

User Manual

## **AMACS – Production Laying**

Code No. 99-97-1926

Edition: 08/2014 GB (Version: 2.0.7)

**These instructions are a translation of the original instructions!**



## Program version

The product described in this manual is computer-based, and most functions are realised by software. This manual corresponds to:

**Software version: V2.0.7**

### Product and documentation changes:

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**IMPORTANT****Notes concerning the alarm system**

Where climatic control is used in livestock buildings, break-downs, malfunctions or faulty settings may cause substantial damage and financial losses. It is therefore **most important to install a separate, independent alarm system**, which monitors the house concurrently with climatic control. Please note that the product liability clause of **BIG DUTCHMAN**'s general terms and conditions of sale and delivery specifies that an alarm system **must be installed**.

We want to draw your attention to EU directive No. 998 of 14/12/1993 concerning minimum requirements for domestic animals, which specifies that an alarm system must be installed in any house which is mechanically ventilated. In addition to this, there must be a suitable emergency system.

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## 1 Main screen

With the Amacs production module, all relevant parameters for production can be set and viewed, and the production values from the database can be recalled and displayed.

Before the Amacs modules can start operation, it is necessary that a production run is started or, if required from a technical perspective, the system is switched to pause mode.



Depending on which equipment is installed, the screenshots in this manual may differ from those generated by your FarmController.

The areas that are visible depend on the configuration of the system. Menus that do not have any function are hidden to make the screen layout clearer.

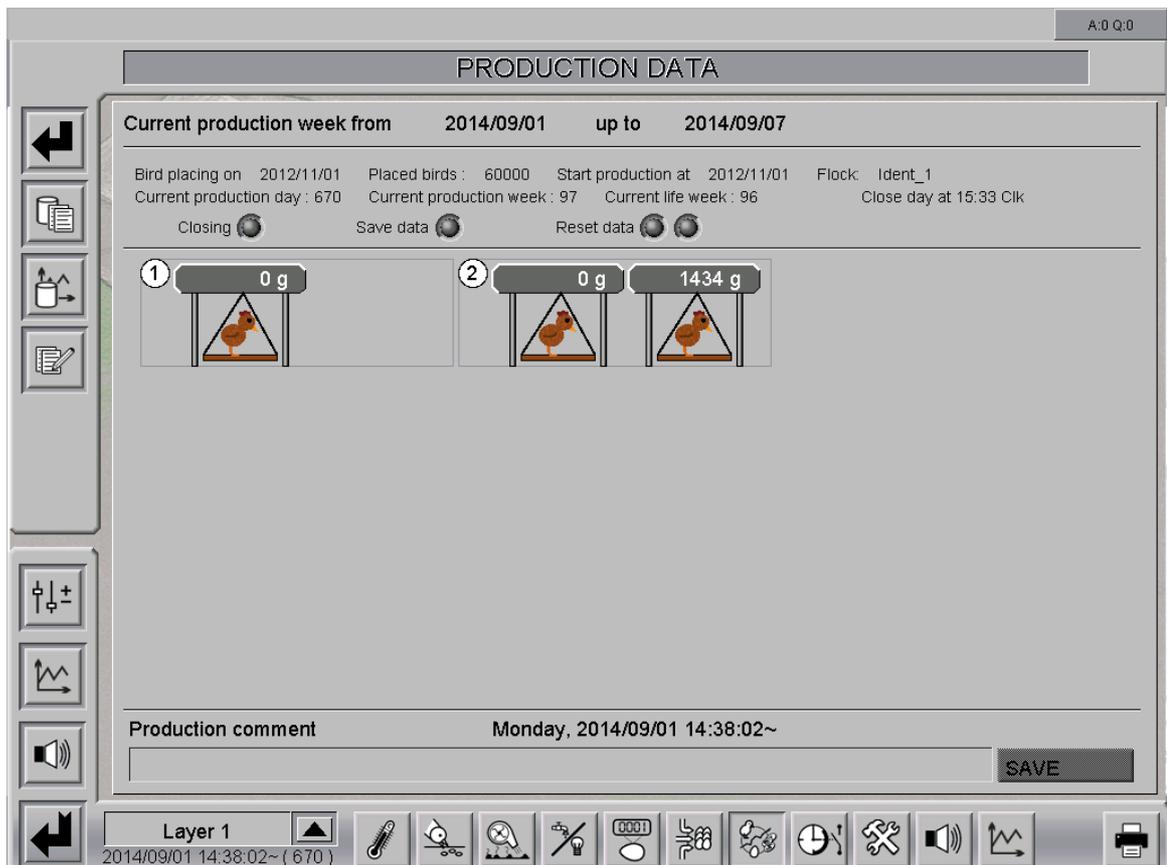


Figure 1-1: Main screen production laying



To access the main screen production laying, open the area selection by clicking on the shaded lower right corner in each house view. Click on the production icon. The production overview screen only opens if you have the required rights.

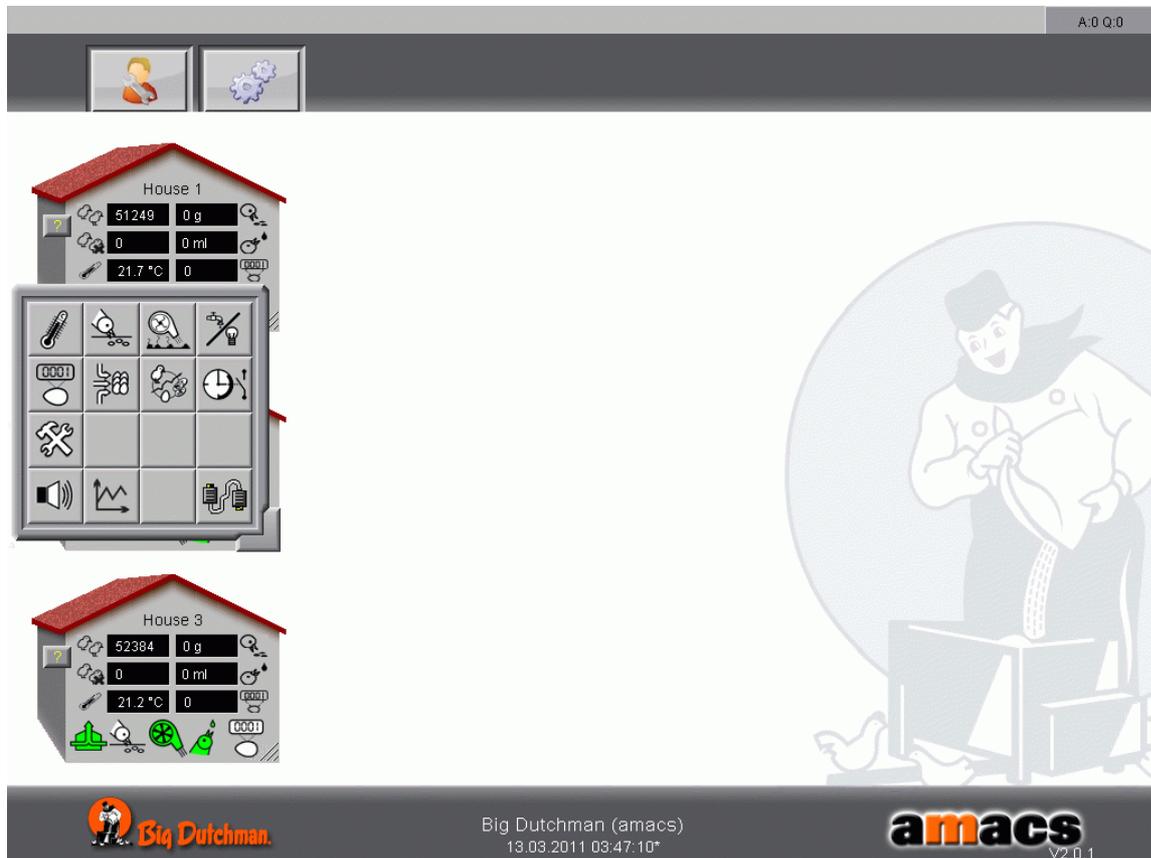


Figure 1-2: Opening Laying Production

## 1.1 Production status display

The data for the present production week can be obtained from the top section of the below screen, depending on whether a production run is in progress or not.

### 1.1.1 Ongoing production

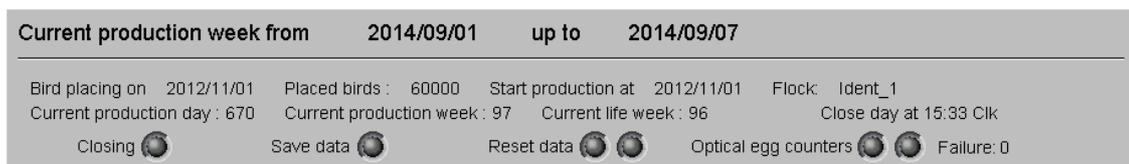


Figure 1-3: Ongoing production

Next to the specification of the production period, you can find information about the moving-in date, the number of placed birds, the production start and the flock. In addition, the overview also shows the current production day, the current production week, the week of the birds' life (only if a reference file has been loaded) as well as the set time for the daily close.

The six greyed out lamps indicate whether the production is still running or whether daily close has already been completed.

#### 1. Closing day

As soon as the daily close occurs (in this case: 22:00 hrs), the first lamp "Closing" lights up green.

#### 2. Optical egg counters

If available, the first lamp of the optical egg counter turns green, which means that the system is requesting data from the egg counters. At the same time, the cameras are checked for errors. For example, the number 8 would mean that 8 cameras could not be reached. Naturally, the optimum value is zero errors. As soon as the data request is completed, the second lamp also turns green.

#### 3. Save data

If this procedure is executed, the data are saved, which is shown by the "Save data" lamp lighting up green.

#### 4. Reset data

The last step is the resetting of the data. If the first lamp lights up, the data are being reset. The second lamp indicates a pulsed signal for resetting of the CAN cards.

### 1.1.2 Pause production

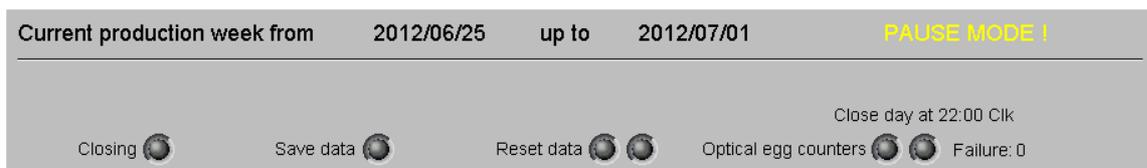


Figure 1-4: Pause production

The above screenshot indicates that production is in pause mode.

### 1.1.3 Concluded production

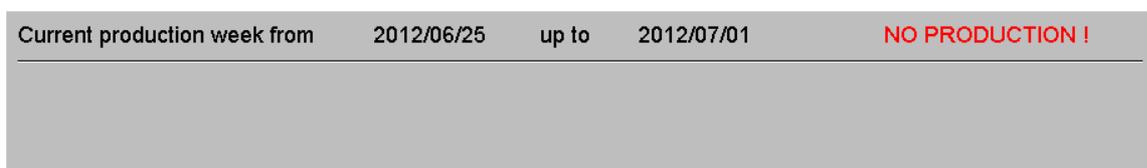


Figure 1-5: Concluded production

The above screenshot indicates that at present no production has been started.

## 1.2 Production data

Via the menu bar in the top left corner, you can view the production data in tables and graphs.



- **Back**  
Return to the production overview screen.
- **Reports**  
Display of production data in a table.
- **Curves**  
Display of production data in a graph.
- **Manual inputs**  
Manual input of production data into the database.

## 1.2.1 Viewing and selecting reports



To ensure that the key parameters for a laying or growing process can be quickly accessed, a number of ready-prepared report templates is provided. By clicking this button, the following screen opens with all available reports.

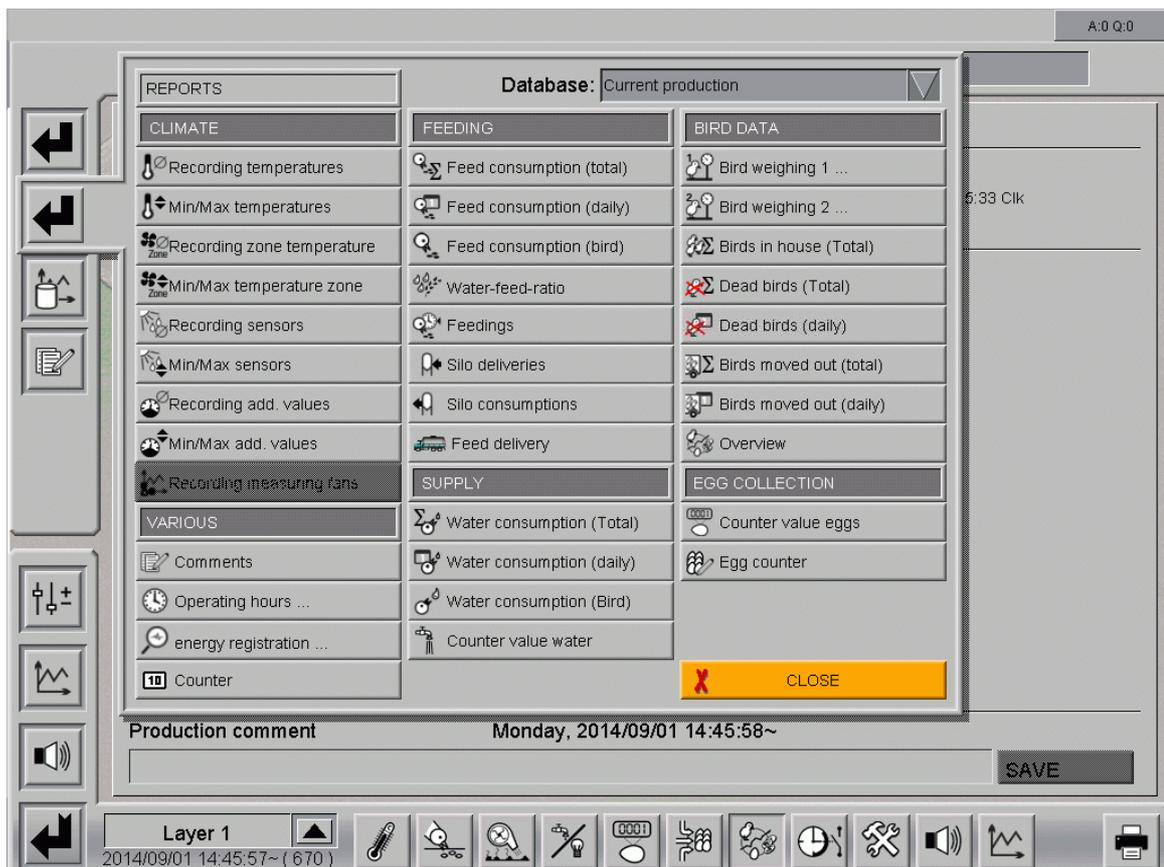


Figure 1-6: Report selection main screen

- **Database: Current production**

Under “Database”, you can select whether the current or previous production should be displayed. The selection menu shows all production runs with house names and placing date.

- **Reports: Birds in house (Total)**

By clicking one of the reports, all available data about the birds in the house are displayed. The following screenshot reproduces one possible view.

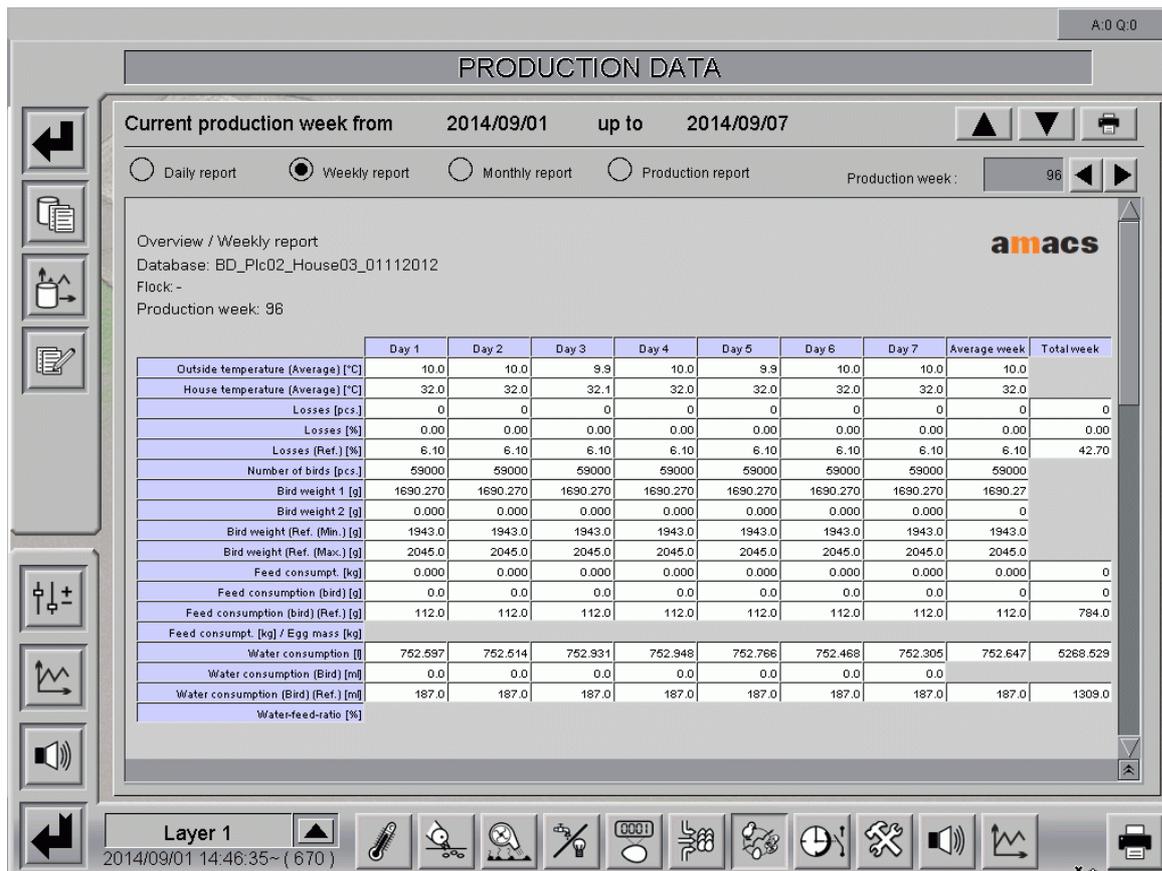


Figure 1-7: Sample report

After selecting the report, the following settings can be made:

- **Viewing daily, weekly, monthly, or production report**

The displayed time period can be selected by clicking one of the options. Daily, weekly or monthly values or data from the production start can be displayed.

**–Daily report**

This displays which data have been entered after end of production for the respective day in the database. The day of the displayed report can be changed via the arrow keys. There is also the option of selecting the desired day via a calendar function.



Figure 1-8: Daily report

**–Weekly report**

This shows which data were entered in the database for the selected week. The week of the displayed report can be changed via the arrow keys.



Figure 1-9: Weekly report

**–Monthly report**

This shows which data were entered in the database for the selected month. The month of the displayed week can be changed via the arrow keys. There is also the option of selecting the desired month via a calendar function.



Figure 1-10: Monthly report

**–Production report**

This shows which data were entered in the database for the selected production run.



Figure 1-11: Production report

- **Scroll**



Via the "Scroll" function it is possible to scroll to the previous or next page if the report contains several pages.

- **Print**



The report can be printed by the connected printer. Clicking the "Print" button, which appears at the top right, allows for defining the appearance of the printout, selecting the printer and submitting the print job.

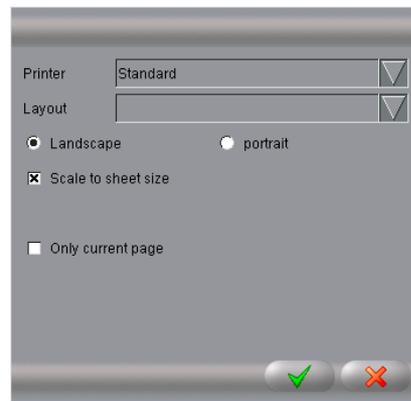
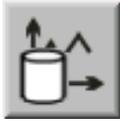


Figure 1-12: Printing

1. The configured **printer** must be selected in the first field. "**Standard**" is the default selection.
2. The "**Layout**" function defines whether only the current **List View** should be printed with lines or a **FrameListView** with index.
3. "**Landscape**" or "**Portrait**" determines whether the image is printed out in landscape or portrait format. "**Landscape**" is the default setting.
4. The function "**Scale to sheet size**" makes it possible to scale the screenshot to the paper size. This function is activated by default.
5. The checkbox "**Only current page**" is not activated in this case.
6. The print order can be started with the **green check** or interrupted with the **red X**. The menu is closed on cancellation.

## 1.2.2 Viewing and creating curves



Clicking on the curve symbol opens a window in which ten individual curves can be created and saved.

When the create curve button is clicked, the window is opened in which the current production values are shown as a curve with benchmark values for comparison.

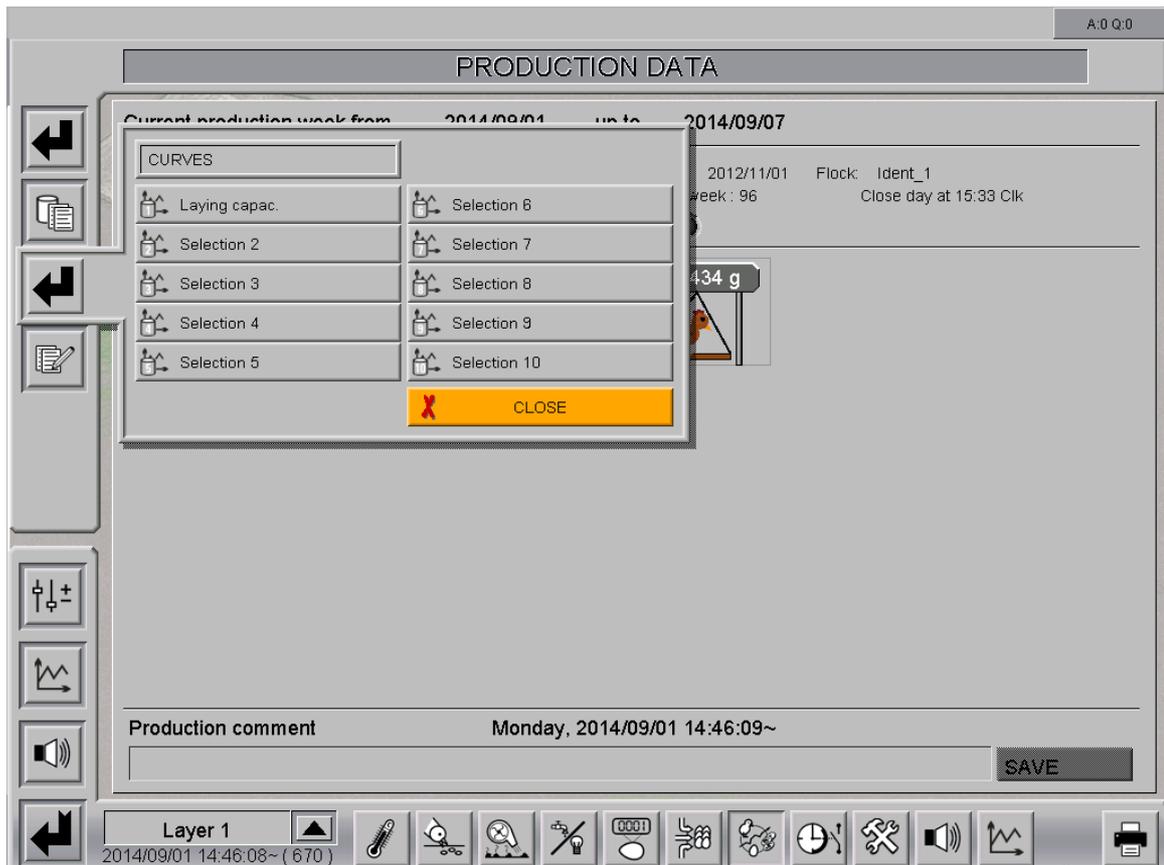


Figure 1-13: Displaying the production curves panel

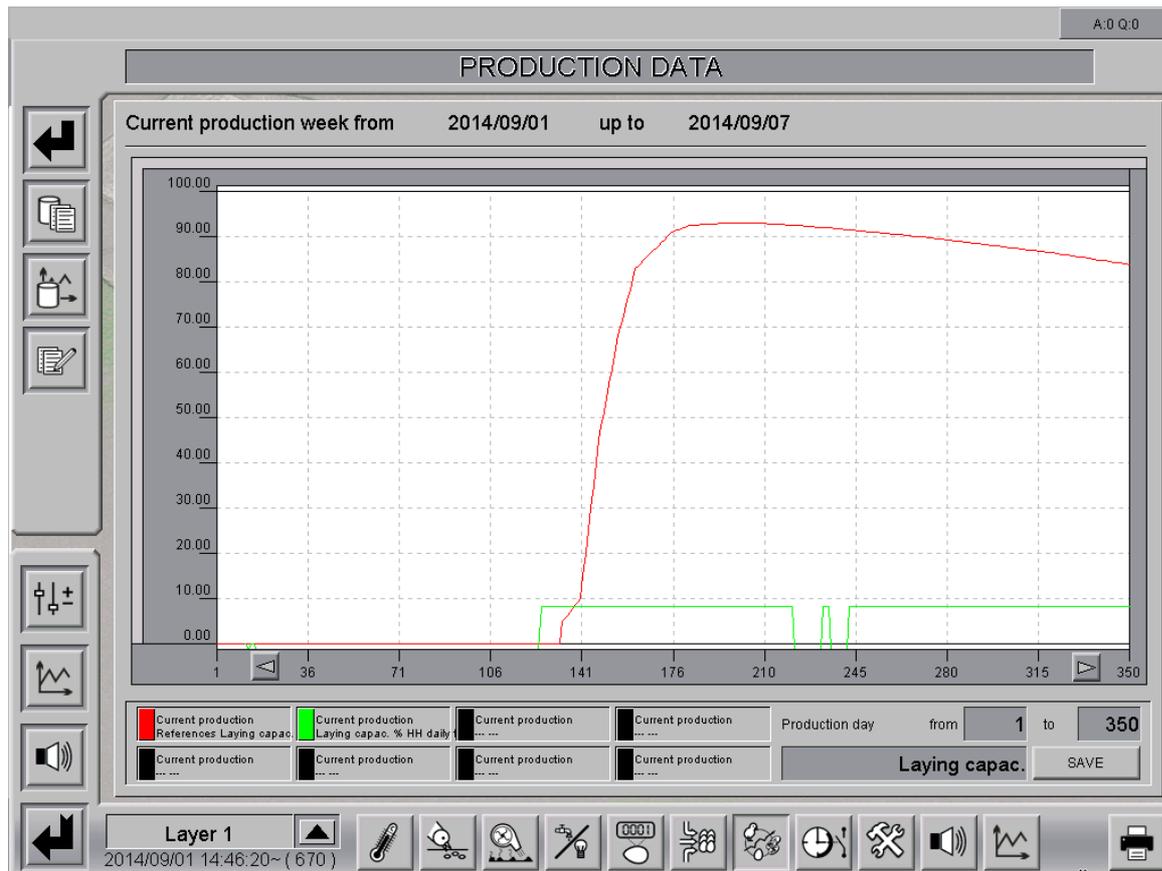


Figure 1-14: Curves

## Creating curves

### 1. Select datapoint

A curve can be added or deleted by clicking one of the eight information fields in the bottom panel.

### 2. Curve selection

In the "Curve selection" window, you can select the production (**database**), area (**table**) and the **values** that are displayed.

In addition, you can also set here what colour and scaling the curve should have.

The settings for the curve display are saved via the "**Take Over**" button.

You can quit the menu via the "**Cancel**" button, without saving the settings.

The "**Remove Curve**" button deletes the current curve from the curve display.

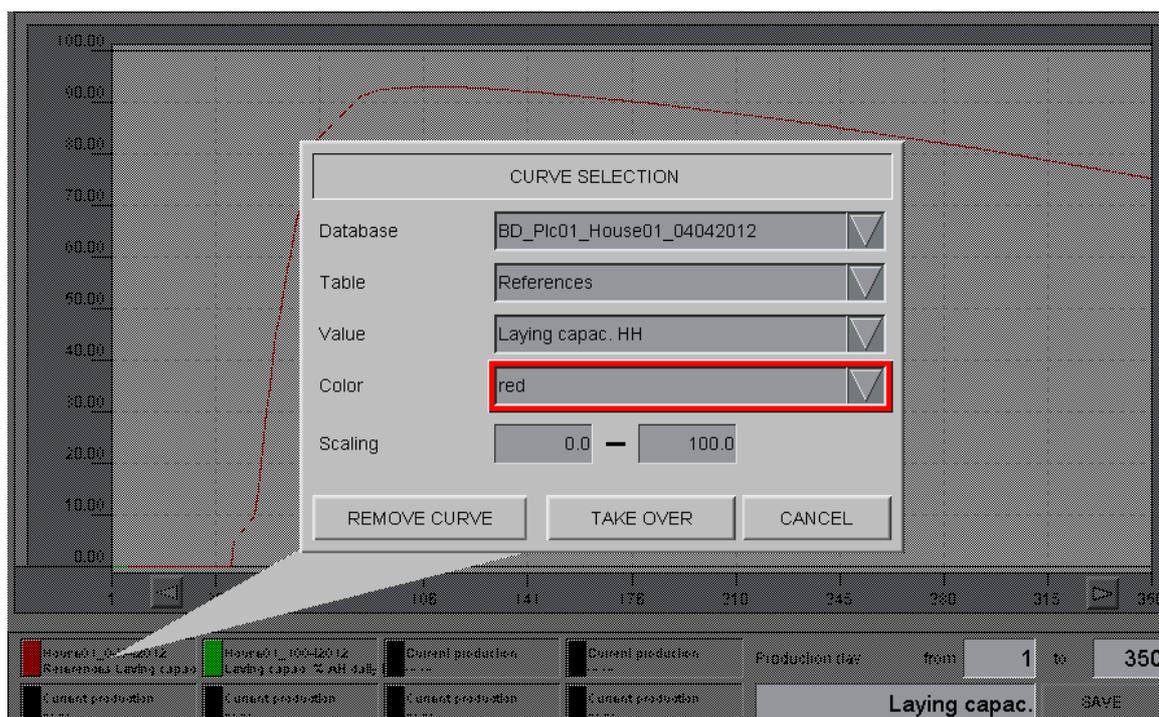


Figure 1-15: Creating curves

### 3. Production day from - to

To display values only of a defined period, the first and last production date can be entered for which production data should be displayed.

### 4. Saving curve

The selection can be assigned a name in the bottom right field and permanently saved with the **"Save"** button.

## 1.2.3 Manual entries



Clicking the **"Note"** button opens a window in which egg numbers and medicines per day can be entered so that they are recorded in the database.

If the production values of the previous day have not been entered on the same day, the values can be entered belatedly via the box **Date** in the upper right corner of the screen. The entered values are then saved in the database by clicking the **"Save"** button.

These manually entered values can be viewed as curve at any time in the "Production curves" pane.

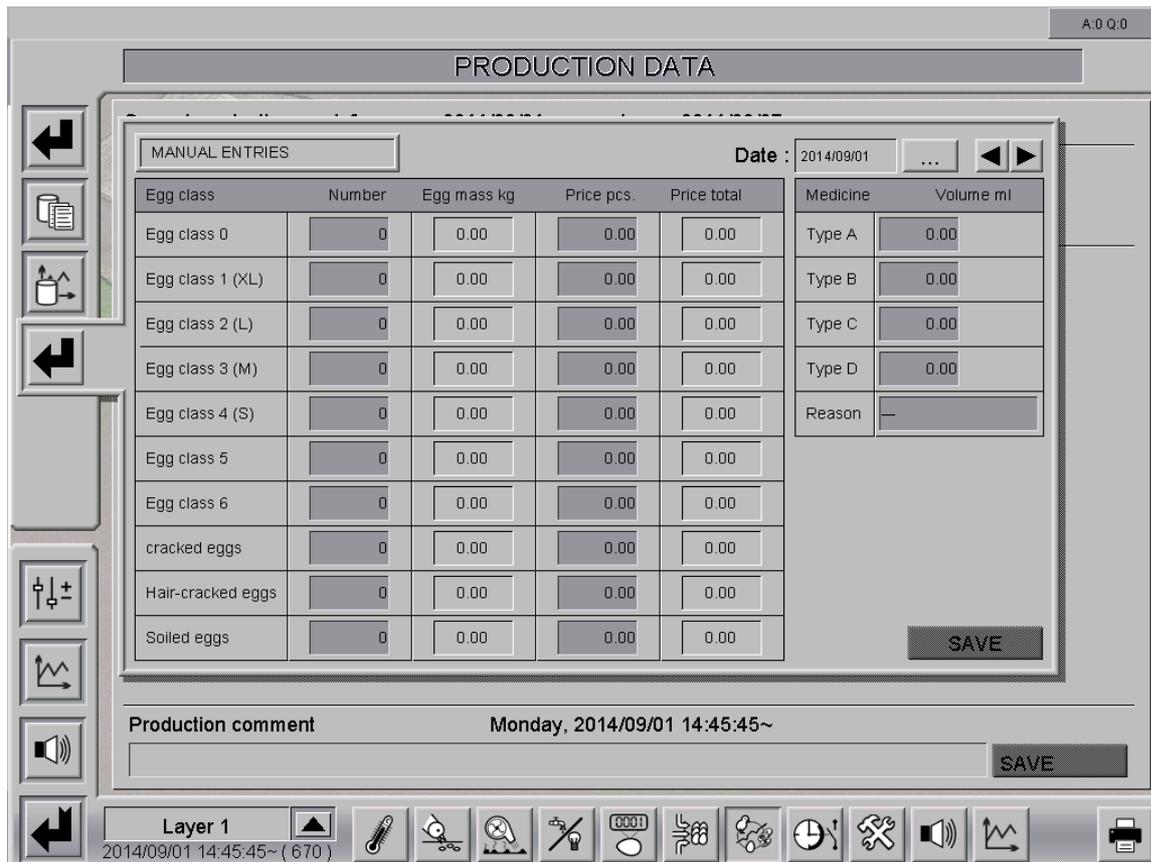


Figure 1-16: Manual input of egg numbers

- **Egg classes**  
The total egg number and unit price can be entered on the left side of the menu.
- **Medicine**  
The medicines administered with quantities and reasons can be entered on the right of the menu.

### 1.3 Comment

Additional comments on the production can be saved. The comments can be saved in the database and can be analysed individually.

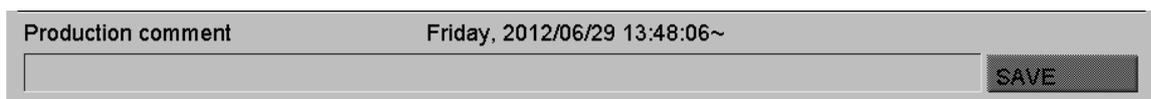
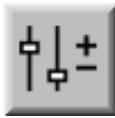


Figure 1-17: Comments

## 1.4 Settings



To access the settings, click on the icon **parameter setup**. The bird management can be defined here and the production data can be adjusted and monitored.

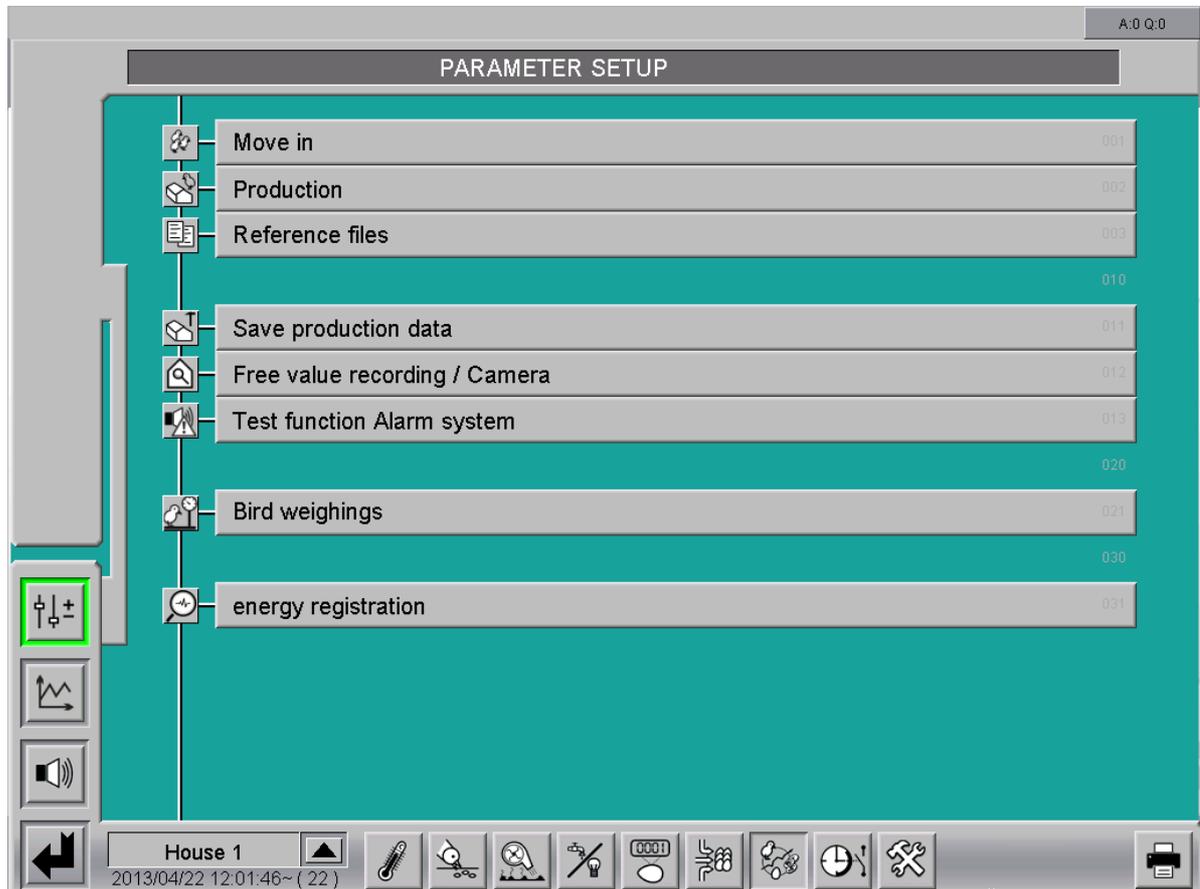


Figure 1-18: Settings

Clicking on one of the buttons in the menu takes you to the submenus where e.g. bird numbers, reference data, etc. can be adjusted.



All shown settings only serve as examples. The appropriate settings are made during initial operation and may then be optimized during operation.

If a submenu is divided into several pages, these pages can be accessed by clicking on the arrow keys in the upper right corner.



Figure 1-19: Switching between the screen pages

## 2 Moving in and production

To access bird management, open the menus "Move in" and "Production" under "Parameter setup".



Figure 2-1: Parameter setup

The following section describes the parameter settings "Move in" and "Production", which are accessed via the eponymous menu items.

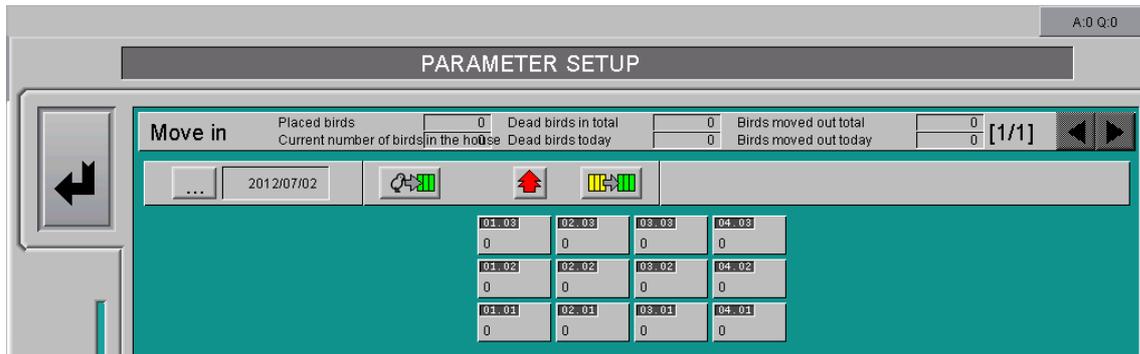


Figure 2-2: Moving birds in

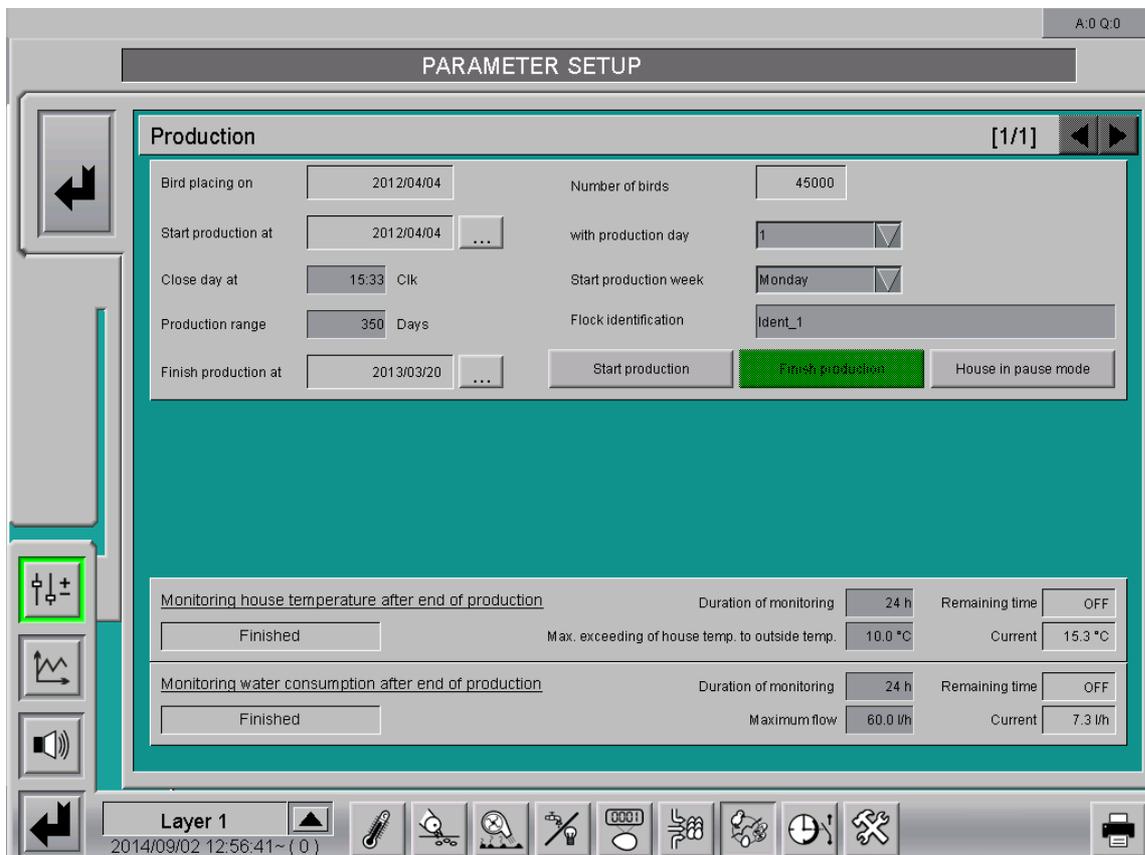


Figure 2-3: Production

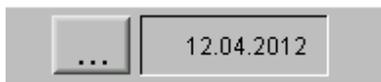
## 2.1 Moving birds in

In order to move birds in and define the moving-in date, the Move in menu under Parameter Setup must be opened, resulting in the bird management input screen opening.



Figure 2-4: Moving birds in

### 1. Moving-in date



Clicking on the button with the three dots opens a calendar in which the moving-in date can be entered.



Figure 2-5: Defining the moving-in date

### 2. Moving birds in



Clicking the "Move in" button marks all blocks green and indicates the required entry fields.

### 3. Selecting blocks

If the entered birds are not distributed in all blocks but should only be divided between certain tiers, it is possible to activate/deactivate certain blocks by mouse click. The deactivated blocks are greyed out.

The selection of activated blocks can also be changed via the three function keys ("**Deselect all**", "**Select all**" and "**Reverse selection**") on the right-hand side of the screen.



Figure 2-6: Selecting blocks

### 4. Number of birds

The number of birds can now be entered in the field "**Move birds in**" and confirmed with the "**Enter**" key. The birds are then evenly distributed in these blocks after clicking on the green arrow.



Figure 2-7: Number of birds



If an incorrect bird number is entered, the input can be reversed via the "Move all birds out?" button. This option is only available if a production has been completed or not yet started.

An explanation on how to reverse inputs during ongoing production can be found in section 2.7 "Cancel entries".



Figure 2-8: Moving all birds out

## 2.2 Starting production

To define the moving-in date and start production, the menu **"Production"** in the parameter setup must be opened. In this menu, production can be started, stopped or the house can be switched to pause mode.

Bird placing on	2012/04/04	Number of birds	45000
Start production at	2012/04/04 ...	with production day	1
Close day at	15:33 Clk	Start production week	Monday
Production range	350 Days	Flock identification	Ident_1
Finish production at	2013/03/20 ...	Start production	Finish production
		House in pause mode	

Figure 2-9: Starting production



The settings **"Bird placing on"** and **"Number of birds"** are taken from the Move in menu and cannot be edited here.

### 1. Start production on

As the moving-in date and the production start are not always identical, the date on which production should start can be entered via a calendar. This can be opened via the button with three dots.



Figure 2-10: Production settings

**2. With production day**

If production is started although there are no birds in the house, a production day can be assigned to the calendar date. This is useful if, for example, the house is preheated or feed is brought to the house which must be assigned to the production. The moving-in date is normally defined as day "0". Consequently, the house is heated and the feed system is filled on day "-1".

**3. Start production week**

In many operations, the production week is organized so that it runs from, for example, Thursday to Thursday. In order to adjust the reports accordingly, the day of the week on which a new production week begins can be entered here.

**4. Close day at**

To save the data recorded for the day in the database at a specifically defined time, the time at which the day should be closed must be entered here.

**5. Production range**

As Amacs can be used in different houses, the number of days for which the placed birds should remain in the house can be entered here. This makes the curves for set temperature, etc. easier to follow as the X-axis of the graphs only shows e.g. the days 0 to 350 if the number 350 was entered.

**6. Finish production on**

The expected moving-out date can be entered in the field "Finish production on". If the moving-out date is changed, this entry can be adjusted even during production. The necessary feed quantity can be calculated in advance based on the end of production, for example.

The date can be entered via the calendar, which opens after clicking on the button with the three dots.



Figure 2-11: Finish production on

## 7. Flock identification

If a flock is identified via flock identification, this identification is indicated in all reports to facilitate distinguishing flocks. This identification must be entered before the start of production as it cannot be changed during production.



Spaces are replaced by \_ when entering the flock identification. Special characters such as ? ! § % / ( ) = ' . , < > ^ ° @ \* \ ß ü ä ö are not accepted and deleted.

## 8. Starting production

When all inputs have been made, production can be activated with the button "**Start production**". The fans and other modules will now start operating according to the specified data.

Moving birds, entering the number of dead birds, etc. is possible immediately after production start. This is explained below.



### Caution!

If a new date is entered for the start of production, a new database for this laying or growing period is always created. If production is only interrupted, only enter the date with which you started the previous batch, as otherwise the cumulated values restart at zero.

## 2.3 Moving birds

If it is necessary to move birds and if the even distribution of bird numbers by Amacs is not correct, the birds can be individually moved. In order to move birds, the menu "**Move birds**" is opened which leads to the bird management input screen.

Figure 2-12: Moving birds

### 1. Moving



Clicking the "**Move birds**" button makes it possible to move birds between houses. The required input fields are displayed.

### 2. From - to

The initial block can now be clicked and the block to which some of the birds should be relocated can be selected while holding the **left mousekey**. As can be seen in the above image, the source block is yellow and the target block green.

### 3. Moving birds

The number of birds that should be removed from this block can now be entered and confirmed with the "**Enter**" key. The change is saved by clicking the button with a green checkmark next to the number field.

Figure 2-13: Entering the number of birds moved

## 2.4 Entering dead birds

Part of daily management is noting the losses per block and entering them in the database. In order to enter the dead birds, the **"Move in"** menu can be opened under Parameter setup, which leads the user the input screen for bird management.



Figure 2-14: Entering losses

### 1. Losses



The number of dead birds can be entered via the **"Loss"** button. The required input fields are displayed.

### 2. Selecting blocks

If the entered birds are not distributed in all blocks but should only be divided between certain tiers, it is possible to activate/deactivate certain blocks by mouse click. The deactivated blocks are greyed out.

The selection of activated blocks can also be changed via the three function keys (**"Deselect all"**, **"Select all"** and **"Reverse selection"**) on the right-hand side of the screen.



Figure 2-15: Selecting blocks

### 3. Dead birds

The number of birds that should be removed from this block can now be entered and confirmed with the **"Enter"** button. The change is saved by clicking the button with the green arrow next to the number field.



Figure 2-16: Number of dead birds

## 2.5 Moving birds in later

In order to retrospectively move birds in, the "Move in" menu under "Parameter setup" is opened, which leads to the bird management input screen.



Figure 2-17: Moving birds in later

### 1. Moving birds in



Clicking the "**Move in**" button once marks all blocks green and the required input fields are displayed.

### 2. Selecting blocks

If the entered birds are not distributed in all blocks but should only be divided between certain tiers, it is possible to activate/deactivate certain blocks by mouse click. The deactivated blocks are greyed out.

The selection of activated blocks can also be changed via the three function keys ("**Deselect all**", "**Select all**" and "**Reverse selection**" on the right-hand side of the screen.



Figure 2-18: Selecting blocks

### 3. Number of birds

The number of birds can now be entered in the field "**Move in birds**" and confirmed with the "**Enter**" key. The birds are then evenly distributed between these blocks by clicking the green arrow.



Figure 2-19: Number of birds

## 2.6 Moving birds out earlier

In order to move birds out early, the "Move in" menu under "Parameter setup" is opened, which leads to the bird management input screen.



Figure 2-20: Moving birds out earlier

### 1. Moving out



Clicking the "Move out" button makes it possible to enter the number of moved out birds. The required input fields are displayed.

### 2. Selecting blocks

If the entered birds are not distributed in all blocks but should only be divided between certain tiers, it is possible to activate/deactivate certain blocks by mouse click. The deactivated blocks are greyed out.

The selection of activated blocks can also be changed via the three function keys ("Deselect all", "Select all" and "Reverse selection") on the right-hand side of the screen.



Figure 2-21: Selecting blocks

### 3. Moving birds out

Enter the number of birds that are to be removed from this block and confirm the input with the "Enter" key. The change is saved by clicking the button with the green arrow next to the number field.



Figure 2-22: Moving out birds earlier

## 2.7 Cancel entries



It is of course not possible to reverse actual losses, but it often happens that incorrect entries have to be corrected.

Changes can be made using the red arrows displayed in the previous figure, which are enabled for entering dead birds and for early moving out.

**The following entries can be reversed with these function keys:**

1. the last entry,
2. today's entries and
3. entries of the entire batch.

## 2.8 Finishing production

To finish production, the menu "**Production**" can be opened in the parameter setup. In this menu, production can be started, stopped or the house can be switched to pause mode.

Bird placing on	2012/04/04	Number of birds	45000
Start production at	2012/04/04	with production day	1
Close day at	15.33 CLK	Start production week	Monday
Production range	350 Days	Flock identification	Ident_1
Finish production at	2013/03/20	<b>Start production</b>	Finish production
			House in pause mode

Figure 2-23: Finishing production



**Caution!**

When production is finished, all controls are stopped and the ventilation is shut down.

Remember to switch the house, if necessary, to **pause mode**, so that the controls are further operated with the values entered for "House in pause".



**Warning**

**Risk of asphyxiation for people and birds**

If production is paused and there are still birds in the house, high concentrations of harmful gases can collect in the house.

- Make sure that harmful gases cannot collect in the house by providing sufficient fresh air circulation!
- If this situation does occur, then do not enter the house or only with suitable breathing protection device!



1. Production can be stopped by clicking the "**Finish production**" button.
2. A warning message appears stating that the control of ventilation, feed, light and water supply has been ended.
3. When you have read the security notice, you can finish production by clicking "**Yes, proceed with production stop**" or quit the safety warning by clicking "**Cancel**" without finishing production.

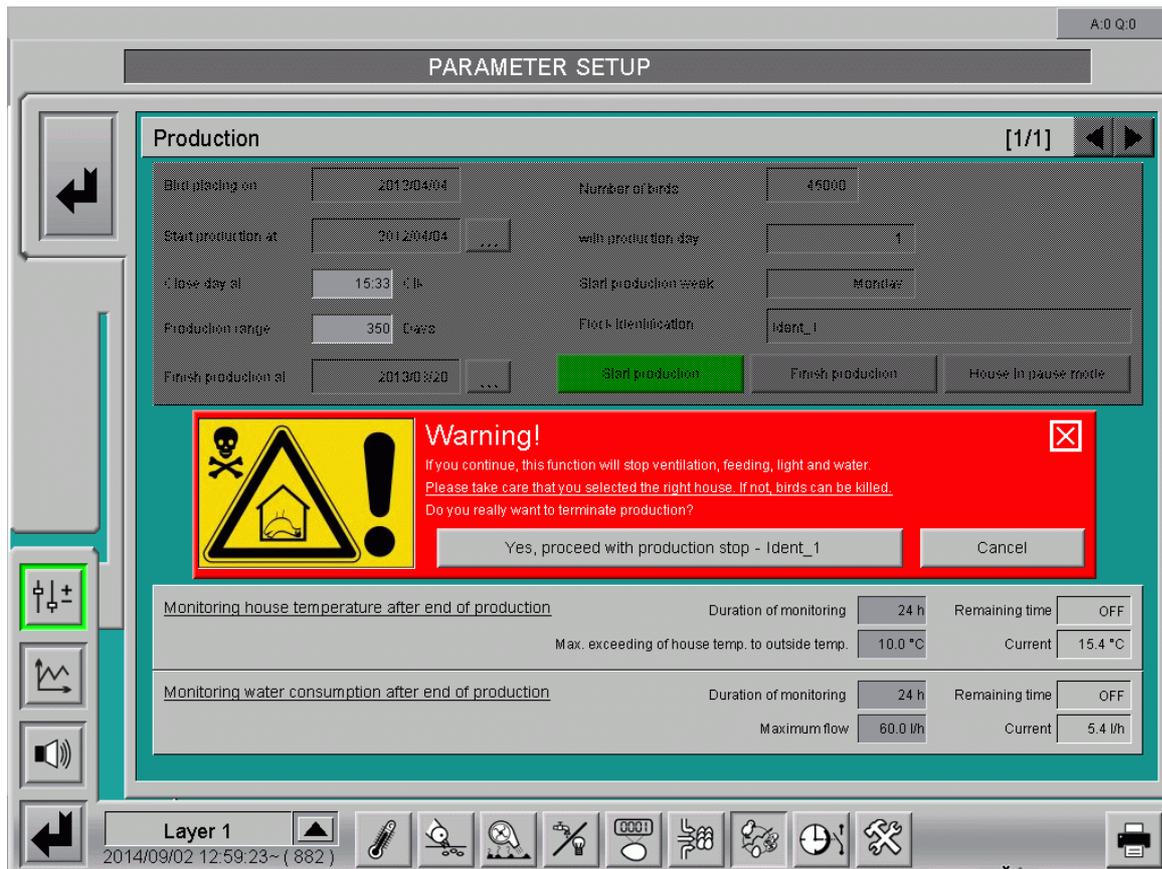


Figure 2-24: Warning - finishing production

## 2.9 Monitoring after end of production

Monitoring after the end of production performs plausibility checks by comparing the house temperature and the external temperature as well as water consumption after the end of production. This function is designed to prevent the death of birds by an inadvertent production stop in the wrong house.

### Monitoring ends when ...

- both monitoring times have lapsed and no alarm was generated,
- production is restarted, or
- in the production home page, the button "**End of monitoring**" has been actuated.

### 2.9.1 Settings

To activate monitoring, the menu "**Production**" can be opened in the parameter setup. In this menu, production can also be started, stopped or the house can be switched to pause mode.

Monitoring house temperature after end of production		Duration of monitoring	24 h	Remaining time	23:59:42
<input checked="" type="checkbox"/> Active		Max. exceeding of house temp. to outside temp.	10.0 °C	Current	24.0 °C
Monitoring water consumption after end of production		Duration of monitoring	24 h	Remaining time	23:59:42
<input checked="" type="checkbox"/> Active		Maximum flow	60.0 l/h	Current	0.0 l/h

Figure 2-25: Monitoring after end of production

- **Duration of monitoring**

Monitoring starts with completion of production and its duration is limited by the setting "**Duration of monitoring**" so that e.g. the heating of a house before the start of the next production does not cause false alarms, thus leading to permanent deactivation of this function.

- **Residual runtime**

During production, this field indicates that the monitoring is switched **OFF**. On completion of production, the residual runtime for monitoring is displayed. When the monitoring time has lapsed, the field shows "**00:00:00**". If both monitoring times have lapsed, "**OFF**" is displayed in the fields.

- **Maximum values**

**House temperature:** The value "**Max. exceeding of house temp. to outside temp.**" indicates the maximum value by which the house temperature may exceed the external temperature during the monitoring time.

**Water:** The current water consumption in l/h may not exceed the value "**Maximum flow**". For monitoring the water consumption, the valve is automatically opened for the duration of the test. If this is not desired, the monitoring time must be set to 0h or monitoring must be deactivated in the alarm settings.

- **Current**

This is the current value that is compared with the respective maximum value for monitoring after the end of production. This value is displayed when production is active and at the end of monitoring.

## 2.9.2 Monitoring status

The status information about monitoring is shown with the settings and in the main screen.

Finished	Displayed when production has been ended and the monitoring times have lapsed.
Active	Displayed when production has been ended and the monitoring times have not yet lapsed.
Disabled	Displayed when monitoring has been deactivated by the alarm setting.
Alarm	Displayed when alarm is generated during monitoring.
	Displayed during ongoing production

	<p>If an alarm has been identified, the error message "<b>Monitoring house temperature after end of production</b>" or "<b>Monitoring water consumption after end of production</b>" is displayed in the alarm line.</p>
---	--

### 2.9.3 Main screen

The display in the main production screen appears at the end of production. When monitoring has ended, the display disappears.

The monitoring display contains the same information as is shown in the settings. It is not, however, possible to change the settings, as the display is only provided for information purposes. In addition, a button for ending monitoring is provided, with which monitoring can be ended early.

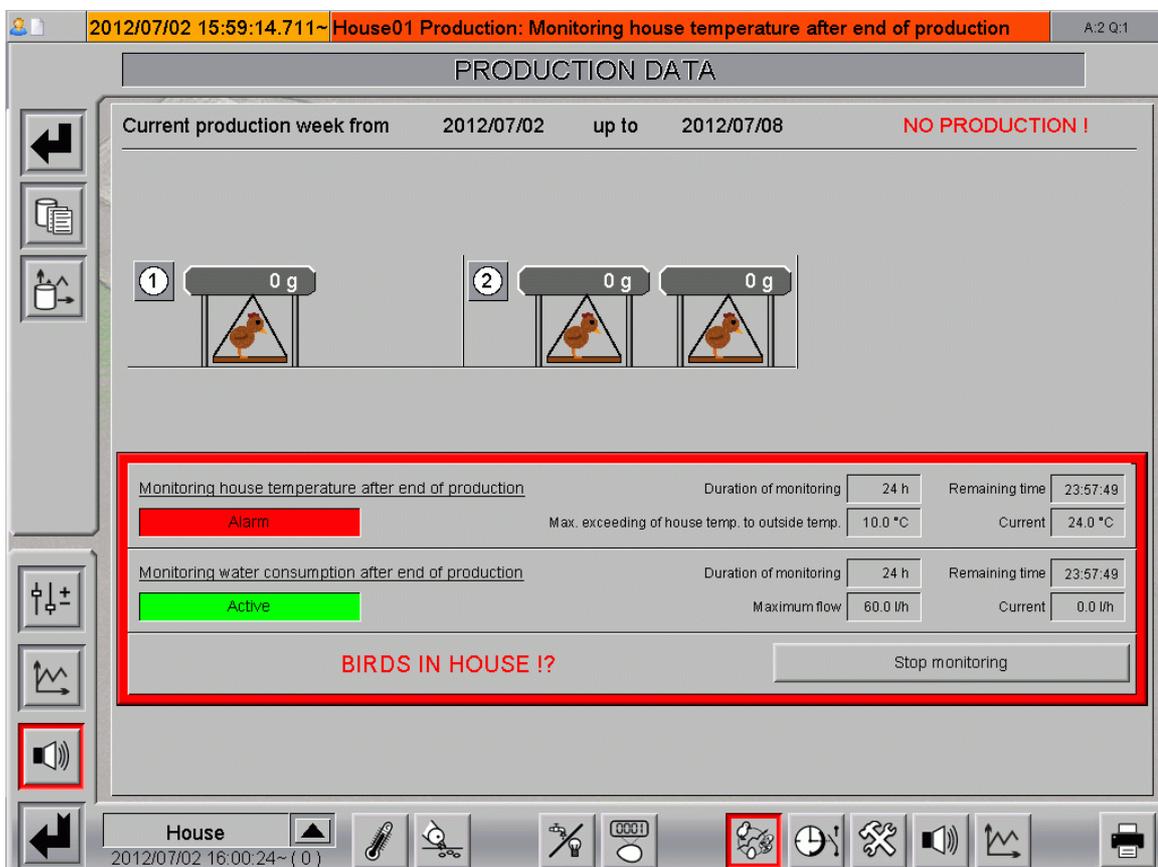
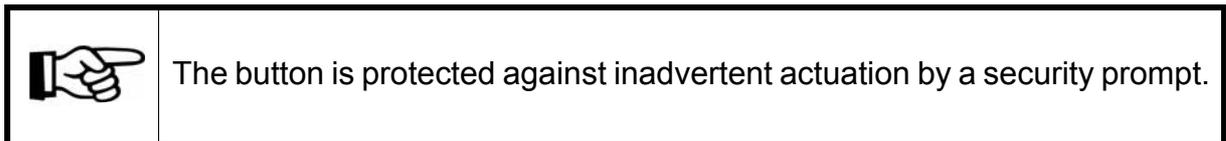


Figure 2-26: Alarm monitoring

If there is an alarm, the monitoring status and the text **"BIRDS IN HOUSE!?"** are displayed in the main screen for the respective house. The text continues to be displayed, even if the conditions for the alarm are no longer fulfilled. Clicking the button **"Stop monitoring"** ends the monitoring and the error is reset.

## 2.10 House in pause mode

To switch to pause mode, the menu "Production" can be opened in the Parameter setup. In this menu, production can be started, stopped or the house can be switched to pause mode.

Bird placing on	2012/04/04	Number of birds	45000
Start production at	2012/04/04 ...	with production day	1
Close day at	15:33 Clk	Start production week	Monday
Production range	350 Days	Flock Identification	Ident_1
Finish production at	2013/03/20 ...	Start production	Finish production
			House in pause mode

Figure 2-27: Activating break mode

Production can be stopped by clicking the **"House in pause mode"** button. This function means, for example, that the ventilation or the heating remain at the values previously defined in the climate module under "Ventilation at house in pause" or "Heating at house in pause".

Bird placing on	2012/04/04	Number of birds	45000
Start production at	2012/04/04 ...	with production day	1
Close day at	15:33 Clk	Start production week	Monday
Production range	350 Days	Flock Identification	Ident_1
Finish production at	2013/03/20 ...	PAUSE MODE !	Stop pause mode

Figure 2-28: Deactivating pause mode

The pause mode can be ended by clicking the same button, which is now named **"Stop pause mode"**.

	<p><b>Warning</b></p> <p><b>Risk of asphyxiation for people and birds</b></p> <p>If production is paused and there are still birds in the house, high concentrations of harmful gases can collect in the house.</p>
	<p></p> <ul style="list-style-type: none"> <li>– Make sure that harmful gases cannot collect in the house by providing sufficient fresh air circulation!</li> <li>– If this situation does occur, then do not enter the house or only with suitable breathing protection device!</li> </ul>

### 3 Reference files

To load various references and to set standard production values, the menu **Reference files** can be opened in the parameter setup.



Figure 3-1: Parameters - production / reference files

The screenshot shows the 'PARAMETER SETUP' window with the following content:

**Production Reference files** [1/1]

Reference curves

Hatching date: 2012/04/04 ... Age: ( 40/279 - 6 )

Reference file: Bovans Goldline [Load]

Egg class	Weight		aver.	Egg price
	from	to		
Egg class 0	83 g	93 g	88	0.00
Egg class 1 (XL)	73 g	83 g	78	0.00
Egg class 2 (L)	63 g	73 g	68	0.00
Egg class 3 (M)	53 g	63 g	58	0.00
Egg class 4 (S)	43 g	53 g	48	0.00
Egg class 5	33 g	43 g	38	0.00
Egg class 6	23 g	33 g	28	0.00
cracked eggs	63 g	73 g	68	0.00
Hair-cracked eggs	63 g	73 g	68	0.00
Soiled eggs	63 g	73 g	68	0.00

**House parameter**

- X-Offset house position: 0.00
- Y-Offset house position: 0.00
- Factor width of house: 1.00
- Factor height of house: 1.00
- Factor stepless roof fan: 1.00
- Factor roof fan: 1.00
- Factor roof exhaust air flap: 1.00
- Feed columns broken visualization:
- Animated fans:

House: 2013/01/07 16:07.45\* ( 279 )

Figure 3-2: Reference files

### 3.1 Reference curves

The reference files can be used for comparison with the actually measured values e.g. laying performance, feed consumption etc.

#### 3.1.1 Loading reference curve



Reference curves	
Hatching date	17.06.2012 ... Age: ( 18/123 - 4 )
Reference file	Bovans Goldline Load

Figure 3-3: Loading reference curve

#### 1. Hatching date

The hatching date of the moved in birds can be entered via a calendar. This can be opened via the button with the three dots. The life week and life day are automatically calculated and displayed with the production week.



Figure 3-4: Hatching date

#### 2. Reference file

In the selection field "Reference file", you can select various reference file that are available for the different breeds.

### 3. Loading reference values

The saved reference file is activated by clicking the "Load" button. The name of the loaded reference file is displayed instead of the selection field.

#### 3.1.2 Deleting reference curve

If the incorrect reference file has been inadvertently loaded, it can be deactivated again by clicking the "Delete" button. After the reference file has been deleted, the input boxes for loading a new reference file appear.



Figure 3-5: Deleting reference curve

### 3.2 Egg classes

The various weights for the egg classes can be entered under the egg classes.

The egg prices can also be entered manually. They are used as a template for manual entry in section 1.2.3 "Manual entries".

Egg class	Weight		aver.	Egg price
	from	to		
Egg class 0	83 g	93 g	88	0.00
Egg class 1 (XL)	73 g	83 g	78	0.00
Egg class 2 (L)	63 g	73 g	68	0.00
Egg class 3 (M)	53 g	63 g	58	0.00
Egg class 4 (S)	43 g	53 g	48	0.00
Egg class 5	33 g	43 g	38	0.00
Egg class 6	23 g	33 g	28	0.00
cracked eggs	63 g	73 g	68	0.00
Hair-cracked eggs	63 g	73 g	68	0.00
Soiled eggs	63 g	73 g	68	0.00

Figure 3-6: Defining egg class by weights



The egg classes entered here can also be loaded into the optical egg counters.

### 3.3 House parameters

Via the “House parameters”, the visual display of the images can be changed easily.

House parameter	
X-Offset house position	<input type="text" value="0.00"/>
Y-Offset house position	<input type="text" value="0.00"/>
Factor width of house	<input type="text" value="1.00"/>
Factor height of house	<input type="text" value="1.00"/>
Factor stepless roof fan	<input type="text" value="1.00"/>
Factor roof fan	<input type="text" value="1.00"/>
Factor roof exhaust air flap	<input type="text" value="1.00"/>
Feed columns broken visualization	<input type="checkbox"/>
Animated fans	<input checked="" type="checkbox"/>

Figure 3-7: House parameters

- The position of the house in the module screens ("X-Offset house position" and "Y-Offset house position") as well as the height and width of the house in the screen ("Factor width of house" and "Factor height of house") can be changed here.
- In addition to the position of the house, the size of the roof elements ("Factor stepless roof fan", "Factor roof fan" and "Factor roof exhaust air flap") can also be modified.
- Some animated components can also be adjusted here. These include the feed columns that are shown with broken lines and the blades of the fans that are either shown rotating or as a green wheel.

## 4 Saving production data

To save settings and production data permanently on the FarmController hard disk, the menu **Save production data** can be opened in the parameter setup.



Figure 4-1: Parameters - production / saving production data

	<p><b>Important:</b></p> <p>ALL settings, including house-specific settings, are saved and/or reloaded when saving and restoring the production data.</p>
---	---

All settings associated with the saving of production data are found on two different screens:

1. On the first screen, the current settings can be saved and saved settings can be loaded.
2. On the second screen, standard settings can be loaded and databases can be saved and reloaded (service only).

## 4.1 Settings

There are eight memory slots under Setup in which the settings can be saved.

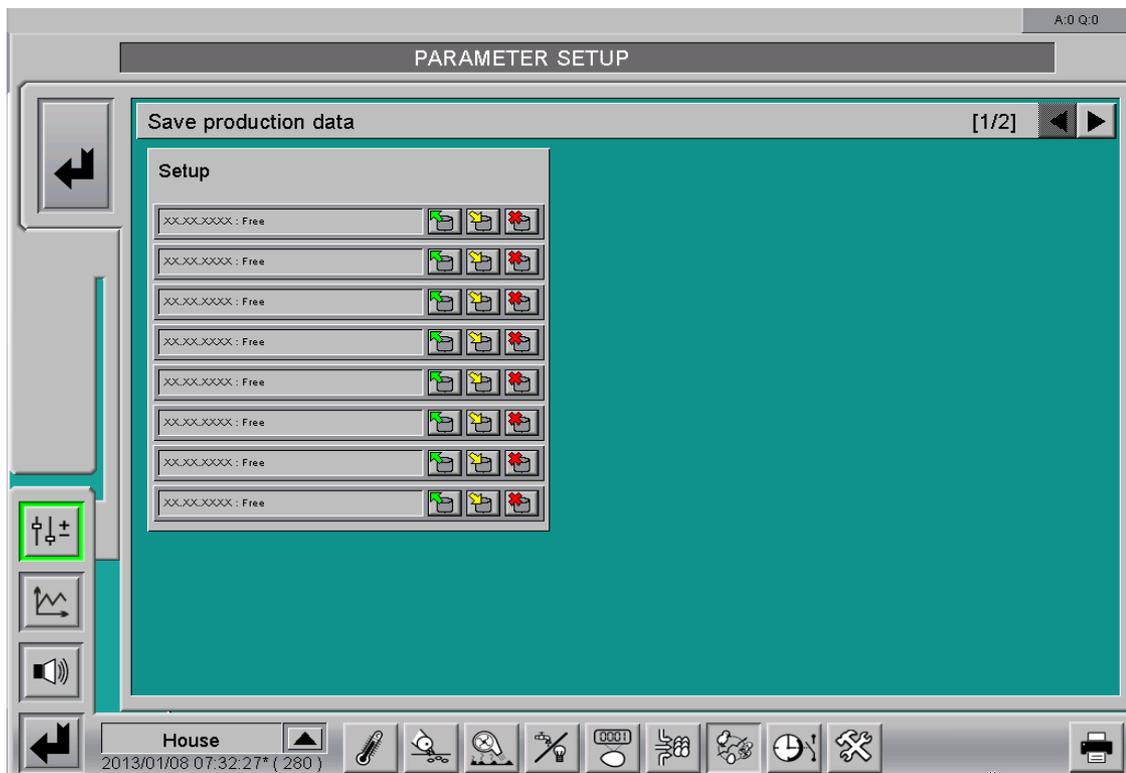


Figure 4-2: Saving the data



### Important:

As all previously made settings are changed, this option should only be used with due caution. You will also see a security prompt which requests you to confirm your settings.

- Saving:**  
 Clicking the yellow arrow results in the saving of all the menu settings entered in the various menus.
- Loading:**  
 Clicking the green arrow results in the previously saved settings being reloaded.
- Deleting:**  
 If you need to free up memory, you can delete some saved entries by clicking the red cross.

## 4.2 Extended production data

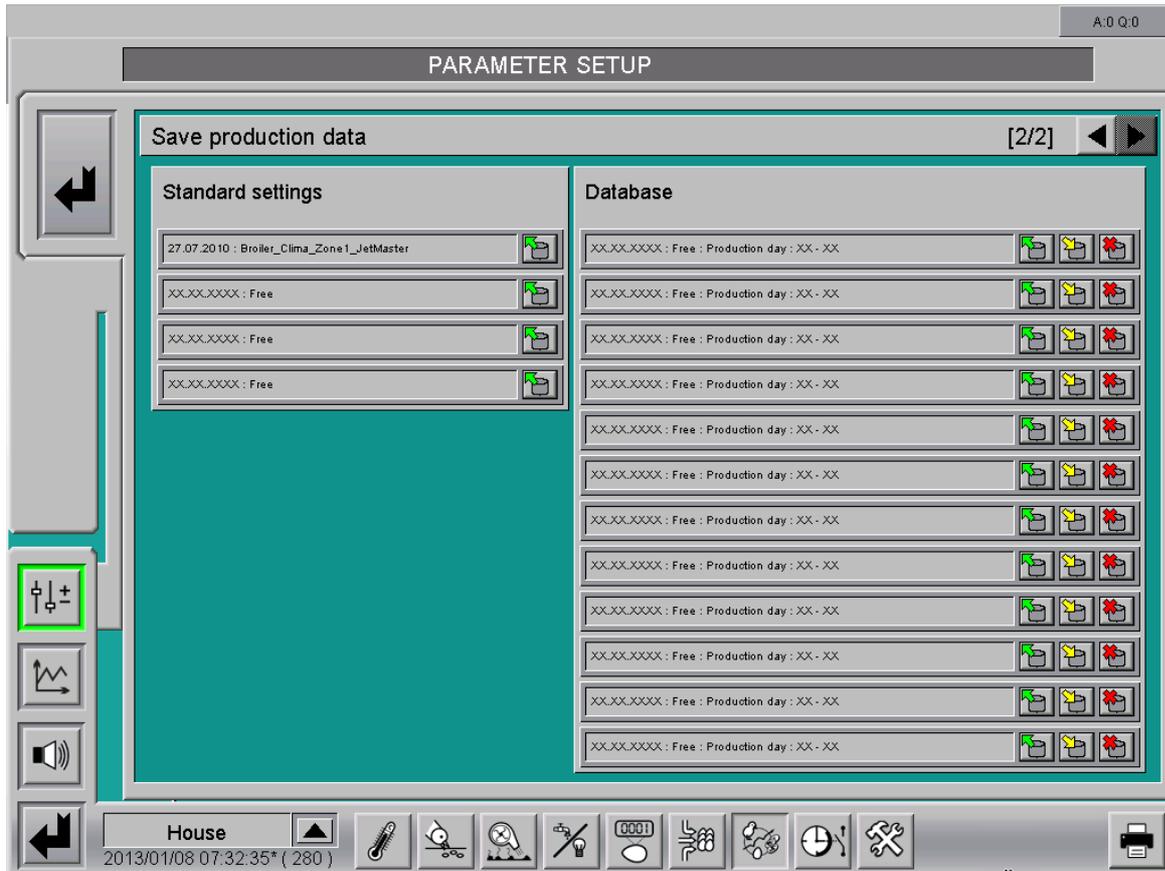


Figure 4-3: Extended production data

### 4.2.1 Standard settings

Four memory slots are available under standard settings. The standard settings saved in the Amacs system can be loaded from here. Clicking on the green arrow activates the standard settings.

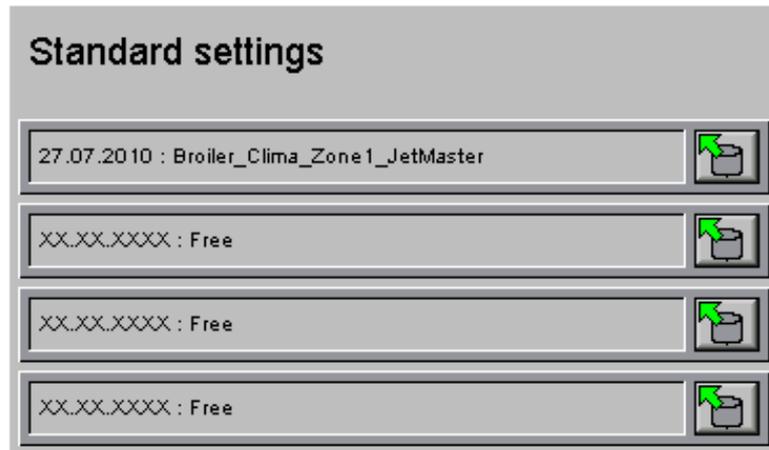


Figure 4-4: Standard settings



**Important:**

As all previously made settings are changed, this option should only be used with due caution. You will also see a security prompt which requests you to confirm your settings.

## 4.2.2 Databases

Under the item "Database", memory slots which can be used to save the entries Amacs makes in the database each day can be found.



Figure 4-5: Database

!

**Important:**

Due to the risk of data loss, only trained service personnel should make changes in the databases.

- **Saving:**  
Clicking the yellow arrow results in the saving of the current database including the date in the selected area.
- **Loading:**  
Clicking the green arrow results in the previously saved databases being reloaded.
- **Deleting:**  
If you need to free up memory, you can delete some saved entries by clicking the red cross.

## 5 Free value recording / Camera

To perform special evaluations and to adjust camera settings, the menu **Free value recording / camera** can be opened in the parameter setup.

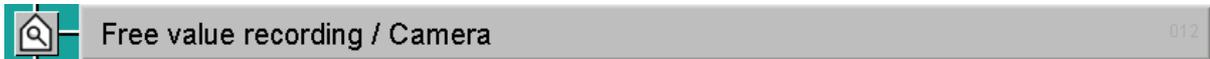


Figure 5-1: Parameters - production / free value recording / camera

The screenshot shows a 'PARAMETER SETUP' window with a 'Production' tab. The 'Free value recording' section is active, displaying a table of global variables. The table has columns for 'Value', 'Average', 'Minim.', 'Maxim.', and 'Values : last minute' (subdivided into 'Average', 'Minim.', and 'Maxim.'). The first row shows 'Plc01\_House01\_Z1ActTemp' with a value of 33.5. The remaining rows (1-14) are empty.

	Value	Values : last minute			Values : last hour		
		Average	Minim.	Maxim.	Average	Minim.	Maxim.
0. Plc01_House01_Z1ActTemp	33.5	0.0	0.0	0.0	0.0	0.0	0.0
1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14.	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Below the table, there is a 'Camera' section with the IP address '192.168.22.230;http://192.168.22.230'. The bottom status bar shows 'House 1' and the date/time '2013/11/20 08:00:21\* ( 10 )'.

Figure 5-2: Free value recording / camera

### 5.1 Free value recording

This area is designed for technical analyses as various internal and external variables in 15 different fields can be queried. They can be presented in graphical form and saved in the database. These raw values are displayed per minute and hour as average, minimum and maximum values.

The buttons with the three dots in the following screenshot open windows in which all inputs available for selection are displayed.

Free value recording		Value	Values : last minute			Values : last hour		
Global variables			Average	Minim.	Maxim.	Average	Minim.	Maxim.
0.	Plc01_House01_Z1ActTemp	...	33.5	0.0	0.0	0.0	0.0	0.0
1.		...	0.0	0.0	0.0	0.0	0.0	0.0
2.		...	0.0	0.0	0.0	0.0	0.0	0.0
3.		...	0.0	0.0	0.0	0.0	0.0	0.0
4.		...	0.0	0.0	0.0	0.0	0.0	0.0
5.		...	0.0	0.0	0.0	0.0	0.0	0.0
6.		...	0.0	0.0	0.0	0.0	0.0	0.0
7.		...	0.0	0.0	0.0	0.0	0.0	0.0
8.		...	0.0	0.0	0.0	0.0	0.0	0.0
9.		...	0.0	0.0	0.0	0.0	0.0	0.0
10.		...	0.0	0.0	0.0	0.0	0.0	0.0
11.		...	0.0	0.0	0.0	0.0	0.0	0.0
12.		...	0.0	0.0	0.0	0.0	0.0	0.0
13.		...	0.0	0.0	0.0	0.0	0.0	0.0
14.		...	0.0	0.0	0.0	0.0	0.0	0.0

Figure 5-3: Free value recording

### 5.2 Camera

As Amacs is also able to display images of up to nine cameras (webcams) per house, the camera's URL or the IP address can be entered here. The address should be entered by a technician during initial operation and does not have to be changed afterwards. Before the camera is purchased, consulting a technician regarding the camera's compatibility is recommended.

Camera	192.168.22.230;http://192.168.22.230
--------	--------------------------------------

Figure 5-4: Camera



If a camera has been installed, it can be selected via the button in the menu bar at the bottom.

To keep the camera images permanently up to date, the button "Update" should be clicked. The images are then updated every second, creating the impression of live images. By clicking an arrow key at the top right of the screen it is possible to toggle between the installed cameras.

- **Camera with controller**

The associated IP address must be entered to control the camera. If several cameras are used, the IP addresses must be separated by a semicolon (;).

**Example:**

IP-address1; IP-address2; IP-address3; etc.

The camera can be moved to the correct position via the arrows in the lower left corner of the screen or it can move along a pre-programmed course or interrupt it after clicking on one of the three symbols.

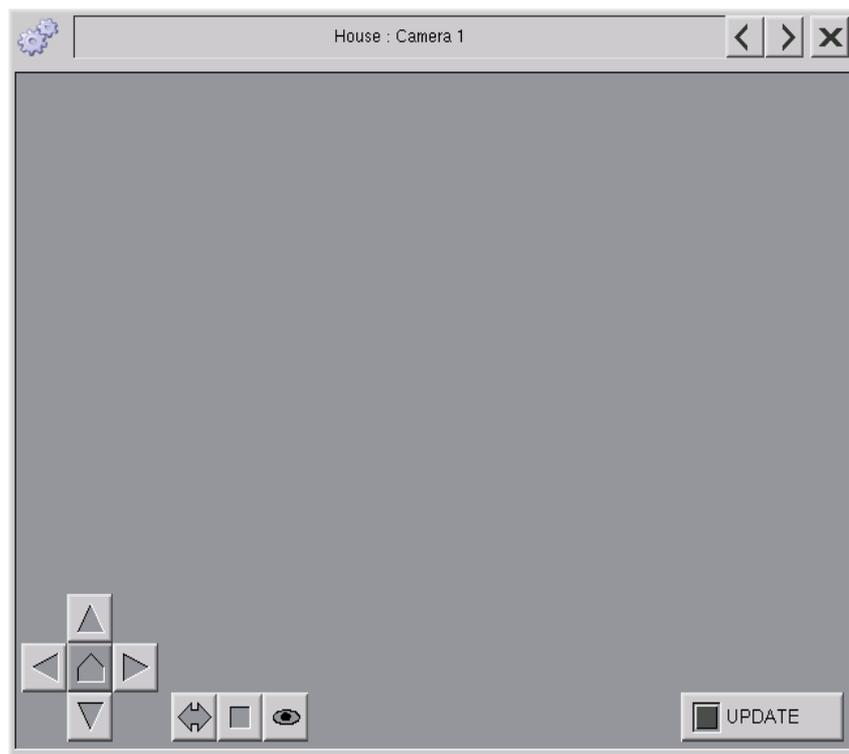


Figure 5-5: Camera with controller

- **Camera without controller**

In addition to cameras that can be steered, unsteerable cameras can also be installed. Like steerable cameras, these are defined by an IP address and also separated by semicolons.

**Example:**

http://IP-address1; IP-address2; IP-address3... etc.



Figure 5-6: Camera without steering



As indicated by the example, it is also possible to use cameras with and without controller.

## 6 Test function alarm system

In each house, the operator can easily test whether the alarm relay releases to check the alarm chain up to the phone call made by the autocaller. The corresponding settings can be found in the menu **Test function alarm system** in the parameter setup.



Figure 6-1: Parameters - production / test function alarm system

The test function of the alarm system can be activated manually by clicking the test button or automatically at an adjustable start time via a week time switch. This test does not depend on an active production. During the tests, the alarm relay is released and the following alarm message is displayed:

### PlcXX HouseXX: Test function alarm system

This message must be acknowledged. The release of the alarm relay transmits the alarm to the alarm annunciators, e.g. the alarm horn, signal light and the autocaller. The test can be stopped prematurely by clicking the test button or the acknowledge button in the alarm menu or at the control cabinet.

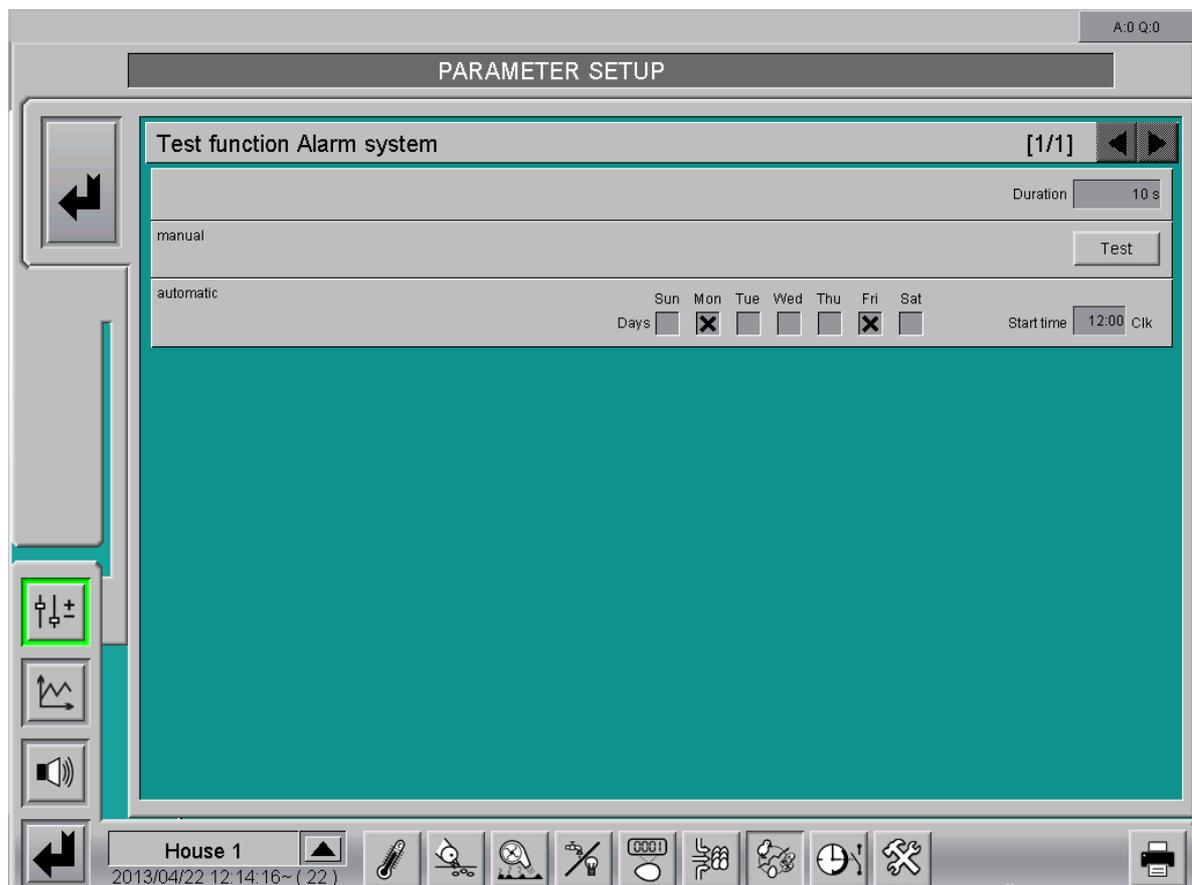


Figure 6-2: Test function alarm system

- **Duration**

The alarm system test is completed automatically after the time set here has expired. The duration is entered in seconds.

- **Manual**

The test function for the alarm system is activated by manually actuating the test button. The button is then highlighted in green.

- **Automatic**

The weekday selection can be used to define on which days the alarm system is to be tested automatically. All days as well as no days can be selected. If no day is selected, the automatic test function is deactivated. The test time can be entered in the field "start time". It is indicated in the format hours:minutes (hh:mm).

**Alarmsystem**

An alarm system protects you and your animals from serious damages and high costs!

Check the alarm system every 3 days for proper functioning!  
It is essential that you read the operating instructions for your alarm system!

The following has to be checked according to the alarm system:

adjustment of the minimum and maximum temperature	alarm horn
battery voltage	signal lamp
	automatic call function
	back-up thermostats

**Important:**

The temperatures in the house must be adjusted to the birds' age at any time! Please consult your animal supplier!

Never switch off the alarm system (alarm horn / signal lamp) when there are animals in the house!

Draw off the key so that nobody can deactivate the alarm!

Alarm check (days)						
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	...

**Big Dutchman.**  
Code No. 00-00-2094 GB

Figure 6-3: Maintenance instructions alarm system

## 7 Bird weighing

### 7.1 Main screen

The bird weighing main screen is also integrated in the production overview. On the main screen, up to 24 bird scales are displayed showing the current bird weight. If a second target weight is saved for the bird weighing, which can be used in a breeder house for weighing cocks and hens on the same scale, a second scale is displayed in each case.

No changes to the settings can be made here.

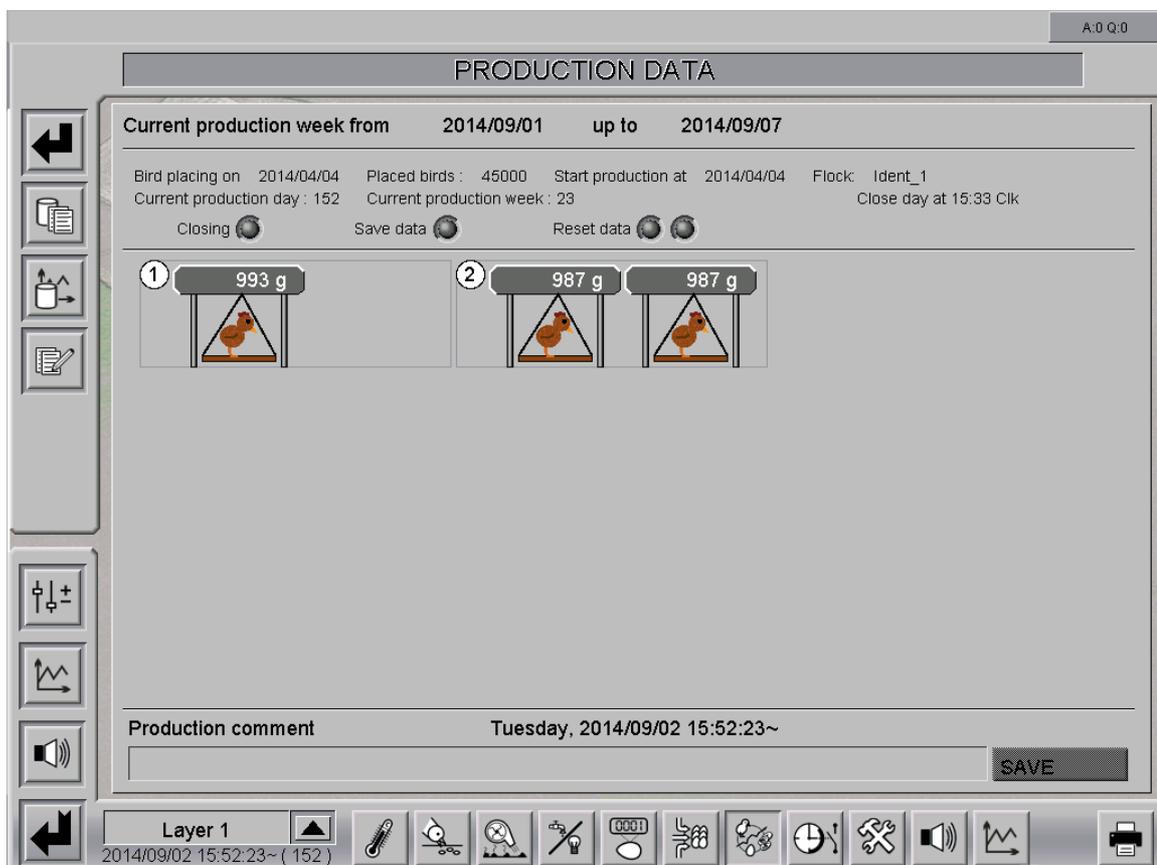


Figure 7-1: Main screen production



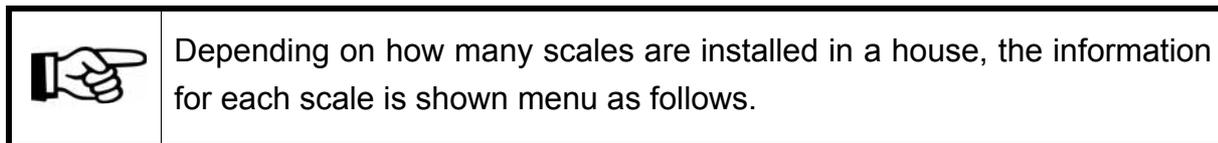
If more than twelve bird scales have been configured, the overview screen shows two arrow keys at the right-hand side next to the scales. These buttons can be used to display all other scales.

## 7.2 Settings

The "**Bird weighings**" menu under Parameter setup can be opened to change the bird scale settings.



Figure 7-2: Parameters - production / bird weighings



All settings associated with bird weighings are found on three different screens:

1. On the first or second screen (if more than six bird scales are installed in the house), a summary of the current values of the scales and their standard settings is displayed.
2. On the last screen, the calculations of all bird scales can be adjusted and the load cells can be calibrated.

### 7.2.1 Overview

The following explanations provide an overview of which settings can or must be made in relation to weighings.

The summary screen for bird weighings lists the individual values and settings one under the other. The load cells in each house are displayed one next to the other.

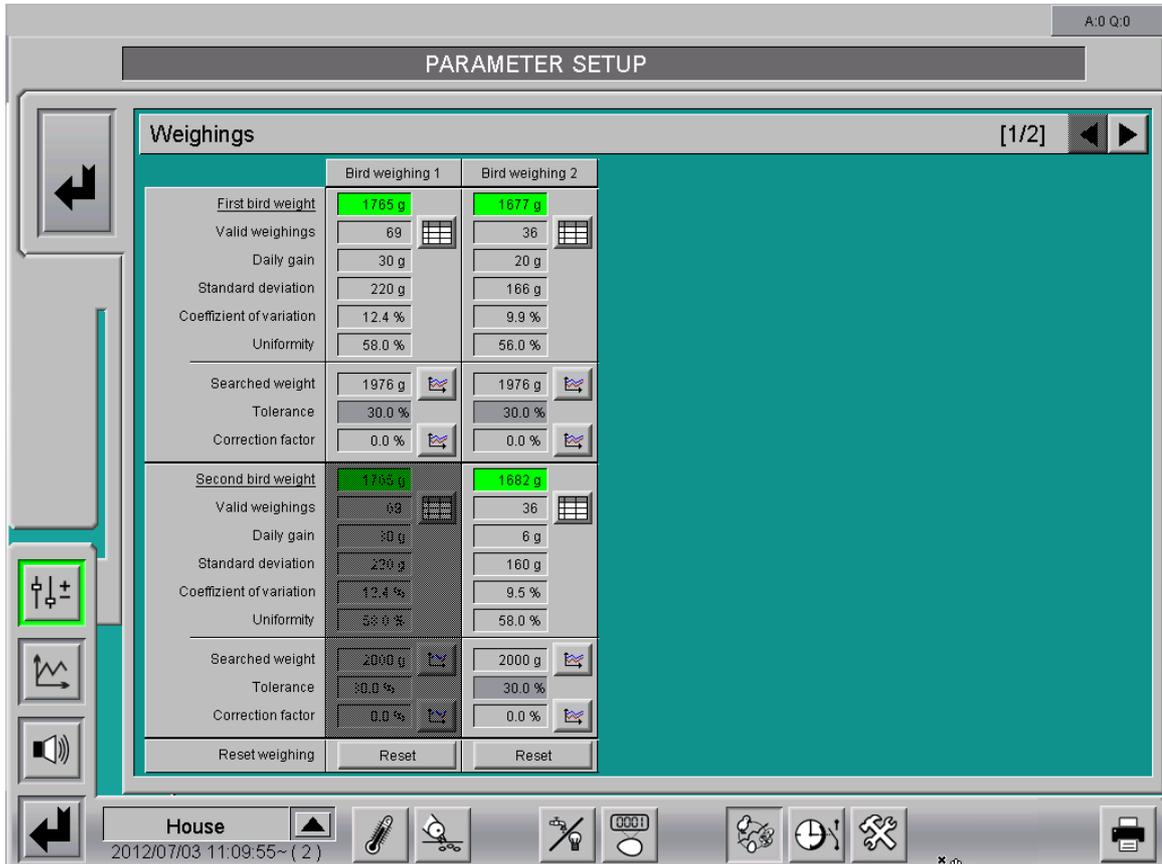


Figure 7-3: Overview of bird scale data

7.2.1.1 Statistical values

First bird weight	1765 g	1677 g
Valid weighings	69 	36 
Daily gain	30 g	20 g
Standard deviation	220 g	166 g
Coeffizient of variation	12.4 %	9.9 %
Uniformity	58.0 %	56.0 %

Figure 7-4: Statistical values

- First/second bird weight**

The currently measured bird weight is displayed here. It is calculated based on the average value of the last two weighings, which are entered during the calculation cycle. If the "second bird weight" is activated for bird weighing, the values for the second bird weight are displayed below the table with the first bird weight.
- Valid weighings**

The number of valid weighings registered today is shown here. Using the table icon next to the valid weighings, a window displaying the last 20 valid weighings including weight, time and date can be opened for control purposes.

Bird weighing 1			
Valid weighings ( First bird weight )			
No	Weight	Time	Date
41	1150 g	16:08:55*	15.11.2013
40	1100 g	15:43:54*	15.11.2013
39	1042 g	15:35:34*	15.11.2013
38	1043 g	15:28:53*	15.11.2013
37	1139 g	15:13:54*	15.11.2013
36	1038 g	15:12:15*	15.11.2013
35	1087 g	14:57:14*	15.11.2013
34	1209 g	14:55:35*	15.11.2013
33	1078 g	14:53:55*	15.11.2013
32	1216 g	14:48:54*	15.11.2013
31	1098 g	14:38:54*	15.11.2013
30	1117 g	14:30:35*	15.11.2013
29	1079 g	14:20:33*	15.11.2013
28	1158 g	14:15:34*	15.11.2013
27	1085 g	14:13:54*	15.11.2013
26	1194 g	14:02:14*	15.11.2013
25	1019 g	14:00:34*	15.11.2013
24	1073 g	13:57:14*	15.11.2013
23	1024 g	13:30:34*	15.11.2013
22	1192 g	13:23:54*	15.11.2013

Figure 7-5: Valid weighings

- **Daily gain**

The daily gain indicates how much weight the birds have gained in the previous 24 hours.

- **Standard deviation**

This value indicates how much the valid weighings within the calculation cycle deviate from the average value in grams per bird.

- **Coefficient of variation**

The coefficient of variation is calculated as follows: standard deviation divided by the arithmetic average, i.e. the standard deviation is expressed here as mean value.

- **Uniformity**

The uniformity is calculated by counting the number of birds with a body weight within an adjustable range of e.g. +/- 10 % of the average body weight. The number of birds in this range is expressed as percentage of the total weight.

### 7.2.1.2 Bird-specific scale setting

Searched weight	1976 g		1976 g	
Tolerance	30.0 %		30.0 %	
Correction factor	0.0 %		0.0 %	

Figure 7-6: Standard settings

- **Searched weight**

The searched (target) weight is set as a curve over the time of the production cycle. It can thus be adjusted to the birds' age.

To change this value, open the searched weight curve. The curve can be opened by clicking on the button with the curve symbol. This opens a new window.



The values in this curve are changed and stored as described in the **AMACS Operation User manual chapter Set curves**.

- **Tolerance**

When weighing birds, the scale always compares the weight with the current searched weight. If 30 % is entered, for example, this specifies that weighings that lie within this tolerance are accepted as valid. Normally a 30% tolerance is applied.

- **Correction factor**

The correction factor compensates for weighings of lighter/more agile birds by a factor of e.g. 9 %.

To change this value, open the correction factor curve. The curve can be opened by clicking on the button with the curve symbol. This opens a new window.



The values in this curve are changed and stored as described in the **AMACS Operation User manual chapter Set curves**.

### 7.2.1.3 Resetting weighing

By clicking the reset button, the values obtained for the two bird weights can be reset.



Figure 7-7: Resetting weighing

### 7.2.2 Calculation

A:0 Q:0

**PARAMETER SETUP**

**Bird weighings**
[2/2] ◀ ▶

Weighing from <input type="text" value="08:00"/> to <input type="text" value="20:00"/> Clk	Calculation cycle <input type="text" value="50"/>
<input type="checkbox"/> Registration upon increase of weigh value	Range for uniformity around average value <input type="text" value="10.0"/> %
<input checked="" type="checkbox"/> Registration upon reduction of weigh value	Setup curves Searched weight to <input type="text" value="5000"/> g

No.	Type Load cell	Current Weighing value	Current Zero value	Current Calib. value	Start point for zero value	Weight Calibration	calculated Weighing value
1	DMS	5526	0	1000	0.00 kg	1.00 kg	5.526 kg
	<input checked="" type="checkbox"/> First bird weight <input type="checkbox"/> Second bird weight		Tolerance for a stability weigh value: Lower limit <input type="text" value="100"/> g Upper limit <input type="text" value="300"/> g				
2	DMS	8488	0	1000	0.00 kg	1.00 kg	8.488 kg
	<input checked="" type="checkbox"/> First bird weight <input checked="" type="checkbox"/> Second bird weight		Tolerance for a stability weigh value: Lower limit <input type="text" value="100"/> g Upper limit <input type="text" value="300"/> g				

Layer 1

2014/09/02 15:52:13~ ( 152 )

Figure 7-8: Second screen

Weighing from <input type="text" value="08:00"/> to <input type="text" value="20:00"/> Clk	Calculation cycle <input type="text" value="50"/>
<input type="checkbox"/> Registration upon increase of weigh value <input checked="" type="checkbox"/> Registration upon reduction of weigh value	Range for uniformity around average value <input type="text" value="10.0 %"/> Setup curves Searched weight to <input type="text" value="5000 g"/>

Figure 7-9: Calculation

- Weighing from (time of weighing)**  
 The period in which birds should be weighed is entered in the fields “Weighing from - to”.
- Registration upon**  
 The settings “Registration upon increase of weigh value” and “Registration upon decrease of weigh value” can be used to specify whether a weighing should be registered in case of an increase of the weighed value and/or a decrease of the weighed value.
- Calculation cycle**  
 The number of most recent valid weighings to be used for calculating the statistical values must be entered here.
- Range for uniformity around average value**  
 The uniformity is calculated by counting the number of birds with a body weight within an adjustable range of e.g. +/- 10 % of the average body weight. The number of birds in this range is expressed as percentage of the total weight.
- Setup curves Searched weight to**  
 In order to adjust the Y-axis of the searched weight curves to the bird breed, the adjustment range for the searched weight can be entered under Setup curves Searched weight to.

### 7.2.3 Calibration

As each load cell is different, even if only minimally, it must be adjusted and calibrated according to its specific characteristics. The corresponding process is described below.

No.	Type Load cell	Current Weighing value	Current Zero value	Current Calib. value	Start point for zero value	Weight Calibration	calculated Weighing value
1	DMS	7510	0	1000	0.00 kg	1.00 kg	7.510 kg
	<input checked="" type="checkbox"/> First bird weight <input type="checkbox"/> Second bird weight		Tolerance for a stability weigh value:		Lower limit <input type="text" value="100 g"/>	Upper limit <input type="text" value="300 g"/>	
2	DMS	8488	0	1000	0.00 kg	1.00 kg	8.488 kg
	<input checked="" type="checkbox"/> First bird weight <input checked="" type="checkbox"/> Second bird weight		Tolerance for a stability weigh value:		Lower limit <input type="text" value="100 g"/>	Upper limit <input type="text" value="300 g"/>	

Figure 7-10: Calibration

### 7.2.3.1 First / second bird weight

The second bird weight can be activated here, or the scale can be deactivated if the sensor is defective. This may be necessary if one bird scale is used to weigh two different breeds or both males and females to make sure that the registered weights are correct.

### 7.2.3.2 Tolerance for a stability weigh value

The weighing values are filtered via the stability weigh value to obtain stable values. The provisional bird weight may only vary for a certain period around the **lower limit** to be registered. If the measured value varies outside of and within the limit, the captured weight is only registered if it remains **twice as long above** the upper limit.

### 7.2.3.3 Number

The number identifies the associated bird weighing. Clicking on the number opens a window in which the current and previous calibration are indicated. The data can be entered manually if calibration is unsuccessful.

Weighing 1	
Current Zero value:	0.000
last change:	
Current Calib. value:	5.640
last change:	03.07.2012, 11:03:57~
Start point for zero value:	0.000
last change:	
Weight Calibration:	10.000
last change:	03.07.2012, 11:00:32~

Figure 7-11: Number

### 7.2.3.4 Type of load cell

This field is only provided for information purposes, as the scale type is already defined at the configuration stage.

- **Strain gauge (DMS)**  
Load cells that determine the weight by means of strain gauges.
- **0 - 10 Volt**  
Load cells that convert the weight into a voltage signal.
- **0 (4) - 20 mA**  
Load cells that convert the weight into a current signal in the mA range.

### 7.2.3.5 Current weighing value

The signal presently measured by the input card is displayed here. It is also described as raw value.



If the current weight value changes, the load cell is functioning.

### 7.2.3.6 Start point for zero value

Normally the starting point for the zero value is 0 kg. If, however, the zero point has shifted, the weight that is displayed by an empty scale can be entered here.

### 7.2.3.7 Calibration of a weighing unit with strain gauge signal

The input board used by the system for strain gauge weighing rods (W2 code no. 91-04-0009) is calibrated and read out via the procedure described here.

- **Calibration of the bird scale with the W2 board**

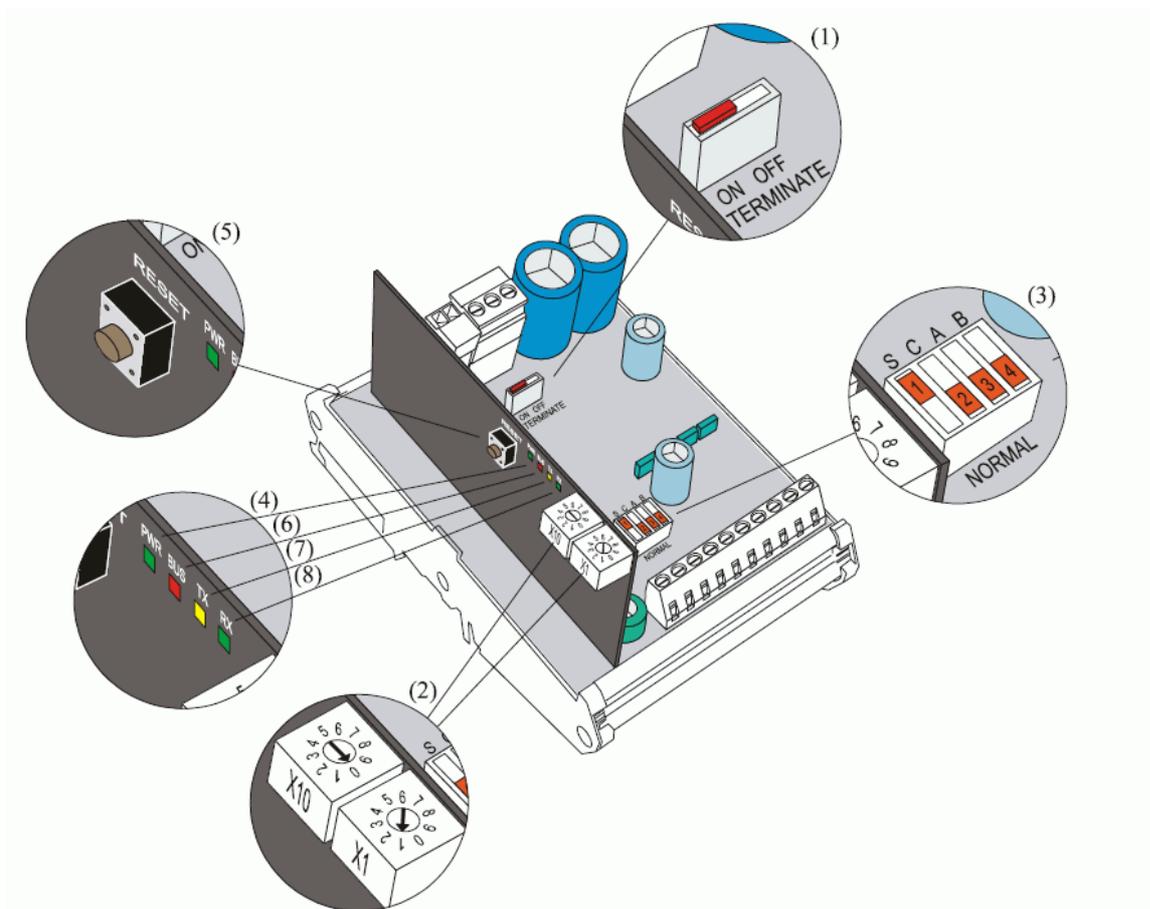


Figure 7-12: Calibration of the W2 weighing module

**In order to calibrate the weighing module, the following steps must be carried out:**

1. Ensure that the PWR lamp (4) is continuously lit (may not flash).
2. Set the switch (3) (NORMAL-S) "S" (= setting) and switches C, A and B to NORMAL.
3. Press the reset button (RESET) (5).

4. Wait until the red lamp (6) lights up (\*).
5. Select the weighing channel to be calibrated (only one at a time):
  - **Scale 1:** switch (3) (NORMAL - A) to "A" or
  - **Scale 2:** switch (3) (NORMAL - B) to "B"
6. Ensure that the scale is not loaded (TARA).
7. Set switch (3) (NORMAL - C) to "C" = KAL position.
8. Wait until the yellow lamp (7) lights up (\*).
9. Load the scale with a known test weight (ideally the max. weight that is reached in operation).
10. Wait several seconds until the scale has come to rest.
11. Reset switch (3) (NORMAL - C) to "NORMAL" position.
 

**Note:** When the green lamp lights up, the calibration has been performed correctly (\*).
12. Reset switch (3) "S" and switch "A" or "B" to "NORMAL".
13. Press the reset button (RESET) (5).
14. To activate calibration, press the buttons on the right of the current reset value and current calibration value. If these are green, the board is transmitting its saved values to Amacs.
15. Now all that remains is to enter the weight used to calibrate the board under Weight Calibration.

No.	Type Load cell	Current Weighing value	Current Zero value	Current Calib. value	Start point for zero value	Weight Calibration	calculated Weighing value
	0-10 Volt	0.000 V	0.000 V	5.640 V	0.00 kg	10.00 kg	0.000 kg

Figure 7-13: Calibration



(\*) = In event of error, the RED + YELLOW + GREEN lamps light up. The error can be cleared by setting switches (3) S, C, A and B to "NORMAL". Pressing the reset button ("RESET") (5) results in the calibration being repeated.

- **Calibration may fail if:**

1. switch (3) A or B is not set correctly.
2. the scale is defective or if there is no connection to the scale.
3. the calibration weight is too light.

The calibration weight must be at least 1 thousandth or even better at least 10 percent of the rated load. Rated load means that the load cell is 100 % loaded (2 mV/V).

4. faults occur during saving of data.

	<p><b>Important:</b></p> <p>The calibration of the scale should be checked at regular intervals and, if necessary, repeated. In addition, the automatic calibration procedure can be bypassed by manual inputs.</p>
---	---

- **Read out calibration value from the W2 board**

The **current zero value** ("Tara") and the **current calibration value** (the value adopted by the load cells at a specific weight) are saved on the board.

No.	Type Load cell	Current Weighing value	Current Zero value	Current Calib. value	Start point for zero value	Weight Calibration	calculated Weighing value
	0-10 Volt	0.000 V	0.000 V	5.640 V	0.00 kg	10.00 kg	0.000 kg

Figure 7-14: Calibration

1. To read out the calibration, press the buttons on the right of the "**Current zero value**" and "**Current calibration value**". If these are green, the board is transmitting its saved values to the system.
2. In order to show the correct weight, enter the weight (used to calibrate the board) under "**Weight Calibration**".

### 7.2.3.8 Manual calibration of the bird scale

No.	Type Load cell	Current Weighing value	Current Zero value	Current Calib. value	Start point for zero value	Weight Calibration	calculated Weighing value
	0-10 Volt	0.000 V	0.000 V	5.640 V	0.00 kg	10.00 kg	0.000 kg

Figure 7-15: Calibration

1. When the scale is unloaded, the **current weighing value** must be noted and entered in the field "**Current zero value**".
2. Load the scale with a known weight next. This value is entered in the field "**Current calibration value**".
3. Now all that remains to do is to enter the weight used to calibrate the board under "**Weight Calibration**".

	<p><b>Important!</b></p> <p>Minimum distance 4 V / 4 mA</p> <p>The difference between the positions current zero value and current calibration value should amount to at least 4 V / 4 mA to guarantee an acceptable calibration value.</p>
--	---

### 7.2.3.9 Calculated weighing value

The **bird weight** resulting from the basic values entered in the previous menus is calculated and displayed here.

## 8 Energy registration

In a house, all outputs of the control influencing power consumers can be assigned a performance. This value and the switch-on duration allow for displaying of the energy consumption distribution.

To adjust the energy consumption, the menu **Energy registration** can be opened in the parameter setup.



Figure 8-1: Parameters - production / energy registration

functional range Overview	Maximum Ø	Current	Today	Total
Climate - Exhaust air	2013/02/15 11:59:49*	0.000 kW	0.000 kWh	0.0 kWh
Climate - Intake air	2013/02/15 11:59:49*	0.000 kW	0.000 kWh	0.0 kWh
Feeding - feed transport	2013/02/15 11:59:49*	0.000 kW	0.000 kWh	0.0 kWh
Manure drying - Air mixer	2013/02/15 11:59:49*	0.000 kW	0.000 kWh	0.0 kWh
Supply - Light	2013/02/15 11:59:49*	0.000 kW	0.000 kWh	0.0 kWh
Supply - Water	2013/02/15 11:59:49*	0.000 kW	0.000 kWh	0.0 kWh
Egg collection - House	2013/02/15 11:59:49*	0.000 kW	0.000 kWh	0.0 kWh
Accessories - Time switches	2013/02/15 11:59:49*	0.000 kW	0.000 kWh	0.0 kWh
Accessories - consumer	2013/02/15 11:59:49*	0.000 kW	0.000 kWh	0.0 kWh
<b>Total</b>	2013/02/15 11:59:49*	0.000 kW	0.000 kWh	0.0 kWh

reset maximum    Reset    Last: .....-?-?-?

reset all values    Reset    Last: .....-?-?-?

curve recording individual consumer:     current output     interval output

Figure 8-2: Energy registration

The display provides several selection fields which can be used to switch between the **Overview** of the total consumption of all areas and the individual consumption within the functional areas (**Climate**, **Feeding**, **Manure drying**, **Egg collection**, **Supply** and **Accessories**).

Categories which are not available are hidden.

## 8.1 Overview

functional range Overview	Maximum Ø		Current	Today	Total
Climate - Exhaust air	2013/02/15 11:59:49*	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Climate - Intake air	2013/02/15 11:59:49*	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Feeding - feed transport	2013/02/15 11:59:49*	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Manure drying - Air mixer	2013/02/15 11:59:49*	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Supply - Light	2013/02/15 11:59:49*	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Supply - Water	2013/02/15 11:59:49*	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Egg collection - House	2013/02/15 11:59:49*	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Accessories - Time switches	2013/02/15 11:59:49*	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Accessories - consumer	2013/02/15 11:59:49*	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Total	2013/02/15 11:59:49*	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh

Figure 8-3: Overview

- **Maximum**

"Maximum" displays the maximally consumed energy (usually a 15-minute mean value) including date, time and value. This value can also be found in the curve recording with the help of the time stamp.

- **Current**

The column "Current" displays the currently measured performance of the respective functional area.

- **Today**

The column "Today" displays the energy consumption measured today.

- **Total (functional area)**

The column "Total" displays the total measured energy consumption.

- **Total (house)**

The bottom row of the table displays the values for the whole house.



## 8.2 Functional areas

Clicking one of the category buttons leads from one functional area to another one. The current performance and the daily and total consumption are displayed in the areas for each consumer, as well.

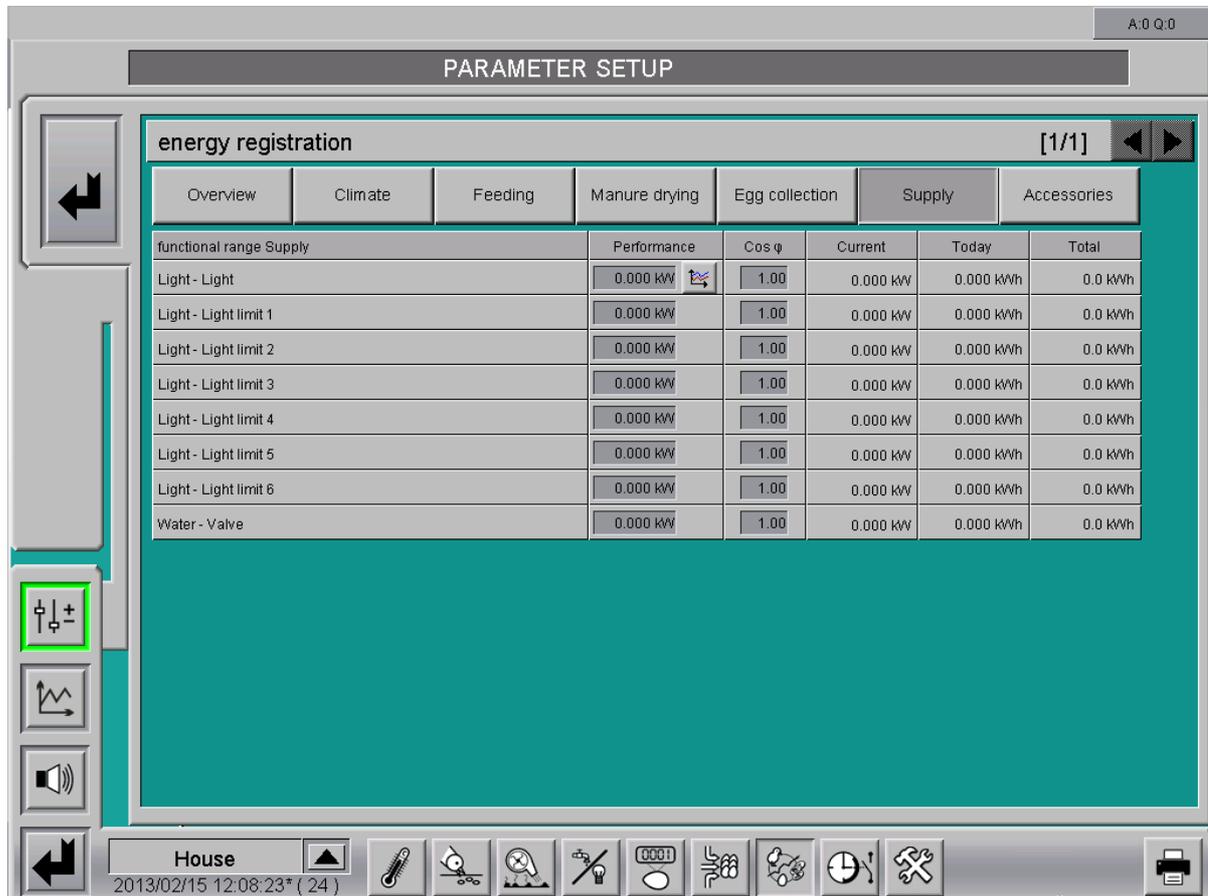


Figure 8-6: Functional areas

- **Performance**

The nominal **active power** can be set here per consumer.



For analogue outputs, a **curve setting** for adjusting a power input depending on the control is available.



Select the second button (farm/house) for the curve summary. The menu opening now lists the curves for all houses and subordinate areas.



The values in this curve are changed and stored as described in the **AMACS Operation User manual chapter Set curves**.

- **Cos Phi**

In addition, the  $\cos \varphi$  (power factor) of the connected power consumer can be entered. This value is required for a later expansion of functions (reactive power calculation).

- **Current**

The currently calculated sum of the power input of the consumer is displayed in kW here.

- **Today**

The column "Today" displays the energy consumption of the consumer measured today in kWh.

- **Total**

The column "Total" displays the total measured energy consumption of the consumer in kWh.

### 8.3 Additional power consumers

To register additional power consumers in the house, which are not activated by the control, the function **free consumers** has been integrated under "Accessories". These can collect and record the data of up to 20 consumers via digital and analogue inputs. The names can be assigned during configuration so they are also used in the displays and curve views.

## 8.4 Curve recording

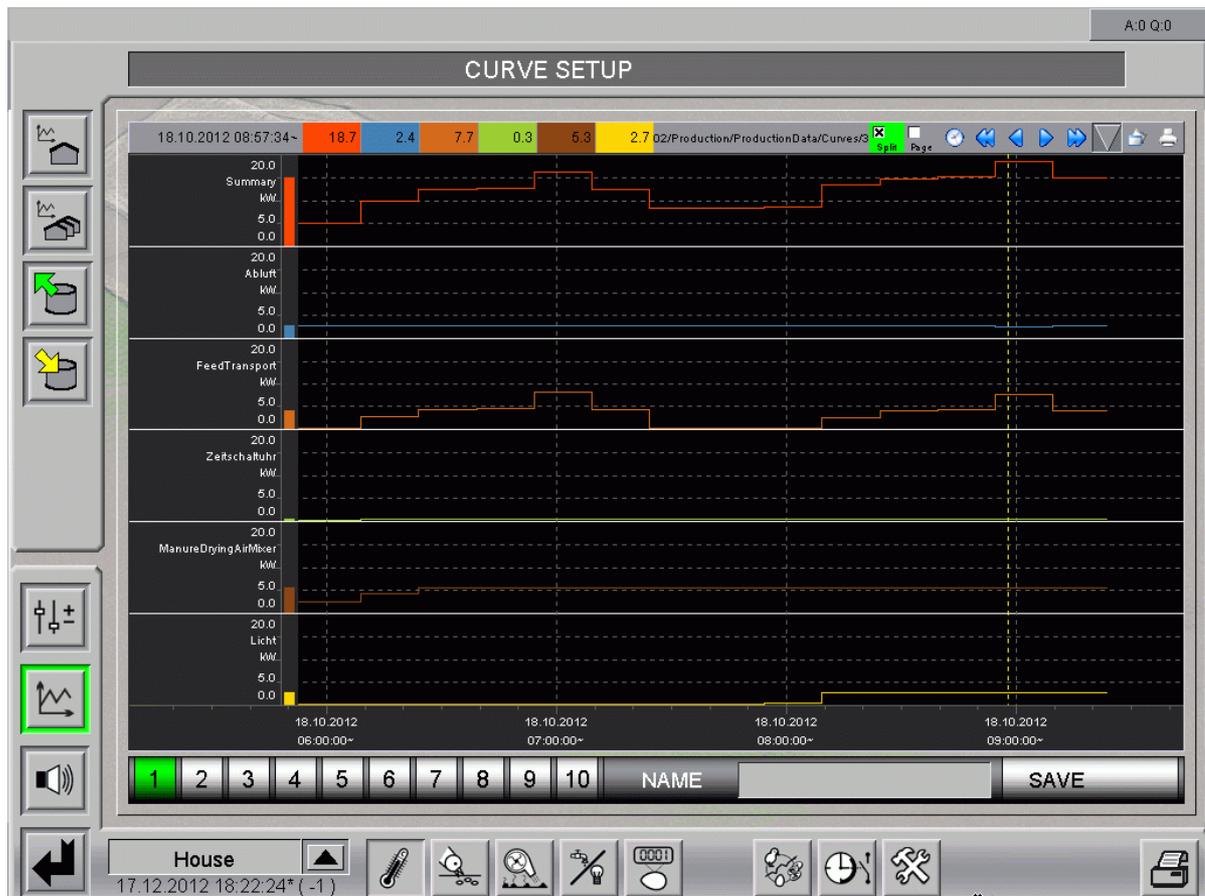


Figure 8-7: Curve summary



To access the curve recording, click on the icon **curve setup**.



The second button farm/house must be selected for the curve summary. The menu opening now lists the curves for all houses and subordinate areas.



Modifications to the curve summary are carried out as described in the **AMACS Operation user manual, chapter Set curves**.

The tree structure includes the entry **Energy** under the main folder of the house. Subordinate to this are the curve recordings for the energy consumption. Curves are recorded for the whole house, per category and for each individual consumer.

The designation **Power** means the current performance.

The designation **PowerPart** means the average performance within a specific time period (usually a 15-minute mean value also used by the energy provider), which can be adjusted or synchronised with an external signal.

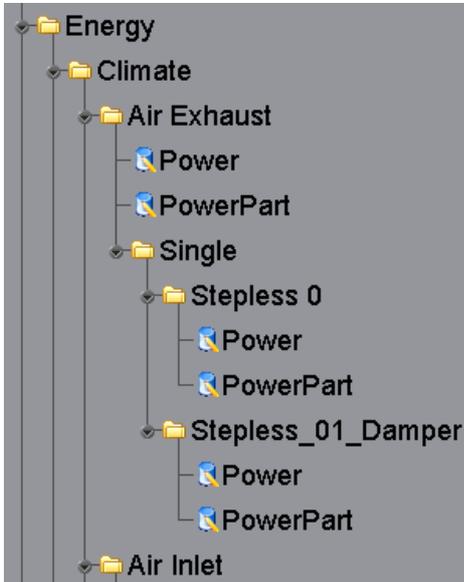


Figure 8-8: Energy

## 9 Accessories

To be able to record the consumption of power, gas, heat quantities, etc., or special sensors, the system allows the configuration of free counters, analogue inputs, energy counters, efficiency analysis devices and even farm energy counters. These can be set and displayed via the user interface.

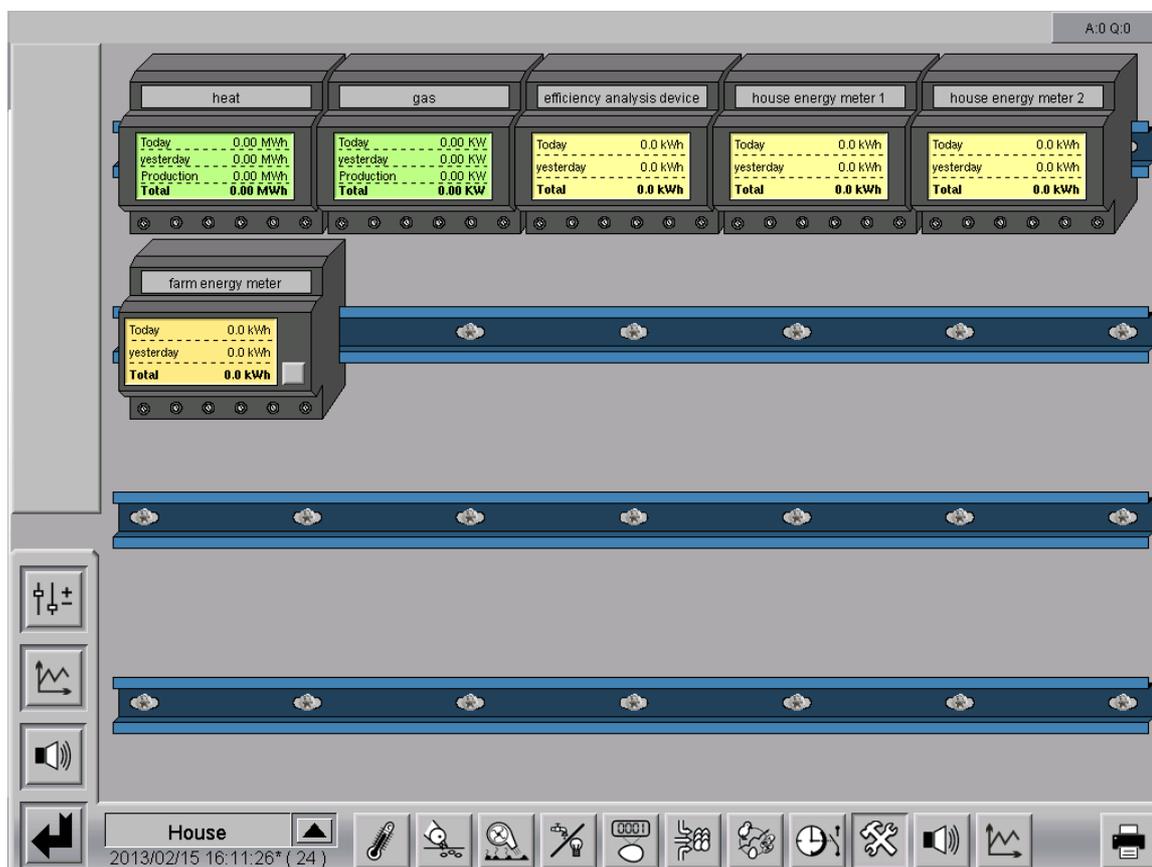


Figure 9-1: Overview accessories



To access the accessories overview screen, open the area selection by clicking on the shaded lower right corner in each house view. Click on the accessories icon. The overview screen only opens if you have the required rights.

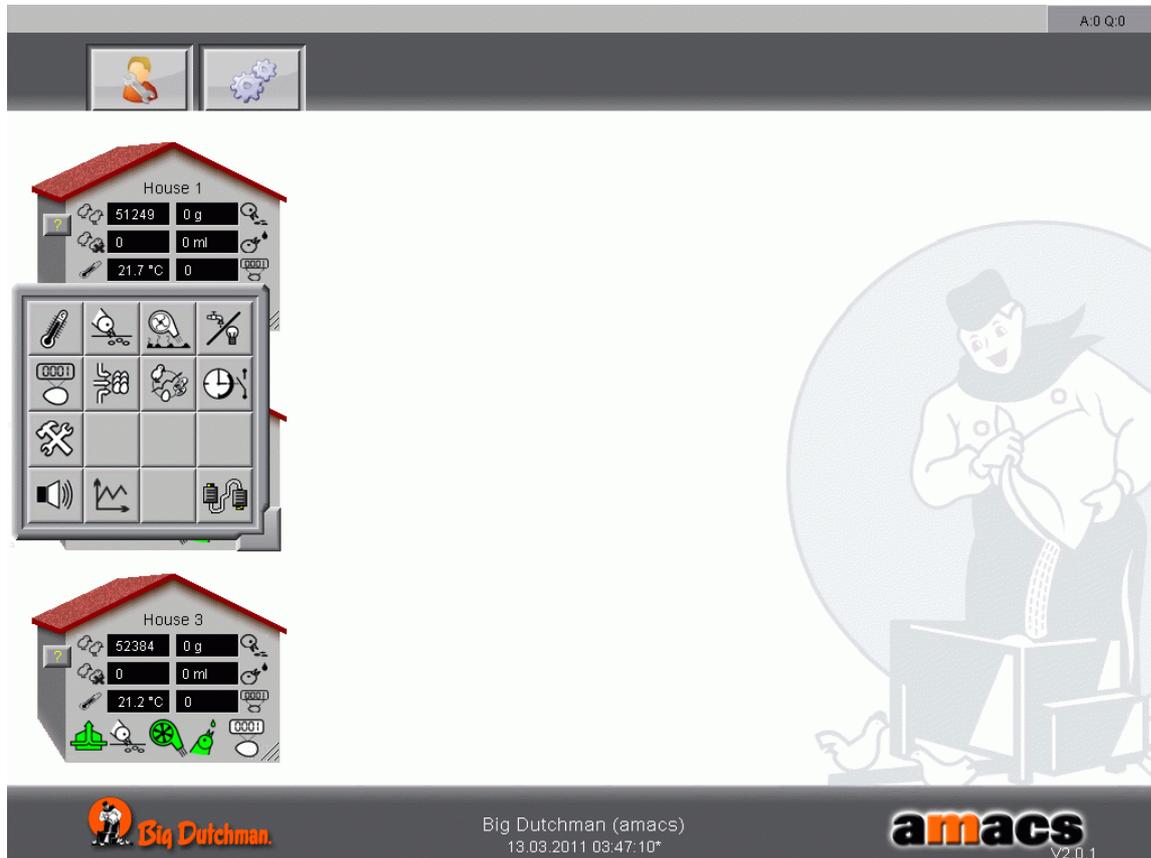


Figure 9-2: Main screen

### 9.1 Main screen

In the accessories main screen, current values are displayed.

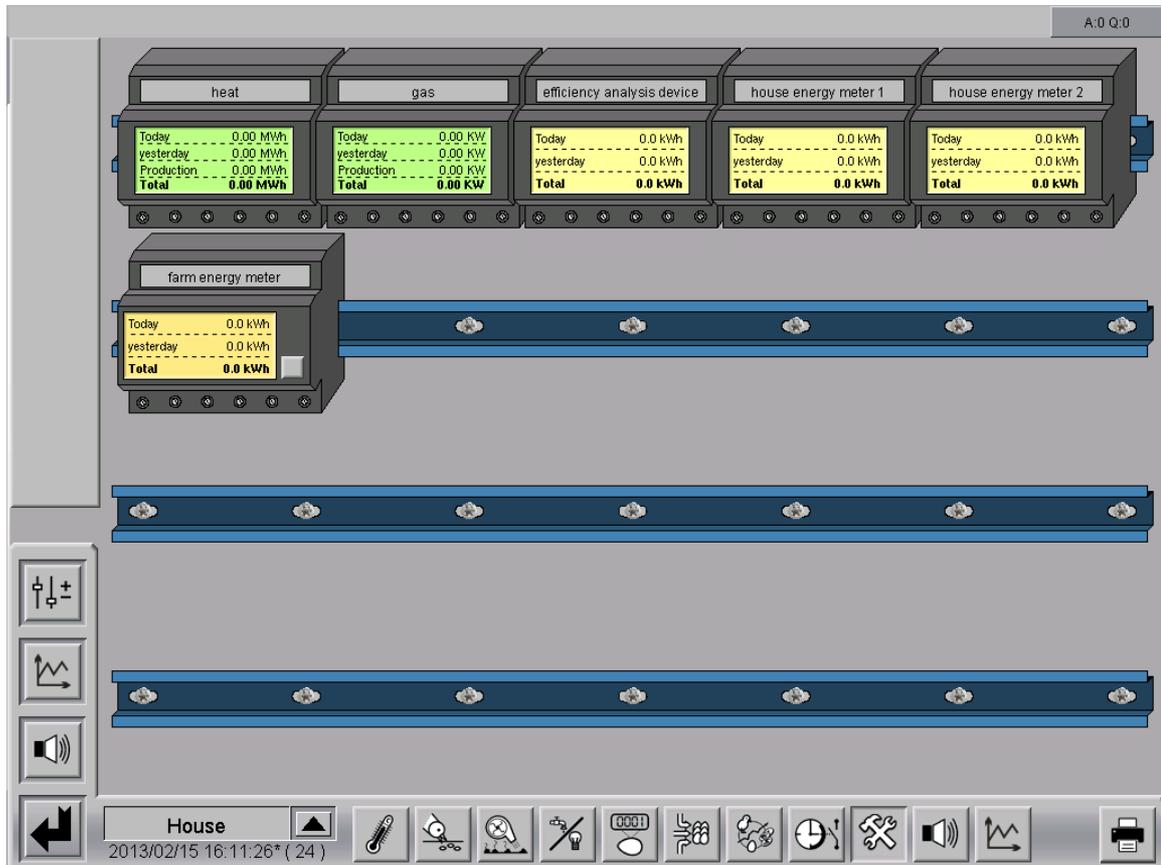


Figure 9-3: Main screen accessories

### 9.1.1 Description

The counters and sensors can be assigned names here. The name is entered in the settings.

### 9.1.2 Status display

The measuring results can be viewed on the accessories main screen. The system obtains the data from the settings.

#### 9.1.2.1 Counters

1. **Today**

The current daily value is displayed here.

2. **Yesterday**

The value counted on the previous day is displayed here.

3. **Production value (free counters)**

The value counted throughout the whole production cycle is displayed here.

4. **Total value**

The total value counted by the counter is displayed here.

5. **Rate changeover (farm energy meter)**

If the farm energy meter includes the option rate for changeover, the button next to the display can be used to switch between the consumption of the different rates. The name of the displayed rate is shown in the name field.

#### 9.1.2.2 Analogue inputs

1. **Minute / hour values**

The h/m button can be used to switch the display from showing average minute values to showing average hour values instead.

2. **Average min/h**

The current average value for the past minute/hour is shown here.

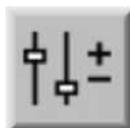
3. **Max. min/h**

The current maximum value for the past minute/hour is shown here.

4. **Min. min/h**

The current minimum value for the past minute/hour is shown here.

### 9.1.3 Settings



To access the settings, click on the icon parameter setup. The accessories can be analysed and adjusted here.

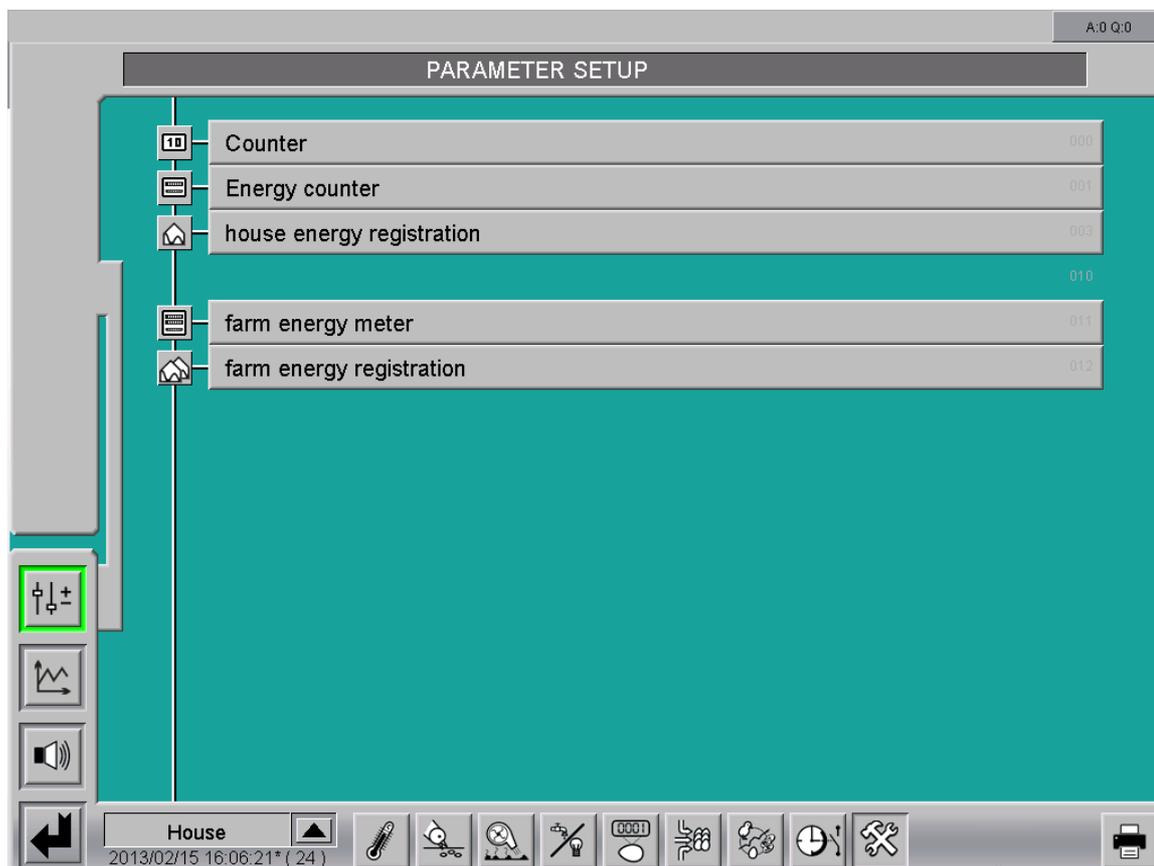


Figure 9-4: Parameter setup / accessories

If a submenu is divided into several pages, these pages can be accessed by clicking on the arrow keys in the upper right corner.

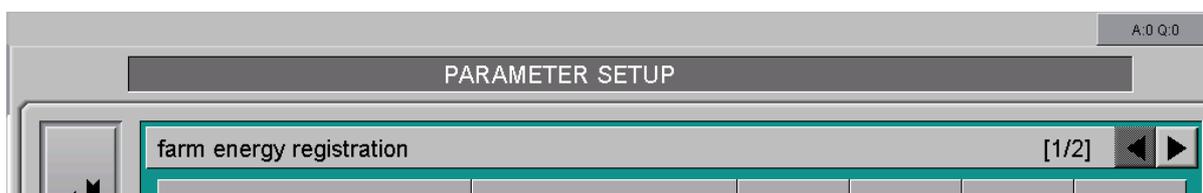


Figure 9-5: Switching between the screen pages

## 9.2 Counters

The free counters are used to record consumed heat quantities, gas, etc. If more than five counters are available, these are divided into two pages. A maximum of ten counters can be configured. The settings for the free **counters** can be found in the functional area **Accessories**.

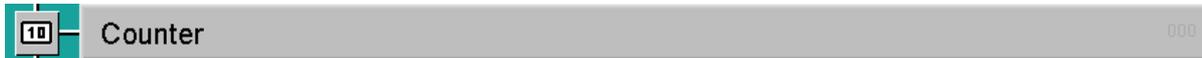


Figure 9-6: Counters menu

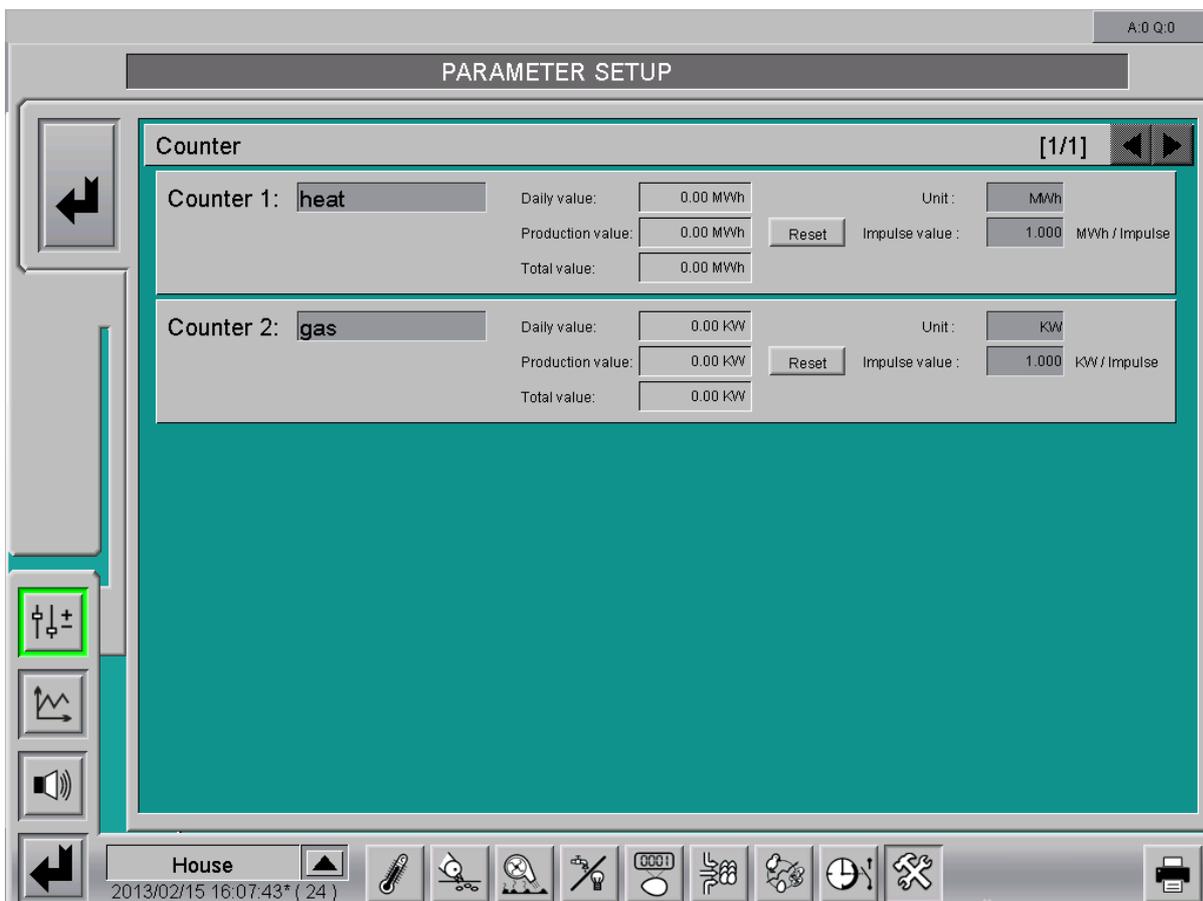


Figure 9-7: Counters settings

- **Counter names**

Counter names can be assigned by entering a name (e.g. the function of the counter: gas) next to the designation counter 1 / counter 2 etc. This name also appears on the main screen **Accessories**.

- **Counter values**

The values are calculated based on the impulse value and the value of the counter.

1. **Daily value**

The current daily value is displayed here.

2. **Production value**

The value counted throughout the whole production cycle is displayed here.

3. **Total value**

The total value counted by the counter is displayed here.

- **Reset**

Clicking on the button **Reset** resets the daily value, the production value and the total value. The reset button turns green when resetting.

- **Unit**

The unit in which the values are displayed can be entered in the field **Unit**.

- **Impulse value**

This is where the measured value per impulse is entered.

### 9.3 Free analogue inputs

The free analogue inputs record the values measured by e.g. additional temperature sensors, pressure controllers, etc. A maximum of ten inputs can be configured, which support the measuring signals PT1000, 0-10 V, 10-0 V, DOL12 and 4-20 mA.

The settings for the **free analogue inputs** can be found in the functional area "Accessories".



Figure 9-8: Free analogue inputs menu

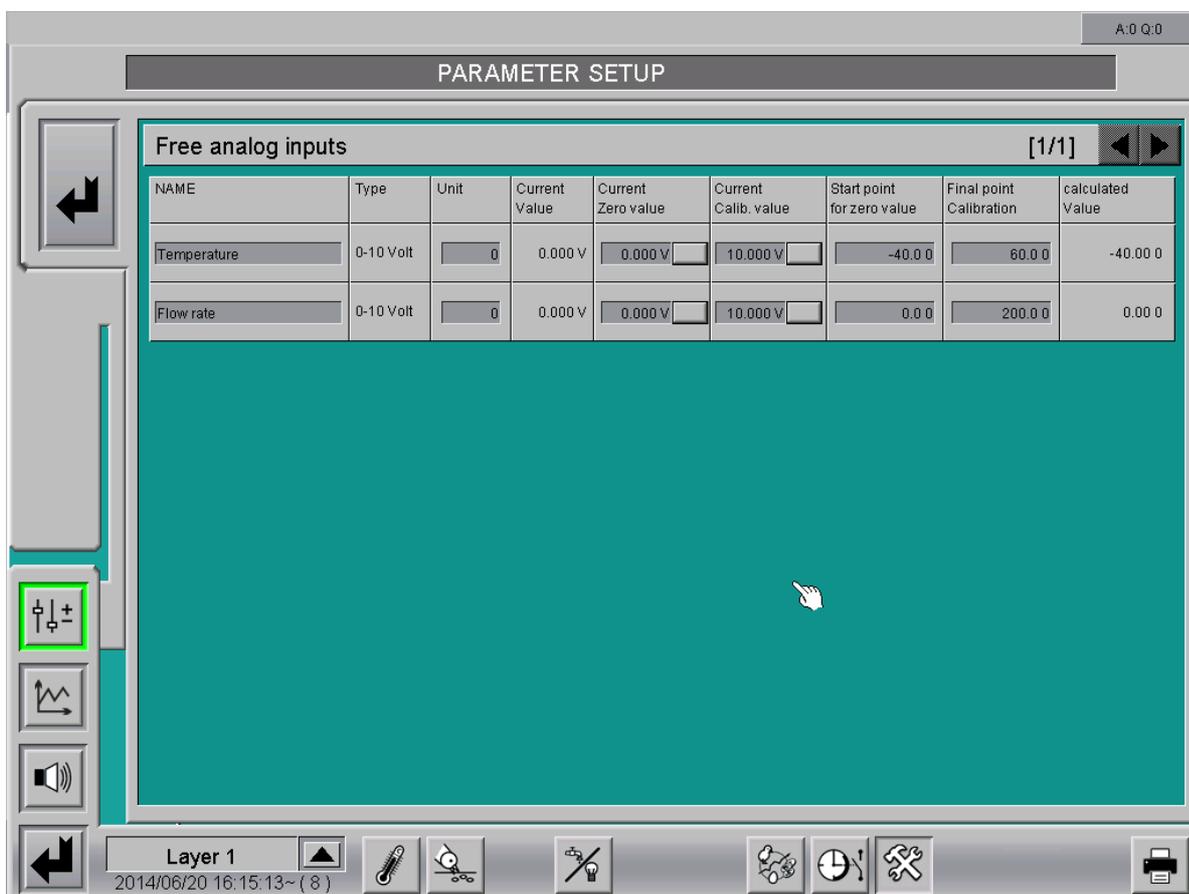


Figure 9-9: Free analogue inputs settings

- **Name of the input**

The free analogue inputs can be assigned names here. In the name field, a description (e.g. the function, such as "temperature") can be entered. This name also appears on the main screen **Accessories**.

- **Type**  
The measuring signal is displayed here. The measuring signals PT1000, 0-10 V, 10-0 V, DOL12 and 4-20 mA are supported.
- **Current value**  
The value presently measured by the input is displayed here. It is also described as raw value.
- **Current zero value**  
The raw value for calibrating the start of the measuring range is entered here. The zero value can be entered either manually or by clicking the button "the system is entering the current value".
- **Current calibration value**  
The raw value for calibrating the end of the measuring range is entered here. The zero value can be entered either manually or by clicking the button "the system is entering the current value".
- **Start point for zero value**  
The start of the sensor's measuring range, or the value determined by an external measuring device read simultaneously with "current zero value", is entered here.
- **Final point calibration**  
The end of the sensor's measuring range, or the value determined by an external measuring device read simultaneously with "current calibration value", is entered here.
- **Calculated value**  
The currently measured value of the sensor is shown here.

### 9.4 House energy registration

The house energy registration creates an overview of the calculated and measured energy consumption of the house and displays it in combination with the time interval performance. The **house energy registration** can also be displayed via the functional area **Accessories**.

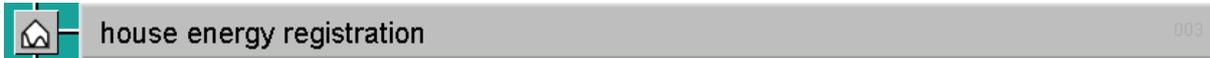


Figure 9-10: House energy registration menu

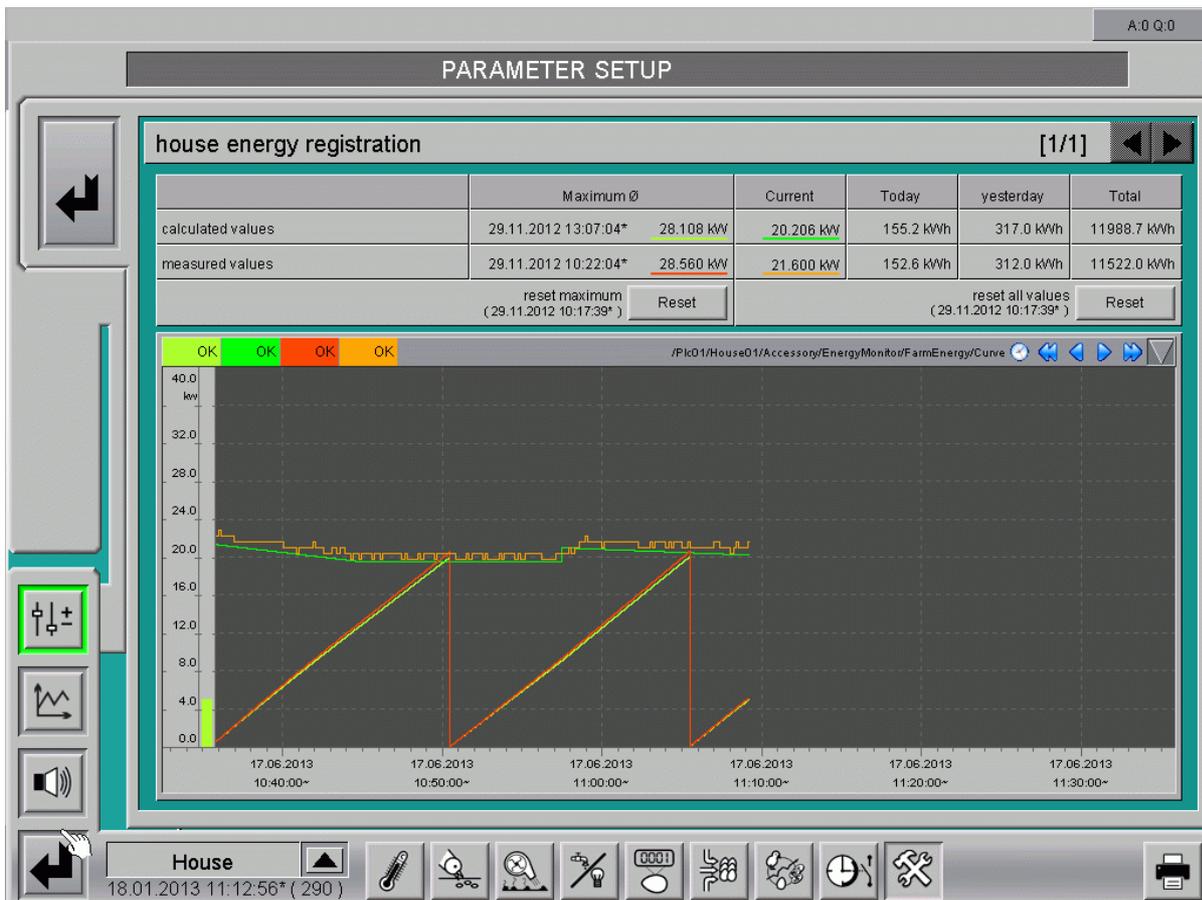


Figure 9-11: House energy registration settings

### 9.4.1 Overview

The table shows the totalled values of the energy registration of **all** houses (see chapter 8 "Energy registration") in the field **calculated values**.

If energy counters have been installed in the house to measure the energy consumption (see chapter 9.5 "Energy counters"), a row for **calculated values** is displayed in addition to **measured values** to compare these. This allows for easy recognition of any errors between calculated power input and measured values.

	Maximum Ø	Current	Today	yesterday	Total
calculated values	29.11.2012 13:07:04* 28.108 kW	20.206 kW	155.2 kWh	317.0 kWh	11988.7 kWh
measured values	29.11.2012 10:22:04* 28.560 kW	21.600 kW	152.6 kWh	312.0 kWh	11522.0 kWh

Figure 9-12: Table house energy registration

- **Maximum**

The field **Maximum** displays the time and the corresponding value of the largest average power input within one time interval. This value is an important parameter for energy invoicing and optimisation.

- **Current**

The currently calculated sum of the house's power input is displayed in kW here.

- **Consumed values**

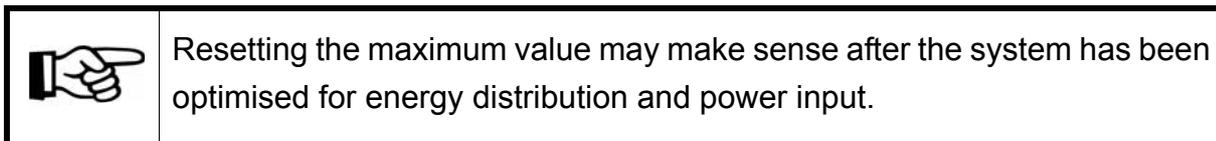
In each row, the registered consumption values for today, yesterday and total are displayed in kWh.

## 9.4.2 Resetting records

The **Reset** button can be used to reset the determined **maximum values** or **all values**. **Reset maximum** only resets the maximum value. **Reset all values** resets the maximum value, the daily value and the total value. The time of the resetting is displayed.



Figure 9-13: Resetting records



### 9.4.3 Curve recording

In addition, a curve recording, which can be adjusted in this screen, is displayed.

- The **dark green curve** indicates the progress of the currently calculated power input.
- The **orange curve** corresponds to the currently measured power input. It is determined based on the measured energy consumption of the last 60 seconds and updated every 10 seconds. If an efficiency analysis device is used for the energy registration of a house and no additional counter is activated to form a total, the power measured by the device is displayed.
- The developing of the maximum value of the measured power input is also indicated in the curve recordings, by a **red line**.
- The **light green line** indicates the developing of the maximum value of this time interval by considering the current power input and the synchronised time interval.

The scaling of the curve automatically depends on the determined maximum value.

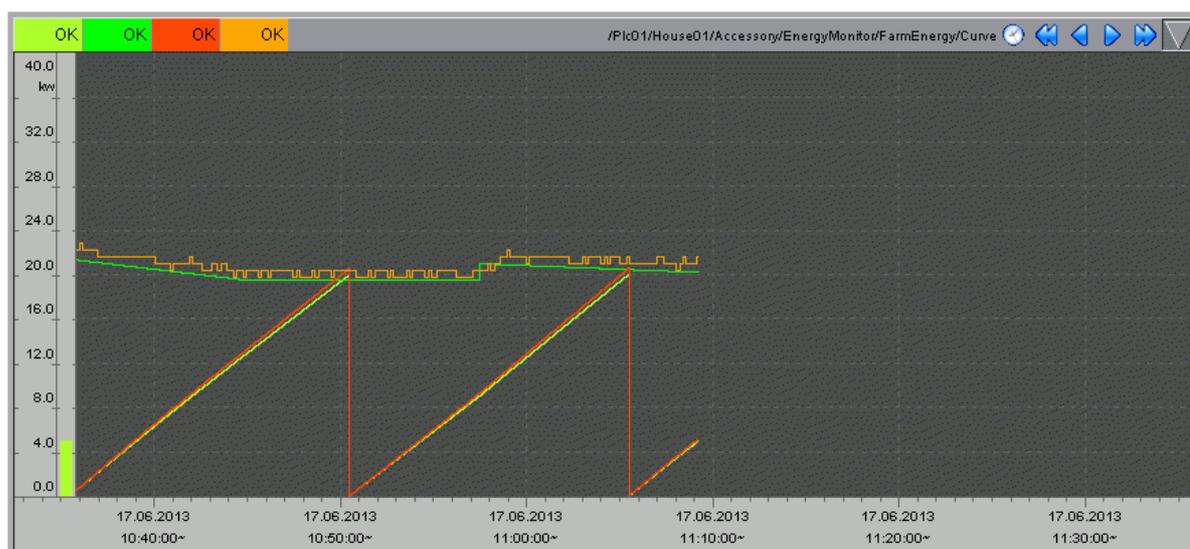


Figure 9-14: Curve presentation house energy registration



The curve presentation is adjusted as described in the **AMACS Operation User manual, chapter Curve overview**.

### 9.5 Energy counters

The energy counters are simple counters which can measure and detect an adjustable range via a pulse input. Their advantage in comparison with free counters is that they are synchronised with the interval pulse (15 minutes) for the energy interval consumption and that they record the interval performance. In addition, an efficiency analysis device can be configured and also displayed in the list. The settings for the **energy counters** can be found in the functional area **Accessories**.



Figure 9-15: Energy counters menu

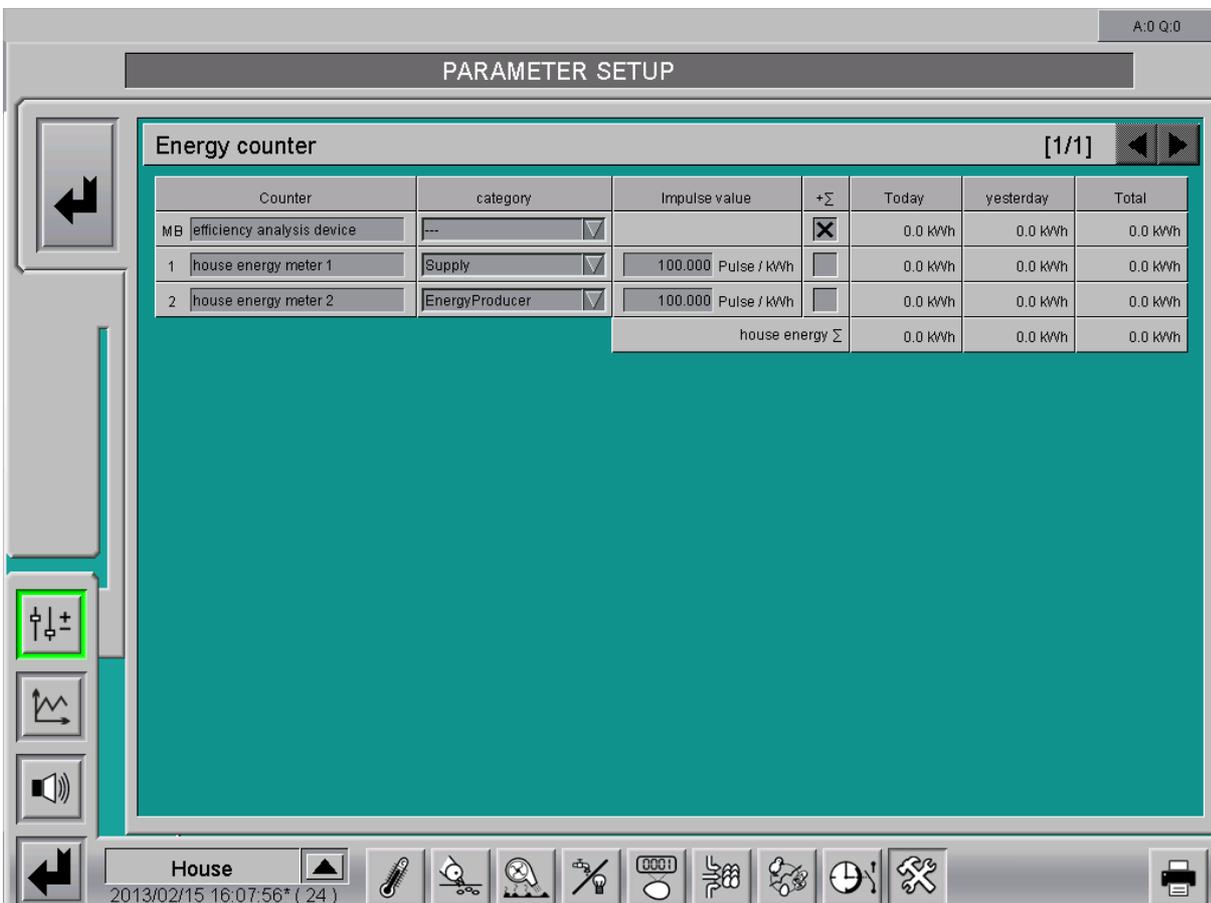


Figure 9-16: Energy counters settings

- **Counters**

Energy counters can be assigned names by entering a name (e.g. the subordinate area of the energy counter: heating) in the field with the designations house energy meter 1, house energy meter 2, etc. This name also appears on the accessories main screen.

- **Category**

Each energy counter can be assigned to a functional area (climate, feeding, etc.) with its measured consumption. If the measured value of the energy counter does not belong to a specific area, - - - can be entered instead.

- **Impulse value**

The impulse value is set here in numbers of impulses per kWh. Changing the impulse value does not affect the already registered pulses.

- **Sum**

By activating this checkbox the installed energy counters can be used when determining the house energy value. If the measured consumption of the energy counter has already been registered by another function, the checkbox must be deactivated.

- **Consumed values**

In addition, the consumption values for today, yesterday and total are displayed in kWh.

## 9.6 Farm energy registration

To register and display the energy consumption of the whole farm, the module **farm energy registration** can be configured during initial operation under **Accessories**. The total energy consumption of the farm can thus be compared with the indicated pulse of the energy provider and optimised.

The settings for the **farm energy registration** can be found in the functional area "Accessories".



Figure 9-17: Farm energy registration menu

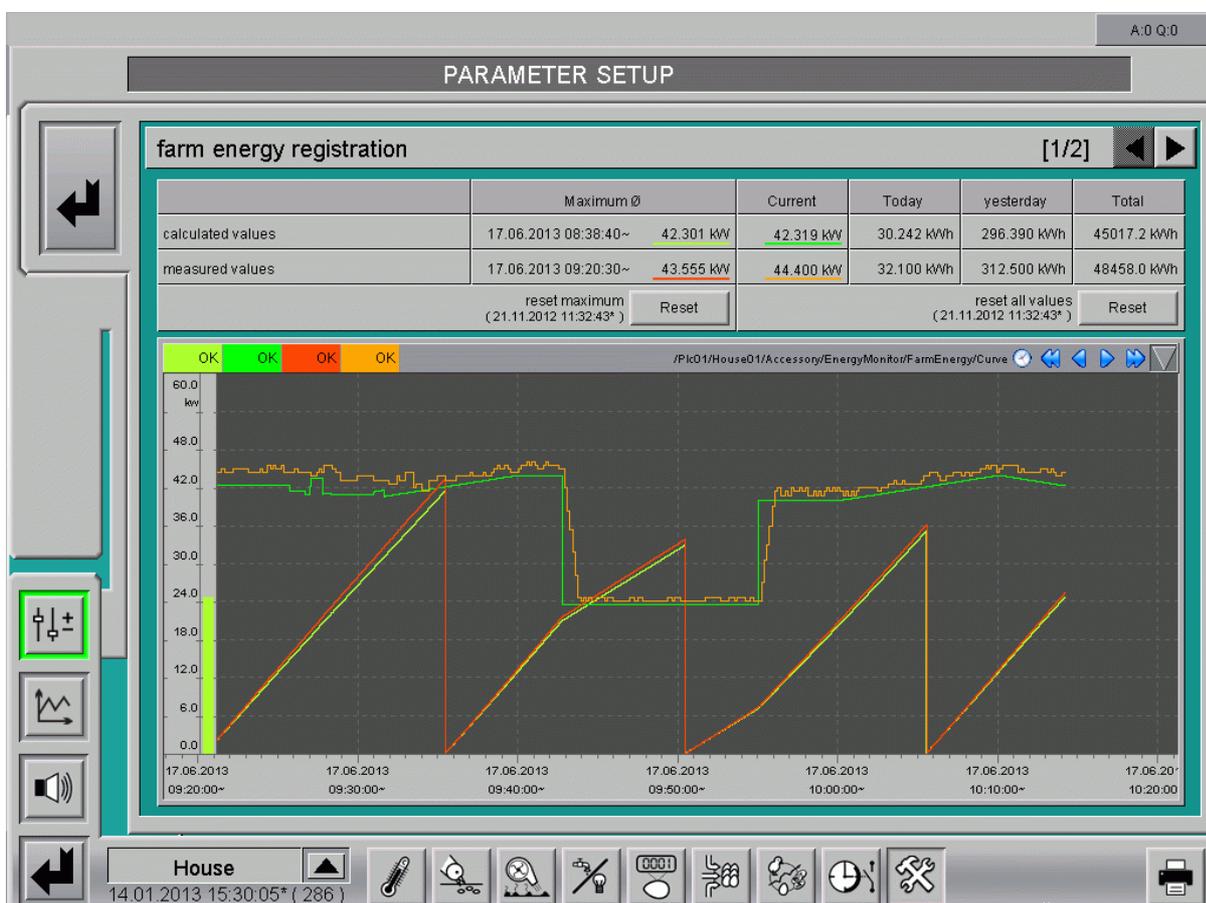


Figure 9-18: Farm energy registration settings

The farm energy registration settings are distributed over two screens.

1. On the first screen, the calculated and measured values are displayed as a table and as a graph.
2. On the second screen, the synchronisation with the energy provider's pulse used for invoicing can be adjusted.

### 9.6.1 Overview

The table shows the totalled values of the energy registration of **all** houses (see chapter 8 "Energy registration") in the field **calculated values**.

If the counter of the energy provider (see chapter 9.7 "Farm energy meter") is installed in the system, a row for **measured values** is displayed in addition to the **calculated values** to compare these. This allows for easy recognition of any errors between calculated power input and measured values.

	Maximum Ø	Current	Today	yesterday	Total
calculated values	29.11.2012 13:07:04* 28.108 kW	20.206 kW	155.2 kWh	317.0 kWh	11988.7 kWh
measured values	29.11.2012 10:22:04* 28.560 kW	21.600 kW	152.6 kWh	312.0 kWh	11522.0 kWh

Figure 9-19: Table farm energy registration

- **Maximum**

The field **Maximum** displays the time and the corresponding value of the largest average power input within one time interval. This value is an important parameter for energy invoicing and optimisation.

- **Current**

The currently calculated sum of the house's power input is displayed in kW here.

- **Consumed values**

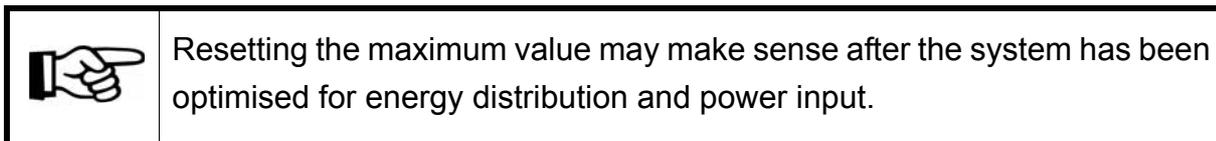
In each row, the registered consumption values for today, yesterday and total are displayed in kWh.

## 9.6.2 Resetting records

The **Reset** button can be used to reset the determined **maximum values** or **all values**. **Reset maximum** only resets the maximum value. **Reset all values** resets the maximum value, the daily value and the total value. The time of the resetting is displayed.



Figure 9-20: Resetting records



### 9.6.3 Curve recording

In addition, a curve recording, which can be adjusted in this screen, is displayed.

- The **dark green curve** indicates the progress of the currently calculated power input.
- The **orange curve** corresponds to the currently measured power input. It is determined based on the measured energy consumption of the last 60 seconds and updated every 10 seconds. If an efficiency analysis device is used for the energy registration of a house and no additional counter is activated to form a total, the power measured by the device is displayed.
- The developing of the maximum value of the measured power input is also indicated in the curve recordings, by a **red line**.
- The **light green line** indicates the developing of the maximum value of this time interval by considering the current power input and the synchronised time interval.

The scaling of the curve automatically depends on the determined maximum value.



Figure 9-21: Curve presentation farm energy registration



The curve presentation is adjusted as described in the **AMACS Operation User manual, chapter Curve overview**.

### 9.6.4 Synchronisation

To synchronise the consumed energy within a time period of the energy provider, a master is configured for each farm during initial operation used to create a pulse for the whole farm. If available, this pulse can be synchronised with the pulse emitted by the energy provider (usually a 15-minute pulse). If this pulse input is not used, the user can set a time as interval. As a general rule, several masters are also possible on one farm (e.g. if several energy feeding inputs are available).

All other houses are slaves.



The house is selected as master or slave during initial operation.

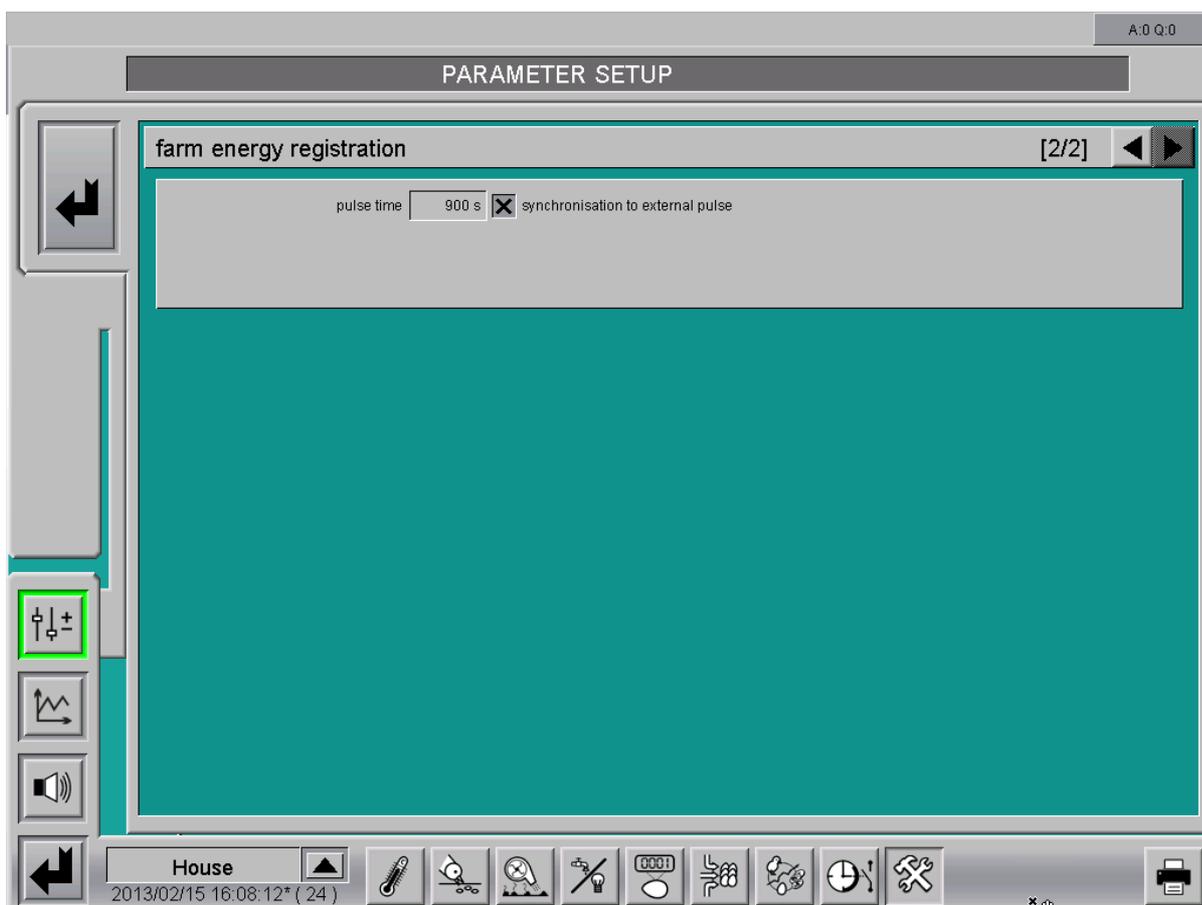


Figure 9-22: Farm energy registration menu

- **Pulse time**

The required pulse time can be set here (synchronisation with external pulse is not activated). If an external pulse is used, the determined pulse time is displayed in seconds.

- **Synchronisation to external pulse**

If an external pulse is to be used, the checkbox must be activated. The time interval used for partial performance calculation is then aligned with the external pulse. If the pulse fails, the master creates an independent pulse which is transmitted to the slaves connected via the network. If no pulse has been found, the system uses the time interval set manually.

The individual slaves use the same logic for synchronisation with the master. If the slave cannot find a pulse, it creates its own pulse in case the master (network) does not emit a pulse either.

### 9.7 Farm energy meter

An additional farm energy counter (counter of the energy provider) with the option for rate changeover can be configured during configuration of the farm-wide display of energy registration. The settings for the **farm energy meter** can be found in the master's functional area **Accessories**.



Figure 9-23: Farm energy meter menu

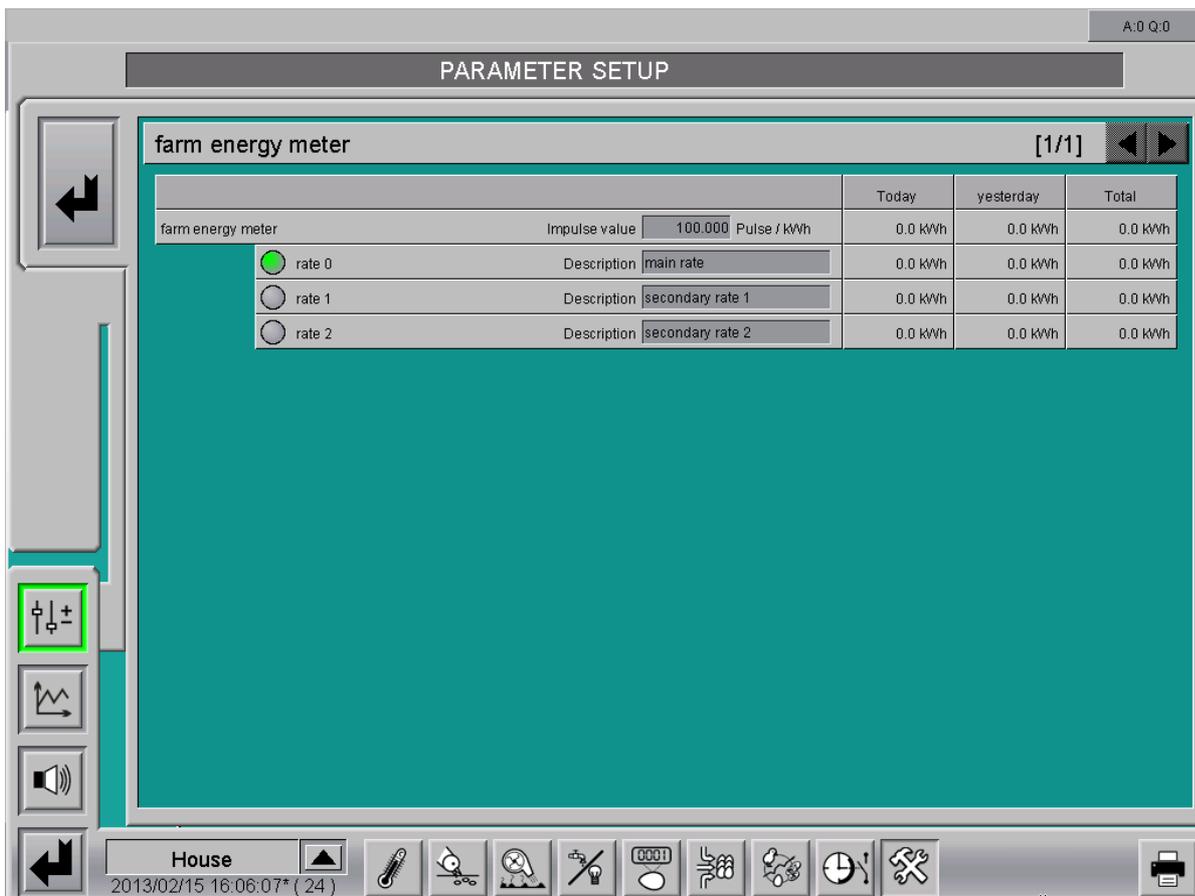


Figure 9-24: Farm energy meter settings

### 9.7.1 Impulse value

The impulse value is set here in numbers of impulses per kWh. Modifying the impulse value does not affect already registered pulses.

In addition, the values for today, yesterday and total are displayed in kWh.

### 9.7.2 Rate changeover

The farm energy counter can be configured to register a rate change. The names of the rates can be edited. Rows are included for the main rate (rate 0) and any additional rates. The green dot in front of the rate indicates which rate is currently active.

In each row, the registered values for today, yesterday and total are displayed in kWh.



The main rate is active as long as no secondary rate is active. If several rates are active simultaneously, the first active rate is used.

## 10 Free time switches

To adjust e.g. the lighting in the house, ten free analogue or digital time switches can be configured with Amacs. These can be set and displayed via the user interface.

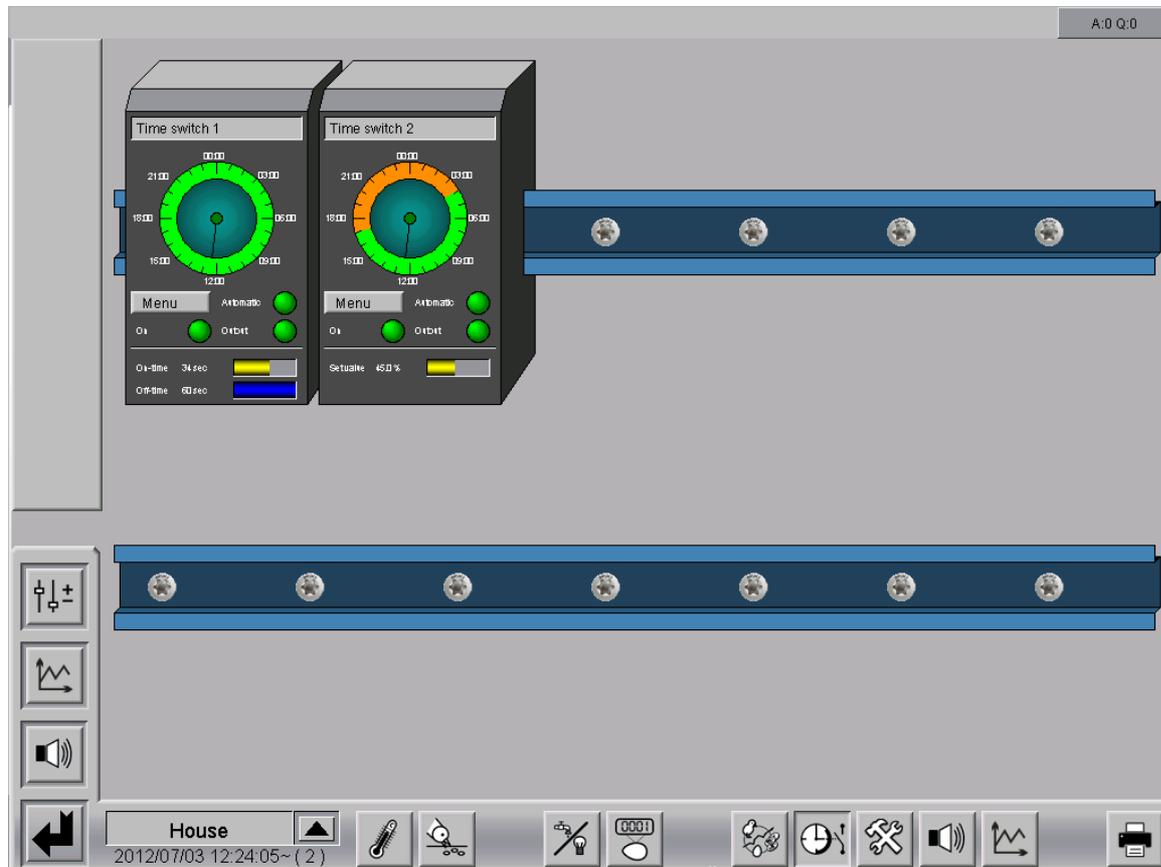


Figure 10-1: Free time switches



To access the main screen free time switches, open the area selection by clicking on the shaded lower right corner in each house view. Click on the free time switches icon. The overview screen only opens if you have the required rights.

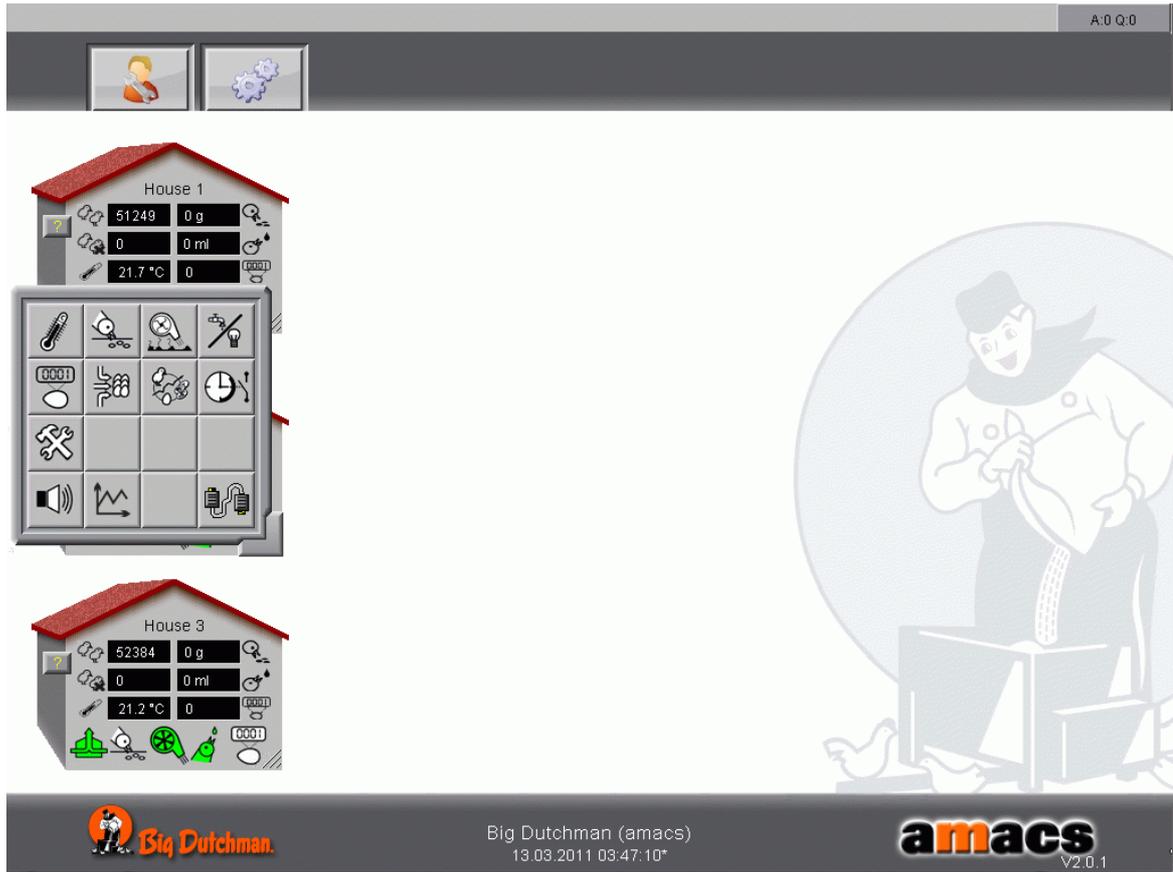


Figure 10-2: Accessing free time switches

## 10.1 Main screen

In the main free time switches screen, the current settings for the time switches are displayed. In addition, it is possible to switch from automatic to manual operation and to control the time switches here.

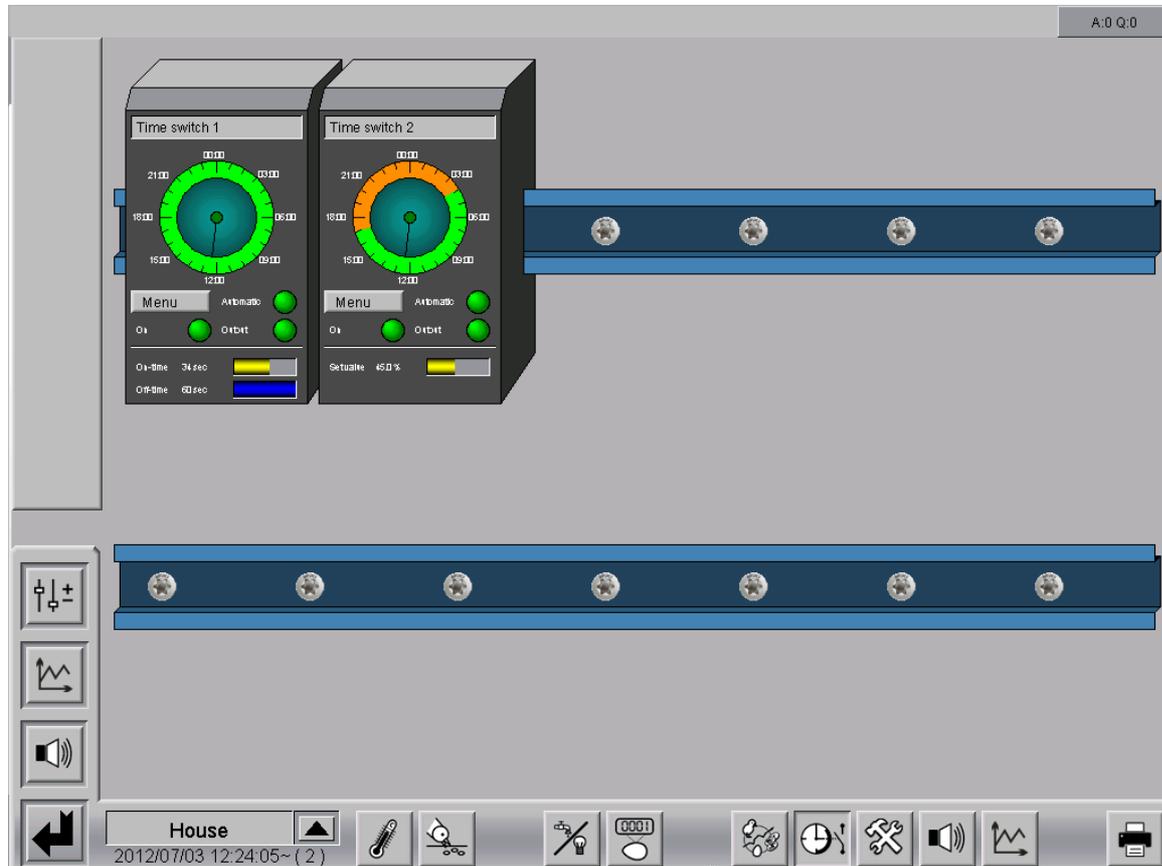


Figure 10-3: Free time switches

### 10.1.1 Time switch names

It is possible to assign the time switches names. The name is separately entered in the settings for each free time switch.

### 10.1.2 Status display

- In the upper part of each time switch, the **switch-on and switch-off times** for today's date are displayed.
- The original status of the time switches is indicated below the switch-on and switch-off times. The time switches can be operated manually here.
- The defined on and off times of the digital time switches or the set value of the analogue time switches are displayed in the lower part of each free time switch.

### 10.1.3 Drives

Each drive can be checked for its status in this screen and operated manually. The following explains what the colours mean and how to operate the drives.

#### 10.1.3.1 Status

The icons at the drives indicate whether the drive is in automatic or manual mode (green or orange dot at the drive) or if the drive is switched on.

#### Colours:



Automatic "OFF"



Automatic "ON";  
output active



Automatic "ON";  
output not active



Manual "OFF"

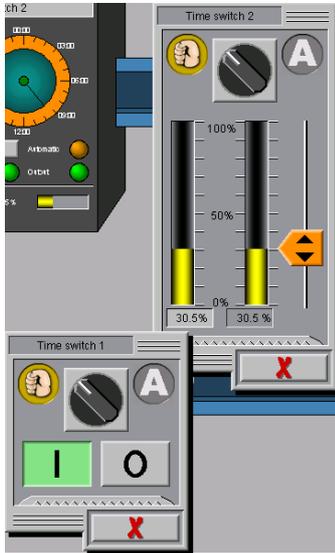


Manual "ON";  
output active

- The **automatic** icon is lit in orange when the time switch is operated manually and in green when the mode is switched to automatic.
- The **on** icon indicates whether the time switch is active according to the switch times. The status display for the input/output icons also changes from green (on) to black (off).
- The **output** icon indicates whether the output is really active or if it is e.g. currently switched off via the pulse pause mode.

### 10.1.3.2 Manual operation

Click on a drive to open a control panel. Depending on whether it deals with a digital or analogue element, a switch will appear or a slider control with which the drive can be switched from manual to automatic mode respectively can be switched on or off.



The drive can be switched from automatic to manual mode via the switch in the upper part of the menu.

In case of a digital drive, the drive can be switched on or off via the I/O keys.

If an analogue drive is installed, the desired position can be activated either via the orange slide or the value can be entered via the appearing input field below the desired position.



#### Caution!

Maintenance or service works at drive units or fans may only be carried out if the protective switch is in the OFF position. The drive units can be activated without warning, e.g. by the time switches. Observe local security signs and instructions.

### 10.1.3.3 Operating hours

In order to determine service intervals it is helpful if the running times of the motors can be viewed. If you click on the highlighted area, the respective time counter of a component will be opened.

The performed hours "today" and "total" are indicated here. The values can be reset to 0 via the reset button.

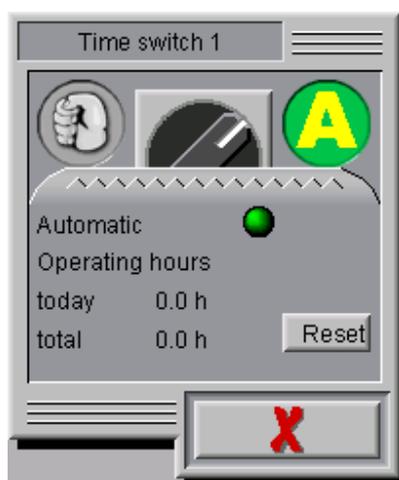


Figure 10-4: Operating hours

### 10.1.4 Settings



The overview of the parameter inputs for “Time switches” is opened by clicking on the settings symbol.

Here you can view and adjust the time switch status messages.

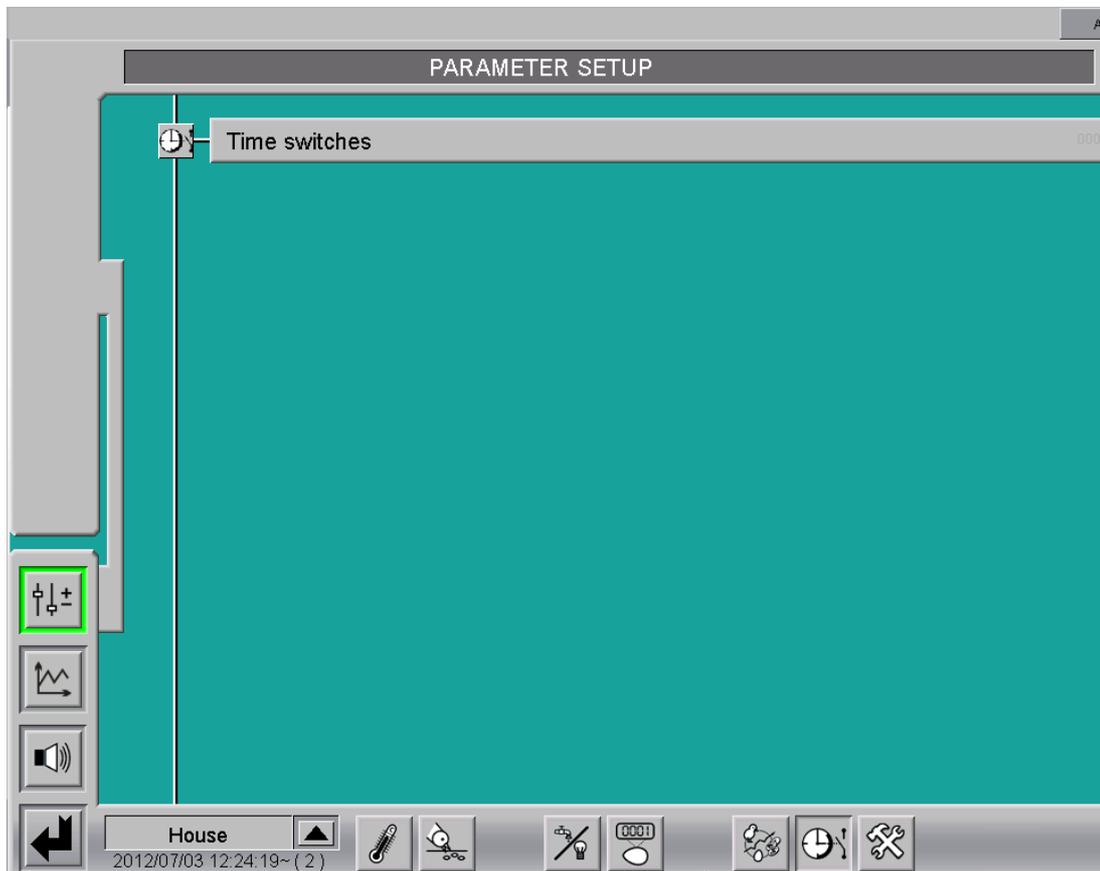


Figure 10-5: Time switch settings

- The arrow keys in the upper right corner can be used to switch between the time switches.

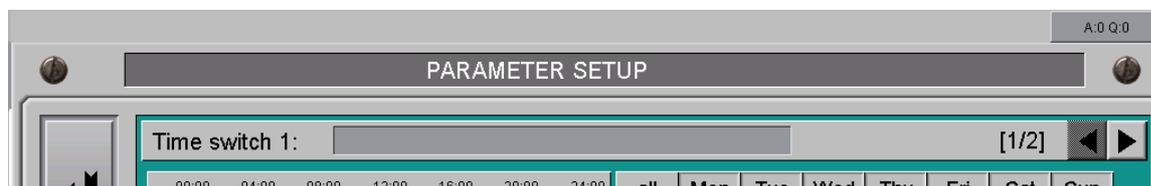


Figure 10-6: Time switch - Toggling between screens

## 10.2 Time switchers

### 10.2.1 General settings

The two time switch types (digital and analogue) offer different setting options.

The general options available for both time switches are explained in the following.

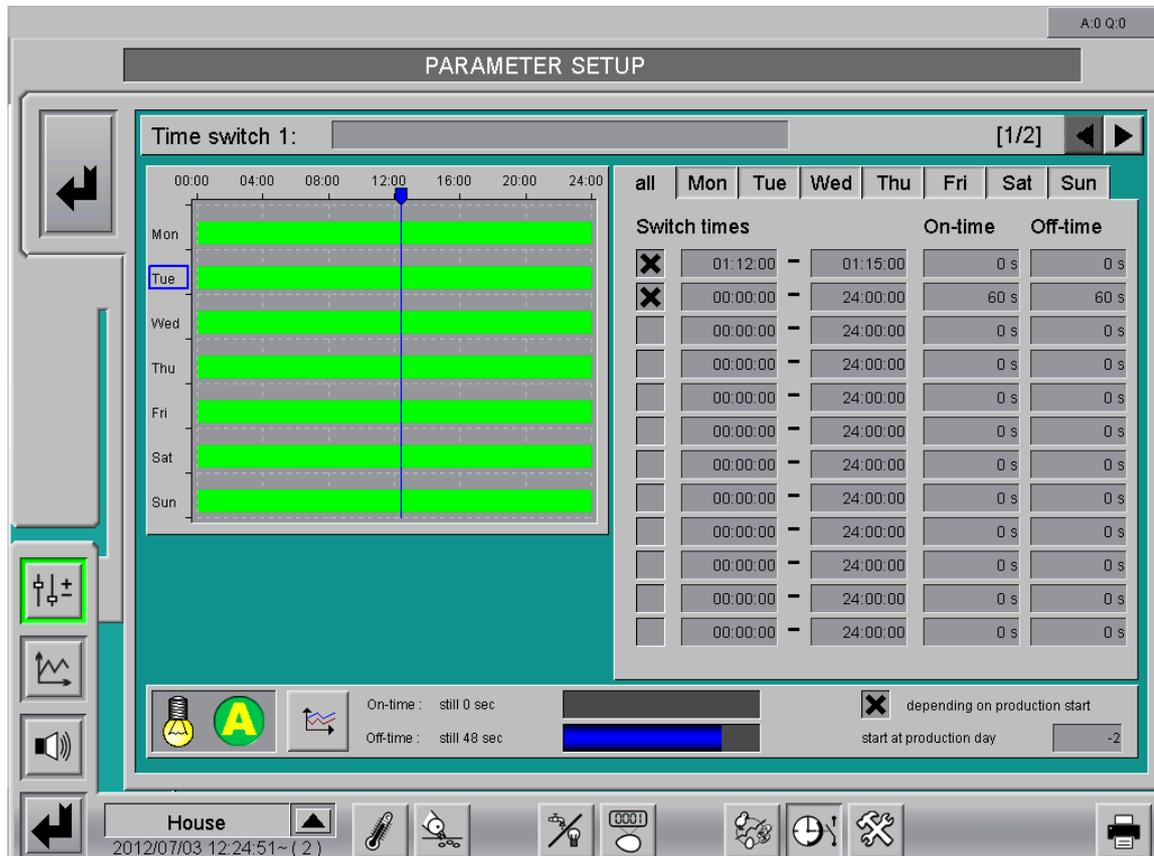


Figure 10-7: Parameters - Settings digital time switch

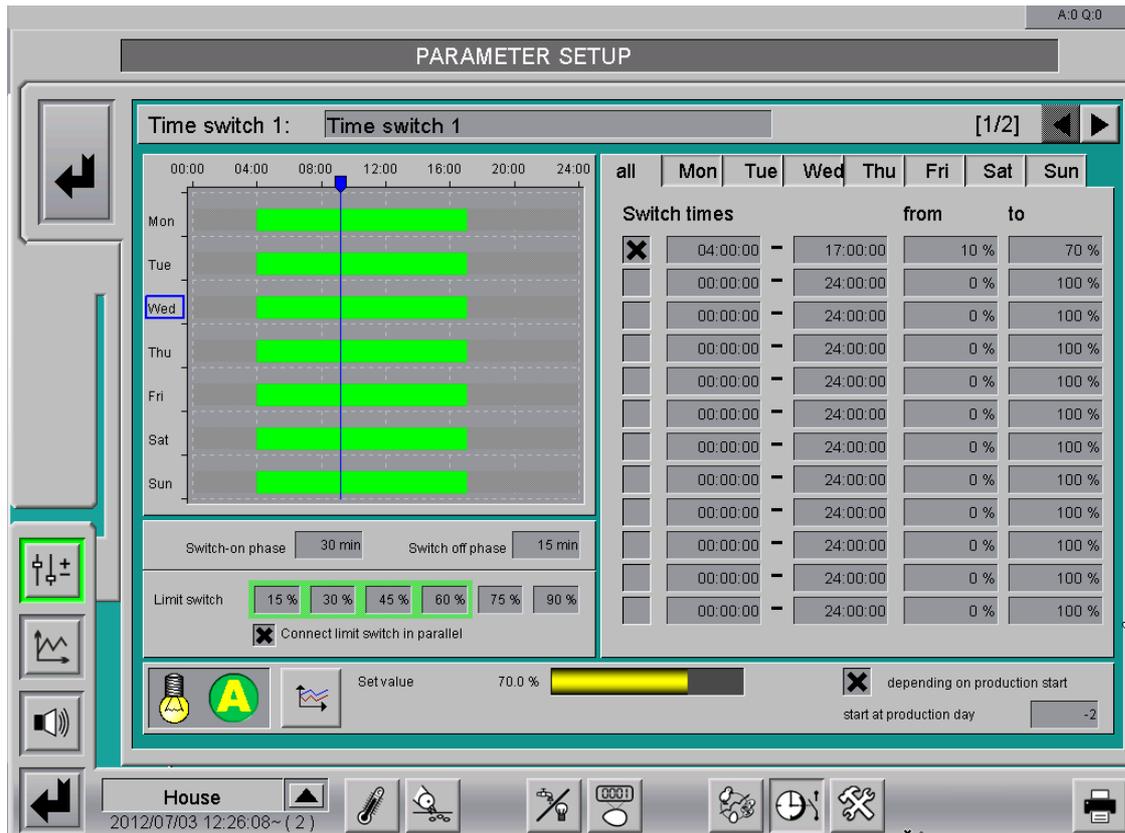


Figure 10-8: Parameters - Settings analogue time switch

- **Time switch names and switching between screens**

Time switch names can be assigned by entering a name (e.g. the function of the time switch: light) next to the designation time switch 1 / time switch 2, etc. The name also appears in the main time switch screen.

- **Switch times**

all	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	Switch times			On-time		Off-time	
<input checked="" type="checkbox"/>	01:12:00	-	01:15:00	0 s	0 s		
<input checked="" type="checkbox"/>	00:00:00	-	24:00:00	60 s	60 s		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 s	0 s		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 s	0 s		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 s	0 s		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 s	0 s		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 s	0 s		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 s	0 s		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 s	0 s		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 s	0 s		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 s	0 s		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 s	0 s		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 s	0 s		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 s	0 s		

Figure 10-9: Switch times

### Days of the week

Here you can predefine via the days of the week how the time switch should switch. Separate settings are possible for each day. Via the "All" button, all the same settings can be applied to all days of the week.



#### Note!

If changes are made in the "All" field, then settings for specific days of the week are lost.

### Switch times

Checking the box in front of each switch time activates the corresponding time.

The switch times at which the time switch should switch on or off can be entered in the fields to the right of the checkbox.

The adjacent graphical display provides a good overview of the set switch times for each day of the week.

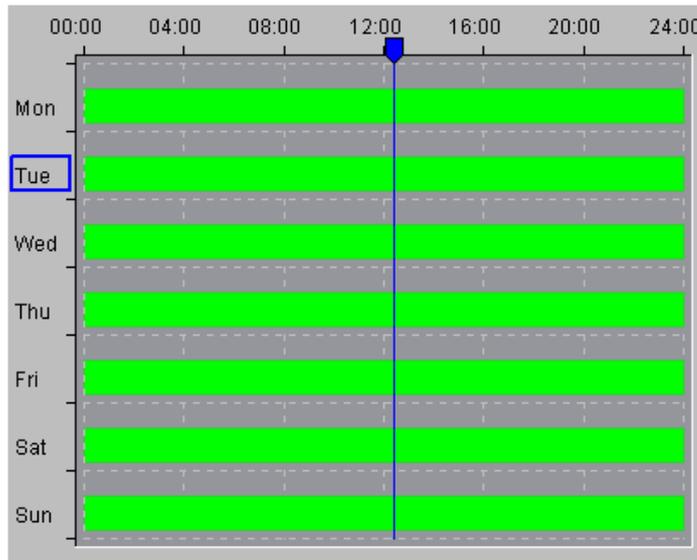


Figure 10-10: Overview of switch times for day of week

- **Depending on production start**

In addition to the switch times, settings for the start of the time switch depending on the production day can be made. Activating the checkbox causes the time switch to start working automatically when production is started. The popup specifies the day (assuming production start = 0) with which the time switch should be started. "-2" means that the time switch starts two days before production start, "2" accordingly two days after.

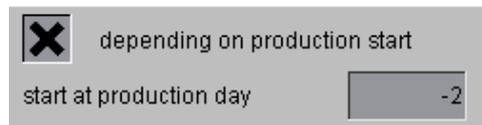


Figure 10-11: Production start



The light bulb icon in the status display indicates whether the time switch output is switched on or off. The adjacent symbol indicates which mode (manual or automatic) the time switch is in.

- **Switch times in graph**



Clicking the curve symbols generates a graph for the respective time switch. This function is designed to facilitate checking of previous switch times.



- **On-time and off-time**

If cyclical switching on and off is desired, the on and off times can be preset in seconds and the time switch is switched like a clock relay.



If "0 s" is entered in the on-time or off-time fields, the impulse-pause control is deactivated.

all	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	<b>Switch times</b>				<b>On-time</b>		<b>Off-time</b>
<input checked="" type="checkbox"/>	01:12:00	-	01:15:00		0 s		0 s
<input checked="" type="checkbox"/>	00:00:00	-	24:00:00		60 s		60 s
<input type="checkbox"/>	00:00:00	-	24:00:00		0 s		0 s
<input type="checkbox"/>	00:00:00	-	24:00:00		0 s		0 s
<input type="checkbox"/>	00:00:00	-	24:00:00		0 s		0 s
<input type="checkbox"/>	00:00:00	-	24:00:00		0 s		0 s
<input type="checkbox"/>	00:00:00	-	24:00:00		0 s		0 s
<input type="checkbox"/>	00:00:00	-	24:00:00		0 s		0 s
<input type="checkbox"/>	00:00:00	-	24:00:00		0 s		0 s
<input type="checkbox"/>	00:00:00	-	24:00:00		0 s		0 s
<input type="checkbox"/>	00:00:00	-	24:00:00		0 s		0 s
<input type="checkbox"/>	00:00:00	-	24:00:00		0 s		0 s
<input type="checkbox"/>	00:00:00	-	24:00:00		0 s		0 s
<input type="checkbox"/>	00:00:00	-	24:00:00		0 s		0 s

Figure 10-13: On-time and off-time

- **Cycle times**

Additional display bars are shown at the bottom of the menu. They show how long the on and off cycle lasts. This is also displayed in the main time switch screen.



Figure 10-14: Cycle times

### 10.2.3 Analogue time switch

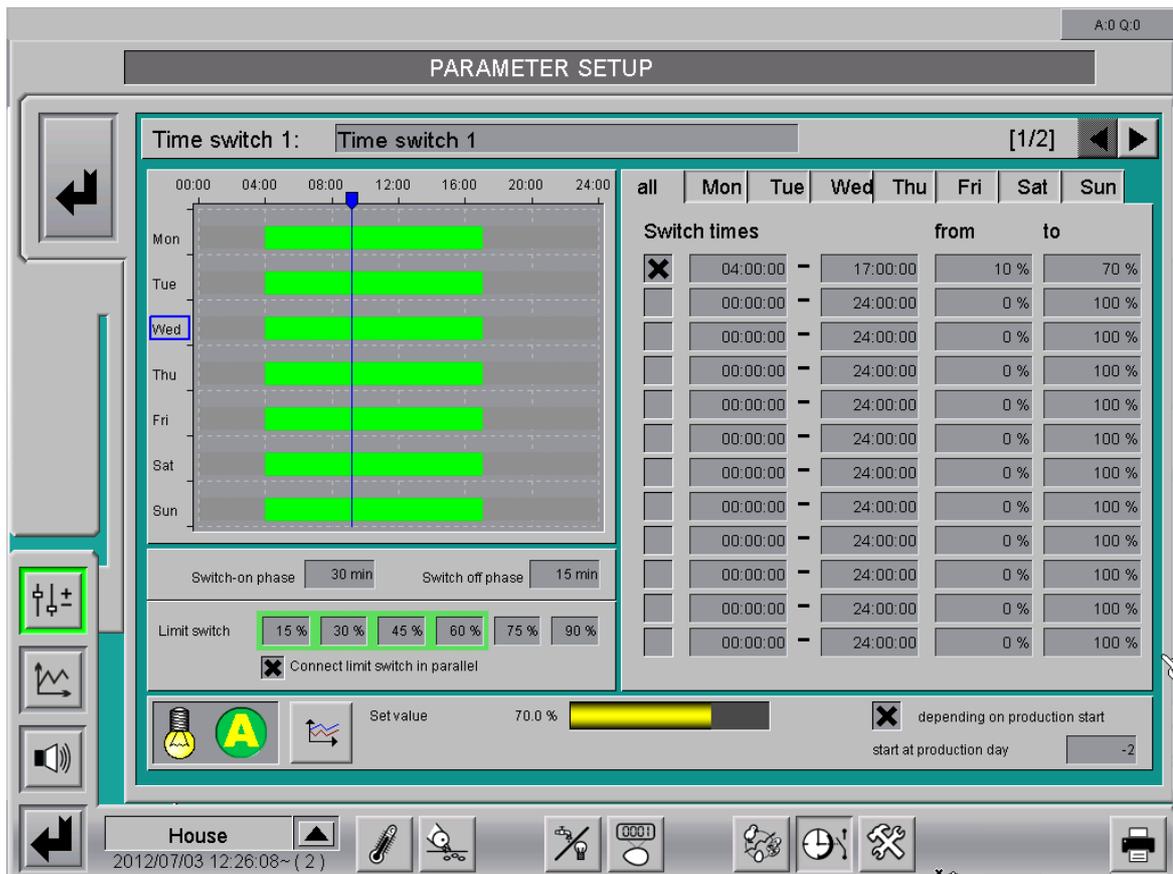


Figure 10-15: Analogue time switch

- Set value**

Use the control parameters “From - To” to specify per switch time from when and to when the light should brighten during the ramp time.

all	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Switch times				from	to		
<input checked="" type="checkbox"/>	04:00:00	-	17:00:00	10 %	70 %		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 %	100 %		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 %	100 %		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 %	100 %		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 %	100 %		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 %	100 %		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 %	100 %		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 %	100 %		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 %	100 %		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 %	100 %		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 %	100 %		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 %	100 %		
<input type="checkbox"/>	00:00:00	-	24:00:00	0 %	100 %		

Figure 10-16: Set value

- Current set value**

The bar display for the current set value shows the current light intensity.

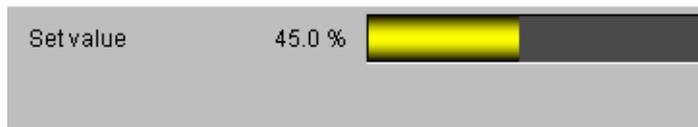


Figure 10-17: Current set value

### •Switch-on and switch-off phases

If the light can be controlled e.g. by a dimmer, it is possible to simulate sunrise and sunset. The switch-on and switch-off phases determine the length of this twilight phase. Times for sunrise and sunset can be entered separately.



Figure 10-18: Dimming behaviour

### Example:

If the light is switched on at 4 a.m., it is dimmed e.g. over a period of ten minutes until the maximum limit value is reached at 4.10 a.m.

If the light is switched off at 4:45 p.m., it is dimmed over a period of 15 minutes until the minimum limit value is reached at 5 p.m. and the light is switched off.

### •Limit switch

If it is necessary for the analogue time switches to connect one or more relays in relation to the intensity, up to six limit switches can be set. To define the switch-on time, enter at the limit switches the value at which the respective output is to be activated.

### Connect limit switch in parallel

If the limit switches shall be activated in parallel, i.e. all relays smaller than the current intensity are energised, the checkbox must be activated. If only the relay with the limit below the intensity shall be activated, the checkbox must be deactivated.

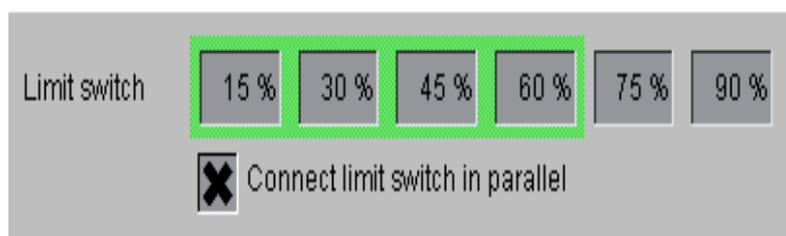


Figure 10-19: Ramp time

## 11 Alarm description



In the alarm settings you can choose which alarms are required and when they should appear. In addition you can specify whether the alarm is to be issued by the alarm device or sent to the users by e-mail.



### Caution!

All alarms are activated by default!

Before deactivating an alarm it is essential to ensure that it is really not required. Alarms help to recognise problems that may potentially endanger the birds' health at an early stage.

Alarms should not be viewed as a nuisance but as an opportunity to keep the productivity of the house at a consistently high level.



You will find information on how to change the alarm settings in the "Amacs Operation" user manual.

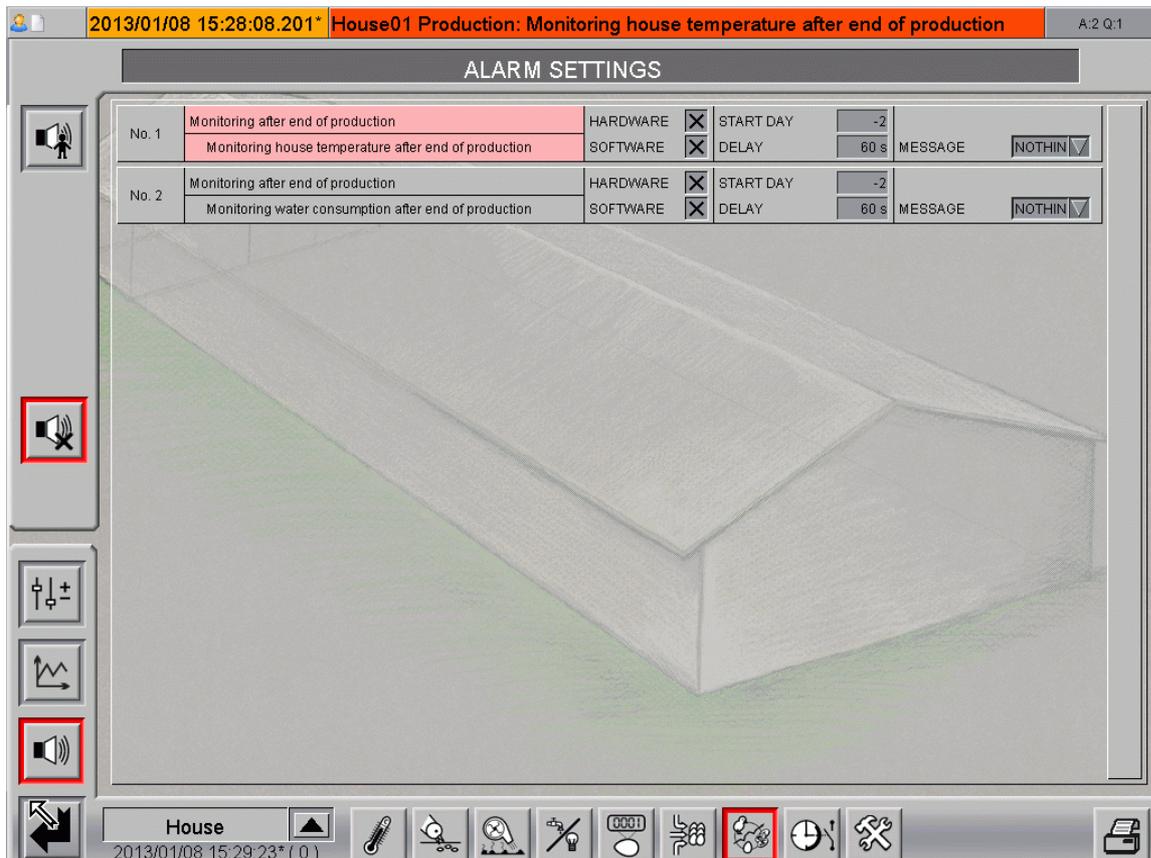


Figure 11-1: Alarm settings

This section describes the various alarms shown in the message line and their cause.



Figure 11-2: Alarm line

- **Monitoring the house temperature after end of production**  
Production not active and temperature in house X °C higher than external temperature.
- **Monitoring water consumption after end of production**  
Production not active and water consumption more than X litres per hour.