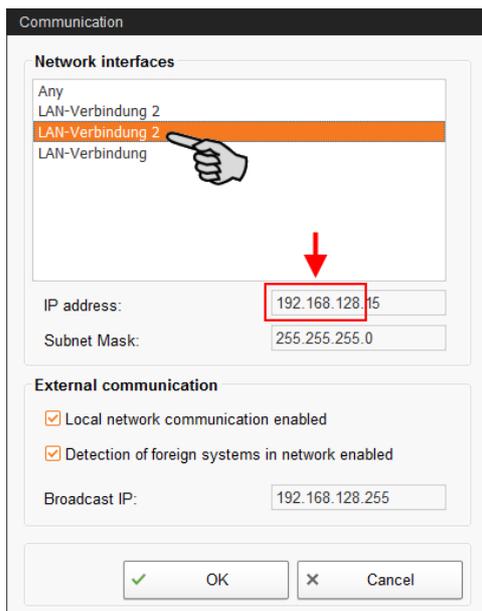
8. Confirm these inputs by clicking on **OK**.

## 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, see chapter 2.2.



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

## 2.4 Checking the connection to the control computer

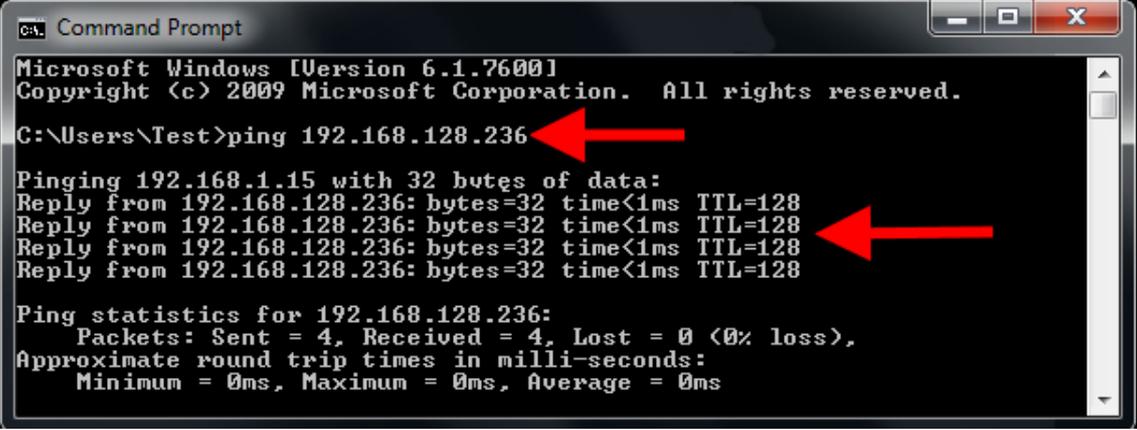
Use the "ping" command to check whether the control computer is available in the network.

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).



```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Test>ping 192.168.128.236

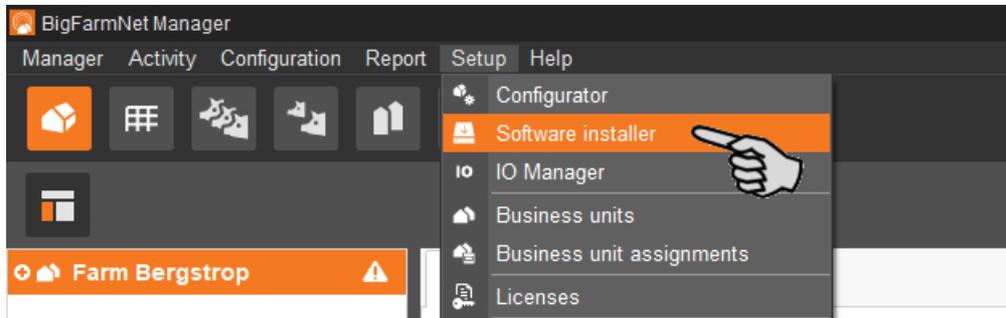
Pinging 192.168.128.236 with 32 bytes of data:
Reply from 192.168.128.236: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.128.236:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

## 2.5 Installing the software on the 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.

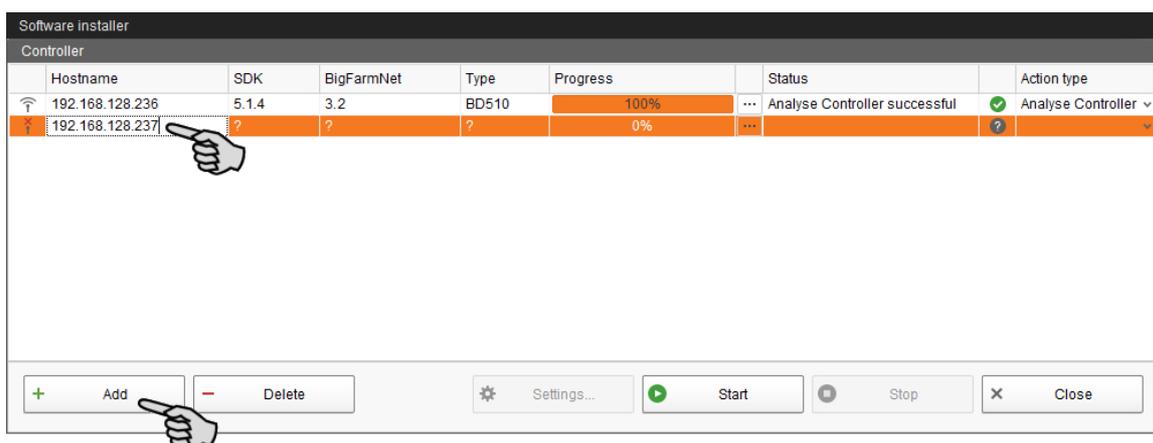


2. Enter the IP address of the control computer on which you want to install the software.

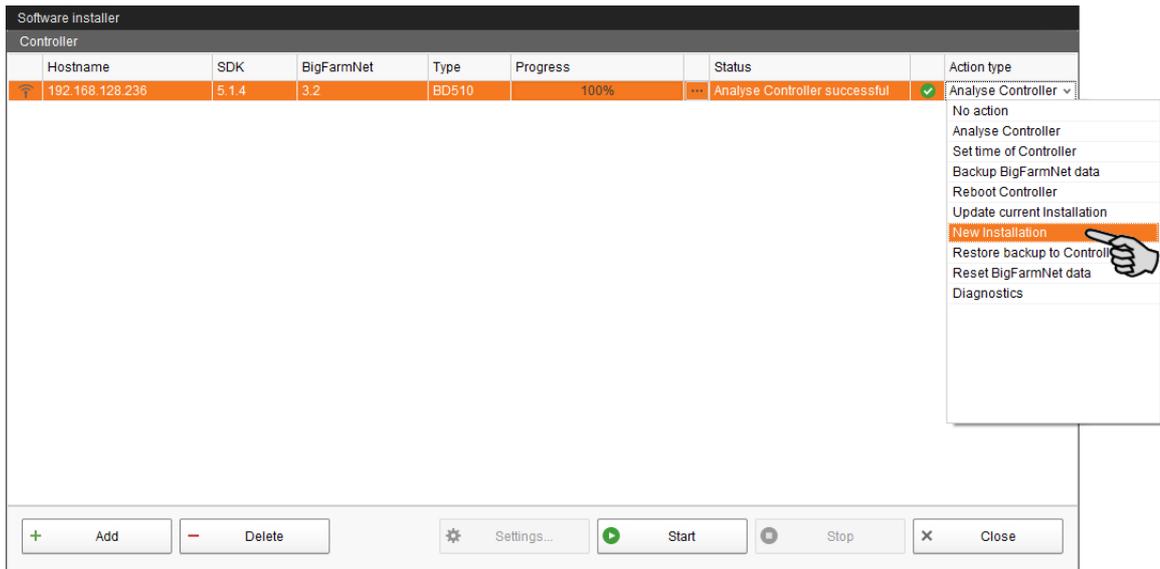


3. If necessary, add the desired number of control computers by clicking on "Add".

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.



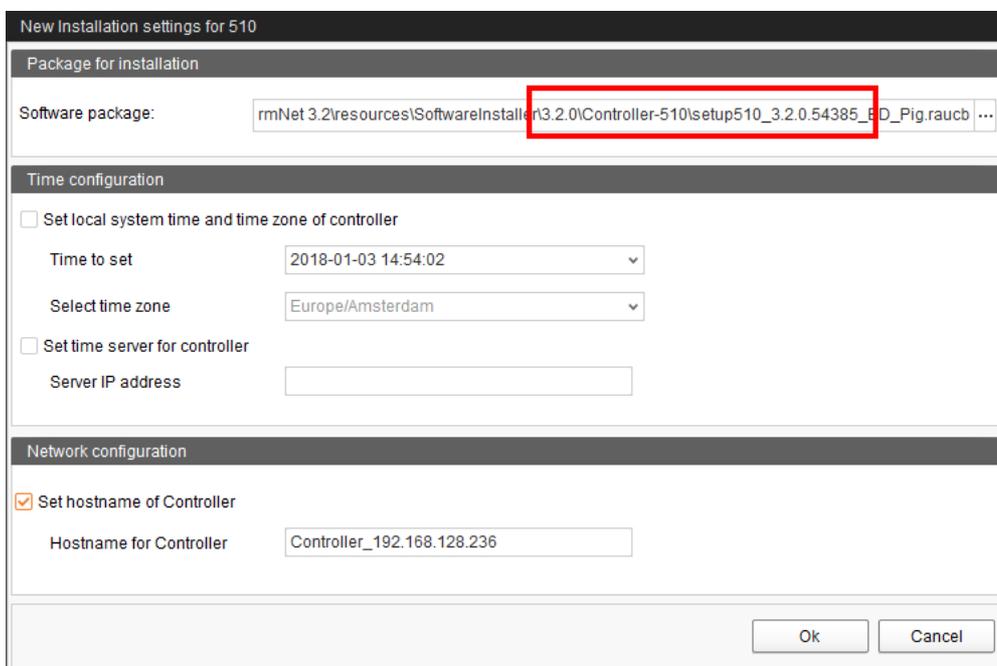
4. Click on a control computer to select it.
5. Click into the respective input field under "Action type" and select "New Installation".



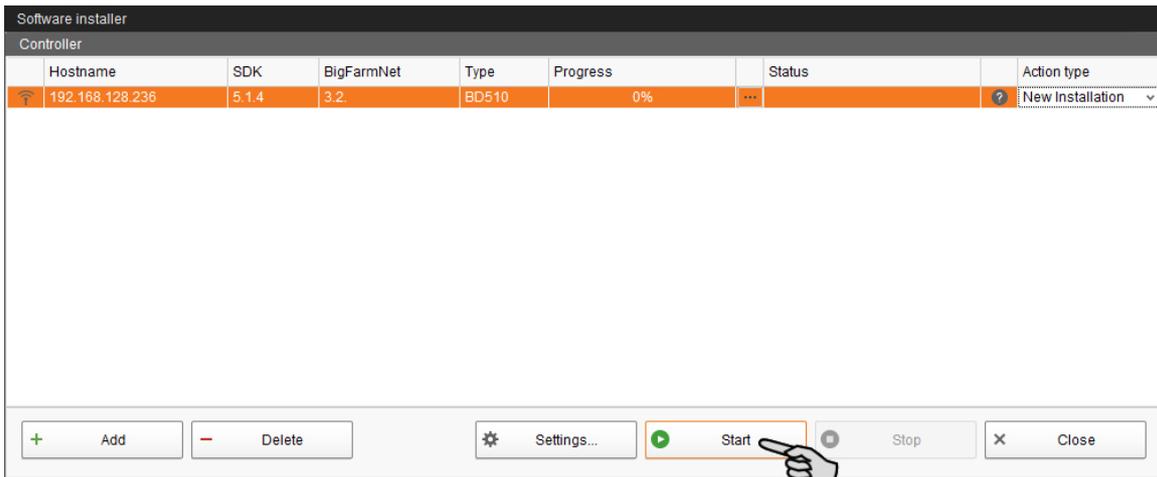
6. Click on "Settings" in the lower command bar of the dialog window.
7. Under "Software package", check whether the setup for the 510*pro* control computer is stored under the indicated path.

### NOTICE!

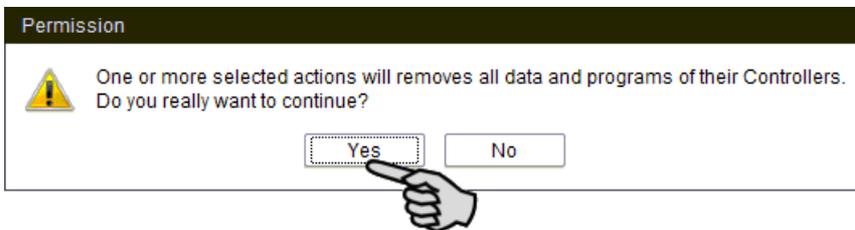
When updating, check whether the update's version number in the software package corresponds to the version you want to install.



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

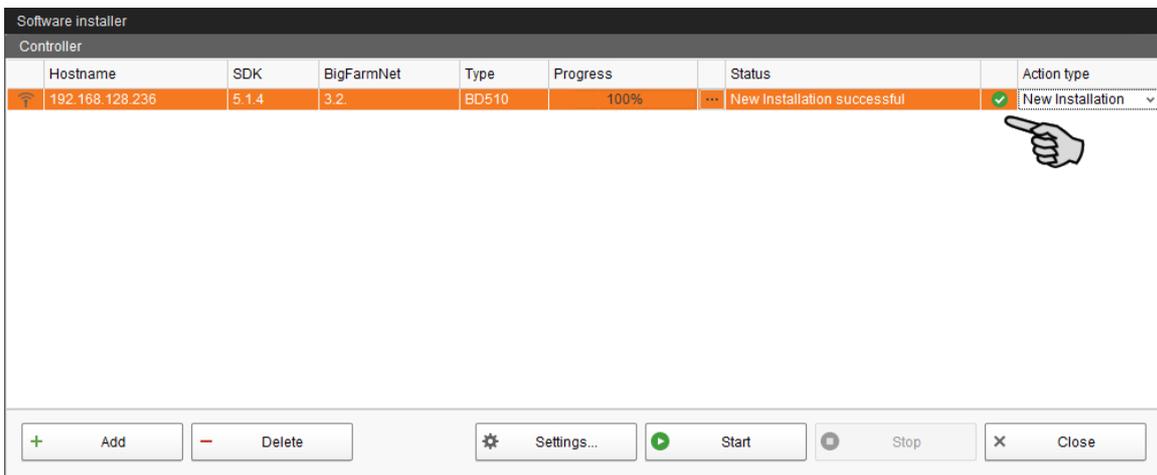


10. Confirm the prompt for confirmation.



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.



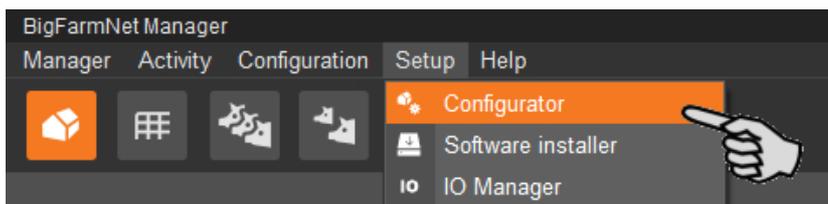
## 3 Configuration of the system

### 3.1 Adding the control computer and the application

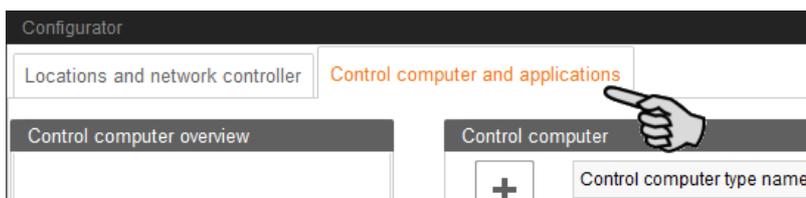
Add the control computer and the application to your farm structure before you configure the system according to the mechanical situation.

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

This opens the "Configurator" window.

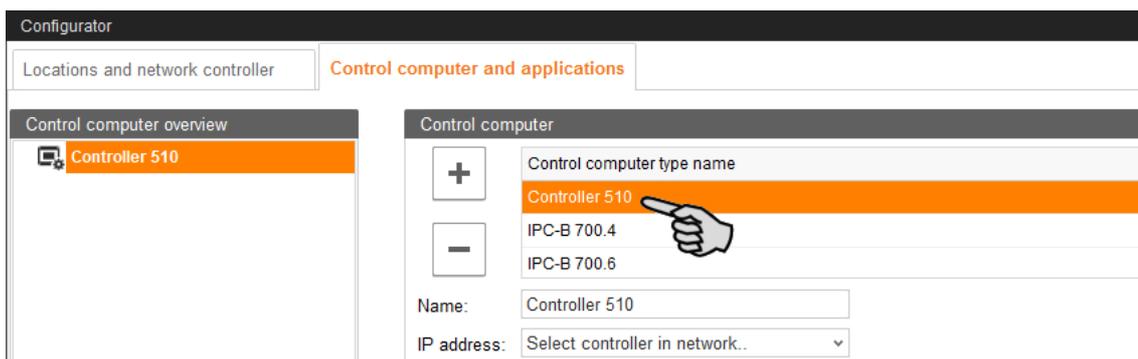


2. Click on the "Control computer and applications" tab.

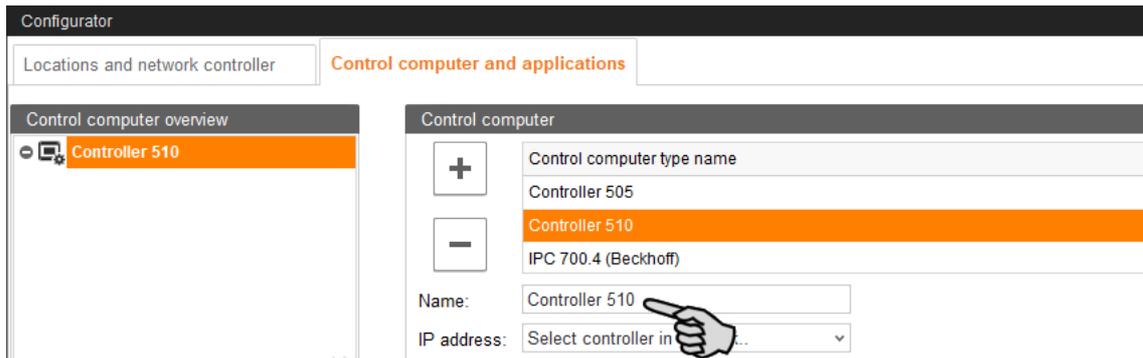


3. Select the correct control computer in the upper part of the window under "Control computer" and click on the plus button.

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



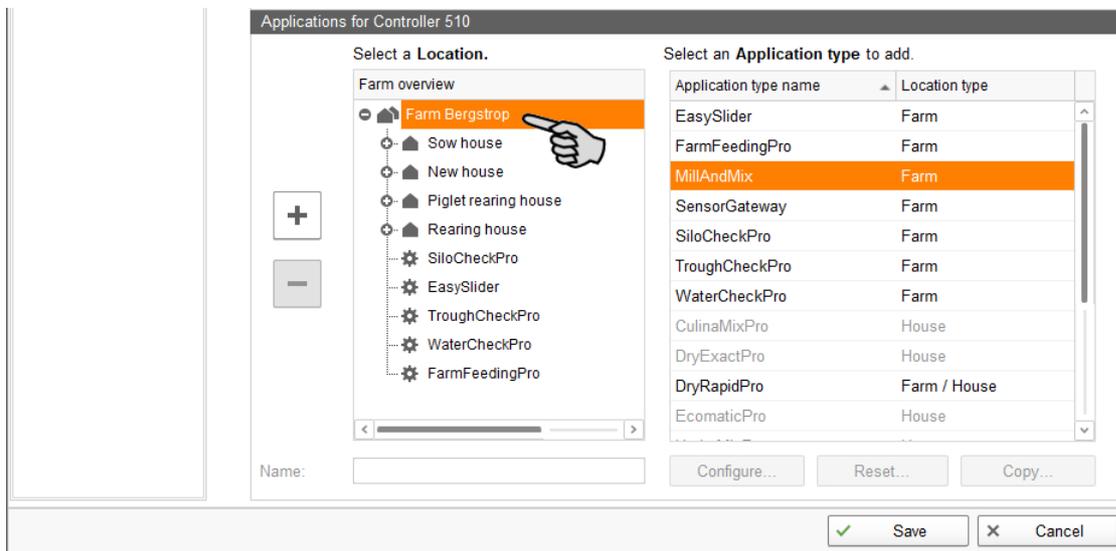
4. Enter a name for the control computer.



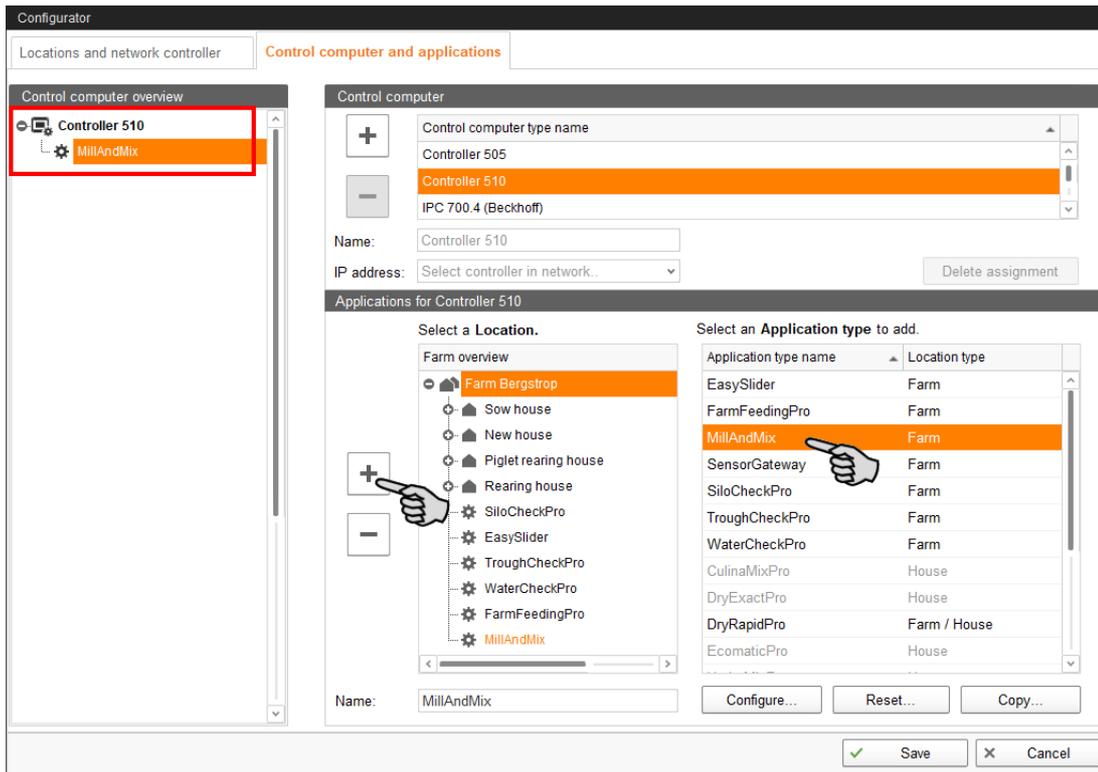
- From the lower part of the window under "Applications for...", select the location where the system is to be operated.

The applications available for selection depend on the selected location.

The MillAndMixpro application can only be added to the "Farm" level.

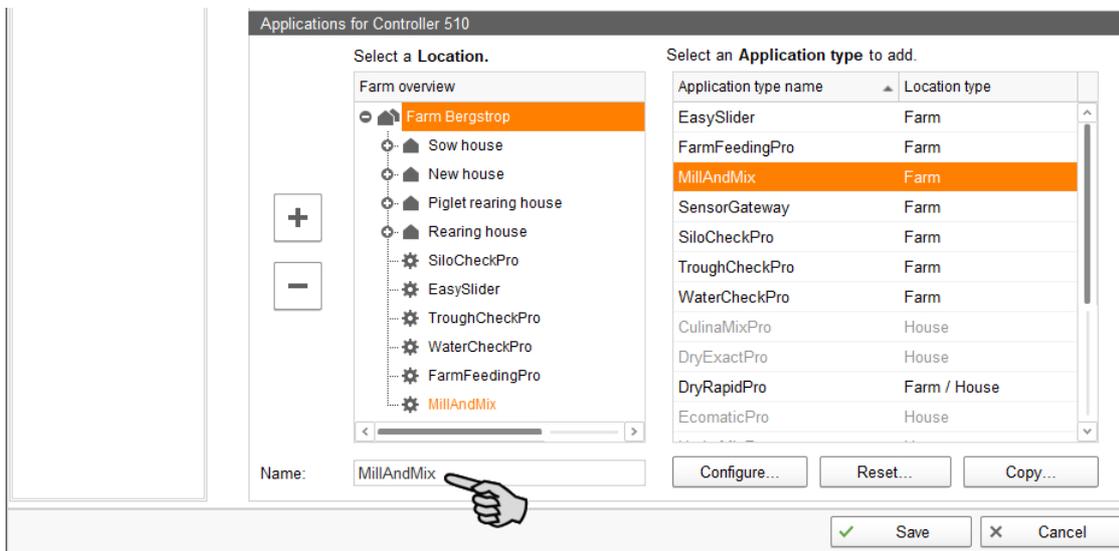


- Select the correct application in the table on the right and click on the plus button to the left.

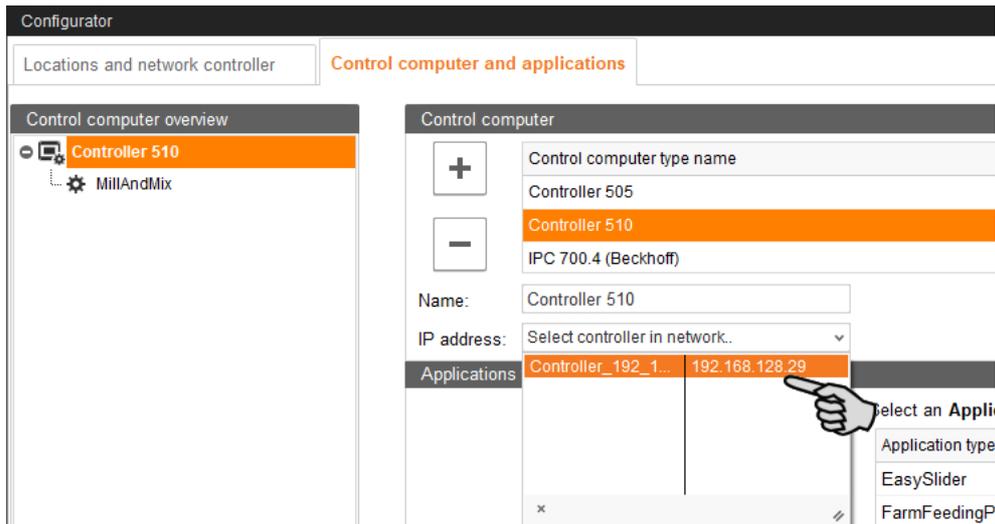


The selected application is assigned to the control computer on the left under "Control computer overview". In the structure, the control computer is displayed on the upper level and the respective application on the lower level.

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".

### 3.2 Configuring settings in the Composer

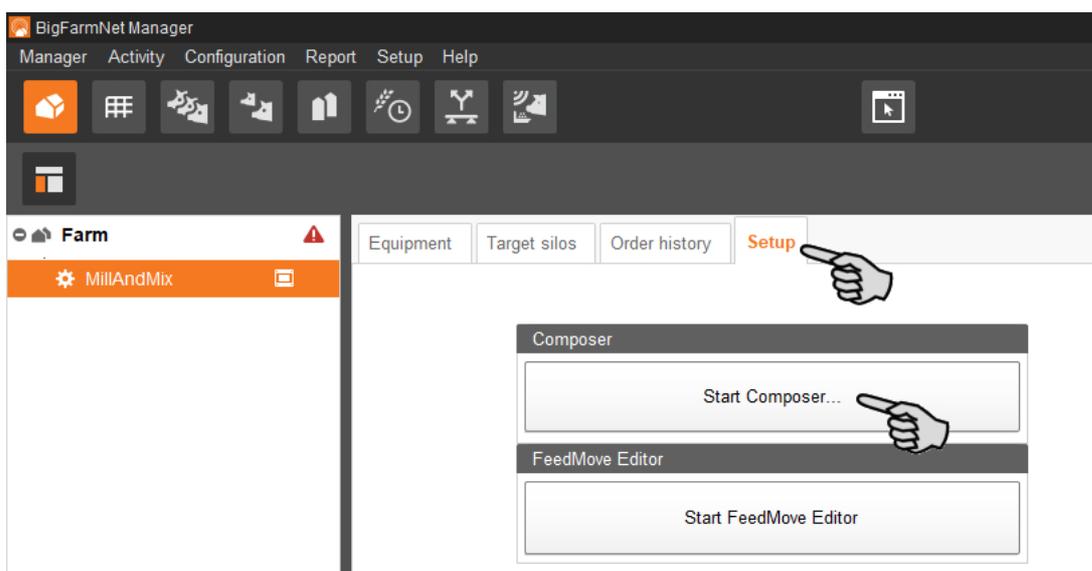
Define the functional range and configure settings according to the system's structure in the Composer. These settings are usually configured once.

1. Click on the respective system application in the farm structure.

**NOTICE!**

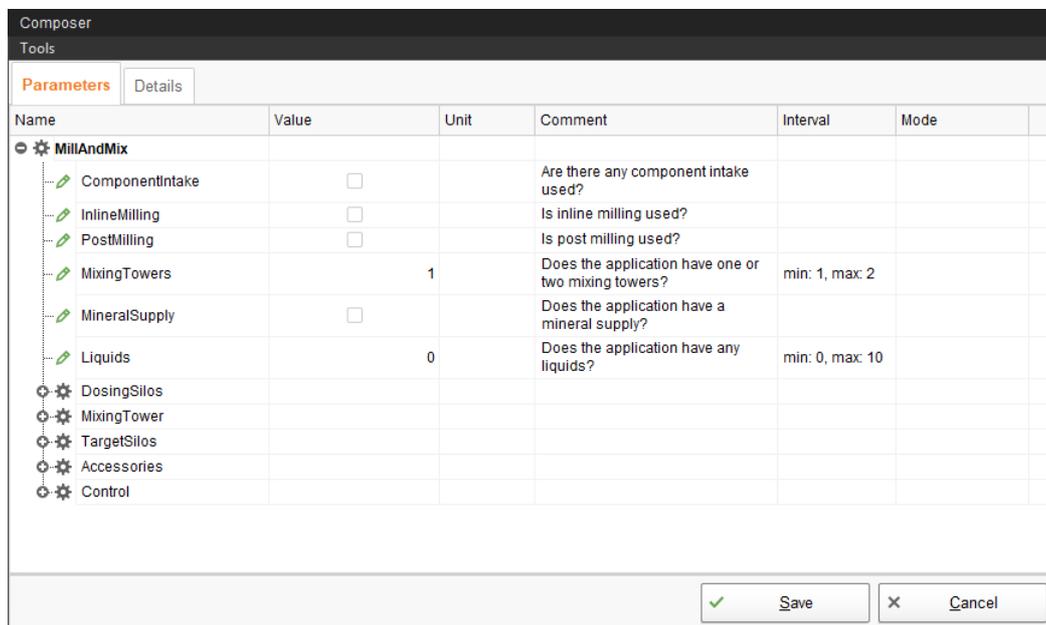
Check whether the application is running. Stop the application by clicking on  Stop in the upper bar.

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



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

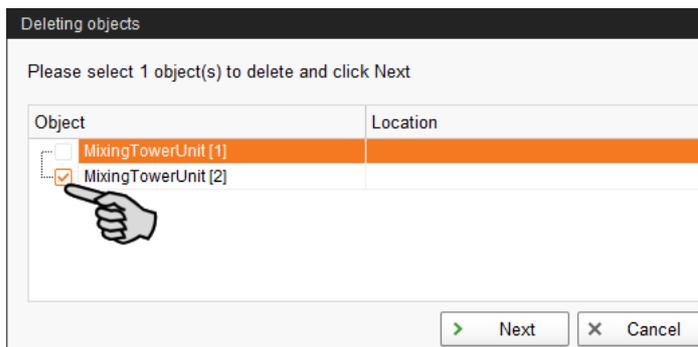
The column "Comment" contains information for setting of the values. The following explains some of the parameters:



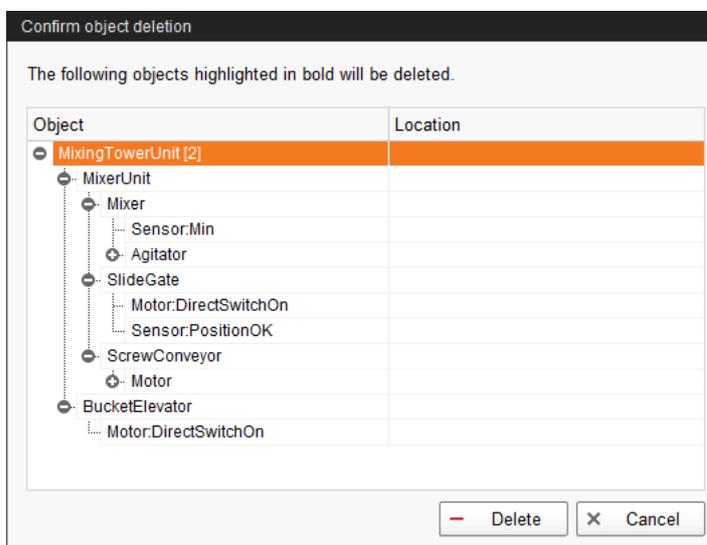
Name	Value	Unit	Comment	Interval	Mode
<b>MillAndMix</b>					
ComponentIntake	<input type="checkbox"/>		Are there any component intake used?		
InlineMilling	<input type="checkbox"/>		Is inline milling used?		
PostMilling	<input type="checkbox"/>		Is post milling used?		
MixingTowers		1	Does the application have one or two mixing towers?	min: 1, max: 2	
MineralSupply	<input type="checkbox"/>		Does the application have a mineral supply?		
Liquids		0	Does the application have any liquids?	min: 0, max: 10	
DosingSilos					
MixingTower					
TargetSilos					
Accessories					
Control					

- **Component intake:** The software can control the component supply from one or more truck pits to the silos. Where automatic silo filling is possible, silo groups can be added. Component supply can be controlled by both physical buttons and BigFarmNet Manager.
- **Post-milling / Inline milling:** The MillAndMix<sup>pro</sup> application can operate the system either with a post-milling process or an inline milling process. In post-milling, the component is weighed directly before it enters the mill. In inline milling, the component is weighed directly by the mill.
- **Mixing towers:** One or two mixing towers can be used in a MillAndMix system. Each tower can have both a pre-bin and a post-bin. Use of the pre- and post-bins is optional.
- **Mineral supply:** Mineral supply can contain minerals and microminerals.
- **Liquids:** Liquid components are stored in liquid silos and can be added to the mix in the mixer during agitation.
- **Accessories:** Under "Accessories", additional system components such as chain conveyors, conveying augers, bucket elevators, etc. can be added.

- **Control:** Under "Control", the start and end valves and the number of junction boxes with 16 outputs/18 inputs as a function of the number of feed valves are defined. Additionally, you can define the frequency inverters used to control the motors here.
4. 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".



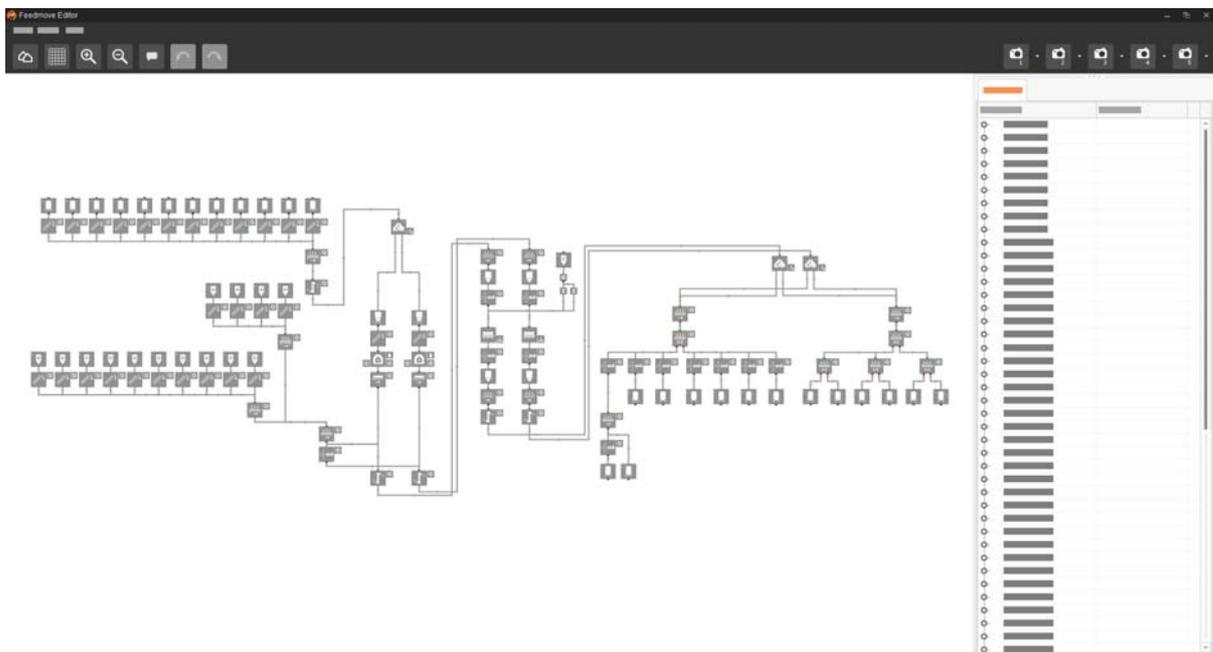
5. Click on "Save" to accept all settings for the Composer.

### 3.3 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!**

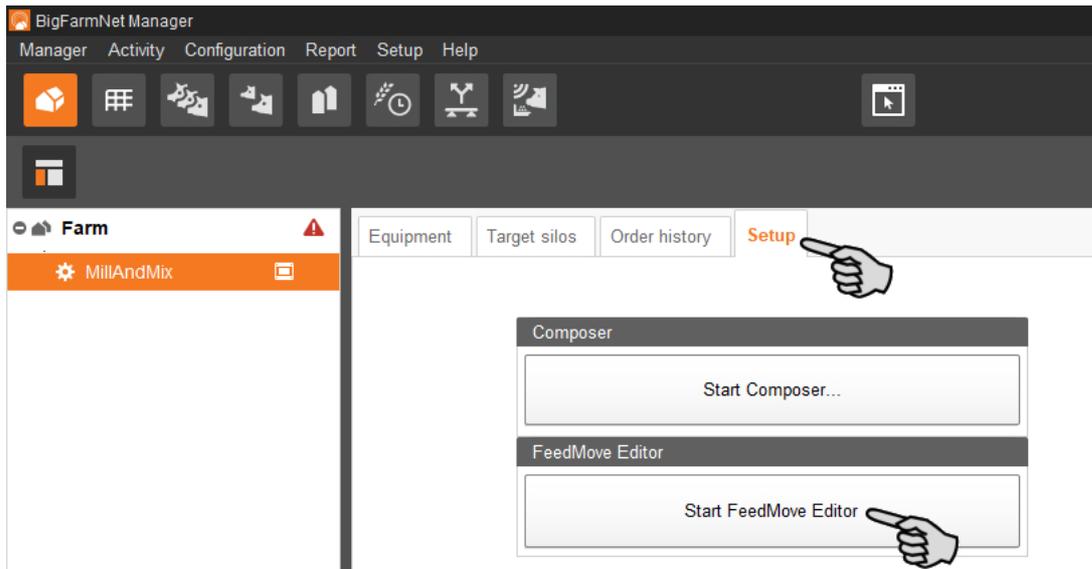
Automatically generated feed moves must be edited!



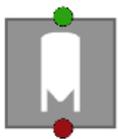
The completed depiction is displayed in the "View" application window. The image shows the system's activity during operation.

1. Click on the respective system application in the farm structure.
2. Under "Setup", click on "Start FeedMove Editor".

The FeedMove Editor opens in a new window.



### 3.3.1 Icons of the system components



Silo dry



Liquid silo / liquid tank



Mineral dosing unit



Micromineral dosing unit



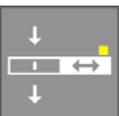
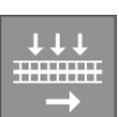
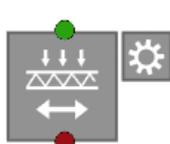
Truck pit



Manual supply

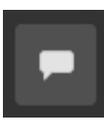
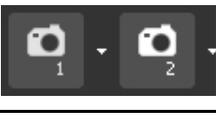


Mill

	Mixing tower
	Mixer pre-bin / post-bin
	Bucket elevator
	Cleaner inline mill
	Tilting box
	Scraper
	Mill distributing auger
	Chain conveyer
	Cross conveyer
	Pump
	Vibrator
	Agitator
	Valve
	Drive

### 3.3.2 Basic functions

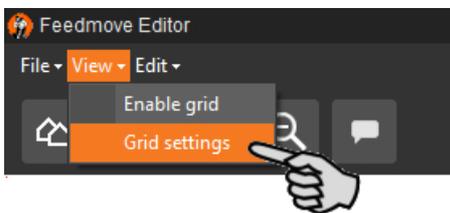


	View	Complete view of the system
	Grid	Hide / show grid lines
	Zoom in / zoom out	Zoom into / out of the view
	Description boxes (labels)	Hide / show description boxes of specific system components
	Undo / redo	Undo / redo an action
	Camera	Save different views of the system

### 3.3.3 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".

### 3.3.4 Linking system components

#### 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  .

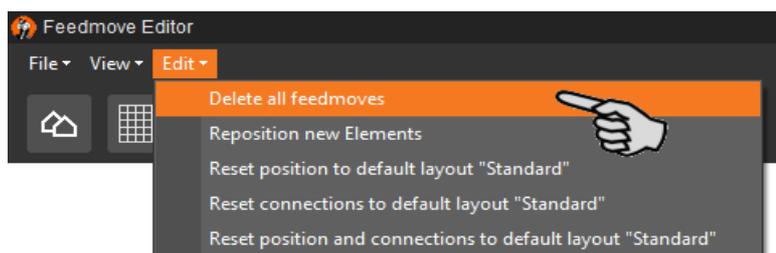
b) Click on the link.

The colour of the link changes to orange.

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

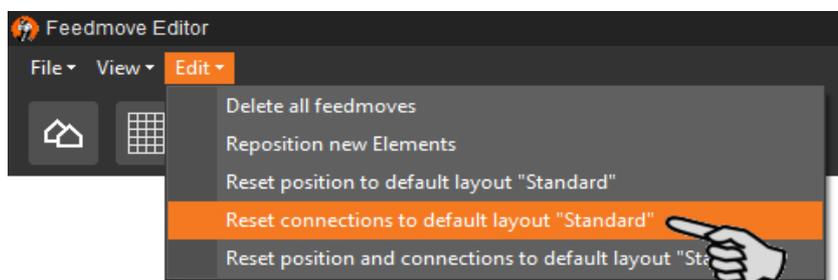
The link is deleted.

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



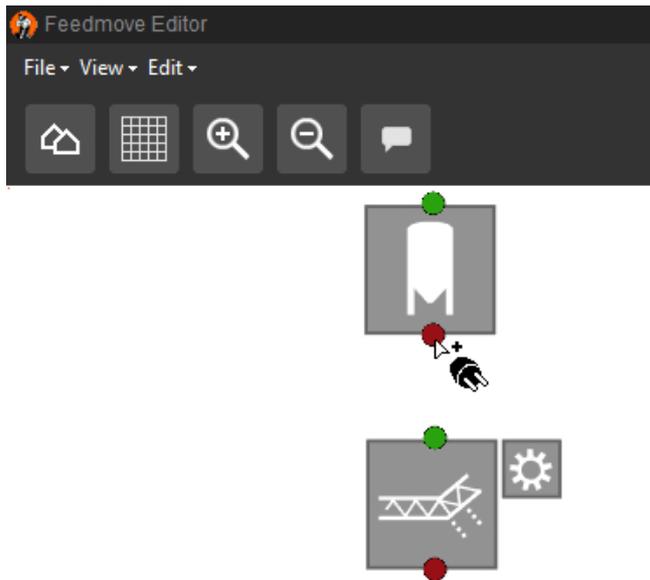
- **Resetting to default:** For EcoMatic, the system components are connected automatically by default links. If this configuration has been changed, you may reset the default links and continue using this default.

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



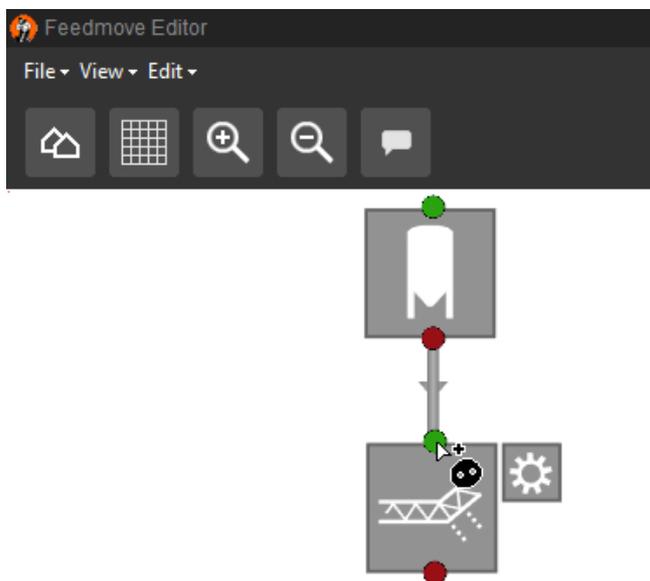
1. Move your mouse pointer to the **red dot** of the specific system component.

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.



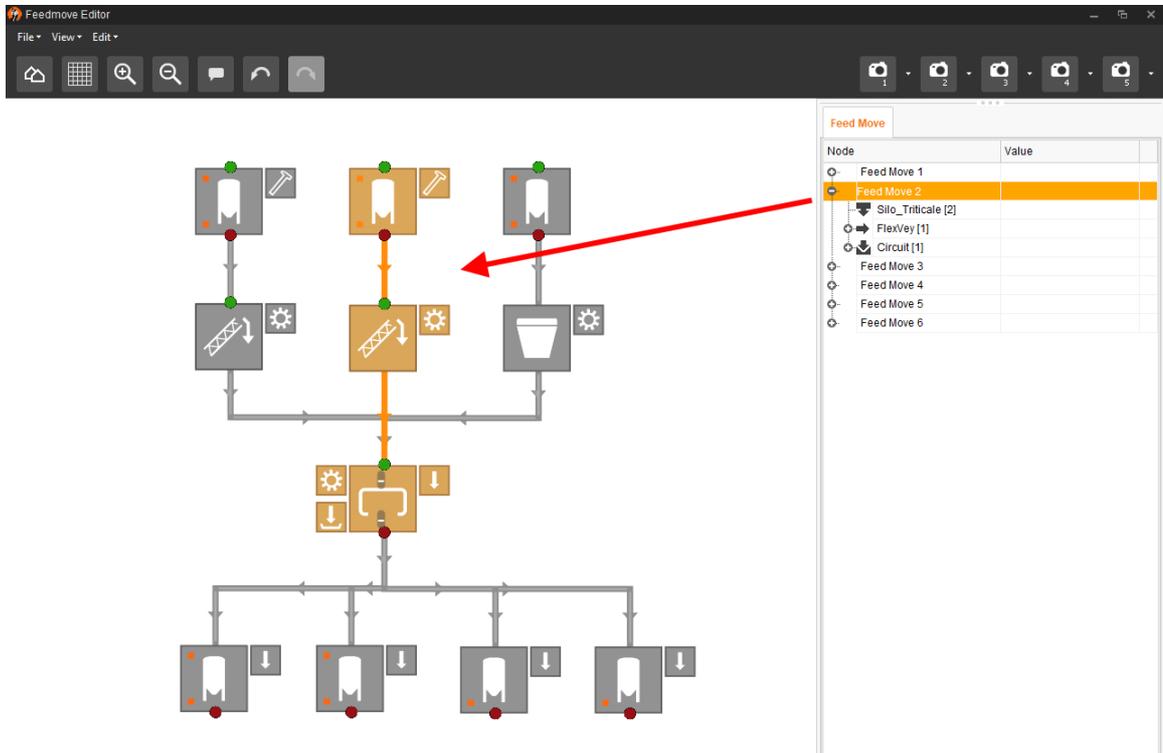
4. Release the mouse button.

The two system components are now linked. The corresponding feed move is created in the window to the right.

Linked system components without green or red dot cannot be linked further.

5. Continue linking all system components so that a complete feed move route from the silo to the circuit is created.

- In the window on the right-hand side, click on a feed move to check the link. The corresponding part of the route is marked orange in the overview. Furthermore, the feed move structure opens and all technical elements belonging to this move are displayed.



### 3.3.5 Selecting and moving system components

#### NOTICE!

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

---

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.

### 3.3.6 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".

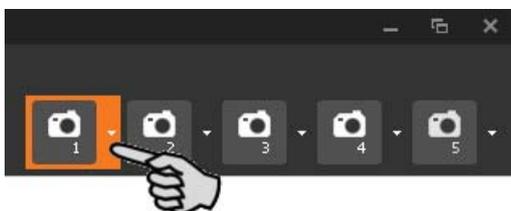
1. Adjust the view as follows:

- **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.

### 3.4 Changing settings in the Composer

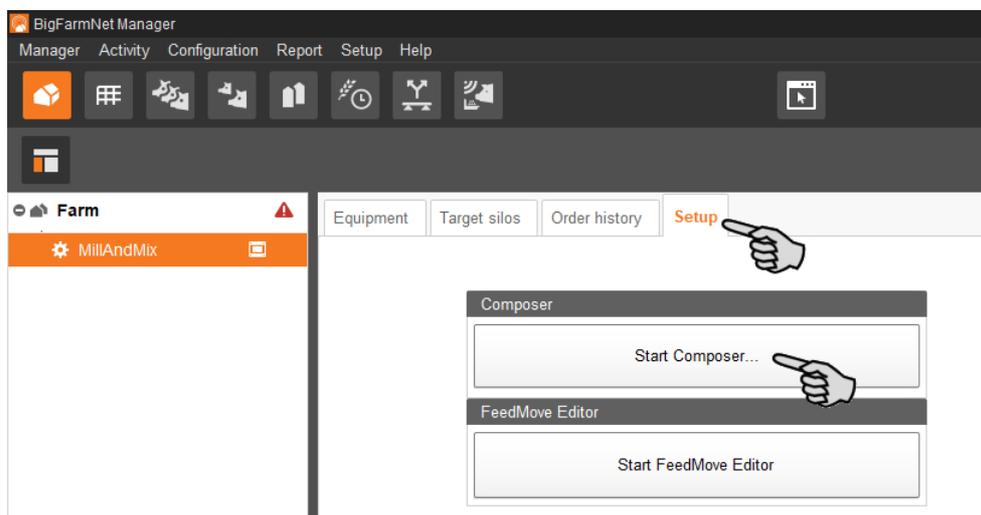
Usually, all functions of the installed system are defined once in the Composer. If necessary, the Composer can be opened as follows for subsequent modifications:

1. Click on the respective system application in the farm structure.

#### **NOTICE!**

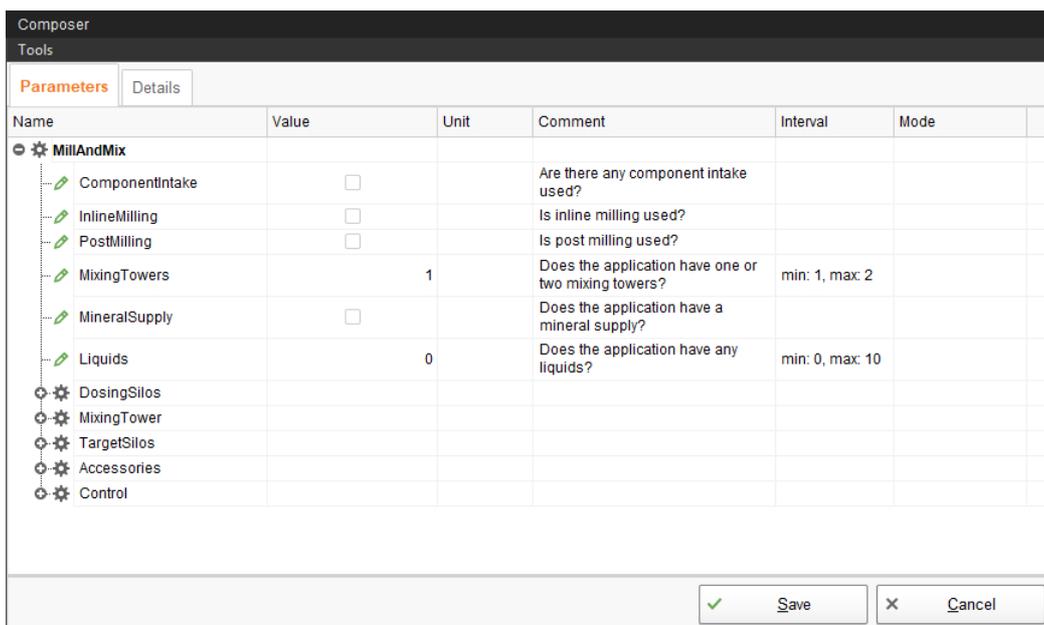
Check whether the application is running. Stop the application by clicking on  Stop in the upper bar.

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



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

For explanations on the selected parameters, see chapter 3.2 "Configuring settings in the Composer".



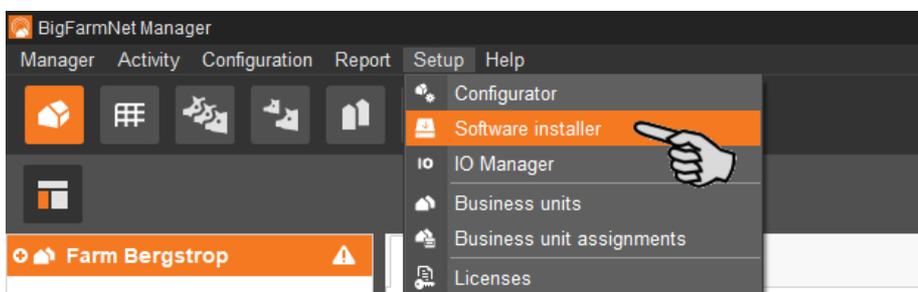
- Click on "Save" to accept all settings for the Composer.  
The next dialog prompts you to restart the control computer.
- Confirm the dialog by clicking on "OK".



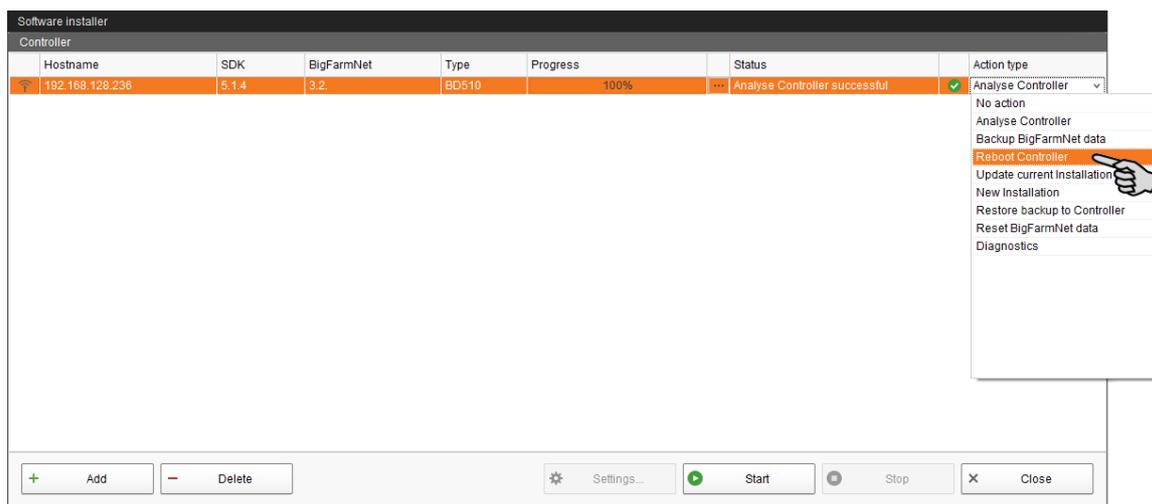
The FeedMove Editor starts automatically so you can first adjust for the changes in the feed moves, chapter 3.3 "Depicting the system in the FeedMove Editor".

After completing the changes in the FeedMove Editor, a new dialog appears, prompting the restart of the control computer. If you want to restart the control computer, follow the next steps.

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



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



9. Click on "Start".

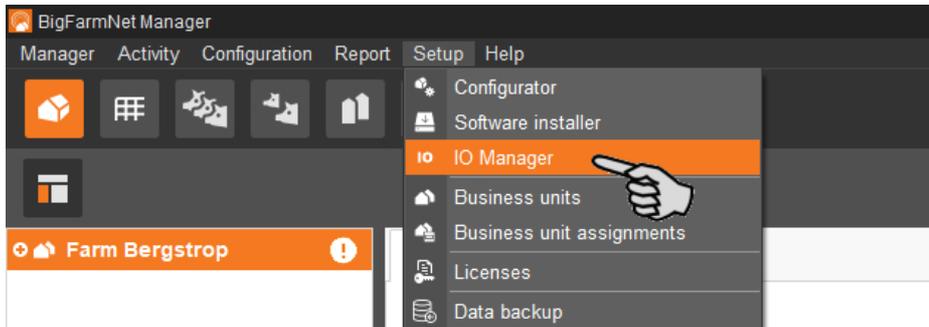
**i NOTICE!**

This process may take a few minutes!

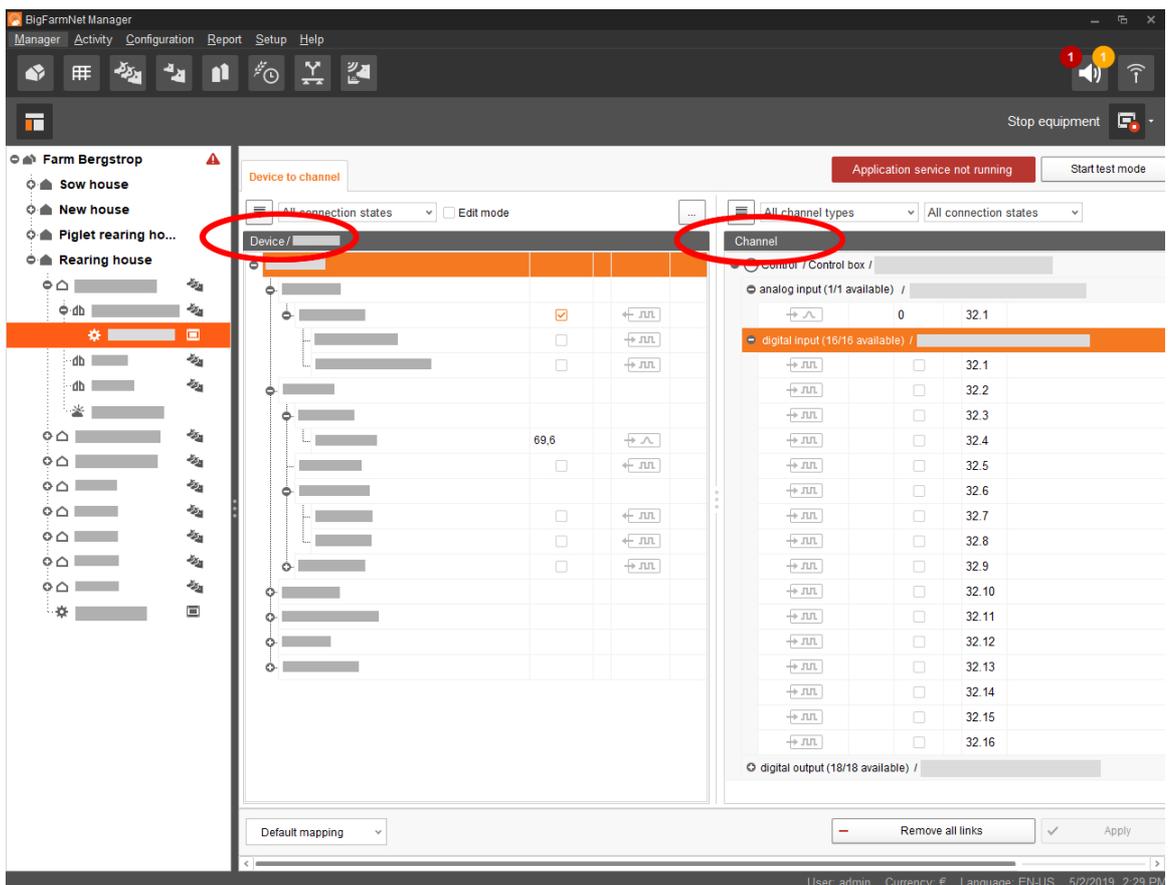
### 3.5 Configuring the IO Manager

The control is set up in the IO Manager. Assign the functions of the system that were defined in the Composer in the previous step to the IO cards.

1. Click on 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 connection state
-  Showing the control cabinet number
-  Showing the channel according to the channel type

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

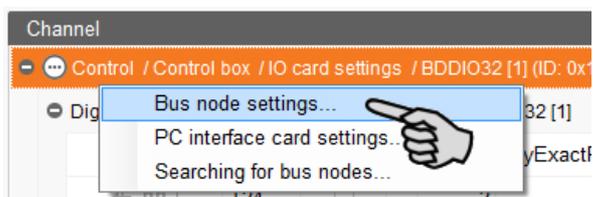
-  Digital output
-  Digital input
-  Analog output
-  Analog input
-  Counter input
-  Serial interface
- Linked interfaces are colored:  
- Non-linked interfaces are grayed out:  

### 3.5.1 Changing the node ID

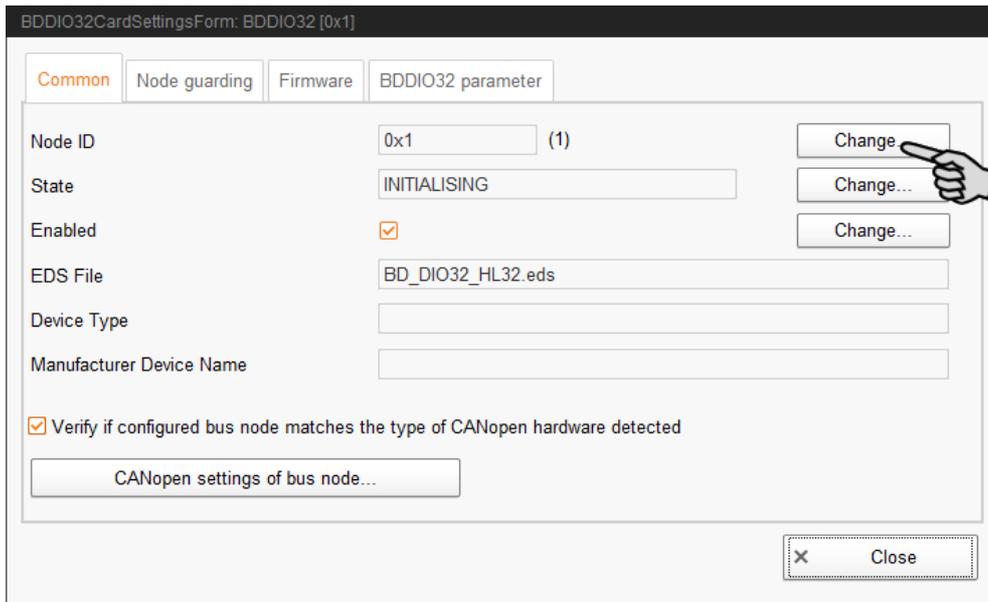
Please refer to the enclosed wiring diagram for information on the devices' CAN addresses. Assign the CAN addresses in accordance with the wiring diagram.

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...".

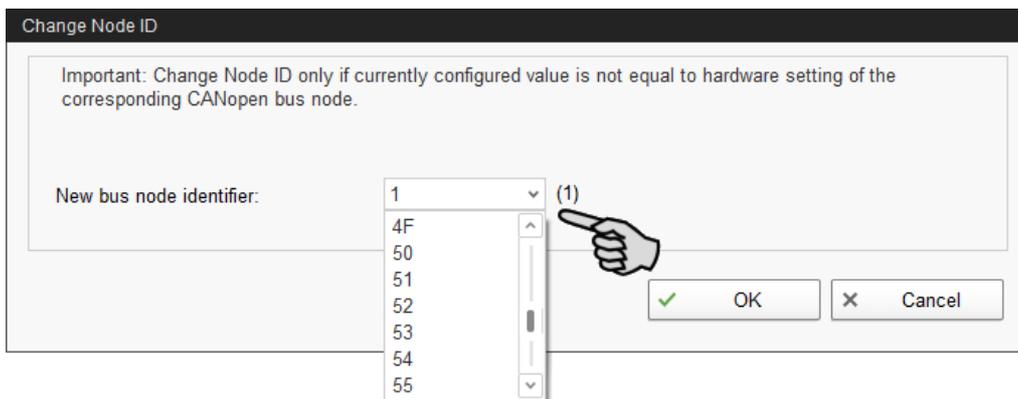
This opens a new dialog.



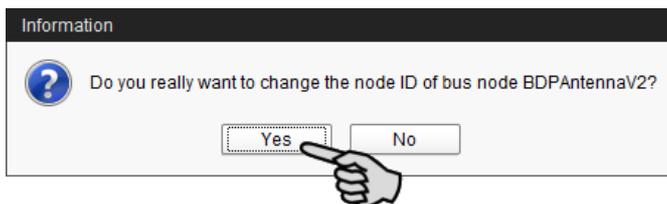
3. In the first tab, click on "Change..." next to "Node ID".



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



5. Confirm the prompt for confirmation.



6. Click on "Close" to close the dialog.

### 3.5.2 Creating links

Link the different devices manually with the corresponding IO card. The system currently does not support the "Default mapping" function (button).

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

In the preset, only inputs are shown at first.

This function is only possible for BDDIO32 IO cards.

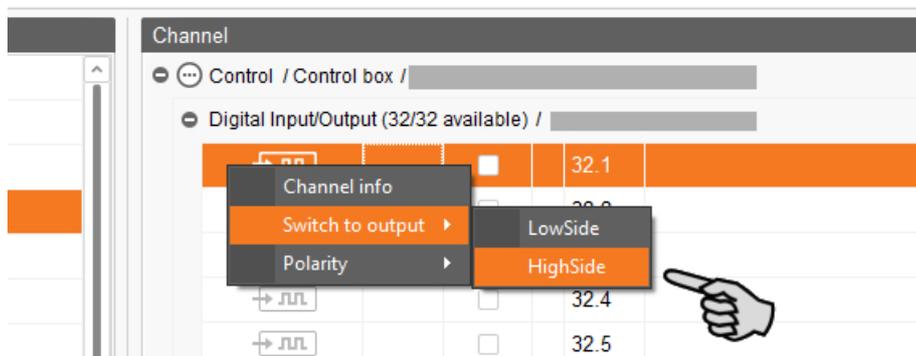
- a) Select one input or select multiple inputs by holding the Ctrl key.

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

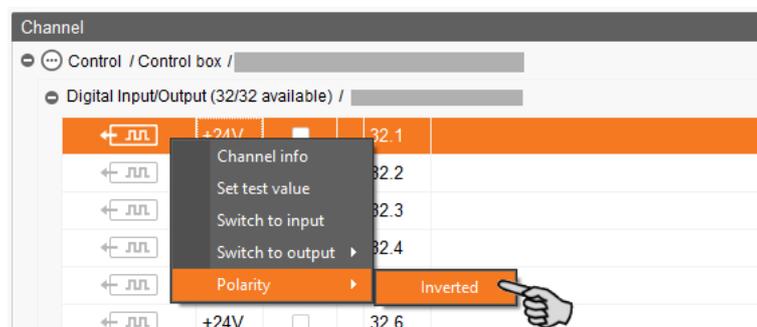
- b) Right-click into the marked area.
- c) In the context menu, select "Switch to output" > "HighSide", if the new output should switch to high side (24 V).

Or:

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



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

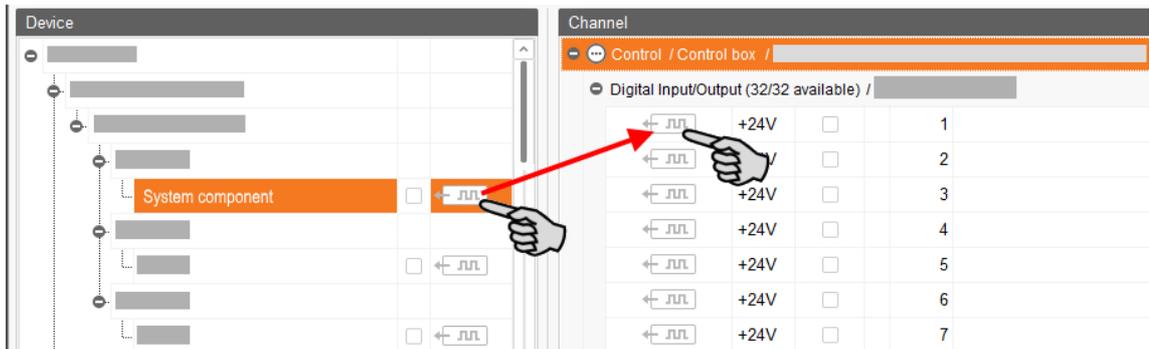


2. Select one of the following options to link the interfaces:

#### 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.

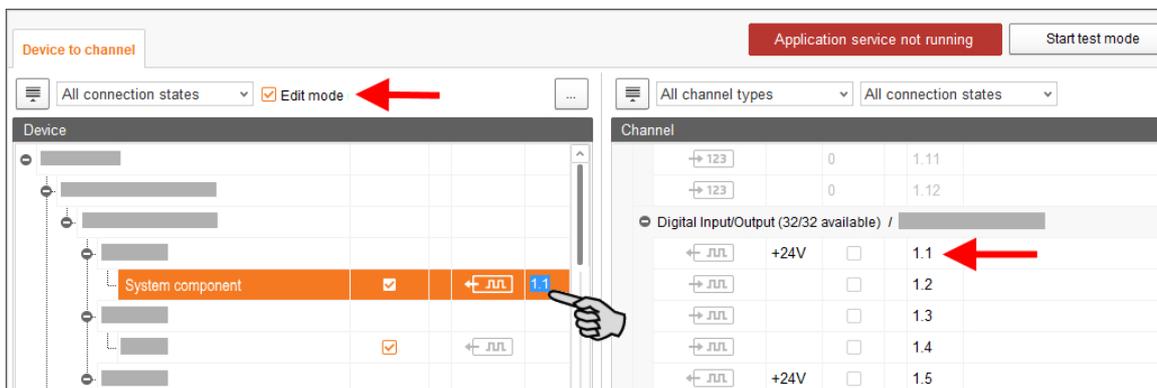
The system component and the channel are now linked. The icons are colored



**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.

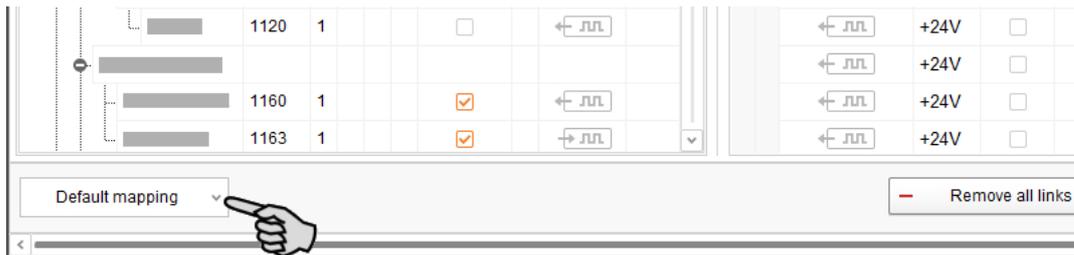
- Click on "Restart application" at the top of the window to start the control.

### 3.5.3 Importing a wiring diagram

Wiring diagrams can be loaded in CSV format.

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

This opens a context menu.



- Select "Load switch cabinet mapping".



### 3.5.4 Using the test mode

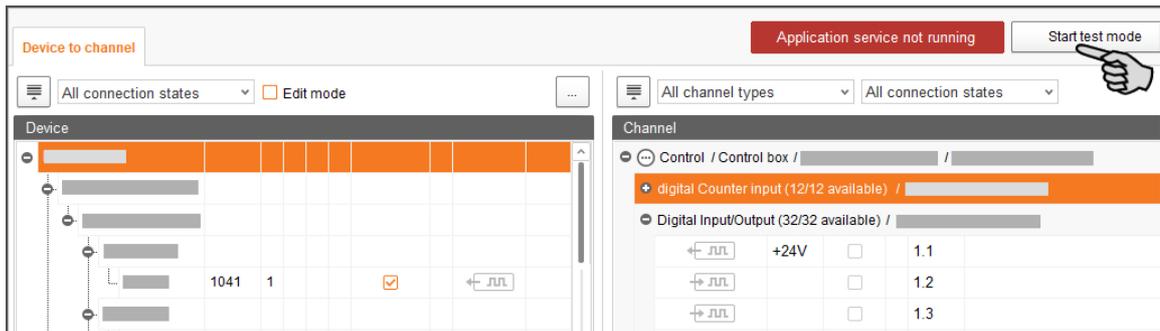
In the test mode of the IO Manager, all devices can be turned on and off to check the correct setup of the control before starting to operate the system.

#### **⚠ 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.

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



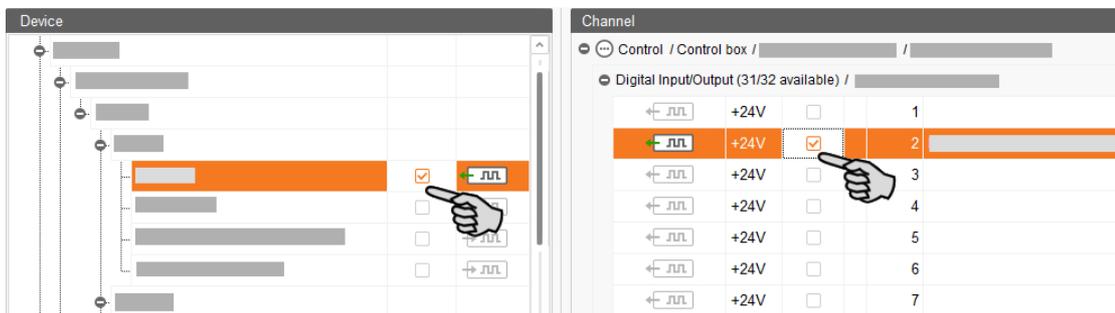
2. In the "Device" part of the window, double-click on the interface of the device you want to turn on .

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.



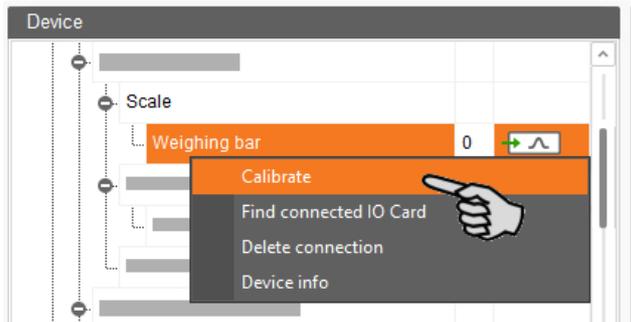
4. Turn off the device by deactivating the check box.
5. End the test mode by clicking on  in the upper bar.

### 3.5.5 Calibrating the scale

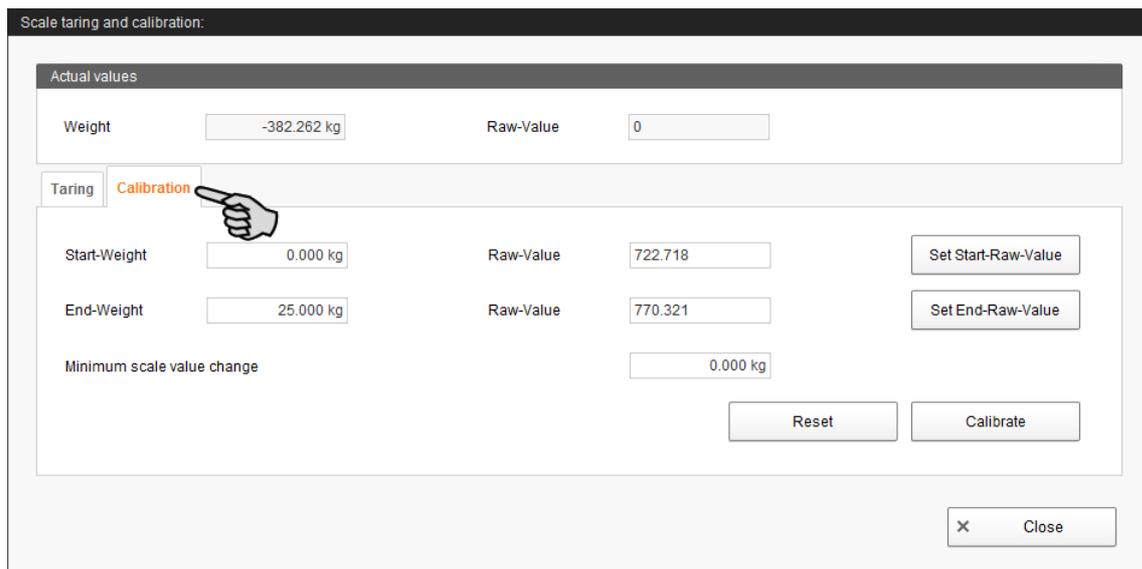
You may calibrate a scale as soon as you have created a link between the weighing bars and the respective weighing box.

1. In the "Device" area, right-click on "Weighing bar".
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 **start weight** (usually the value 0) and click on "Set start raw value".
5. Enter the used calibration weight under **End weight**.
6. Load System component with the calibration weight.
7. Click on "Set end raw value".
8. Remove the calibration weight.
9. Click on "Calibrate" to complete the calibration process.
10. Close the dialog.

### 3.6 Manually controlling the system components

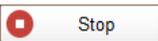
The system can be controlled manually in the "View" window after you have created the image in the FeedMove Editor (chapter 3.3). You may manually control the MillAndMix system via the image by activating or deactivating individual system components.

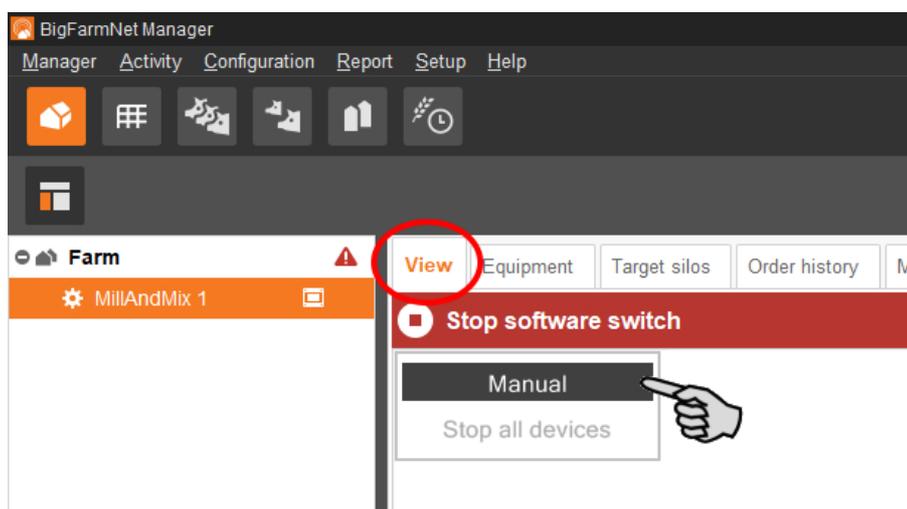
#### **i** NOTICE!

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 respective system application in the farm structure.
2. Under "View", click on "Manual".

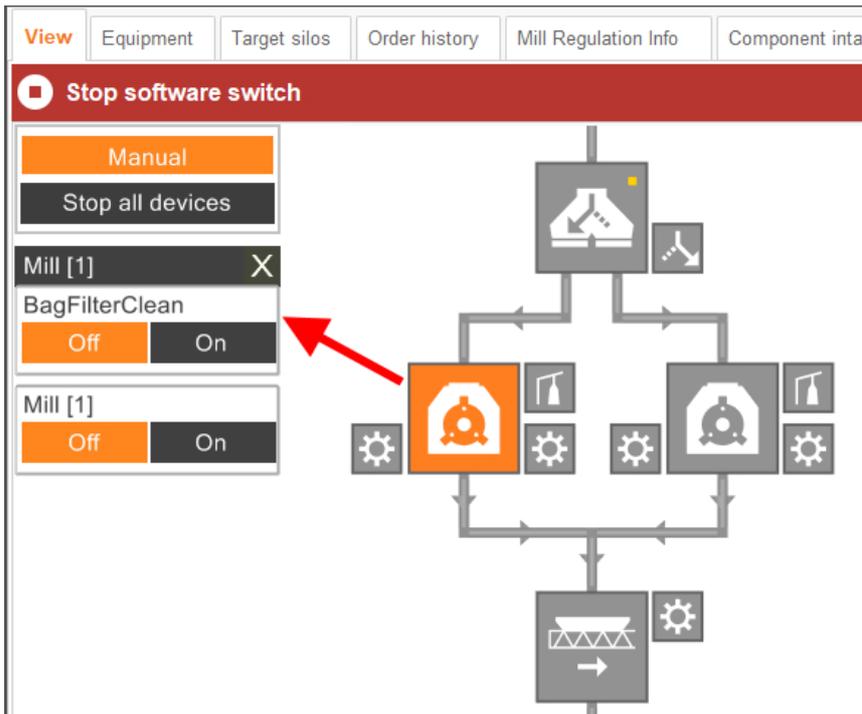
#### **i** NOTICE!

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

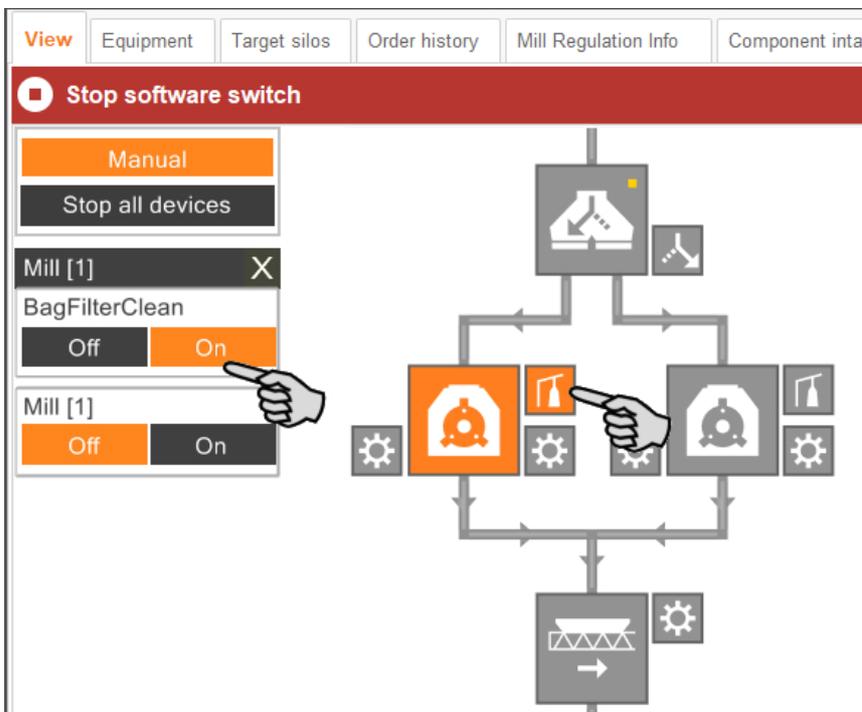


3. If necessary, adjust the view or retrieve one of your saved views using the camera icons, see chapter 3.3.6.
4. You can manually switch on or off functions of the system components as follows:
  - a) Click on the respective system component.

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

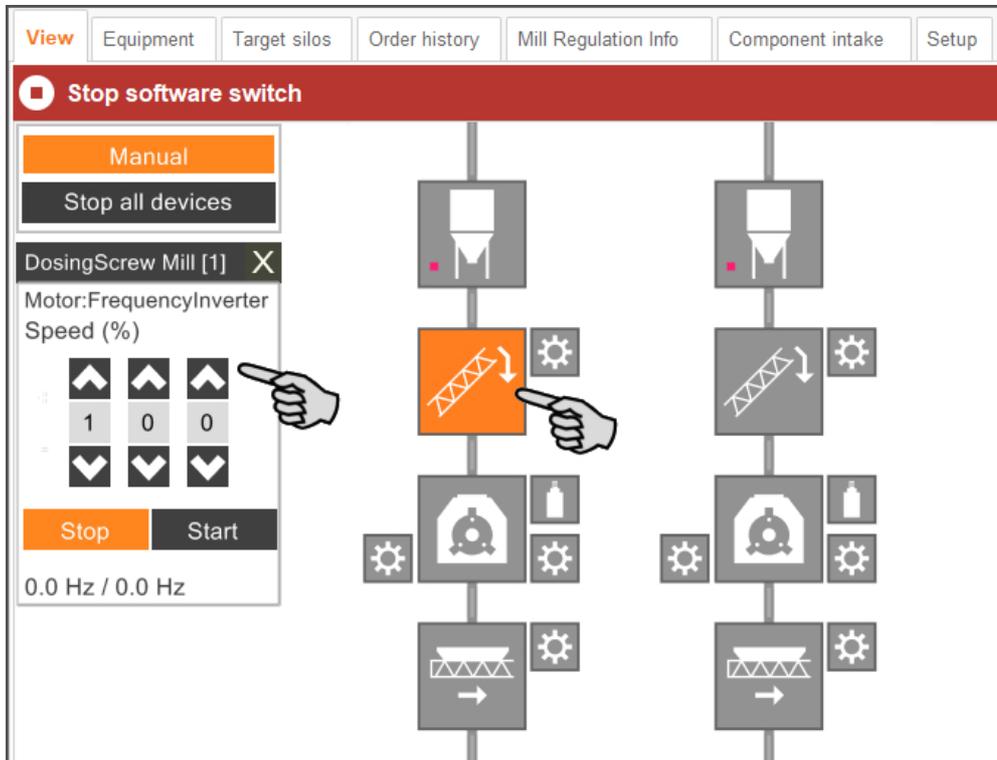


- b) Activate or deactivate the required element in the window to the left or by clicking directly on the element icon in the view.  
Active elements are orange. Inactive elements are gray.



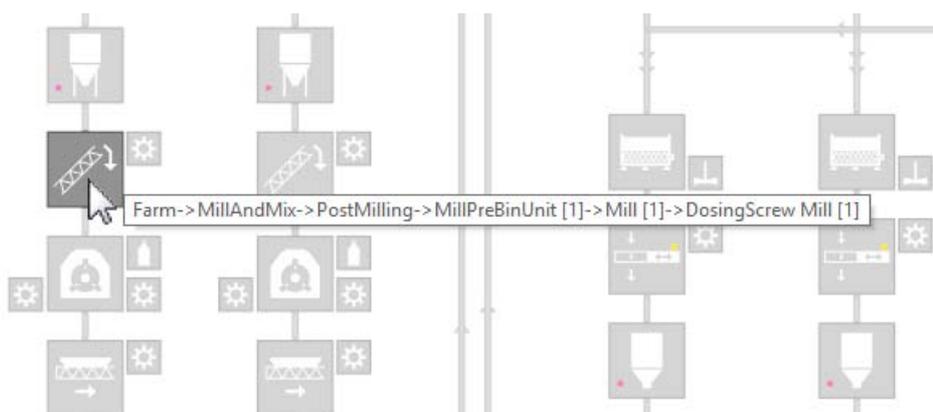
- Change the frequency of a system component that is controlled by a frequency inverter, e.g. an agitator or a pump, if necessary.

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



- 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.



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

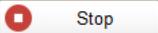
### 3.7 Manual actions for the feed moves

The function for manual actions is located in the "View" 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. transport a component from a silo to a mixer. Manual actions can also be defined for multiple feed moves. Define an order according to which the actions will be processed.

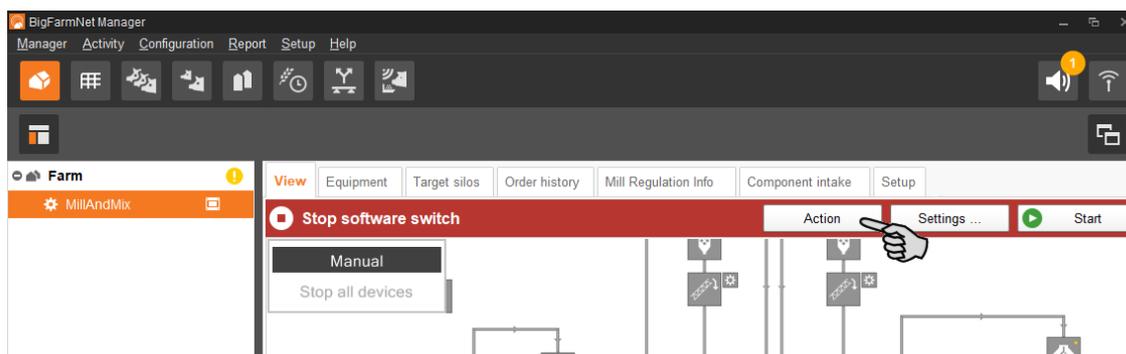
1. Click on the respective system application in the farm structure.

#### NOTICE!

Check whether the application is running. Stop the application by clicking on  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. Configure the temporary setting under "End condition", " Pump" and "Agitator speed".

Depending on the feed move and the system component, the correct parameter will be unblocked for the action, e.g. the button "<= until minimum weight". If you click on this button, the system turns off as soon as the source from which components are removed has reached the minimum weight.

5. Click on "Start" in the lower command bar to start the action for the selected feed move immediately.

OR:

Click on "Add" in the lower area if you want to add actions for other feed moves.

Feed moves with defined actions are listed in the field on the right. Use the arrows pointing upwards and downwards to sort the actions in the correct order for execution.

6. Click on "Start" in the lower command bar to start the action(s).
7. Click on "Close" in the lower command bar to close the dialog window.

### 3.8 Stopping the system and canceling an action

You may stop the system during operation by clicking on "Stop" in the upper bar in the "Equipment" window. If you click on "Start" again, the system continues to operate with the current action.



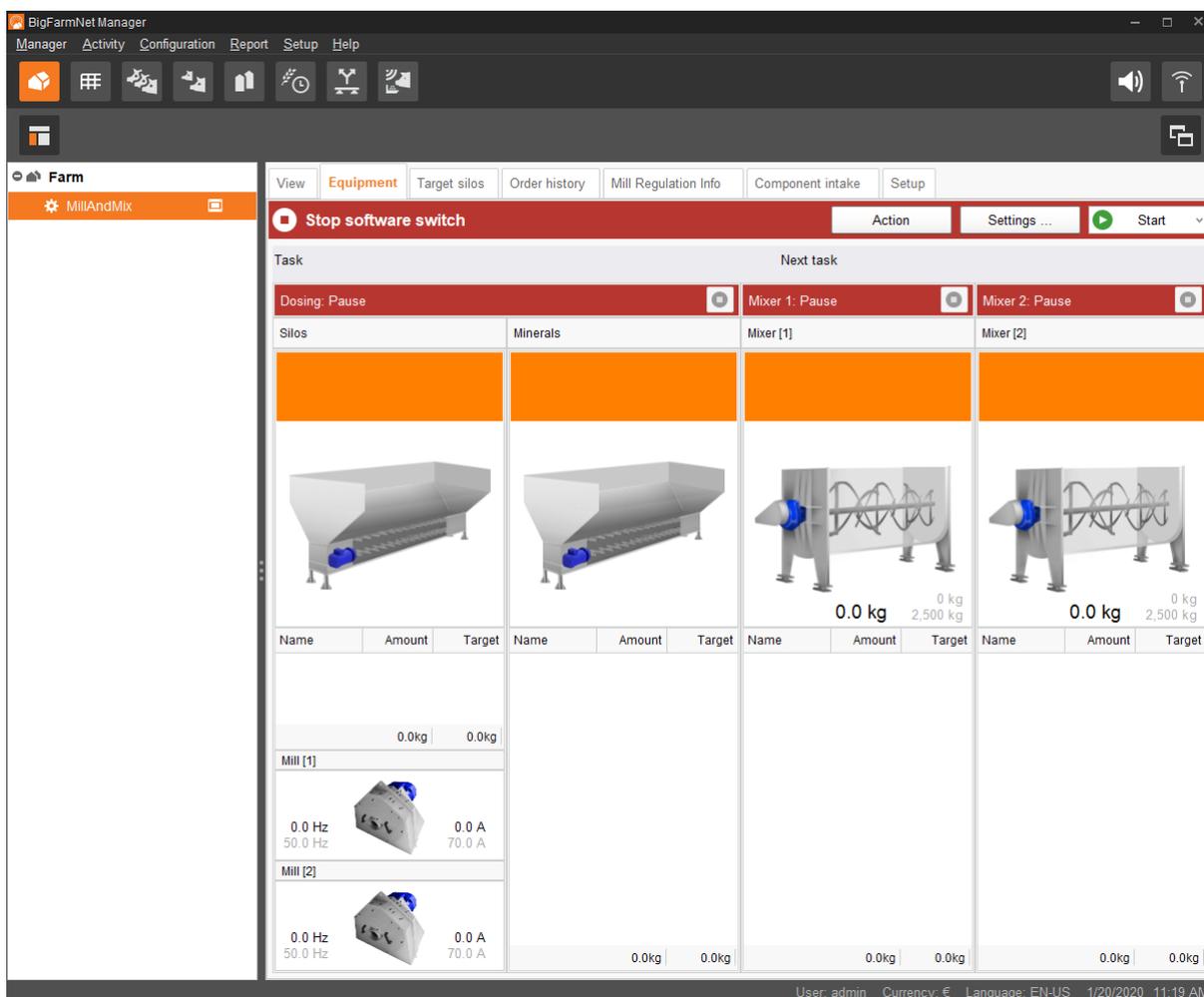
If you click on the arrow pointing downwards next to the "Start" button, you have the following option:

**Start with canceling current batches:** The system starts, cancels the current batches and then continues with the next batch of this order, as defined in the Task Manager. Before selecting this option, the entire system must be emptied via manual control.



### 3.9 "Equipment" window

The "Equipment" window shows all relevant data and individual system components of the installed MillAndMix system as independent sub-applications. Each sub-application can be stopped and restarted. If a sub-application generates an alarm, only this sub-application goes into error mode. The other sub-applications continue running.



### 3.10 Target silo

The window "Target silos" contains a list of all target silos of the MillAndMixpro application. You can view information about the target silos and change settings regarding automatic filling as follows:

- **Auto fill:** Activate or deactivate automatic filling.
- **Auto fill start / end:** Period during which a silo should be filled automatically.
- **Order amount:** The number of batches in this order.
- **Batch size:** The size of the batch in kilograms.
- **Mixing tower:** Select one or both mixing towers, if applicable.

View	Equipment	Target silos	Order history	Mill Regulation Info	Component intake	Setup	
Silo information		Target Silos					
Target silo	<input type="text" value="TargetSilo [1]"/>	Target Silo	Recipe	Priority	Top sensor state	Min sensor state	Auto fill enabled
Recipe	<input type="text" value="Mix 2"/>	TargetSilo [1]	Mix 2	50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Priority	<input type="text" value="50"/>	TargetSilo [2]	Mix 2	50	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Top sensor state	<input type="checkbox"/>	TargetSilo [3]	Mix 2	50	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Min sensor state	<input type="checkbox"/>	TargetSilo [4]	Mix 2	50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Auto fill settings		TargetSilo [5]	Mix 2	50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Auto fill	<input type="checkbox"/>	TargetSilo [6]	Mix 2	50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Auto fill start	<input type="text" value="12:00 AM"/>	TargetSilo [7]	Mix 2	50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Auto fill end	<input type="text" value="12:00 AM"/>						
Order amount	<input type="text" value="0"/>						
Batch size	<input type="text" value="0.0 kg"/>						
Mixing tower	<input type="text"/>						
Manual order controls							
Order name	<input type="text" value="TargetSilo [1]"/>						
Order amount	<input type="text" value="0"/>						
Batch size	<input type="text" value="0.0 kg"/>						
Rest order	<input type="text" value="0"/>						
Mixing tower	<input type="text"/>						

User: admin Currency: € Language: EN-US 1/20/2020 11:20 AM

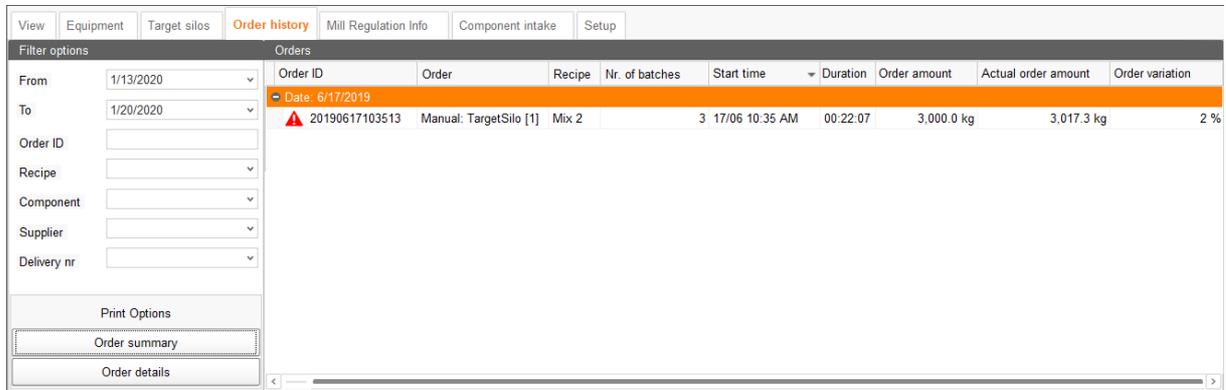
You can also manually create an order using the following parameters:

- **Order name:** The name of the order.
- **Order amount:** The number of batches in this order.
- **Batch size:** The size of the batch in kilograms.
- **Rest order:** This field is read-only.
- **Mixing tower:** Select one or both mixing towers, if applicable.

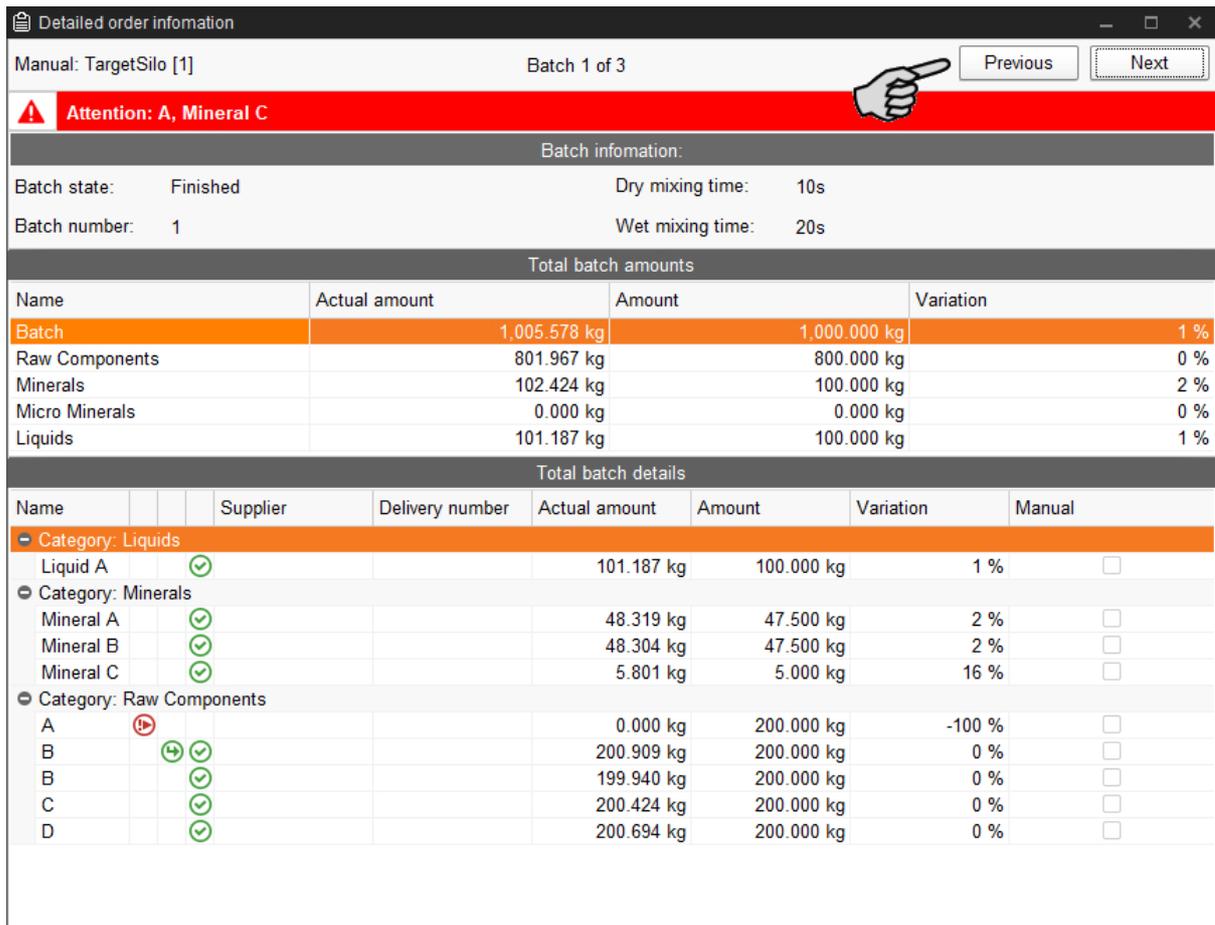
If all fields have been filled correctly, the button "Add new manual task" appears.

### 3.11 Order history

The window "Order history" shows all orders the MillAndMix system has processed. This log can be filtered for different criteria:

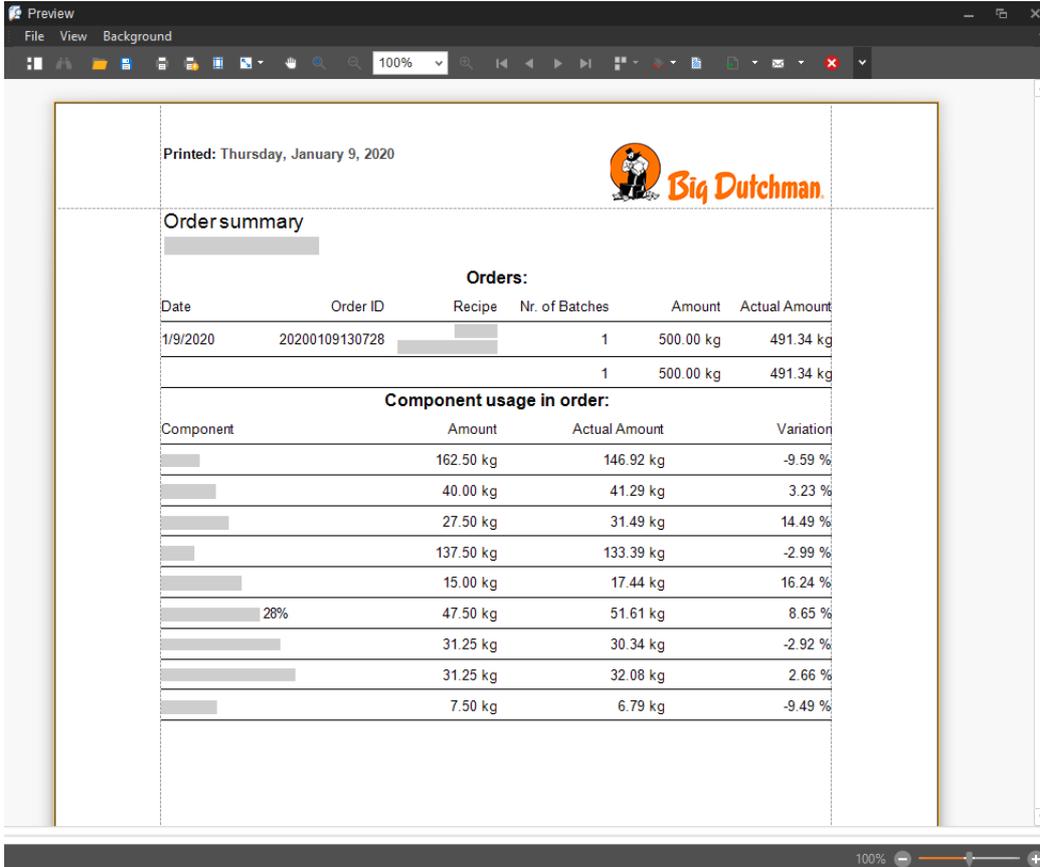


Double-click on an order to open a new window with additional information regarding the individual batches of the order. Toggle between the different batches using the buttons "Previous" and "Next".

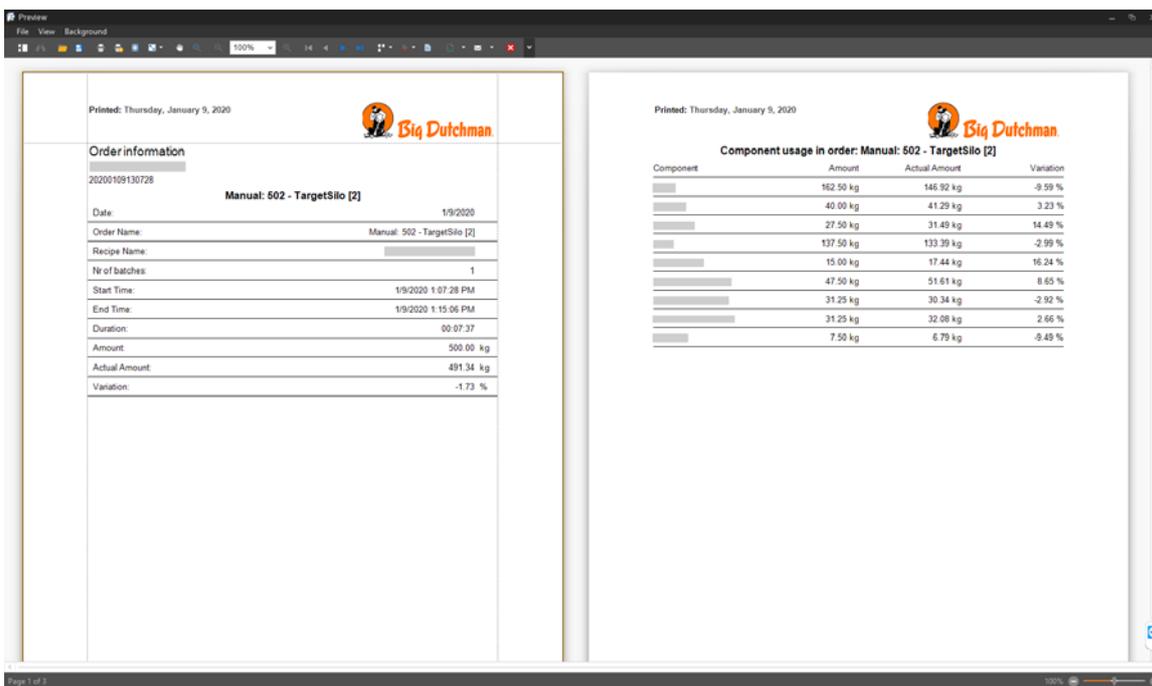


You can also save or print order information:

- Order summary by clicking on the button "Order summary"

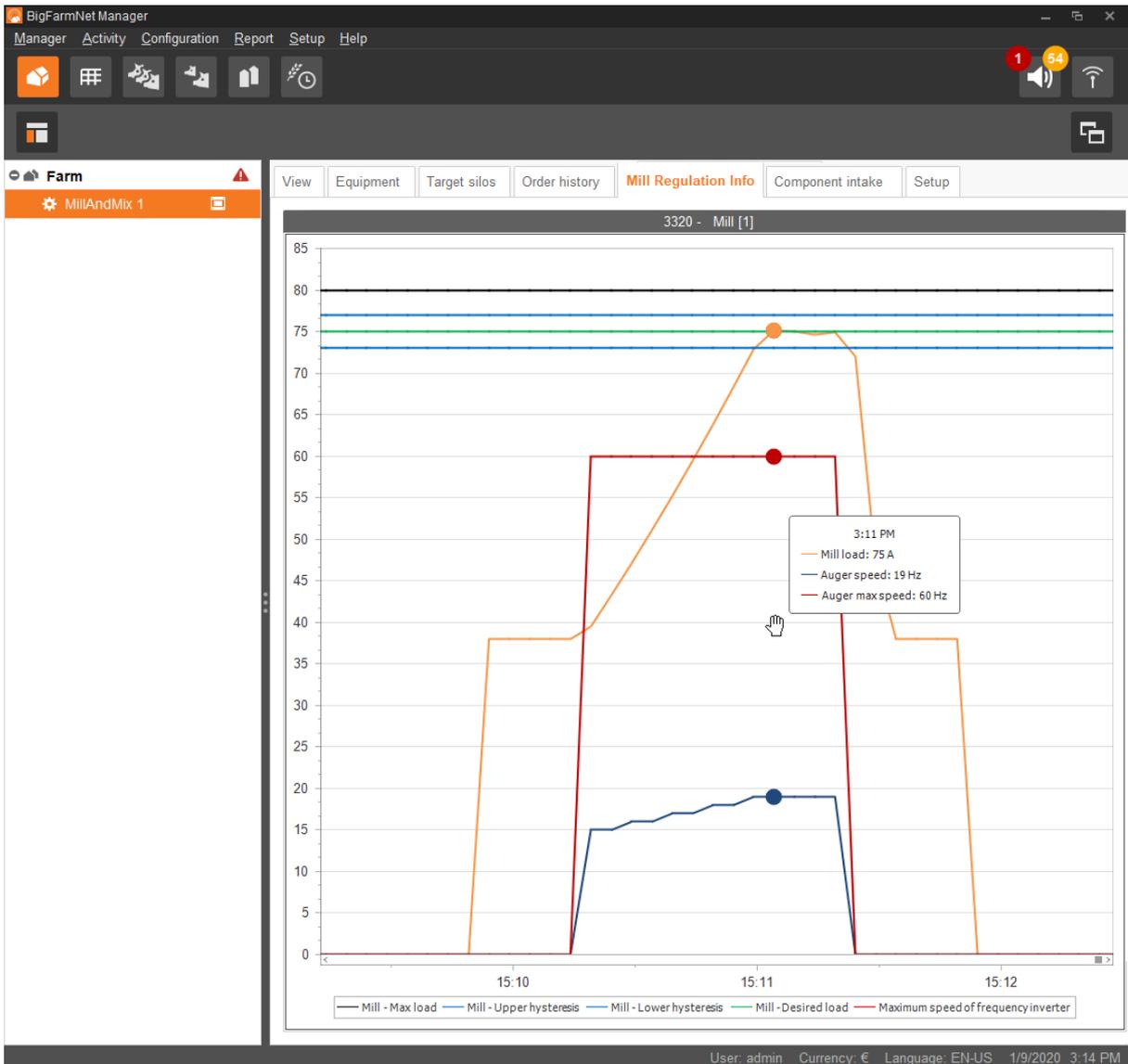


- Order information including historical data by clicking on the button "Order details"



### 3.12 Mill regulation info

The window "Mill regulation info" shows a curve diagram based on the values defined under **Settings > Milling > Mills** and **Settings > Shared frequency inverter**. Two additional curves show the current mill load and the current speed of the frequency inverter. One curve diagram showing the past 24 hours is created for each mill. You may zoom into or out of the curve diagram by positioning the mouse pointer in the curve diagram and scrolling with the mouse wheel.



### 3.13 Component intake

The window "Component intake" is only visible if you have added the component supply in the Composer. If you have added buttons to start the feed move in the Composer, these will be displayed as a list under "Start button".

View	Equipment	Target silos	Order history	Mill Regulation Info	Component intake	Setup
Component Intake: Stop						
Start buttons						
Start Button	Stop Button	FeedMove	FI speed	Amount	Max Transport Time	Sensor Delay
Sensor:Start [4]		Change feedmove	40.0 Hz	0.000 kg	1.800 s	0 s
Sensor:Start [2]		Change feedmove	40.0 Hz	0.000 kg	1.800 s	0 s
Sensor:Start [1]		Change feedmove	40.0 Hz	0.000 kg	1.800 s	0 s
Sensor:Start [9]		Change feedmove	40.0 Hz	0.000 kg	1.800 s	0 s
Sensor:Start [3]		Change feedmove	40.0 Hz	0.000 kg	1.800 s	0 s
Sensor:Start [5]		Change feedmove	40.0 Hz	0.000 kg	1.800 s	0 s
Sensor:Start [8]		Change feedmove	40.0 Hz	0.000 kg	1.800 s	0 s
Sensor:Start [6]		Change feedmove	40.0 Hz	0.000 kg	1.800 s	0 s
Sensor:Start [7]		Change feedmove	40.0 Hz	0.000 kg	1.800 s	0 s
Sensor:Start [10]		Change feedmove	40.0 Hz	0.000 kg	1.800 s	0 s
Automatic silo filling						
Silo	Filling Mode	Content	Max Transport Time	Sensor Delay		
Dosing Silos						
DosingSilo [1]	Auto	A		1.800 s	0 s	
DosingSilo [2]	Auto	B		1.800 s	0 s	
DosingSilo [3]	Auto	C		1.800 s	0 s	
DosingSilo [4]	Auto	D		1.800 s	0 s	
DosingSilo [5]	Auto			1.800 s	0 s	
DosingSilo [6]	Auto			1.800 s	0 s	
DosingSilo [7]	Auto			1.800 s	0 s	
DosingSilo [8]	Auto			1.800 s	0 s	
DosingSilo [9]	Auto			1.800 s	0 s	

You can make the following changes:

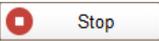
- **Stop button:** For each start button, a stop button must be defined for the button to work.
- **Feed move:** Click on "Change feed move" to select a feed move. Click on "Start transport" to start the feed move.
- **Frequency inverter (FI) speed:** If the first device of the selected feed move is a frequency inverter, the speed set here is used.
- **Amount:** If the selected feed move has a scale, either at the target or at the source, the amount entered here will be transported whenever the button is pressed.
- **Maximum transport time:** The maximum time for the feed move, after which it should be completed.
- **Sensor delay:** This delay is added if the feed move has a minimum sensor in its source bin. This ensures that the source bin is empty before the feed move stops.

Silos with a minimum sensor can be filled automatically by the MillAndMix application. If the minimum sensor is triggered, the MillAndMix application finds a silo with the same component and connected to the silo that requires filling, and filling starts.

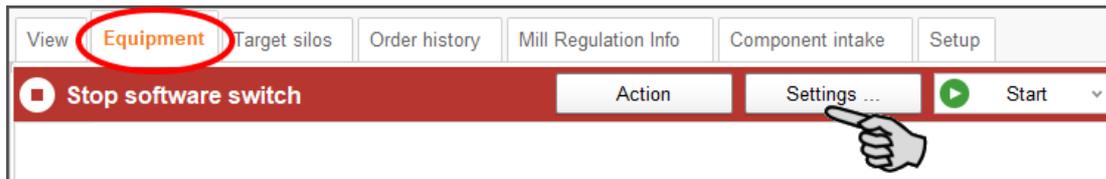
## 4 Configuration of the application

1. Click on the respective system application in the farm structure.

### **i** NOTICE!

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

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

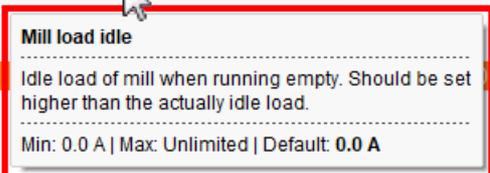


This opens the settings dialog, which contains all settings for the system components you defined in the Composer beforehand. The settings are grouped and may have pre-set values. The different parameters are described in the following chapters.

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)!

### **i** NOTICE!

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

Mill				
Max mill load	Mill load idle	Mill hysteresis	Regulation factor up	Regulation factor down
85.0 A			Hz	2.0 Hz

The tooltip for 'Mill load idle' contains the following text:

**Mill load idle**  
 -----  
 Idle load of mill when running empty. Should be set higher than the actually idle load.  
 -----  
 Min: 0.0 A | Max: Unlimited | Default: 0.0 A

## 4.1 General

### 4.1.1 Application settings

Settings: Current application: MillAndMix 1

General | Dosing | Milling | Mixing | Periodical mixing | Scales | Sensors | Shared frequency inverter | Expert settings

Applications settings | Sub applications | Sensor alignment

Filter and settings

Applications at or below this location: Farm  Copy settings...

Application not operational				Simulation	Reset
Action after max. pause time	Max. pause time	Repeat action	Global	Activate simulation	Reset application
MillAndMix 1: Farm					
Alarm	60 min	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Hard reset

Save Cancel

- **Application not operational**

- **Action after maximum pause time** can be set to be either an alarm, a warning or no action at all ("No").
- **Maximum pause time:** If the application does not run for a time longer than set here (pause or error), an alarm or a warning (depending on what is set for "Action after maximum pause time") is issued. If the time is set to 0 minutes, there is no maximum pause time.
- **Repeat action:** When this box is checked, the action (alarm, warning or no action) is repeated every time the maximum pause time expires.
- **Global:** Optionally allows defining the status **Application not operational** as a global alarm/warning.

- **Simulation**

- **Activate simulation:** You need to restart the control process when you activate the simulation. The control process starts when you click on the button "Restart application" in the IO Manager. When you deactivate the simulation, you need to restart the control again by clicking on the button "Restart application".

- **Reset**

- **Reset application**

## 4.1.2 Sub-application settings

Settings: Current application: MillAndMix 1

General Dosing Milling Mixing Periodical mixing Scales Sensors Shared frequency inverter Expert settings

Applications settings **Sub applications** Sensor alignment

Filter and settings

Applications at or below this location: Farm

Name	Activate sub application	Action after max. pause time	Max. pause time	Repeat action
MillAndMix 1: Farm				
ComponentIntake	<input checked="" type="checkbox"/>	Alarm	60 min	<input checked="" type="checkbox"/>
MineralDosing	<input checked="" type="checkbox"/>	Alarm	60 min	<input checked="" type="checkbox"/>
Mixer	<input checked="" type="checkbox"/>	Alarm	60 min	<input checked="" type="checkbox"/>
MixerPostBin	<input checked="" type="checkbox"/>	Alarm	60 min	<input checked="" type="checkbox"/>
MixerPreBin	<input checked="" type="checkbox"/>	Alarm	60 min	<input checked="" type="checkbox"/>
SiloDosing	<input checked="" type="checkbox"/>	Alarm	60 min	<input checked="" type="checkbox"/>
SiloDosing	<input checked="" type="checkbox"/>	Alarm	60 min	<input checked="" type="checkbox"/>

The application contains system components that are controlled as independent sub-applications. Sub-applications can be locked for a specified period, e.g. in case of damage.

- **Name:** System component that is controlled as sub-application.
- **Activate sub-application:** The system components are active by default. Click into the box to remove the checkmark if you want to lock system components.
- **Action after maximum pause time** can be set to be either an alarm, a warning or no action at all ("No").
- **Maximum pause time:** If the application does not run for a time longer than set here (pause or error), an alarm or a warning (depending on what is set for "Action after maximum pause time") is issued. If the time is set to 0 minutes, there is no maximum pause time.
- **Repeat action:** When this box is checked, the action (alarm, warning or no action) is repeated every time the maximum pause time expires.

### 4.1.3 Sensor alignment

Settings: Current application: MillAndMix 1

General Dosing Milling Mixing Periodical mixing Scales Sensors Shared frequency inverter Expert settings

Applications settings Sub applications **Sensor alignment**

Filter and settings

Applications at or below this location: Farm

Path	Sensor	Alignment mode	In		Out		Invert sensor
			Delay high	Delay low	Minimum high	Minimum low	
Application name: MillAndMix 1: Farm							
InlineMilling / Mill	Sensor:Overflow	UseSensor	0.0 s	0.0 s	0.0 s	0.0 s	<input type="checkbox"/>

- **Path:** The corresponding path.
- **Sensor:** The name of the sensor.
- **Alignment mode:** Usually, the setting "UseSensor" should be used. The modes "Low" and "High" mean that the derived sensor value (output) is always either "Low" or "High", irrespective of the actual sensor value. These modes can be used temporarily so the software always has a correct value in case the sensor is defective. Do not use these modes always, however.
- **Delay high:** The actual sensor (input) must have reported "High" within this period before the derived sensor switches to "High" (output).
- **Delay low:** The actual sensor (input) must have reported "Low" within this period before the derived sensor switches to "Low" (output).
- **Minimum high:** The minimum time for which the derived sensor (output) reports "High".
- **Minimum low:** The minimum time for which the derived sensor (output) reports "Low".
- **Invert sensor:** This setting inverts the input value of the actual sensor (input). The parameters **Delay high** and **Minimum low** are then applied to the inverted input value of the sensor. The effect is similar to inverting the sensor on the card.

## 4.2 Dosing

### 4.2.1 Silos

Settings: Current application: MillAndMix 1

General **Dosing** Milling Mixing Periodical mixing Scales Sensors Shared frequency inverter Expert settings

Silos

Filter and settings

Applications at or below this location: Farm

Location	Name of the silo	Silo			Agitator		Vibrator	
		Mix up time before dosing	Maximum dosing amount for the given silo	Top sensor rest	Name of agitator	Maximum run time of agitator	Name of vibrator	Vibrator run time
MillAndMix 1: Farm								
Farm	DosingSilo [1]	---	2.000.0 kg	---	---	---	---	---
Farm	LiquidTank [1]	---	0.0 kg	---	---	---	---	---
Farm	TargetSilo [1]	---	---	0	---	---	---	---

- **Silo**

- **Name of the silo:** The name of the silo.
- **Mix-up time before dosing:** This setting only applies to liquid silos with agitator. The parameter defines the duration for which the silo contents are mixed before the component is dispensed into the mixing tank.
- **Maximum dosing amount for the given silo:** The maximum amount the silo may dispense before the scale is empty. This is only relevant if the component is dispensed into a hopper scale. This setting does not apply to liquid silos.
- **Top sensor rest:** This setting only applies to target silos. The parameter defines the permitted number of batches that fit into the indicated target silo even above the maximum sensor's limit. If the target silo's content reaches the maximum sensor before an order is completed, the remaining number of unfinished batches is reduced by the number defined here.

- **Agitator**

- **Agitator:** The name of the agitator.
- **Maximum runtime of agitator:** The maximum time for which the agitator is allowed to run without pause.

- **Vibrators**

- **Name of vibrator:** The name of the vibrator.

- **Vibrator runtime:** The time for which the vibrator should run when active.

## 4.2.2 Hopper scales

Settings: Current application: MillAndMix 1

General **Dosing** Milling Mixing Periodical mixing Scales Sensors Shared frequency inverter Motor controls Expert settings

Silos **Hopper scales**

Filter and settings

Applications at or below this location: Farm

Hopper Scale			
Location	Name of hopper scale	Hopper Scale Capacity	Max Rest Amount
MillAndMix 1: Farm			
Farm	HopperScale [1]	2,000.0 kg	50.0 kg
Farm	HopperScale [2]	1,000.0 kg	25.0 kg

- **Hopper scale**

- **Name of hopper scale:** The name of the hopper scale.
- **Hopper scale capacity:** The weighing capacity of the hopper scale.
- **Maximum rest amount:** The maximum amount allowed to remain in the hopper scale when a new batch starts. If the hopper scale calculates a higher remaining amount than indicated here, an alarm is generated.

## 4.3 Milling – Inline milling

### 4.3.1 Mills

Mill										
Name of the mill	Desired mill load	Max mill load	Mill load idle	Mill hysteresis	Regulation factor up	Regulation factor down	Mill control time	Filter stopping time	Max running time	
Mill [1]	70.0 A	85.0 A	40.0 A	2.0 A	1.0 Hz	2.0 Hz	2 s	0 s	300 s	

- **Name of the mill:** The name of the mill.
- **Desired mill load:** The desired load the mill should reach when milling any component. The mill control will try to achieve this load during milling.
- **Max. mill load:** If the value defined here is reached, the mill control is reset.
- **Mill load idle:** The load of the mill when idle (to be set higher than the actual idle load).
- **Mill hysteresis:** The hysteresis used in combination with the desired mill load. If the desired mill load is 70 A and the hysteresis is 2 A, the desired range is 68 – 72 A.
- **Regulation factor up:** The frequency inverter's speed will increase by this factor when filling the mill as long as the load is below the desired mill load.
- **Regulation factor down:** The frequency inverter's speed will decrease by this factor when filling the mill as long as the load is above the desired mill load.
- **Mill control time:** This value defines how often the control should regulate the mill load and set the frequency inverter.
- **Filter stopping time:** The time for which the mill filter continues running after the mill has stopped.
- **Maximum runtime** The time for which the mill may continue running after processing the final component. This prevents the mill from starting and stopping continuously.

### 4.3.2 Silo configuration

Settings: Current application: MillAndMix 1

General Dosing **Milling** Mixing Periodical mixing Scales Sensors Shared frequency inverter Expert settings

Mills **Silo Configuration**

Filter and settings

Applications at or below this location: Farm

Silo per milling gradient				
Location	Silo	Milling Gradient	Start speed	Max speed
MillAndMix 1: Farm				
Mill [1]				
Farm	DosingSilo [1]	Default	25 %	100 %

Every dosing silo can be configured individually for each mill to which it is assigned. This allows for different start speeds for silos supplying the same mill. A silo can also have different start speeds for different mills.

- **Silo:** The name of the silo (read-only).
- **Milling gradient:** The name of the milling gradient (read-only).
- **Start speed** the silo should use during dosing for the mill.
- **Maximum speed** the silo should use during dosing for the mill.

## 4.4 Milling – Post-milling

### 4.4.1 Mill pre-bins

Settings: Current application: MillAndMix 1

General Dosing **Milling** Mixing Periodical mixing Scales Sensors Shared frequency inverter Motor controls Expert settings

Mill pre-bins Mills

Filter and settings

Applications at or below this location: Farm

Mill pre-bin		
Location	Name of mill pre-bin	Max. transport time
MillAndMix 1: Farm	MillPreBin [1]	3,600 s

- **Name of mill pre-bin:** The name of the mill pre-bin.
- **Maximum transport time:** The maximum time for which the feed move starting from the mill pre-bin may run. When this time is reached, an alarm is generated.

## 4.4.2 Mills

Settings: Current application: MillAndMix 1

General Dosing **Milling** Mixing Periodical mixing Scales Sensors Shared frequency inverter Motor controls Expert settings

Mill pre-bins **Mills**

Filter and settings

Applications at or below this location: Farm Copy settings...

Location	Name of the mill	Desired mill load	Max. mill load	Mill load idle	Mill hysteresis	Regulation factor up	Regulation factor down
MillAndMix 1: Farm							
MillPreBin [1]							
Farm	Mill [1]	70.0 A	85.0 A	40.0 A	2.0 A	1.0 Hz	2.0 Hz
Farm	Mill [2]	70.0 A	85.0 A	40.0 A	2.0 A	1.0 Hz	2.0 Hz

Save Cancel

- **Name of the mill:** The name of the mill.
- **Desired mill load:** The desired load the mill should reach when milling any component. The mill control will try to achieve this load during milling.
- **Max. mill load:** If the value defined here is reached, the mill control is reset.
- **Mill load idle:** The load of the mill when idle (to be set higher than the actual idle load).
- **Mill hysteresis:** The hysteresis used in combination with the desired mill load. If the desired mill load is 70 A and the hysteresis is 2 A, the desired range is 68 – 72 A.
- **Regulation factor up:** The frequency inverter's speed will increase by this factor when filling the mill as long as the load is below the desired mill load.
- **Regulation factor down:** The frequency inverter's speed will decrease by this factor when filling the mill as long as the load is above the desired mill load.
- **Auger fill speed:** The speed of the frequency inverter that supplies the mill until the mill load exceeds the idle values.
- **Auger start speed:** The speed that the frequency inverter supplying the mill uses when the load value has reached the idle value.
- **Maximum auger speed:** The maximum frequency inverter speed permitted for the mill.

- **Auger empty time:** The time for which the auger continues running after the minimum sensor in the mill pre-bin reports empty. If the mill pre-bin is empty, this time begins before the feed move starts stopping.
- **Mill control time:** This value defines how often the control should regulate the mill load and set the frequency inverter.
- **Filter stopping time:** The time for which the mill filter continues running after the mill has stopped.
- **Maximum runtime** The time for which the mill may continue running after processing the final component. This prevents the mill from starting and stopping continuously.

## 4.5 Mixing

### 4.5.1 Mixer pre-bins

Settings: Current application: MillAndMix 1

General Dosing Milling **Mixing** Periodical mixing Scales Sensors Shared frequency inverter Motor controls Expert settings

Mixer pre-bins Mixers Mixer post-bins

Filter and settings

Applications at or below this location: Farm

Mixer Pre Bin			
Location	Name	Capacity	Max transport time
MillAndMix 1: Farm			
Farm	MixerPreBin [1]	2,500.0 kg	60 s
Farm	MixerPreBin [2]	2,500.0 kg	60 s

- **Name:** The name of the mixer pre-bin.
- **Capacity:** The capacity of the mixer pre-bin.
- **Maximum transport time:** The maximum transport time from the mixer pre-bin to the mixer.

## 4.5.2 Mixers

Settings: Current application: MillAndMix 1

General Dosing Milling **Mixing** Periodical mixing Scales Sensors Shared frequency inverter Motor controls Expert settings

Mixer pre-bins **Mixers** Mixer post-bins

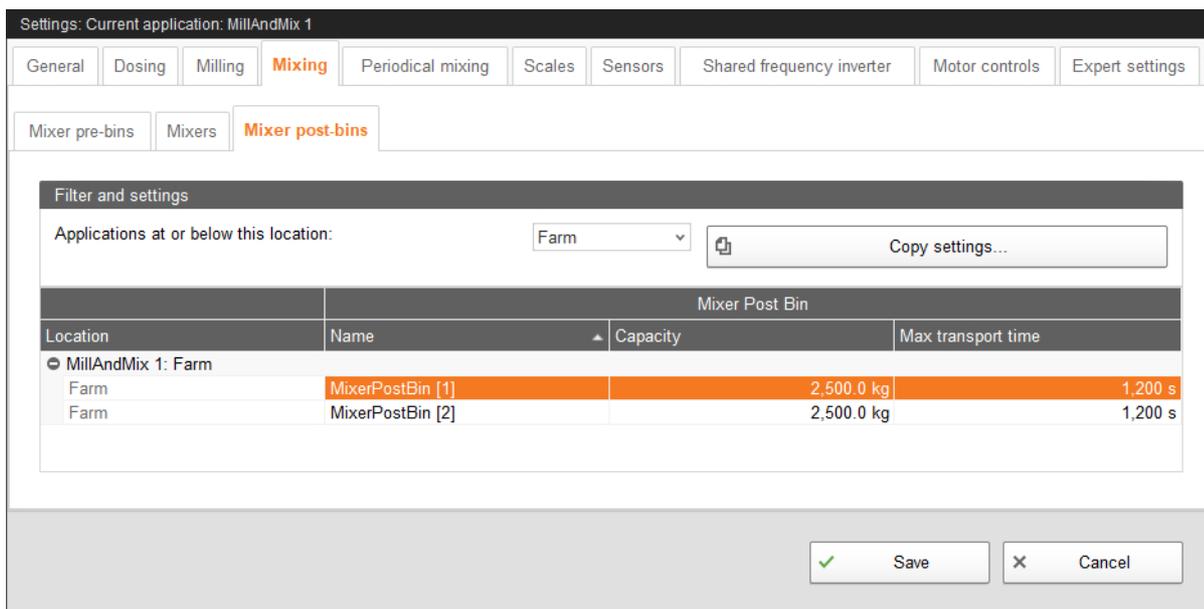
Filter and settings

Applications at or below this location: Farm

Location	Name	Mixer					Agitator	
		Capacity	Max Deviation	Max rest amount	Filter stopping time	Max Transport Time	Stopping time	Max run time
MillAndMix 1: Farm								
Farm	Mixer [1]	2,500.0 kg	50 %	50.0 kg	10 s	1,200 s	30 s	1,800 s
Farm	Mixer [2]	2,500.0 kg	50 %	50.0 kg	10 s	1,200 s	30 s	1,800 s

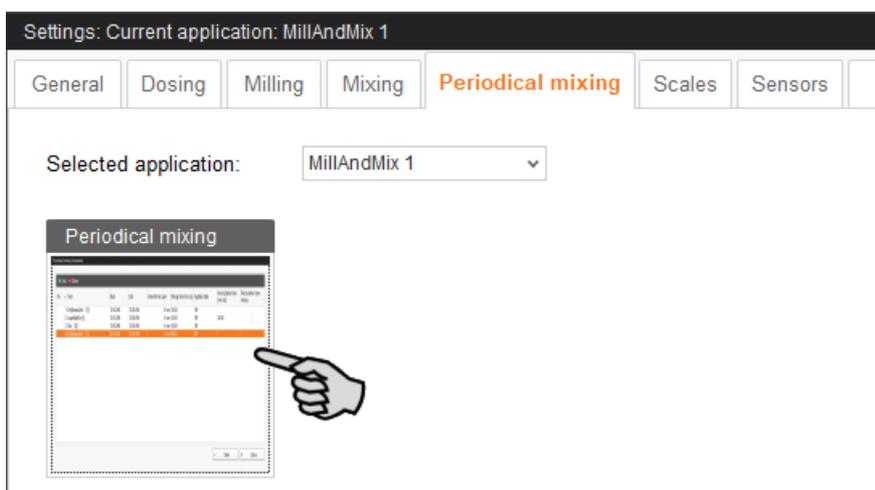
- **Mixer**
  - **Name:** The name of the mixer.
  - **Capacity:** The capacity of the mixer.
  - **Maximum deviation:** As soon as all components have been dispensed into the mixer, the deviation from the expected amount is calculated. If the deviation is smaller or greater than then percentage set here, a warning will be generated.
  - **Maximum rest amount:** The maximum amount allowed to remain in the mixer when a new batch starts.
  - **Filter stopping time:** The mixing towers' filter will continue running for this time after the mixer or the mixing tower has completed processing the batch.
  - **Maximum transport time:** The maximum transport time from the mixer to a target silo or the mixer pre-bin. If this time is reached, an alarm is generated.
- **Agitator**
  - **Stopping time:** The agitator continues running for this time after the batch has left the mixer. This setting prevents the agitator from starting and stopping between the batches.
  - **Maximum runtime** The maximum time the agitator is allowed to run without pause.

### 4.5.3 Mixer post-bins



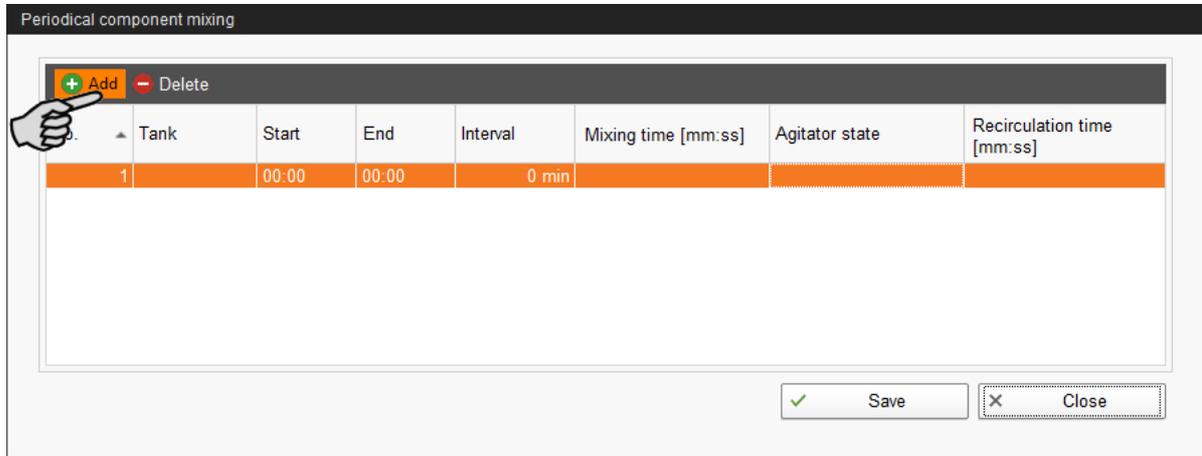
- **Name:** The name of the mixer post-bin.
- **Capacity:** The capacity of the mixer post-bin.
- **Maximum transport time:** The maximum transport time from the mixer post-bin to any target.

### 4.6 Periodical mixing



If liquid silos or liquid tanks are installed, the settings can be configured under the tab **Periodical mixing**.

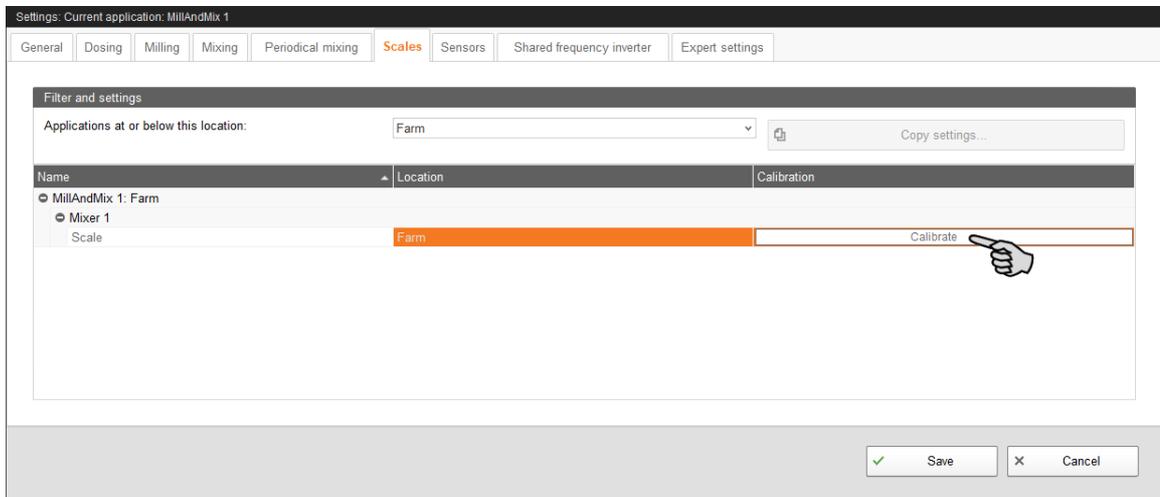
Select the tank and define a start and an end time as well as the interval duration. If the tank is equipped with an agitator, you can adjust the agitator's state and the mixing time. If the tank is equipped with a recirculation valve, you can define a recirculation time. The actions for recirculation and mixing via agitator use the same interval.



## 4.7 Scales

Use the tab **Scales** to tare and calibrate the scales of each System component.

1. Click on "Calibrate" next to the correct system component.



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

Scale taring and calibration:

Actual values

Weight	-382.262 kg	Raw-Value	0
--------	-------------	-----------	---

Taring Calibration

Start-Weight	0.000 kg	Raw-Value	722.718	Set Start-Raw-Value
End-Weight	25.000 kg	Raw-Value	770.321	Set End-Raw-Value
Minimum scale value change	0.000 kg			

Reset Calibrate

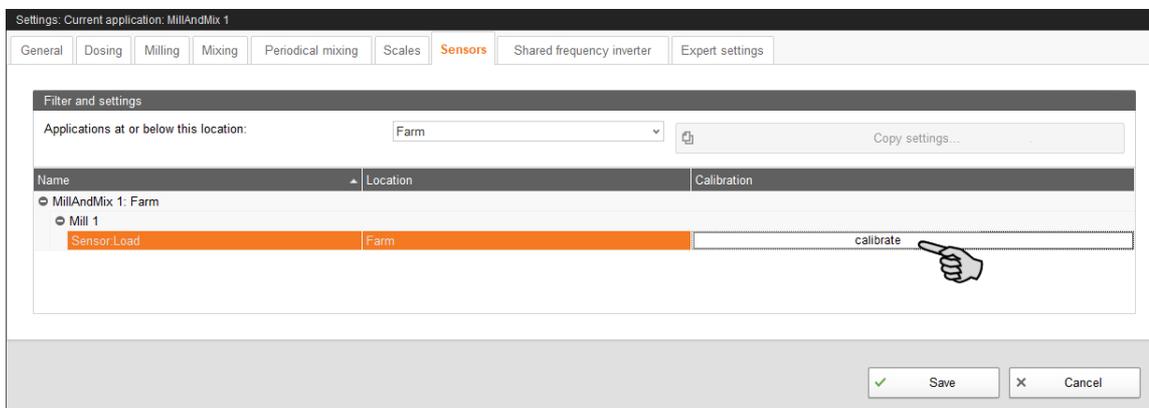
Close

3. Enter the **start weight** (usually the value 0) and click on "Set start raw value".
4. Enter the used calibration weight under **End weight**.
5. Load System component with the calibration weight.
6. Click on "Set end raw value".
7. Remove the calibration weight.
8. Click on "Calibrate" to complete the calibration process.
9. Close the dialog.

## 4.8 Sensors

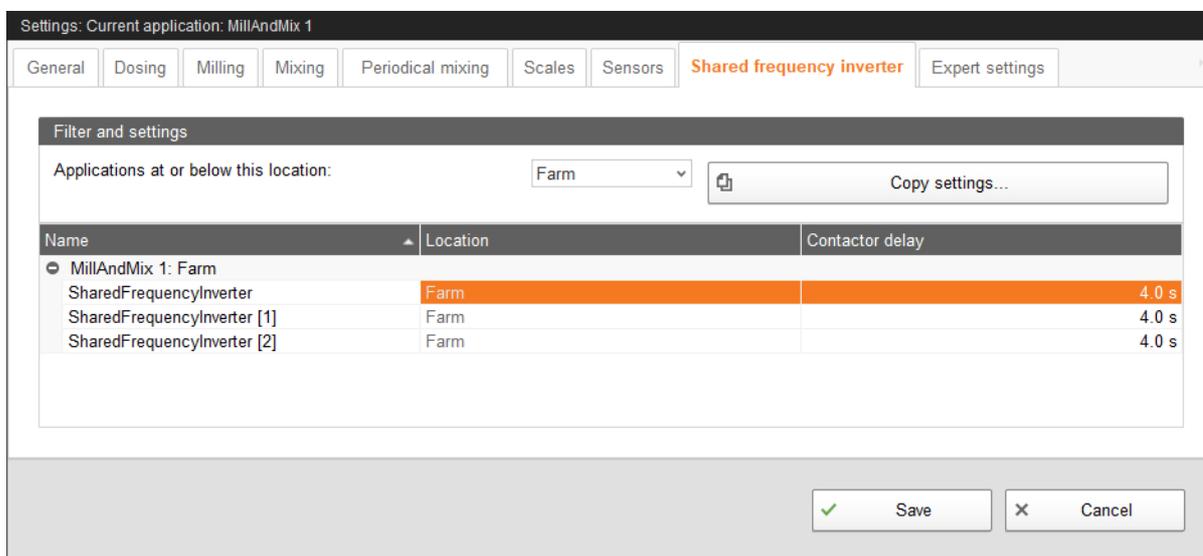
Use the tab **Sensors** to calibrate the sensors of the mills.

1. Click on "Calibrate" next to the correct system component.



2. Enter the **start value** (usually the value 0) and click on "Set start raw value".
3. Enter the **end value** and click on "Set end raw value".
4. Click on "Calibrate".

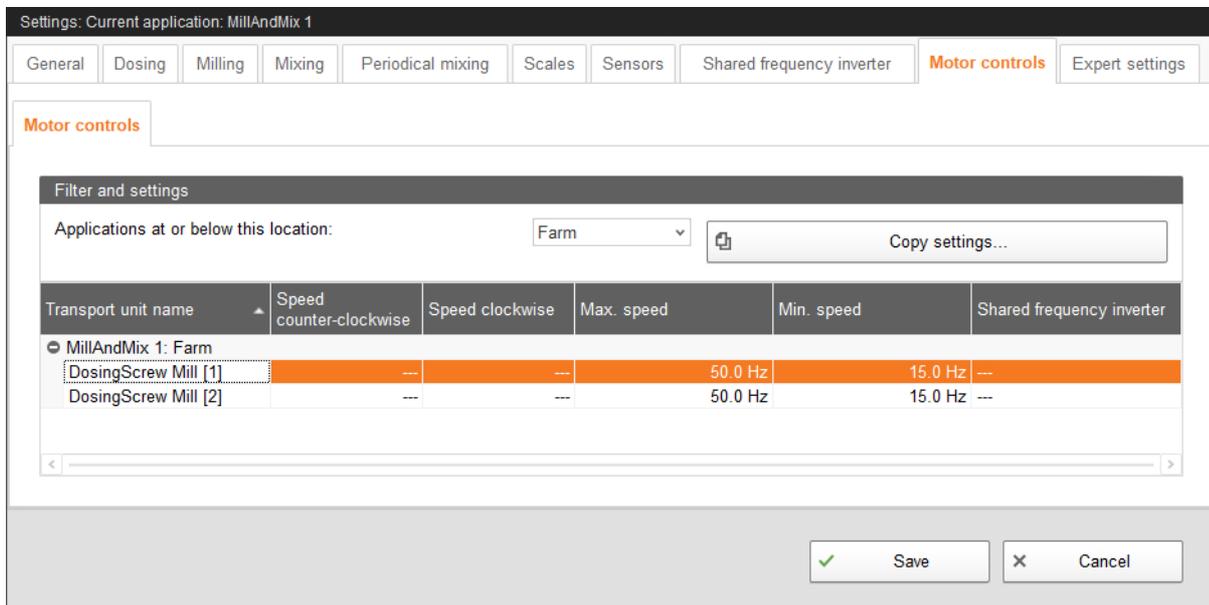
## 4.9 Shared frequency inverter



- **Name:** The name of the shared frequency inverter (can be edited here).
- **Location:** The location of the shared frequency inverter.
- **Contactor delay:** The switch delay between switching of the relay and control of the frequency inverter.

## 4.10 Motor controls

The tab **Motor controls** contains all drives that are controlled by a frequency inverter or a shared frequency inverter.



- **Transport unit name:** The name of the transport unit.
- **Speed counter-clockwise:** The speed which is used when the frequency inverter runs counter-clockwise.
- **Speed clockwise:** The speed which is used when the frequency inverter runs clockwise. If the frequency inverter is operated with a non-reversible motor, it will always run clockwise.
- **Maximum speed:** The frequency inverter's maximum allowed speed.
- **Minimum speed:** The frequency inverter's minimum allowed speed.
- **Shared frequency inverter:** If the transport unit is controlled by a shared frequency inverter, select the frequency inverter from this drop-down menu and assign it to the transport unit.

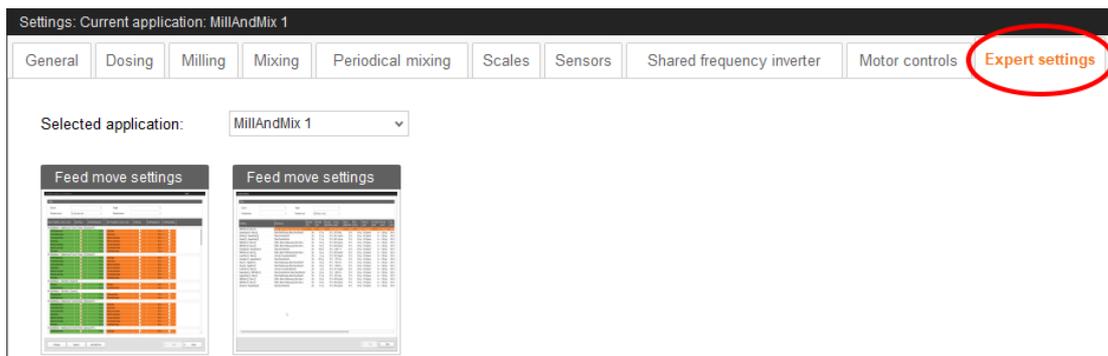
## 4.11 Expert settings

### 4.11.1 Switch order feed moves

Define the switch times and the switch order for feed moves under the tab **Expert settings**.

**NOTICE!**

These settings should only be configured by a service technician.



Feed move overview (7 feed moves)

Filter

Source:  Target:

Passed device:

Start feed move: device order	Start value	Start waiting time	End feed move: device order	End value	End waiting time	End partial stop
LiquidTank [1] - Mixer [1] (Count=2)						
Valve [1]	<input checked="" type="checkbox"/>	1.0 s	Pump.DirectSwitchOn	<input type="checkbox"/>	1.0 s	<input checked="" type="checkbox"/>
Pump.DirectSwitchOn	<input checked="" type="checkbox"/>	1.0 s	Valve [1]	<input type="checkbox"/>	1.0 s	<input checked="" type="checkbox"/>
LiquidTank [1] - Mixer [2] (Count=2)						
Valve [2]	<input checked="" type="checkbox"/>	1.0 s	Pump.DirectSwitchOn	<input type="checkbox"/>	1.0 s	<input checked="" type="checkbox"/>
Pump.DirectSwitchOn	<input checked="" type="checkbox"/>	1.0 s	Valve [2]	<input type="checkbox"/>	1.0 s	<input checked="" type="checkbox"/>
ManualDosing - HopperScale [1] (Count=1)						
MicroMineral [1] - HopperScale [2] (Count=1)						
Motor.DirectSwitchOn	<input checked="" type="checkbox"/>	1.0 s	Motor.DirectSwitchOn	<input type="checkbox"/>	0.0 s	<input checked="" type="checkbox"/>
Mineral [1] - HopperScale [1] (Count=1)						
Motor.DirectSwitchOn	<input checked="" type="checkbox"/>	1.0 s	Motor.DirectSwitchOn	<input type="checkbox"/>	0.0 s	<input checked="" type="checkbox"/>

Collapse Expand Save Close

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

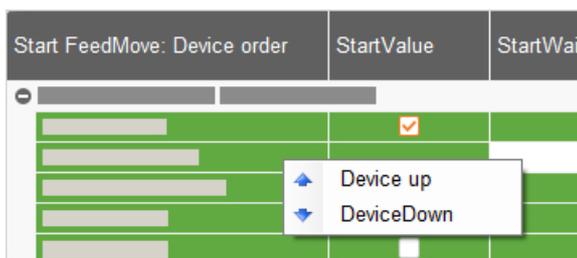
Use the buttons "Collapse" and "Expand" in the lower command bar to show or hide the devices included in the feed move.

2. Define new switch times by entering the times directly into the input fields of the columns "Start waiting time" and "End waiting time".

The values in the green area on the left refer to the start of the feed moves. The values in the orange area on the right refer to the end of the feed moves. The system moves from the first to the last device while starting and ending feed moves. After a device has been switched, the system waits for the waiting time before switching the next device.

3. Define partial stops for the switch from one feed move to the next:
  - a) Check the box in the column "End partial stop" for the corresponding devices.
 

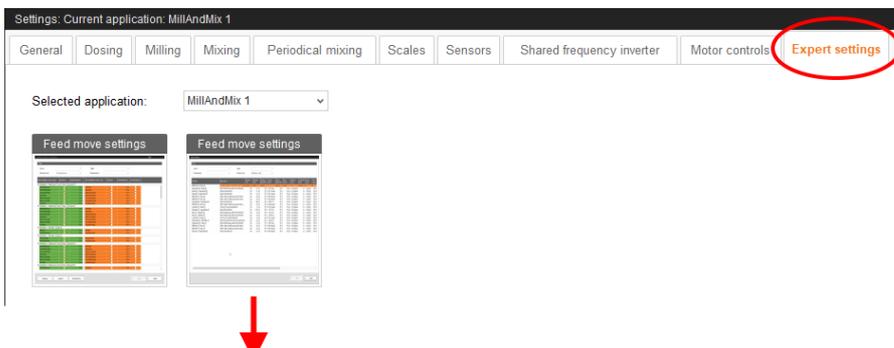
A partial stop is carried out when the system switches directly from one feed move to another. First, all devices of the old feed move for which "End partial stop" has been activated are switched. In case both feed moves use the same feed pump, all devices of the new feed move are switched all the way to the feed pump in the next step. This is to prevent the pump from running dry. Next, all devices of the old feed move for which "End partial stop" has not been activated and which are not part of the new feed move are switched. All as of yet unswitched devices of the new feed move are switched as the last step.
4. If necessary, define a new switch order for the devices.
  - a) Right-click on the corresponding device.
  - b) Change the position of the device using the options "Device up" or "Device down".



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

## 4.11.2 Feed move settings

Define the settings for the feed moves under the tab **Expert settings**.



The screenshot shows the 'Settings: Current application: MillAndMix 1' interface. The 'Expert settings' tab is highlighted with a red circle. Below it, the 'Feed move settings' window is open, displaying a table of feed moves and their associated parameters.

Feed move	Start devices	Residual flow time	Residual flow volume	Max. residual flow	Residual flow adjustment factor	Residual time	Dosing speed	Speed adjustment factor
DosingSilo [1] - HopperScale [1]	Motor:DirectSwitchOn	30 s	0.0 kg	30.0 kg	90 %	3 s	60.00 kg/min	33 %
HopperScale [1] - MillPreBin [1]	Motor:DirectSwitchOn, Motor:DirectSwitchOn	30 s	0.0 kg	30.0 kg	90 %	3 s	60.00 kg/min	33 %
LiquidTank [1] - Mixer [1]	Valve [1], Pump:DirectSwitchOn	30 s	0.0 kg	30.0 kg	90 %	3 s	60.00 kg/min	33 %
MillPreBin [1] - MixerPreBin [1]	Mill [1], Motor:DirectSwitchOn, CellGate, M...	30 s	0.0 kg	30.0 kg	90 %	3 s	60.00 kg/min	33 %
Mixer [1] - MixerPostBin [1]	Motor:DirectSwitchOn	30 s	0.0 kg	30.0 kg	90 %	3 s	60.00 kg/min	33 %
MixerPostBin [1] - TargetSilo [1]	Motor:PoleReversing, Motor:DirectSwitchO...	30 s	0.0 kg	30.0 kg	90 %	3 s	60.00 kg/min	33 %
MixerPreBin [1] - Mixer [1]	Motor:DirectSwitchOn	30 s	0.0 kg	30.0 kg	90 %	3 s	60.00 kg/min	33 %

At the bottom of the window, there are 'Save' and 'Close' buttons.

- Individual feed moves and the corresponding devices to be switched are displayed under **Feed move** and **Start devices**.
- **Residual flow time** to measure the residual flow. If this time is reached, an alarm is generated.
- **Residual flow volume** is determined by the control.
- **Maximum residual flow**: The maximum allowed residual flow volume. If this amount is reached, an alarm is generated.
- **Residual flow adjustment factor**: Weighting of the new value to calculate the residual flow.
- **Residual time**: (pending)
- **Dosing speed**: The dosing speed is determined and set automatically for dosing based on weight. Calculate and enter the dosing speed if the system doses based on time.
- **Speed adjustment factor**: The weighting of the new value to calculate the dosing speed.

- **Transport time:** If the transport time of a feed move is longer than the desired **Control time dosing**, a compensation value can be entered here. The time entered here will be added when a weigh bar is first checked during dosing to compensate for a transport time from source to target bin.
- **Control time dosing:** The application checks deviations at the weigh bar during dosing of a component at the regular interval set here. For every weigh bar check, the application expects a weight change of 5 kg. This does not apply if microminerals are dispensed (in this case, a deviation of only 5 g is expected). If the expected deviation does not occur, the vibrator is activated, if applicable. If this is not the case, the source silo will be locked and the application will try to use a replacement component.
- **Fine dosing speed:** This speed applies to the frequency inverter if this frequency inverter is the first device of the feed move. This speed is used to make dosing onto the scale more accurate.
- **Fine dosing amount:** The remaining dosing amount for which the **fine dosing speed** is used. For example: The fine dosing amount is defined at 50 kg. A total of 200 kg need to be dispensed. As soon as 150 kg are reached on the scale, the speed for fine dosing is used.

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.

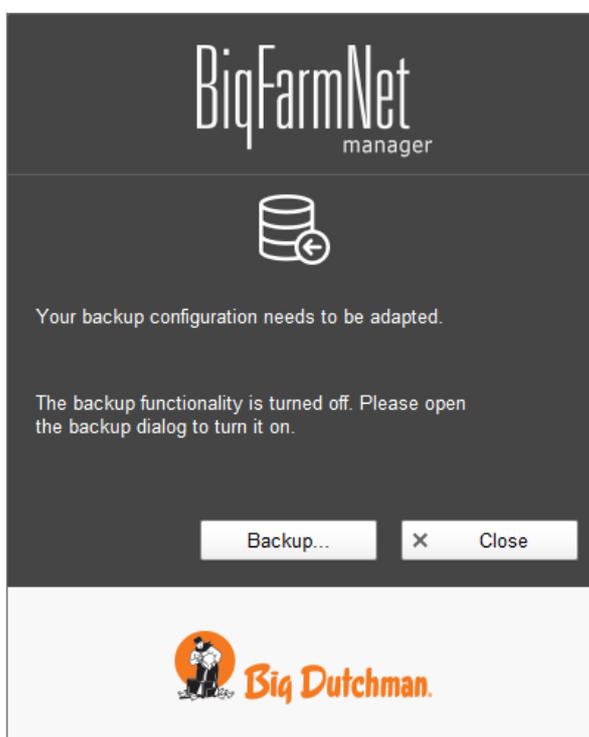
## 4.12 Data backup

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.

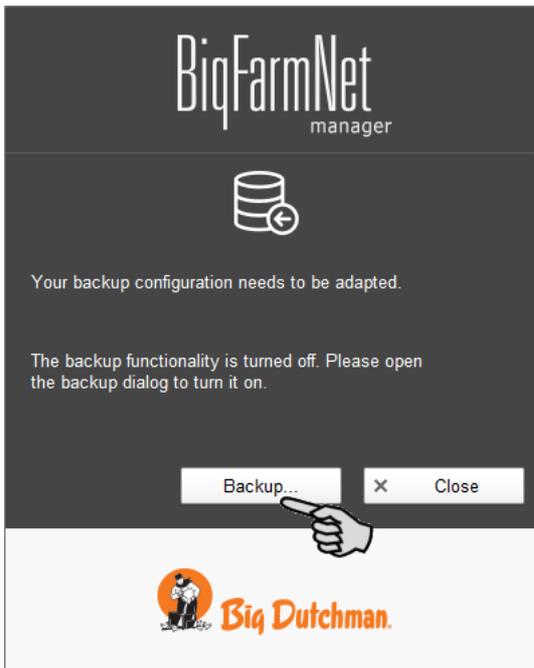
Remember that you can only retrieve the last data backup. Everything you have created or changed since then is not included in this backup. This means that the backup period should be determined depending on the amount of data you produce. You should find the ideal compromise between acceptable data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

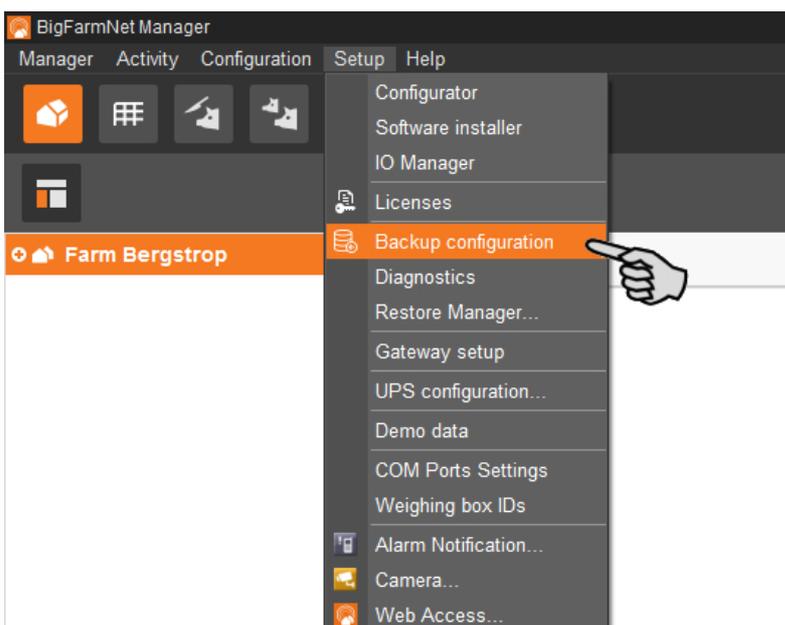
Open the settings dialog as follows:

1. Click on "Backup...".



OR

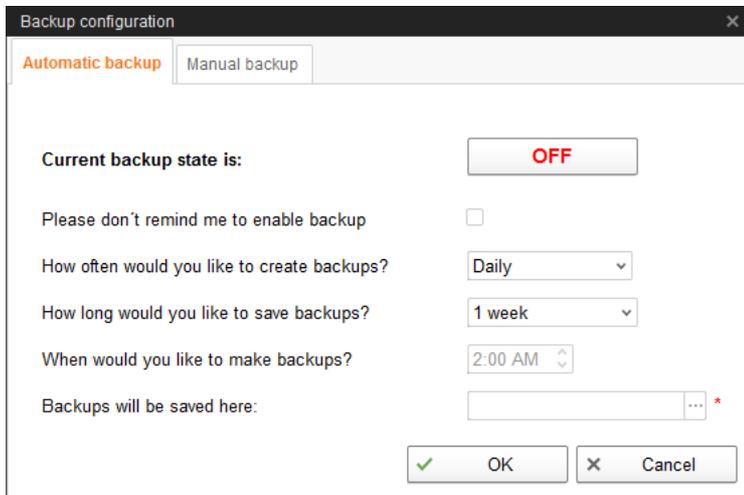
1. Click on "Backup configuration" in the "Setup" menu.



- In the window "Backup configuration", select the desired process using one of the two tabs:

### Automatic backup

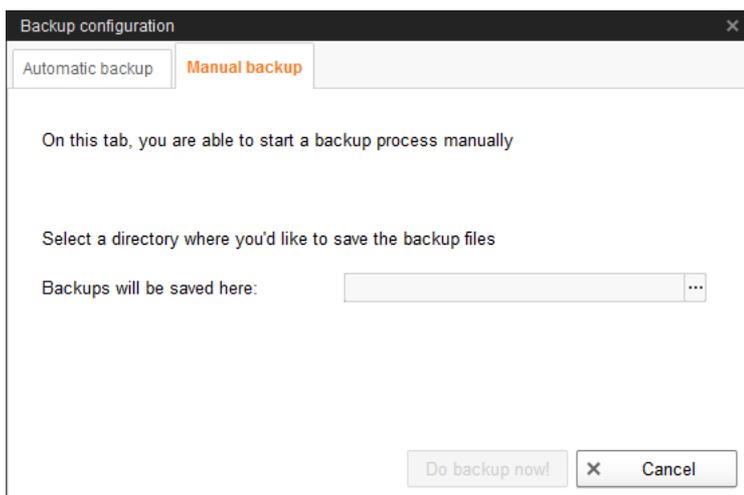
The automatic backup is pre-set to "OFF".



- Click on "OFF" to turn off the deactivation.  
The button then switches to "ON".
- Determine the backup period.
- Select an external storage location.
- Click on "OK" to accept these settings.

Or:

### Manual backup

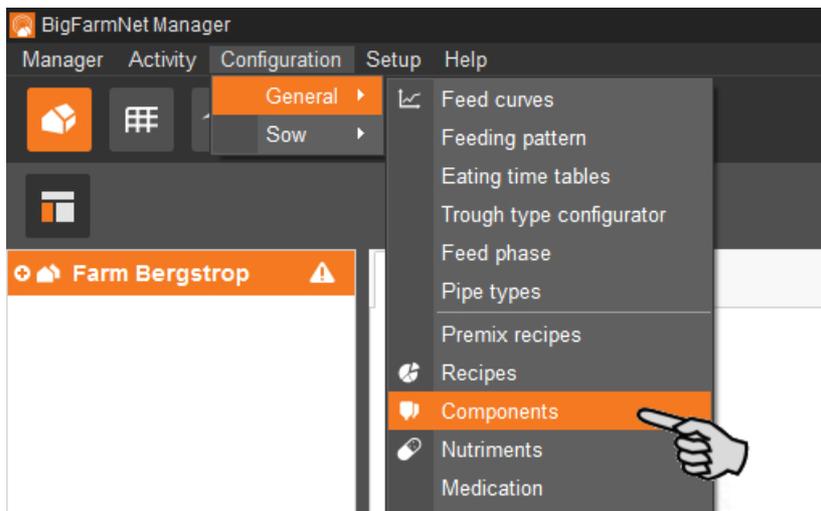


- Select an external storage location.
- Click on the now active button "Create backup now!"

## 5 Creating components

Use the "Component" dialog to create different components and to configure different settings depending on the application. Components are assigned to different categories. Components in the category "Feed" can be the individual ingredient of a feed mix or a complete compound feed.

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

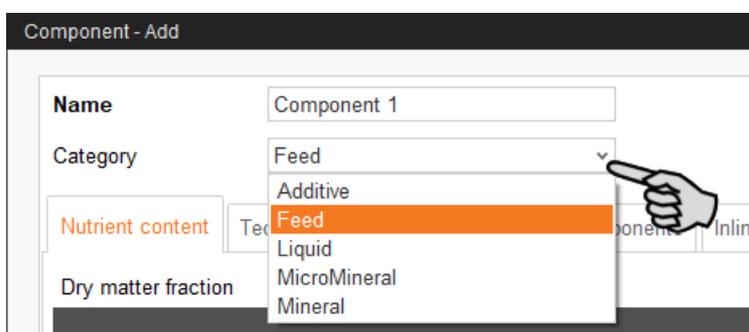


2. In the dialog window "Components", click on "Add".
3. Enter a name for the component and select a category.

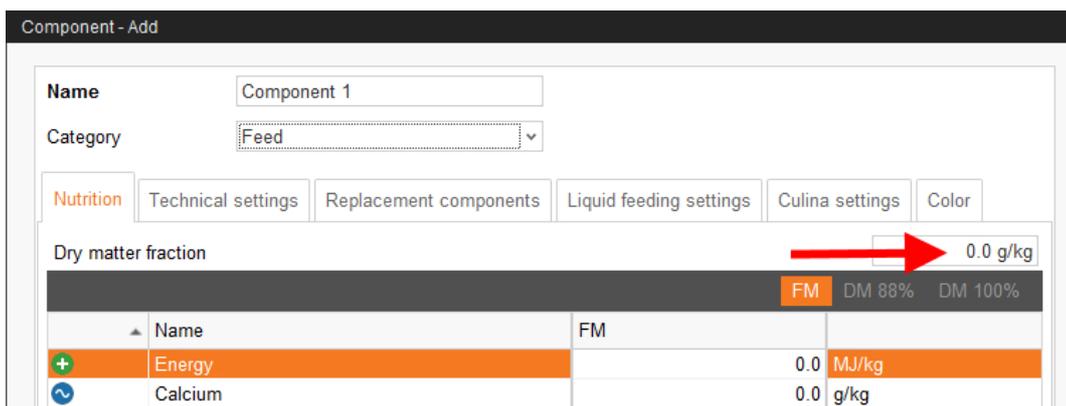
In the MillAndMix system, the following component categories are used:

- **Feed** in the dosing silo
- **Mineral** in the mineral dosing unit
- **Micro mineral** in the micromineral dosing unit
- **Liquid** in the liquid silo

Only components of the category **Feed** can be used in a mill.



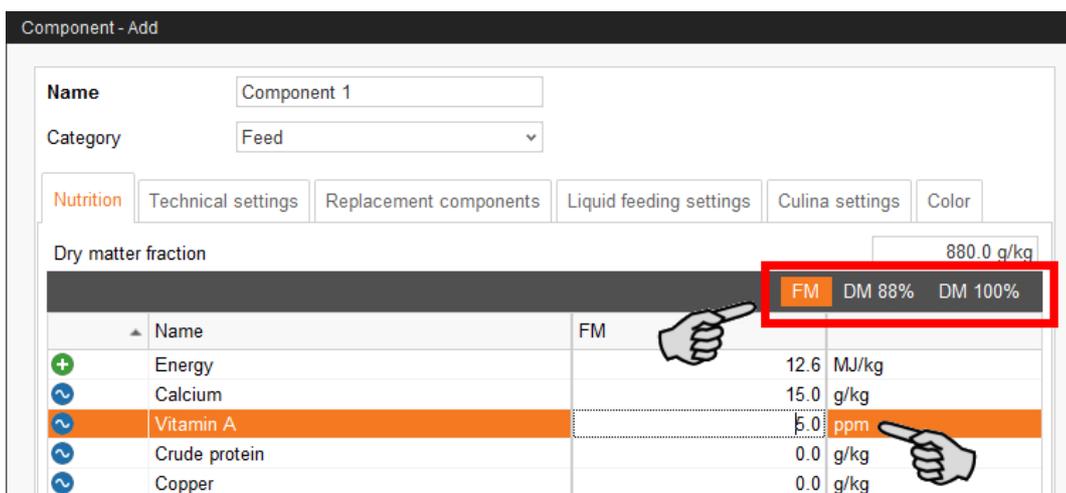
4. Under the tab "Nutrition", define the dry matter fraction.



5. Only after entering the dry matter fraction can you choose one of the following quantities:

- FM = per fresh matter
- DM 88 % = in relation to 88 % dry matter
- DM 100 % = in relation to 100 % dry matter

If required, enter the energy content and the individual nutrient fractions in the table below (see 7 "Creating nutrients").



6. Define parameters for dosing of the component under the tab "Technical settings".

Component - Add

**Name**

**Category**

---

**Mixing**

**Total mixing time**  hh:mm:ss

**Interval mixing**

Interval mixing time  hh:mm:ss

Interval pause time  hh:mm:ss

Low mixing speed

---

**Dosing**

**Time dosing threshold**   **Auto**

**Dosing type**   **Manual**

---

**Specific weight**

**Specific weight**

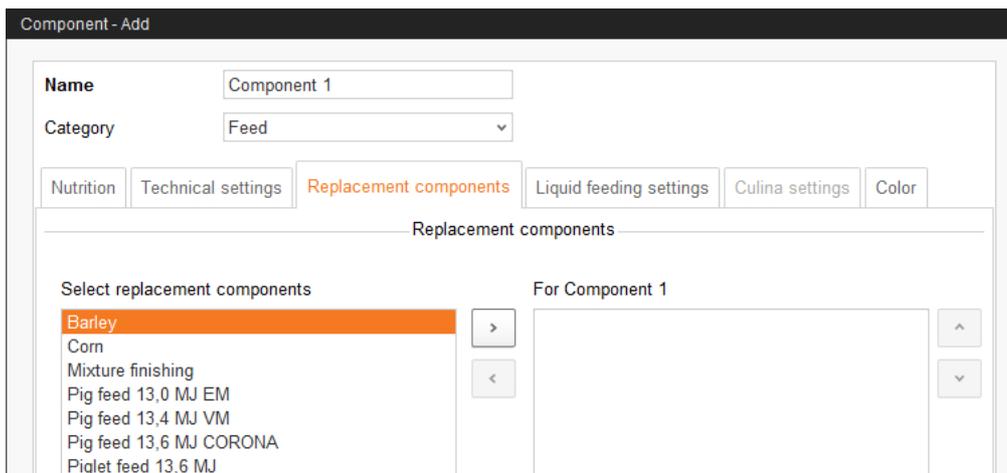
Select either **Auto**(matic) or **Manual**:

**Auto:** Define a weight as threshold value. If the weight of the dispensed component is below the threshold, dosing is automatically time-controlled. If the weight is above the threshold, dosing is automatically weight-controlled.

**Manual:** Define whether components should be generally dispensed "by weight" or "by time".

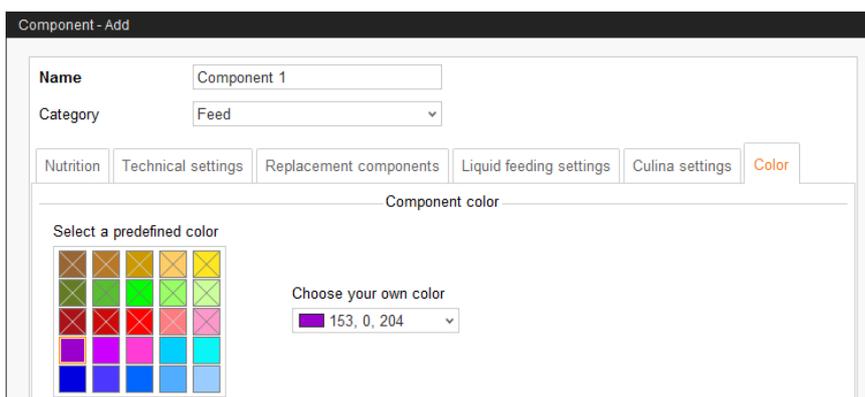
If the component is dissolved in water, change the presetting under **Specific weight**, if necessary.

7. Select one or more replacement components from the tab "Replacement components" in case the component you entered is used up before a new order arrives. If you select more than one replacement component, you may sort them in descending order according to priority.



8. Define a color for the component under the tab "Color".

If you do not define a color, the system will assign a color automatically. The color will help you differentiate between components in diagrams, e.g. when you create feed curves or recipes or when analyses are prepared.

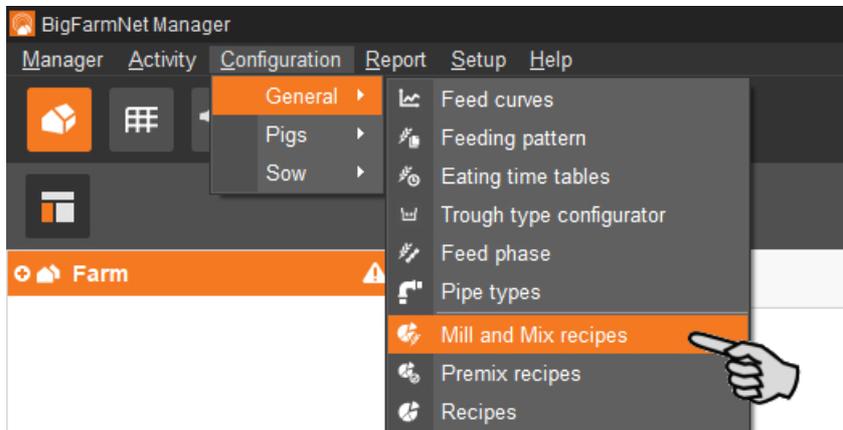


9. Click on "OK" after you have configured all settings.

## 6 Creating a recipe

One batch consists of one recipe. A recipe consists of multiple components, of which a specific percentage is used, chapter 5 "Creating components".

1. In the menu "Configuration" > "General", click on "Mill and Mix recipes".



2. In the dialog window "Recipes", click on "Add".
3. Enter a name for the recipe.
4. Click on "Add" and select the components.

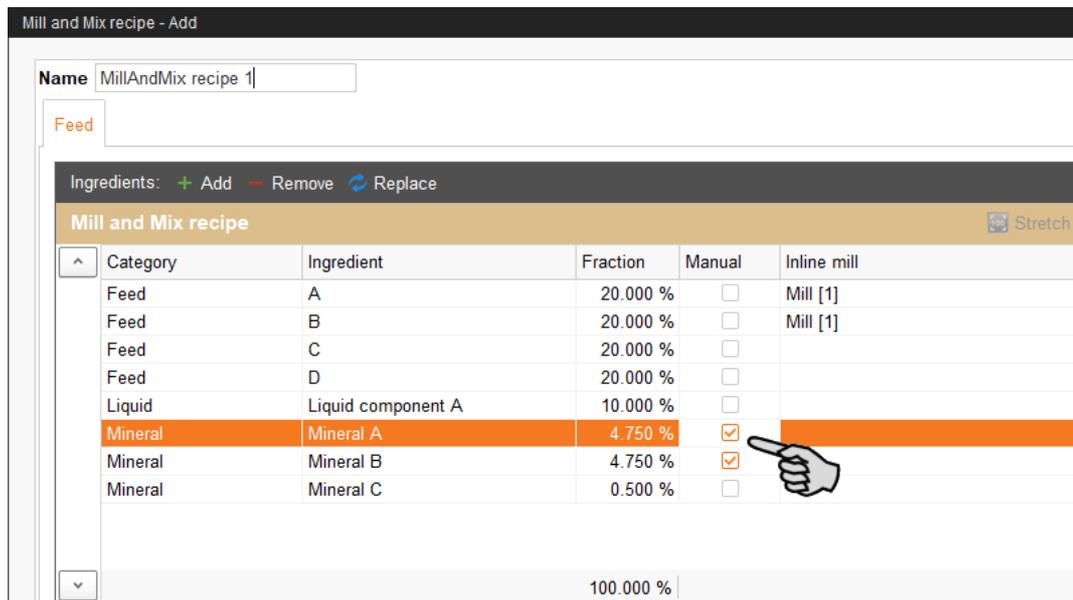
In the recipe, you may use the same component multiple times with different technical settings.



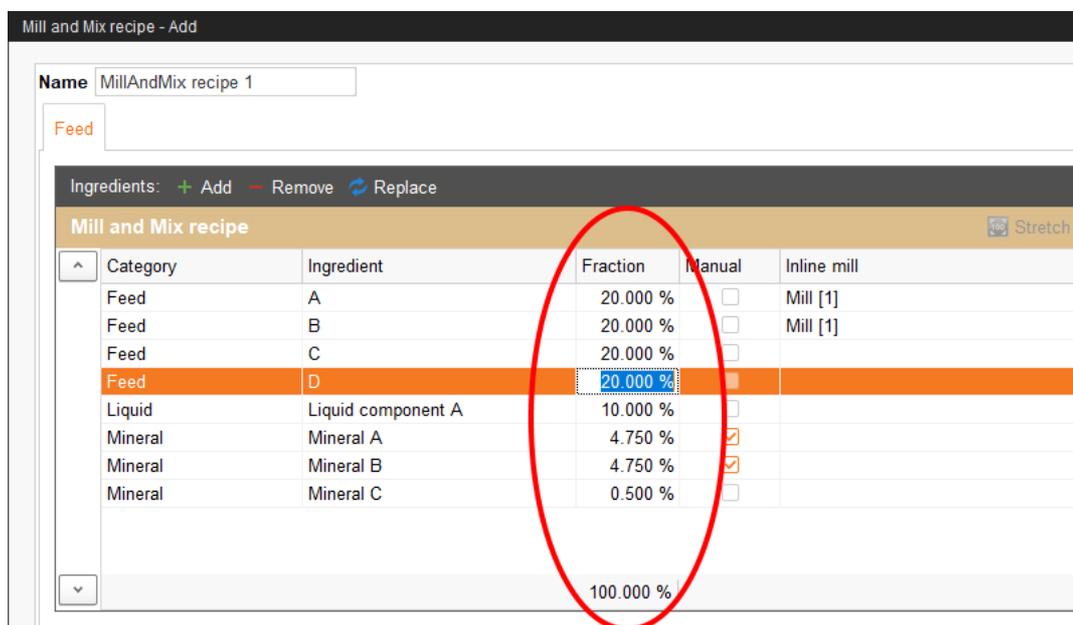
Settings in the recipe dialog vary depending on the MillAndMix application's configuration:

- If inline milling is used, every component of the category **Feed** must be assigned to a mill. However, if there is a feed move around the inline milling, selecting a mill is optional.
- If post-milling is used, every component of the category **Feed** must be assigned to a mill pre-bin. As soon as a mill pre-bin has been selected, the mills connected to it can be selected. Depending on the configuration, this can be one to three mills.

- **Manual** can only be selected for components of the category **Mineral**.  
The screenshot below shows example settings for inline milling.



5. Define the correct fractions for the components.  
The fractions must sum up to 100 % in total.



6. In the lower part of the dialog, you have the following setting options:
  - **Nutrition:** Select between DM, FM 88 % and DM 100 %. The energy content and the nutrient fractions are then shown including the corresponding values.

- **Technical settings:**
  - Dry mixing time** starts before liquid components are added.
  - Wet mixing time** starts after liquid components were added.
- **Color:** Select a color for the recipe so it is easier to differentiate the recipe from components and other recipes in diagrams. If you do not select a color, the system will automatically assign one.

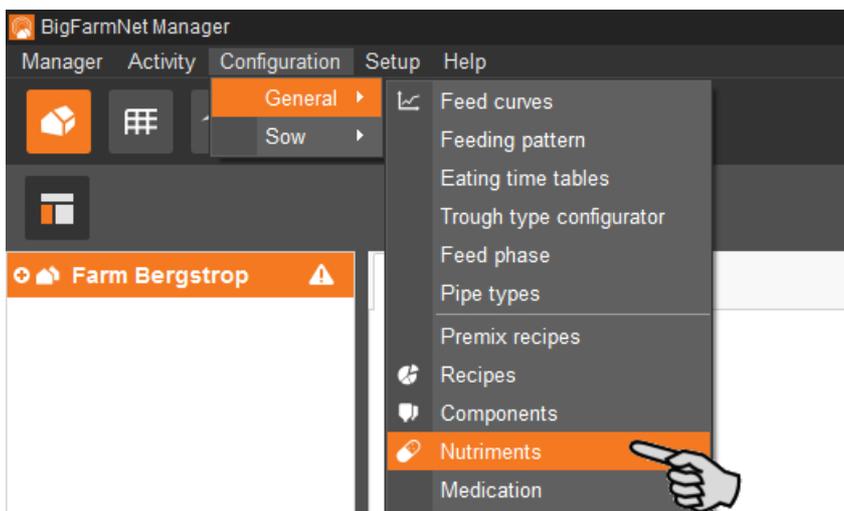
The screenshot shows a software interface with three tabs: 'Nutrition', 'Technical settings' (which is active and highlighted in orange), and 'Color'. Below the tabs, there is a section titled 'Parameters for mixing times'. This section contains two rows of settings: 'Dry mixing time' with a text input field containing '10 s', and 'Wet mixing time' with a text input field containing '20 s'.

7. Click on "OK" after you have configured all settings.

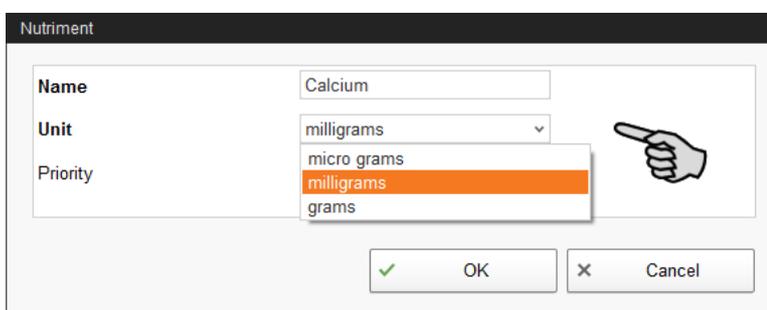
## 7 Creating nutrients

Nutrients include carbohydrates, fats and proteins, but also vitamins and minerals. The nutrients you create determine the nutritional value of the components. When you create a new component, all nutrients you created before will be listed. You can then enter the corresponding values per component, see chapter 5 "Creating components".

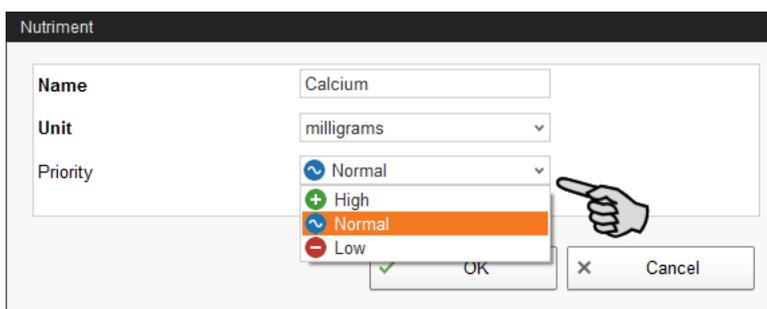
1. In the menu "Configuration" > "General", click on "Nutrients".



2. In the dialog window "Nutrients", click on "Add".
3. Enter a name for the nutrient and determine the unit.



4. As an option, you can also determine a priority for each nutrient. The nutrients can then be listed in ascending or descending order according to priority later on.



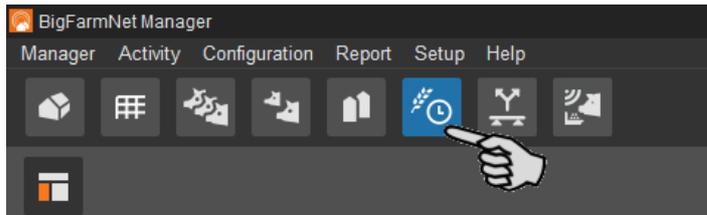
5. Accept these inputs by clicking on "OK".

## 8 Task Manager

The Task manager allows you to create tasks as new orders for the MillAndMix system to process.

### 8.1 Defining an order

1. Click on "Task Manager" in the toolbar.

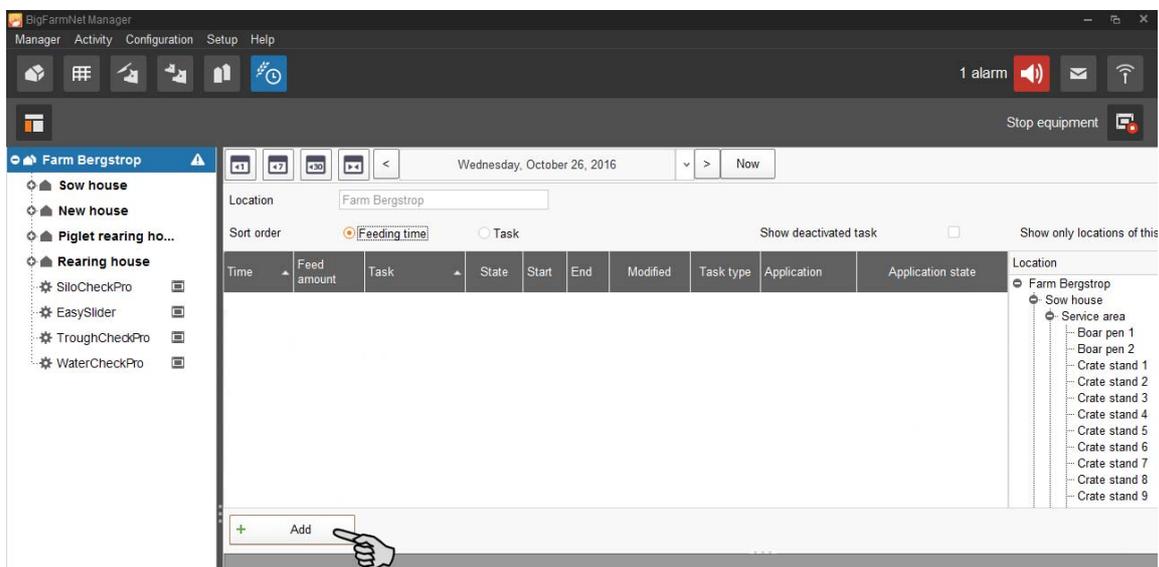


2. Click on the correct system in the farm structure.

If you stay on the farm level, you will need to indicate the correct system in the mandatory field **Application** in the task dialog.

3. In the application window, click on "Add".

This opens the task dialog.



4. Select the correct application.

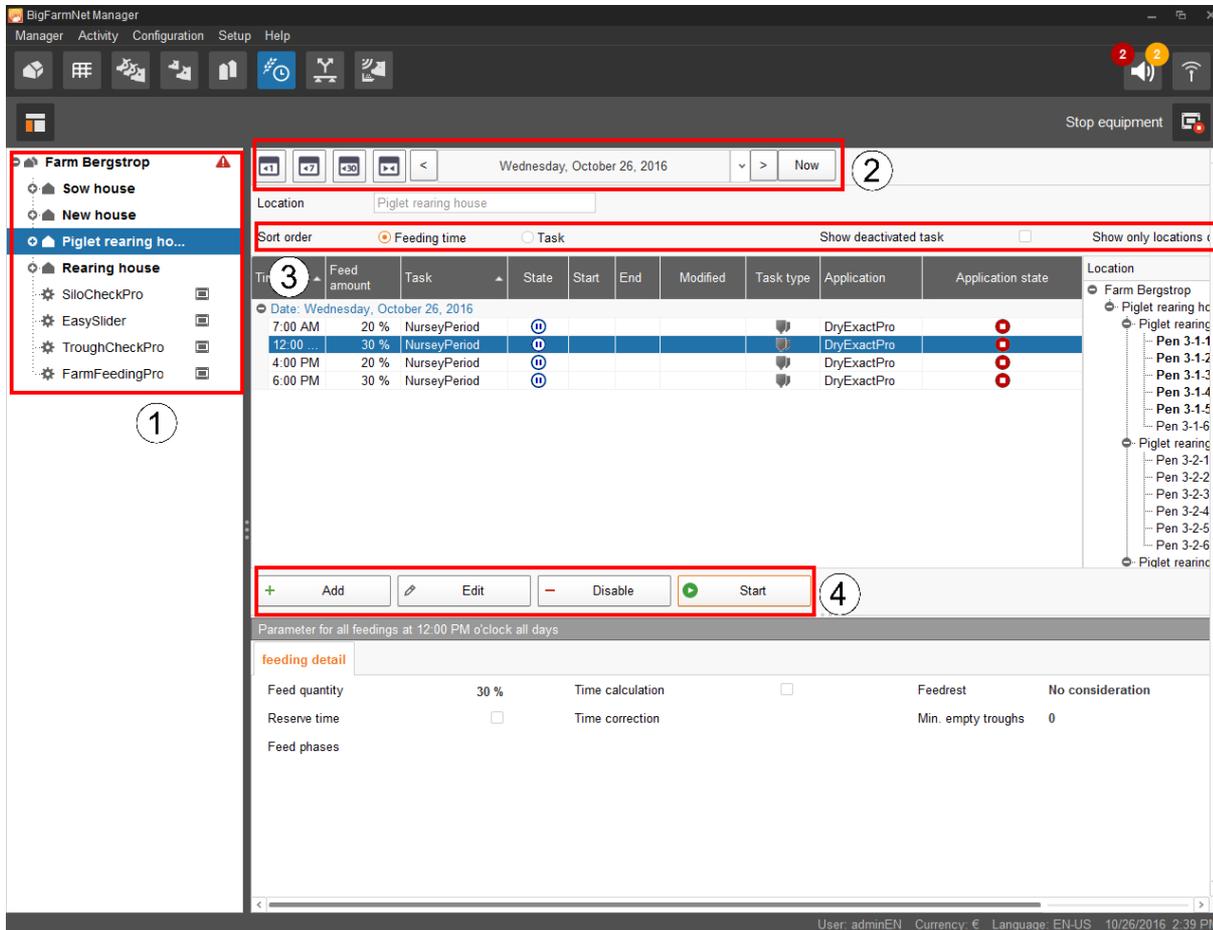
The tasks in the dialog change depending on the selected application.

5. Define the bold mandatory information:

- **Name** of the task
  - **Type:** Pre-set to "Feeding".
  - **Application:** The selected application.
  - **Strategy:** The type of the task.
  - **Execute:** "Daily "> **Every ... days:** The task is performed every nth day.
- OR
- **Execute:** "Weekly"> **Days:** The task is performed on the selected week days.
- **From – Until:** Time period for this task. The task will not be started outside of this time period.
  - **Feeding time:** Time at which processing of the task starts.
6. Define the settings for the order:
- **Target silo:** The target silo of the order.
  - **Recipe:** This information automatically shows the recipe for the target silo.
  - **Mixing tower:** Selection of one or two mixing towers, if applicable.
  - **Order amount:** The number of batches in this order.
  - **Batch size:** The size of a batch in kg.
7. Click on "OK" after you have configured all settings.

## 8.2 Editing a task

As soon as a task has been created, it will appear in the overview of the Task Manager. The following functions are available:



1. View the tasks by clicking on the correct system or location where the system is installed in the farm structure.

On the farm level, all tasks of all systems are displayed.

2. Select a time period, if necessary.

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

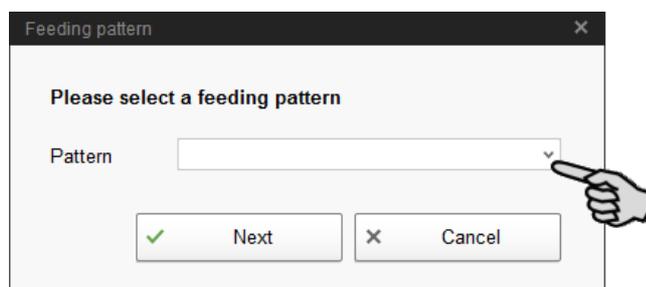
3. Adjust the view, if necessary.

- Sort according to "Feeding time" or the name ("Task").
- "Show deactivated tasks"
- "Show only locations of this feeding time"

4. You may edit feeding times as follows. First, select the correct feeding time by clicking on it.

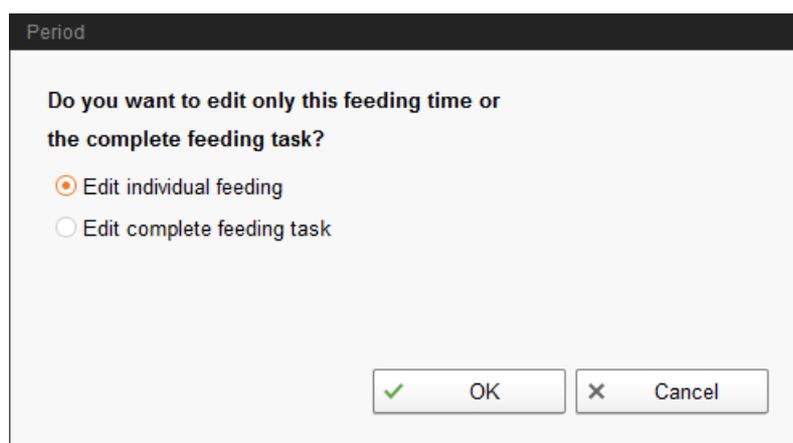
- "Add" = add a new task.

If you have created feeding time patterns, you will be asked whether you want to select an existing pattern. If applicable, select a pattern from the drop-down menu. Click on "Next".



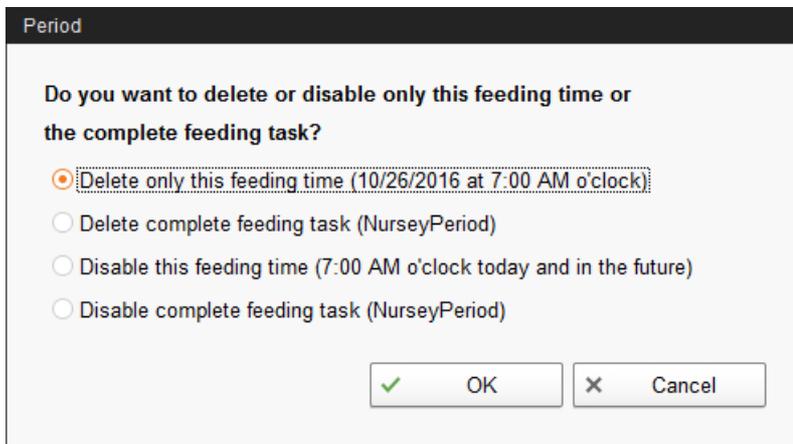
- "Edit" = edit the selected time or the entire connected task.

Select the correct option and click on "OK".

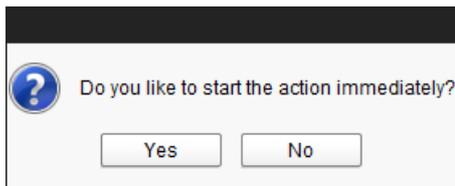


- "Deactivate" = deactivate or delete the selected time or the entire connected task.

Select the correct option and click on "OK".



- "Start" = immediately start the selected action, even if a different time was saved.



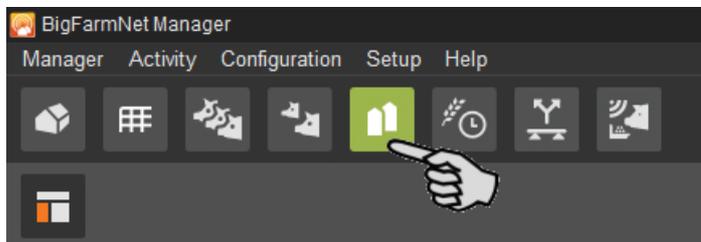
## 9 Silo Manager

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.

Locked	Location	Name	Number	Content	Today (-)
	Sow house	Silo_Barley	4	Barley	0.00
	Sow house	Silo_Barley	4	Barley	0.00
	Sow house	Silo_Corn	5	Corn	0.00

- 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.

Locked	Location	Name	Number	Content	Today (-)	Yesterday (-)	Forecast empty	Current weight	Critical fill level	Fill level
	Sow house	Silo_Barley	1	Barley	0.00 kg	599.60 kg	1 days	612.00 kg	41	3 %
	Sow house	Silo_Triticale	2	Triticale	0.00 kg	599.85 kg	16 days	9,834.15 kg		48 %
	Sow house	Silo_Wheat	3	Wheat	0.00 kg	626.42 kg	13 days	8,314.41 kg		42 %
	Sow house	Silo_Wheat	4	Wheat	0.00 kg	617.05 kg	13 days	8,314.41 kg		42 %
	Sow house	Silo_Barley	5	Barley						
	Sow house	Silo_Corn	6	Corn	0.00 kg	620.73 kg	13 days	8,314.41 kg		42 %
	Sow house	Silo_Corn	7	Corn	0.00 kg	590.57 kg	14 days	8,314.41 kg		42 %
	Sow house	Silo_Rye	8	Rye	0.00 kg	613.85 kg	13 days	8,314.41 kg		42 %
	Sow house	Silo_Soya	9	Soya	0.00 kg	604.46 kg	13 days	8,314.41 kg		42 %
X	Sow house	Silo_Triticale	10	Triticale	0.00 kg	594.83 kg	3 days	1,927.00 kg	41	10 %
	Sow house	Silo_Rye	11	Rye	0.00 kg	625.34 kg	19 days	11,853.35 kg		59 %
	Sow house	Silo_Soya	12	Soya	0.00 kg	619.59 kg	19 days	11,853.35 kg		59 %
	Sow house	Silo_Barley	13	Barley	0.00 kg	591.63 kg	19 days	11,853.35 kg		59 %
	Sow house	Silo_Triticale	14	Triticale	0.00 kg	613.02 kg	19 days	11,853.35 kg		59 %
	Sow house	Silo_Wheat	15	Wheat	0.00 kg	626.37 kg	19 days	11,853.35 kg		59 %
	Sow house	Silo_Wheat	16	Wheat	0.00 kg	621.25 kg	19 days	11,853.35 kg		59 %
X	Sow house	Silo_Barley	17	Barley	0.00 kg	613.18 kg	19 days	11,853.35 kg		59 %
	Sow house	Silo_Corn	18	Corn	0.00 kg	621.38 kg	16 days	10,333.60 kg		52 %
	Sow house	Silo_Corn	19	Corn	0.00 kg	606.60 kg	17 days	10,333.60 kg		52 %
	Sow house	Silo_Rye	20	Rye	0.00 kg	600.85 kg	16 days	10,333.60 kg		52 %

**Silo\_Wheat [3]**

Category	Field	Value
General	Name of silo	Silo_Wheat
	Capacity	20,000.00 kg
Loading	Location	Sow house
	Current weight	8,314.41 kg
Unloading	Ingredient type	Dry
History		
Settings		

User: adminEN Currency: € Language: EN-GB 08/10/2018 10:36

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 9.1) and **Settings** (chapter 9.4) can be edited.

## 9.1 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.

Silo_Wheat [1]							
General	Date	Content	Supplier	Delivery number	Price	Total cost	Amount
Loading	1/24/2018 1:00 AM	Wheat	East Pig Food	10120	0.57 €/kg	5,430.77 €	9,531.0 kg
	1/16/2018 1:00 AM	Wheat	East Pig Food	10121	0.31 €/kg	3,113.81 €	9,923.0 kg
	1/8/2018 1:00 AM	Wheat	East Pig Food	10122	0.30 €/kg	3,076.95 €	10,357.0 kg
Unloading	12/31/2017 1:00 AM	Wheat	East Pig Food	10123	0.59 €/kg	6,208.51 €	10,452.0 kg
	12/18/2017 1:00 AM	Wheat	East Pig Food	10124	0.29 €/kg	2,763.68 €	9,425.0 kg

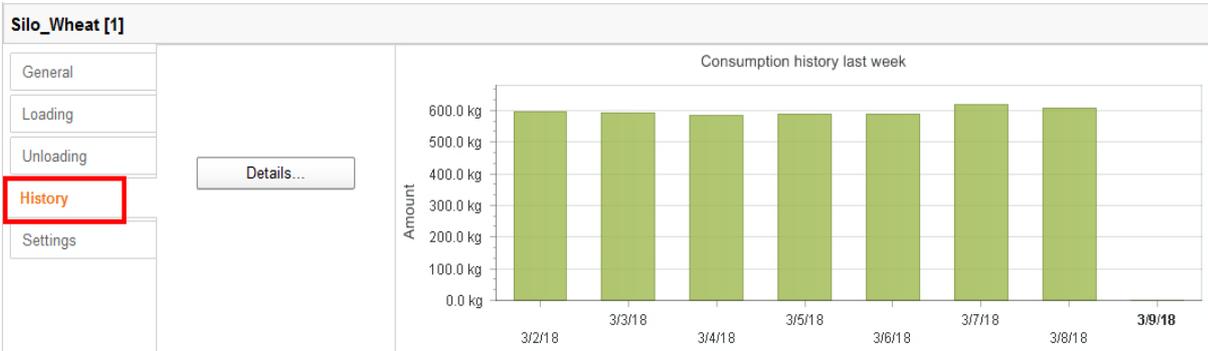
## 9.2 Consumption

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.

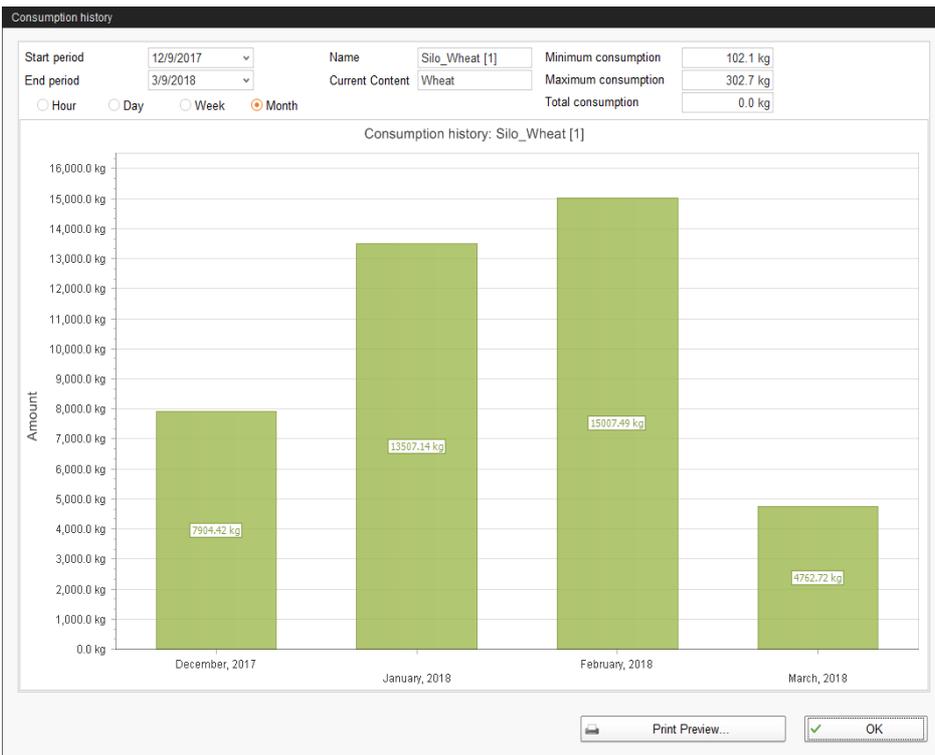
Silo_Wheat [1]				
General	Date	Location	Content	Amount
	3/8/2018 8:37 PM	Piglet rearing house	Wheat	302.7 kg
Loading	3/8/2018 10:32 AM	Piglet rearing house	Wheat	302.7 kg
	3/7/2018 7:18 PM	Piglet rearing house	Wheat	205.7 kg
Unloading	3/7/2018 4:28 PM	Piglet rearing house	Wheat	205.7 kg
	3/7/2018 10:48 AM	Piglet rearing house	Wheat	205.7 kg
History	3/6/2018 7:58 PM	Piglet rearing house	Wheat	196.5 kg
	3/6/2018 3:24 PM	Piglet rearing house	Wheat	196.5 kg
Settings	3/6/2018 11:23 AM	Piglet rearing house	Wheat	196.5 kg
	3/5/2018 8:14 PM	Piglet rearing house	Wheat	195.4 kg

### 9.3 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.



### 9.4 Settings

Define the most important information about the selected silo under "Settings".

### 9.4.1 Source silo

The following settings can be configured for a source silo. Mandatory information is bold.

Field	Value
Name of silo	Source silo_Barley
Components	Barley
Capacity	20,000.00 kg
Warning amount (relative)	25.0%
Warning amount (total)	5,000.00 kg
Weighed	<input type="checkbox"/>
Lock outlet	<input type="checkbox"/>
Unlock outlet automatically	<input type="checkbox"/>
Create warning	<input type="checkbox"/>
Priority	50
Tare	Tare
Last tare date	1/1/1970

- **Name of silo:** To be able to distinguish source and target silos more easily in the overview, we recommend giving a unique name plus the addition "source silo".
- **Components** or **Recipes** indicate the silo's content.
- **Weighed** is an information from the application SiloCheckpro and defines weighed silos.
- **Lock outlet** is a manual setting.
- **Unlock outlet automatically** means that the automatic locking actuated by the system is automatically removed after the delivery. The system locks a silo automatically after its entire contents have been 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/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.
- **Tara** 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**

## 9.4.2 Target silo

The following settings can be configured for a target silo. Mandatory information is bold.

Silo settings: Target silo\_Triticale [2]

<b>Name of silo</b>	Target silo_Triticale	Capacity	20,000.00 kg
<b>Content</b>	Component	Warning amount (relative)	10.0%
<b>Components</b>	Triticale	Warning amount (total)	2,000.00 kg
Recipes		Create warning	<input type="checkbox"/>
<b>Weighed</b>	<input type="checkbox"/>	Priority	50
Lock outlet	<input type="checkbox"/>	Tare	Tare
Lock inlet	<input type="checkbox"/>	Last tare date	1/1/1970
Unlock outlet automatically	<input type="checkbox"/>		

OK Cancel

- **Name of the silo:** To be able to distinguish source and target silos more easily in the view, we recommend giving a unique name plus the addition "source silo".
- **Content** indicates whether the content always remains the same ("Component") or whether it varies depending on the animals' feed demand according to the feed curve ("Animal-based"). The content defines the feeding strategy, i.e. whether the system always supplies the same component or a recipe to the silo. Where a feed curve has been selected, the feed composition is always adapted to meet the youngest animal's age.
- **Components** or **Recipes** indicate the silo's content.
- **Weighed** is an information from the application SiloCheckpro and defines weighed silos.
- **Lock outlet** is a manual setting.
- **Lock inlet** is a manual setting.
- **Unlock outlet automatically** means that the automatic locking actuated by the system is automatically removed after the delivery. This is because the system locks a silo automatically after its entire contents have been 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.

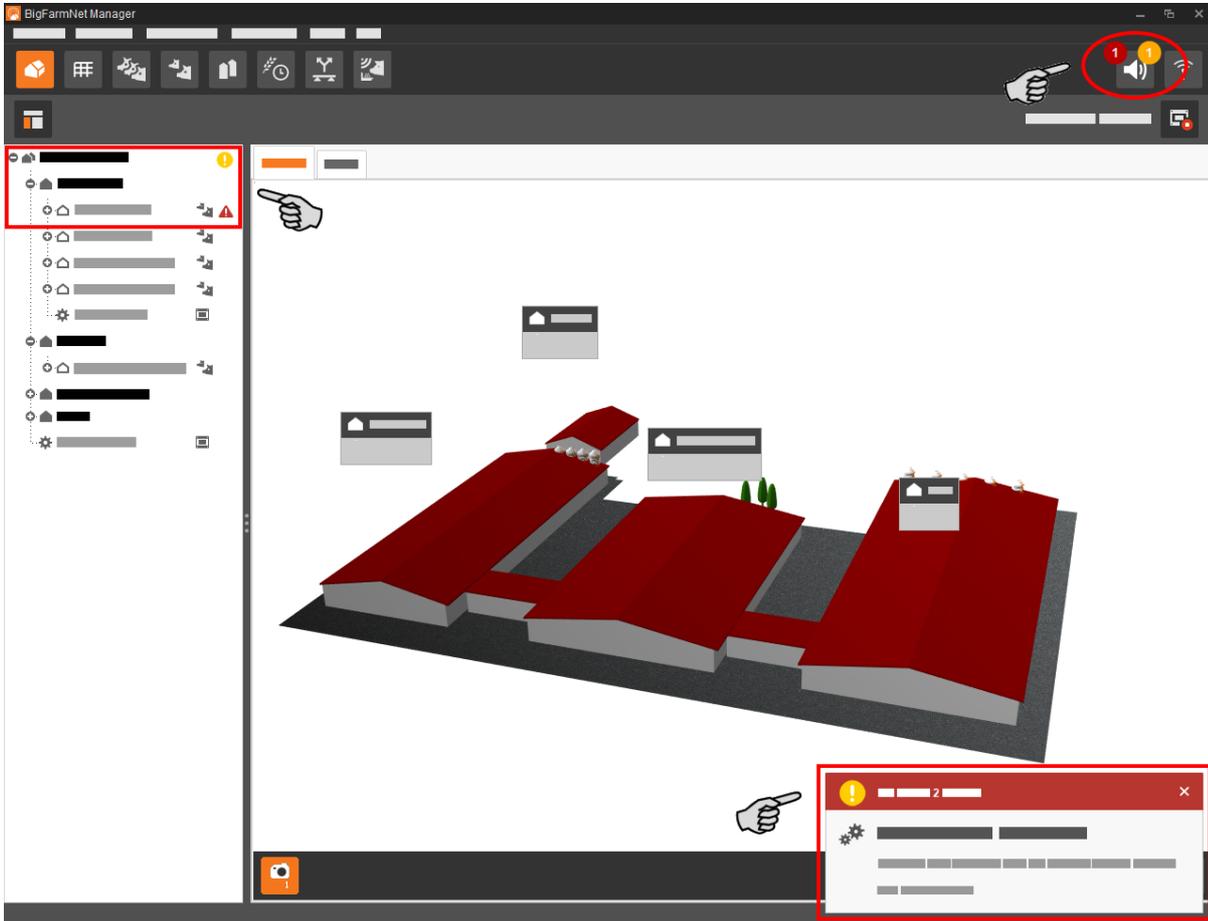
The relative warning amount refers to the silo's capacity.

If the silo weight falls below the (total/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.
- **Tara** 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**

## 10 Alarms and warnings

Alarms and warning 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 lists 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				Filter	
Type	Categ.	Where	When	Category	Alarm
!	⚙️	Windows Auto Update activated	Farm Bergstrop	3/2/2016 3:44:49 PM	<Enter filter criteria>
!	⚙️	UPS is required but currently not enabled	Farm Bergstrop	3/2/2016 3:40:49 PM	<Enter filter criteria>

Filter

Category

<Enter filter criteria>

Alarm

<Enter filter criteria>

Reset

## Alarm types

Icon	Status	Description
	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, IO connection or test (system-specific)
	BigFarmNet system or CAN bus
	Dry feeding
	Liquid feeding
	SiloCheck system
	WaterCheck system
	MillAndMix system

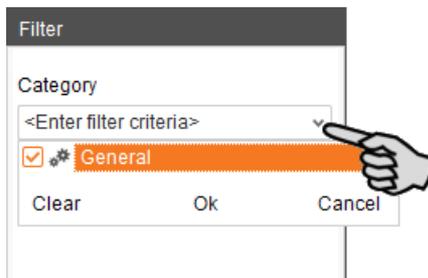
## NOTICE!

Always eliminate causes for alarms in the "Climate" category first.

### 10.1 Filtering alarms

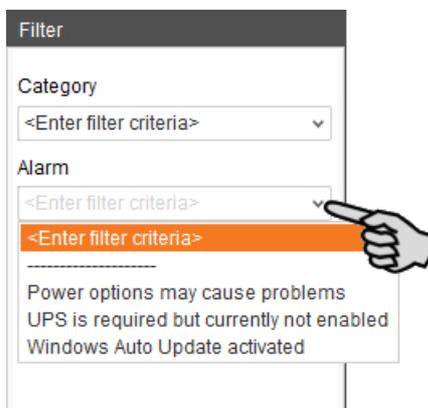
Alarms can be filtered according to category as well as cause.

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.



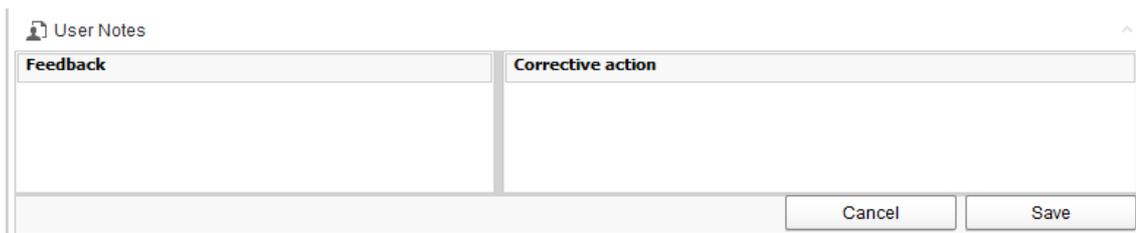
5. To deselect the alarms, click on "Reset".  
The selection is discarded and all alarms are listed.

## 10.2 Acknowledging an alarm

Alarms can be acknowledged 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.

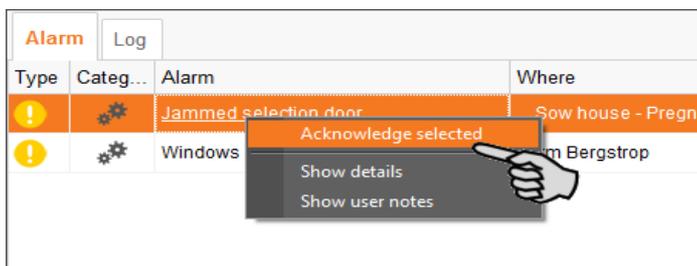


The screenshot shows a dialog box titled "User Notes". It contains two text input fields: "Feedback" and "Corrective action". At the bottom right, there are two buttons: "Cancel" and "Save".

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.

## 10.3 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:

Type	Categ...	Ala	Where	When	Duration
!	⚙️	UPS is required but currently not ...	Farm Bergstrop	3/18/2016 3:03:30 PM	
!	⚙️	Windows Auto Update activated	Farm Bergstrop	3/18/2016 3:03:15 PM	

Search panel details:

- Date interval: [Navigation icons]
- Type: <Enter search criteria>
- Category: <Enter search criteria>
- Alarm: <Enter filter criteria>
- Where: <Enter search criteria>
- User notes: <Enter search criteria>
- Buttons: Reset, Delete...

2 alarms

1. Click on "Delete..." in the right-hand part of the window.
2. Select the desired time period or enter a date.

Delete alarms

Older than 6 months  
 Older than 12 months  
 Older than user specified date

Delete alarms older than:

3/18/2015 12:00 AM

OK Cancel

3. Click on "OK".
- All alarms within the selected time period are deleted.

## 10.4 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

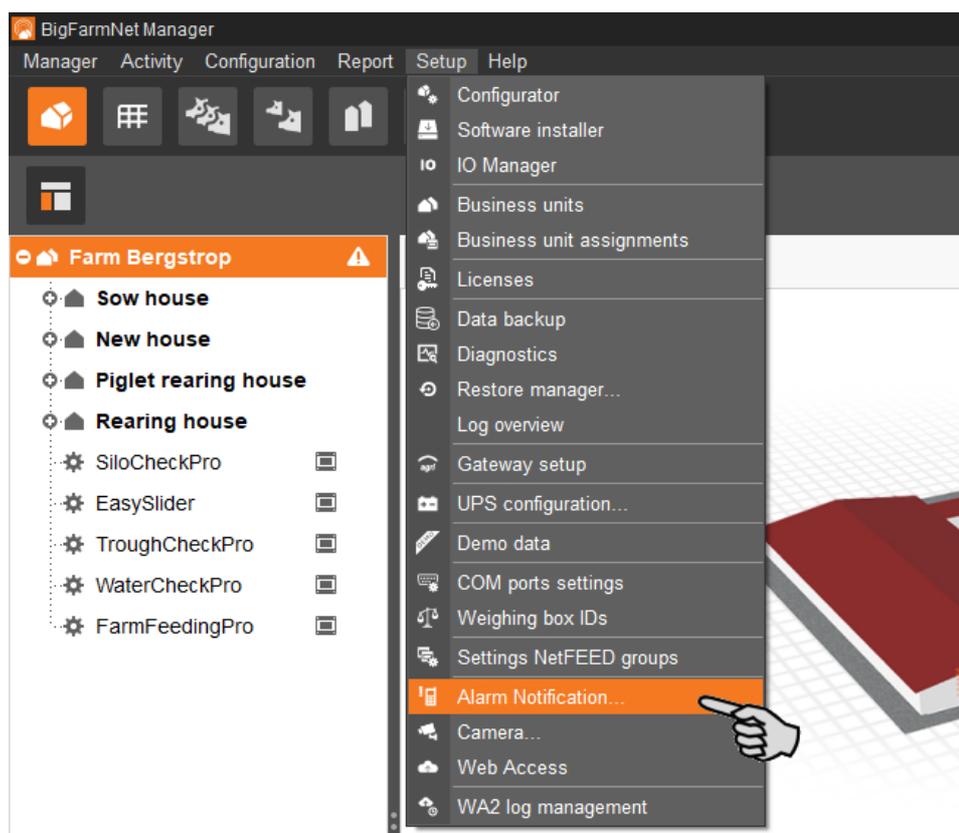
### NOTICE!

The Alarm Notification service cannot replace an autcaller! The service is merely an additional help.

Carry out the following steps to set up the Alarm Notification service:

1. Click on "Alarm Notification" in the "Setup" menu.

This opens the dialog window "Alarm Notification".



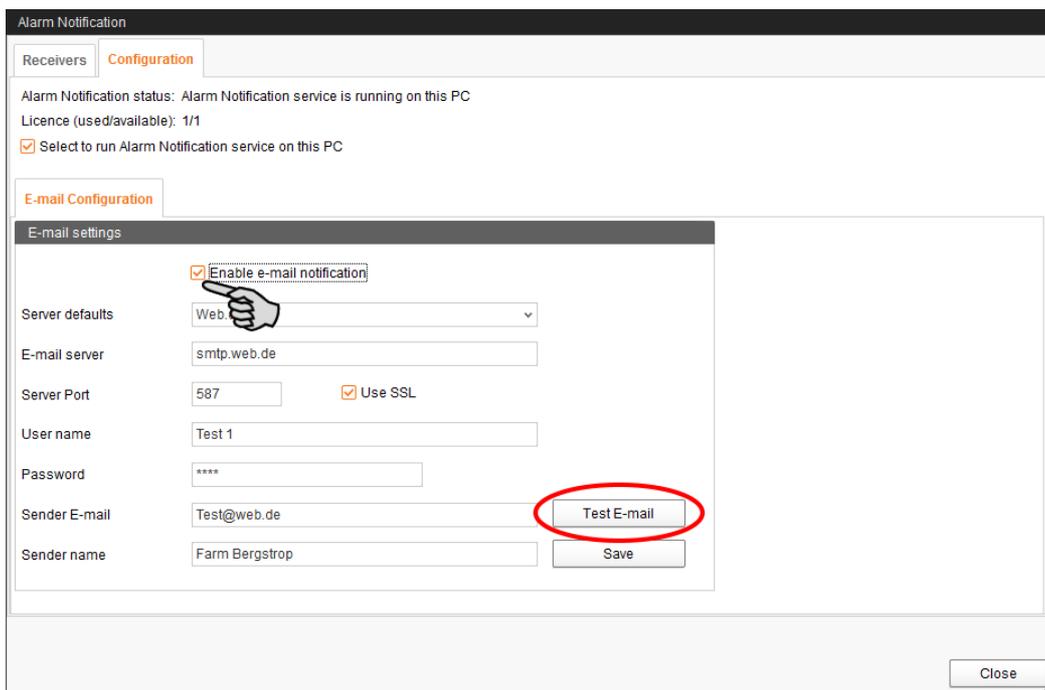
2. Activate the Alarm Notification service under "Configuration".

3. Click on the arrow pointing downwards next to **Server defaults** and select your server default from the drop-down menu.

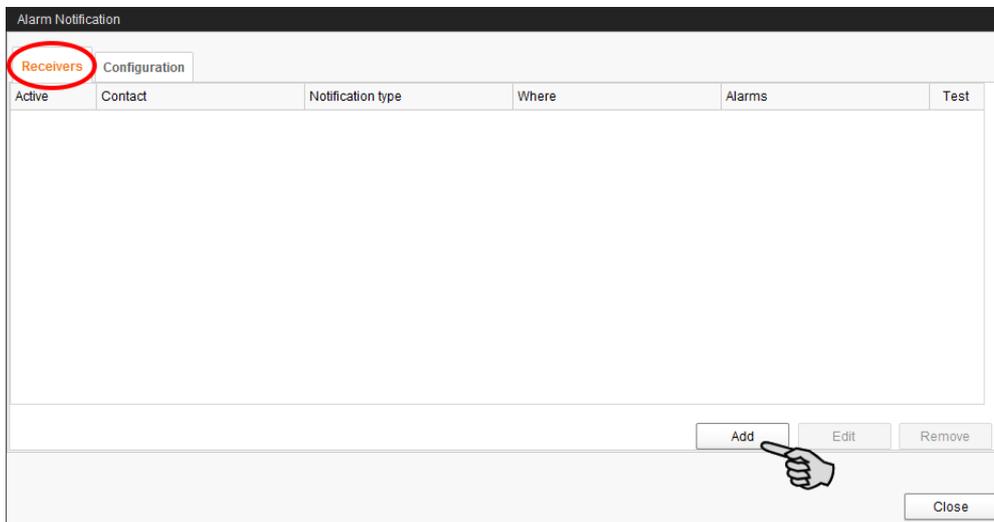
As soon as you have selected a server default, the email server, the server port and the SSL are filled in automatically.

4. Enter the **user name**, the **password** and the **sender email**.

5. Activate the function for email notification and click on "Test email" to check the configuration.



6. Click on "Save" to accept all settings.
7. Under "Receivers", click on "Add" to add a recipient.



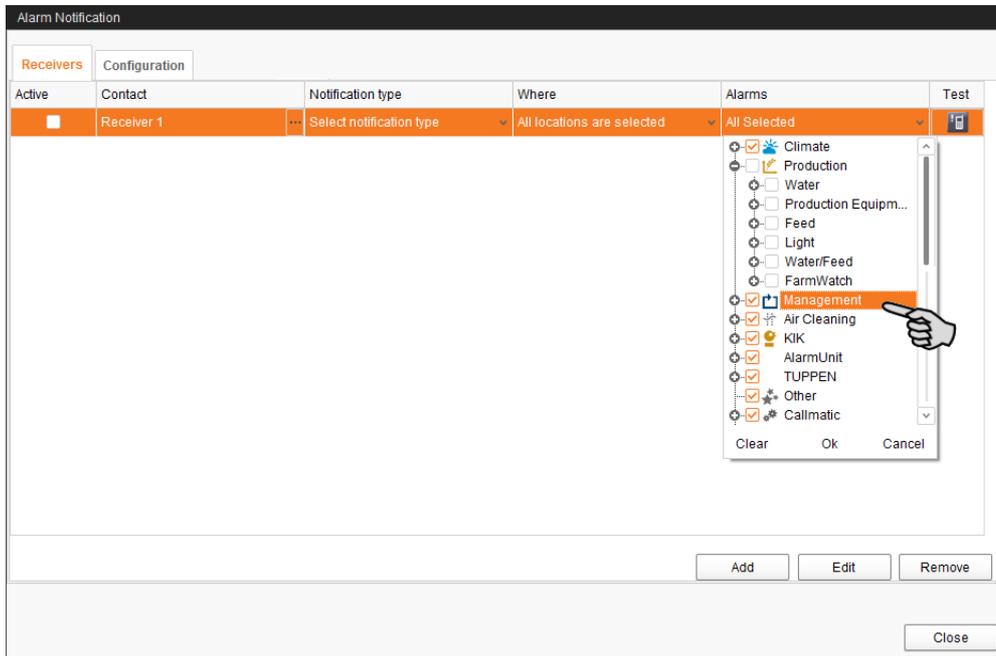
8. Enter the contact details and select the correct language.

9. Confirm your input by clicking on "OK".
10. Select "Email" as **notification type** and confirm your selection by clicking on "OK".
11. Under **Where**, select the location whose alarms the recipient should receive.  
You may select multiple locations.

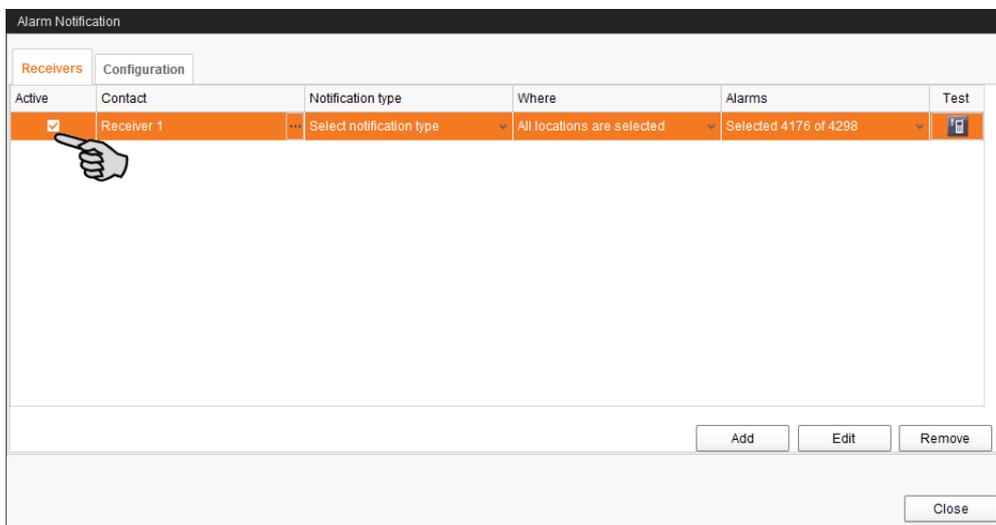
Active	Contact	Notification type	Where	Alarms	Test
<input type="checkbox"/>	Receiver 1	Select notification type	All locations are selected	All Selected	

12. Confirm your selection by clicking on "OK" in the drop-down menu.

13. Under **Alarms**, select which type of alarms the recipient should receive.  
You may select multiple alarm types.

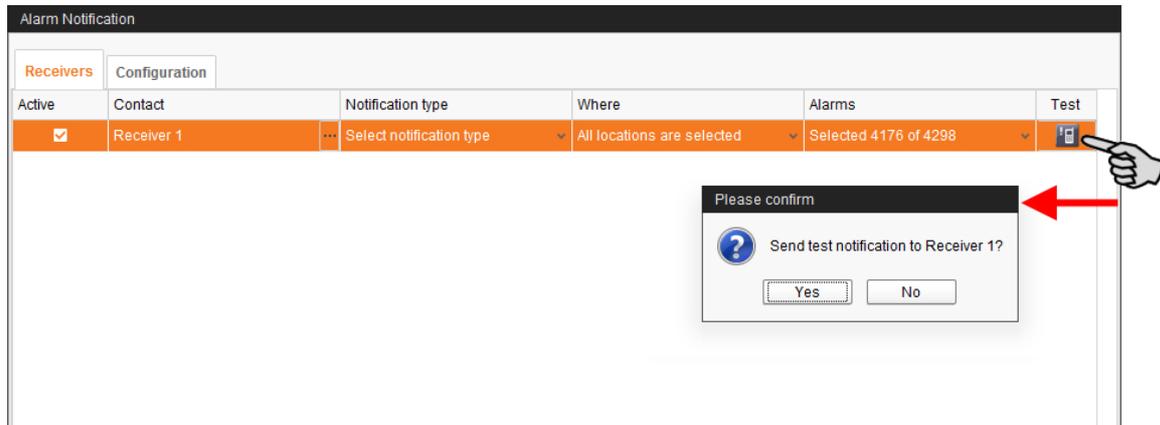


14. Confirm your selection by clicking on "OK" in the drop-down menu.  
15. Activate the recipient for alarm notifications.



16. Check the recipient's data by sending the recipient a test message:

Click on the alarm notification icon and confirm the next dialog with "OK".



17. Click on "Close" after you have configured all settings.

This closes the dialog window.

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