

User manual

AMACS (V 3.4.1) – Egg production

Code No. 99-94-0116 GB

Edition: 07/2025

Overview of changes / updates

Name of chapter	Type of change / update	Product information / Code of the person in charge	Date of edition	Page
Entire manual	Update to software version 3.4.1	<i>AMa</i>	07/2025	-

1	About this manual	1
2	Overview	3
3	Production data	5
3.1	Status display production – main screen	5
3.1.1	Ongoing production	5
3.1.2	Pause production	6
3.1.3	Concluded production	6
3.1.4	Comment	7
3.2	Viewing and selecting reports	7
3.3	Viewing and creating curves	11
3.4	Manual entries	14
4	Settings	15
5	Moving in and production	16
5.1	Moving birds in	17
5.2	Starting production	20
5.3	Moving birds	23
5.4	Entering dead birds	24
5.5	Moving birds in later	26
5.6	Moving birds out earlier	28
5.7	Undoing entries	29
5.8	Finishing production	30
5.9	Monitoring after end of production	32
5.9.1	Settings	32
5.9.2	Monitoring status	33
5.9.3	Main screen	34
5.10	House in pause mode	35
6	Reference files	37
6.1	Reference curves	37
6.1.1	Loading reference curve	37
6.1.2	Deleting reference curve	38
6.2	Egg classes	39
6.3	House parameters	40
7	Free value recording	41

8	Saving production data	43
8.1	Saved settings	43
8.2	Standard settings	44
9	Test function alarm system	45
10	Camera	47
11	Bird weighing	49
11.1	Main screen	49
11.2	Settings	50
11.2.1	Overview	50
11.2.1.1	Statistical values	51
11.2.1.2	Bird-specific scale setting	53
11.2.1.3	Resetting weighing	53
11.2.2	Calculation	54
11.2.3	Calibration	55
11.2.3.1	First/second bird weight	55
11.2.3.2	Limit area for stable weighing value	55
11.2.3.3	Number	55
11.2.3.4	Type	56
11.2.3.5	Raw value	56
11.2.3.6	Calibration weight	56
11.2.3.7	Calibration of a weighing unit with strain gauge signal	56
11.2.3.8	Manual calibration of the bird scale	60
11.2.3.9	Calculated weighing value	60
12	Energy registration	61
12.1	Overview	62
12.1.1	Resetting records	63
12.1.2	Curve recording	63
12.2	Functional areas	64
12.3	Additional power consumers	65
12.4	Curve recording	66
13	Accessories	68
13.1	Main screen	69
13.1.1	Description	70
13.1.2	Status display	70
13.1.2.1	Counters	70
13.1.2.2	Analogue inputs	70
13.2	Settings	71

13.3	Free counter inputs	71
13.4	Free analogue inputs	73
13.5	Drip oilers	74
13.5.1	Settings	74
13.5.2	Main screen	78
13.5.3	Database recordings	78
13.6	Energy counters	79
13.7	House energy registration	81
13.7.1	Overview	82
13.7.2	Resetting records	82
13.7.3	Curve recording	83
13.8	Farm energy counter	84
13.8.1	Impulse value	84
13.8.2	Rate changeover	84
13.9	Farm energy registration	85
13.9.1	Overview	86
13.9.2	Resetting records	86
13.9.3	Curve recording	87
13.9.4	Synchronisation	88
14	Free time switches	89
14.1	Main screen	90
14.1.1	Time switch names	90
14.1.2	Status display	90
14.1.2.1	Status	91
14.1.2.2	Automatic operation on/off	91
14.1.2.3	Operating hours	92
14.2	Settings	93
14.3	Timer	93
14.3.1	General settings	93
14.3.2	Digital time switch	97
14.3.3	Analogue time switch	99
15	Alarmbeschreibung	102

1 About this manual

Observe the instructions in this manual to ensure correct and safe use of the system.

Keep this manual safe for future use.

The documentation for AMACS (V 3.4.1) – Egg production must be used together with the following documents:

Code no.	Description
99-94-0447	AMACS safety regulations

Program version

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

Software version: V 3.4.1

This version is compatible with **BFN Fusion**. For more information, refer to the **BFN Fusion** documentation.

NOTICE!

Communication with BFN Fusion requires an OrbitX gateway that retrieves data from AMACS and transmits them to BFN.

IMPORTANT

Notes concerning the alarm system

Dysfunctions, malfunctions or faulty settings in climate-controlled livestock houses may cause substantial damage and financial losses. It is therefore **essential to install a separate, independent alarm system** that monitors the house concurrently with the climate control system. Please note that the product liability clause of the **BIG DUTCHMAN** terms and conditions of sale and delivery specifies that an alarm system **must be installed**.

Observe the valid law of the respective country regarding the minimum requirements for emergency and alarm systems.

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Liability

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

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

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2 Overview

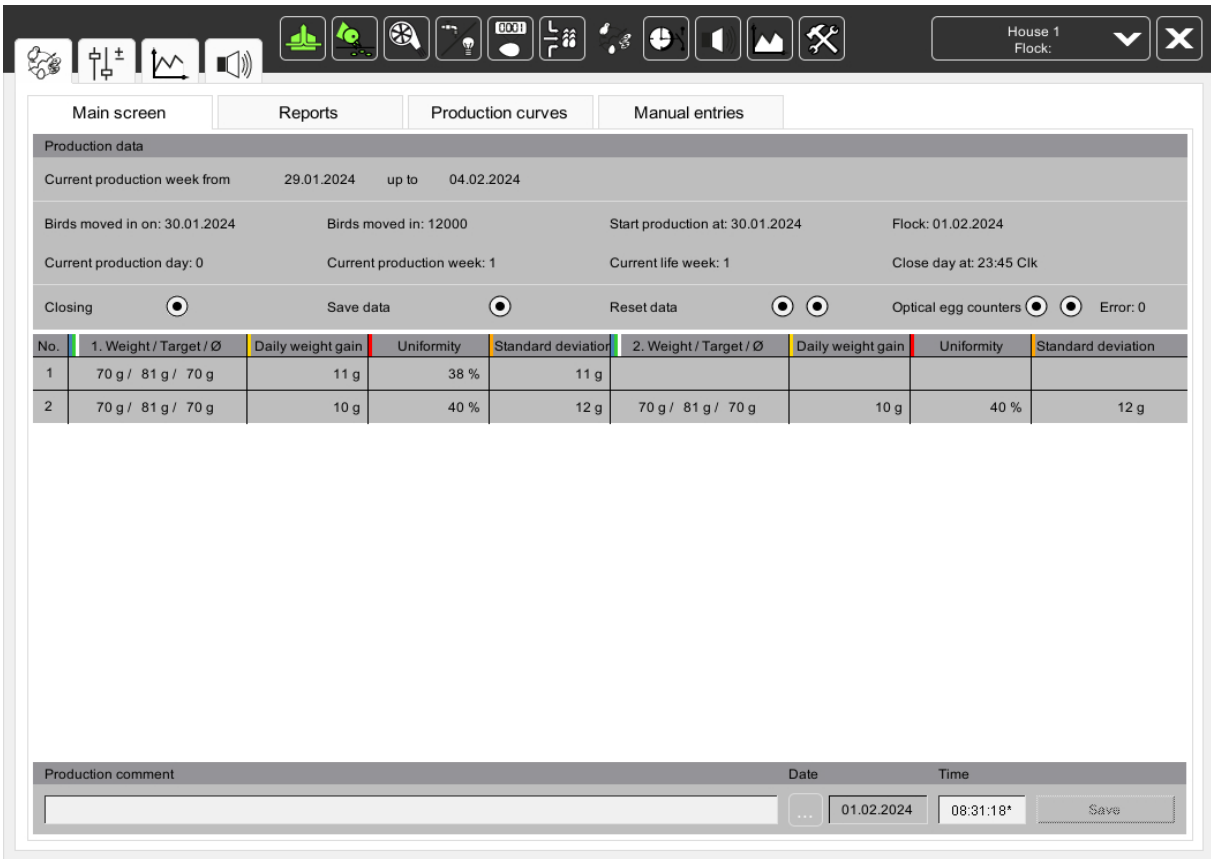
With the Amacs production module, all relevant parameters for production can be set and viewed, and the production values from the database can be recalled and displayed.

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.

NOTICE!

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.



The screenshot displays the 'Main screen' of the AMACS production module. At the top, there is a toolbar with various icons for navigation and settings. Below the toolbar, the 'Production data' section shows the current production week from 29.01.2024 to 04.02.2024. It also lists birds moved in on 30.01.2024, birds moved in (12000), start production at (30.01.2024), flock (01.02.2024), current production day (0), current production week (1), current life week (1), and close day at (23:45 Clk). The 'Closing' section has radio buttons for 'Closing', 'Save data', 'Reset data', and 'Optical egg counters', with 'Error: 0' displayed. Below this is a table with production data for two rows. The bottom section includes a 'Production comment' field, 'Date' (01.02.2024), 'Time' (08:31:18*), and a 'Save' button.

No.	1. Weight / Target / Ø	Daily weight gain	Uniformity	Standard deviation	2. Weight / Target / Ø	Daily weight gain	Uniformity	Standard deviation
1	70 g / 81 g / 70 g	11 g	38 %	11 g				
2	70 g / 81 g / 70 g	10 g	40 %	12 g	70 g / 81 g / 70 g	10 g	40 %	12 g

Figure 2-1: Overview screen egg production



To access the egg production overview screen, click on the production icon underneath every house view. The production overview screen only opens if you have the required rights.

amacs
V3.4.1 ASS-Edition 2024/02/02 12:07:37*
A:0 Q:0

House 1
⚙️

24000	8 oz	79.9 °F	70.0 %RH
0	0 ml	64.4 °F	2000 ppm
0 oz	0 lb	78.6 °F	0
PW 63	150000 m³/h	0 %	

House 2
⚙️

25000	0 oz	68.0 °F	66.9 %RH
0	0 ml	68.0 °F	899 ppm
0 oz	0 lb	71.1 °F	0
PW 62	17500 m³/h	0 %	

House 3
⚙️

0	0 oz	68.4 °F	69.5 %RH
0	0 ml	68.4 °F	1388 ppm
0 oz	0 lb	71.4 °F	0
PW 0	0 m³/h	0 %	

Production

Figure 2-2: Opening the egg production module

3 Production data

Next to the "Main screen" tab, there are additional tabs you can use to show production data as tables or graphs.



- **Main screen**
Shows the most important production data.
- **Reports**
Shows the production data as a table.
- **Production curves**
Shows the production data as a graph.
- **Manual entries**
Manual input of production data into the database.

3.1 Status display production – main screen

3.1.1 Ongoing production

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.

Production data			
Current production week from	05.02.2024	up to	11.02.2024
Birds moved in on: 30.01.2024	Birds moved in: 12000	Start production at: 30.01.2024	Flock: 06.02.2024
Current production day: 5	Current production week: 2	Current life week: 1	Close day at: 23:45 Clk
Closing ☐	Save data ☐	Reset data ☐	Optical egg counters ☐ Error: 0

Figure 3-1: 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 circular icons indicate that production is still running, but the day has not been closed yet.

1. Closing

As soon as the day is closed (at 11:45 p.m. in this example), the first icon, "Closing", turns fully black.

2. Optical egg counters

If applicable, the first icon of the optical egg counter turns fully black next, 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. Once the system has received all data, the second icon of the optical egg counters also turns fully black.

3. Save data

When this procedure has been completed, the data are saved, which is indicated by the black colour of the "Save data" icon.

4. Reset data

The last step is the data reset. If the first icon is fully black, data are being reset. The second icon indicates a pulsed signal for resetting of the CAN cards.

3.1.2 Pause production



Figure 3-2: Pause production

Figure 3-2 indicates that production is in pause mode.

3.1.3 Concluded production



Figure 3-3: Concluded production

Figure 3-3 indicates that no production is active at present.

3.1.4 Comment

You can save additional comments regarding production. Add the comments in the lower part of the "Main screen" tab and enter the date and time. The comments are saved in the database and can be analysed individually.

Production comment	Date	Time	
	08.02.2024	14:49:50*	Save

Figure 3-4: Production comment

3.2 Viewing and selecting reports

To ensure that important production batch parameters can be retrieved quickly, a large number of preconfigured reports is available. Clicking on the **"Reports"** tab opens the overview screen below, which displays all available reports.

Main screen	Reports	Production curves	Manual entries
Database: Current production			
Climate Temperatures Min/Max temperatures Zone temperature Min/Max temperature zone Sensors Min/Max sensors Additional values Min/Max add. values Measuring fans	Feeding Feed consumption (total) Feed consumption (daily) Feed consumption (bird) Water/feed ratio Feedings Feed type consumption Feed type consumption (Bird) Silo consumptions Feed delivery	Bird data Birds in house (total) Birds moved out (total) Birds moved out (daily) Losses Overview Comments Supply Water consumption (Total) Water consumption (daily) Water consumption (Bird) Counter value water	Bird weighing 1 Weight Weight change Standard deviation Coefficient of variation Uniformity Bird weighing 2 Weight Weight change Standard deviation Coefficient of variation Uniformity
Miscellaneous Operating hours ... Energy registration ... Counter	Egg collection Counter value eggs Egg counter System egg counter		

Figure 3-5: Main overview report selection

- **Database**

Under "Database", select whether you want to see the current production or a historical one. The selection menu shows all productions, including house name and move-in date.

- Reports**

Click on one of the reports to see all available data of the selected area. The following screenshot is an example.

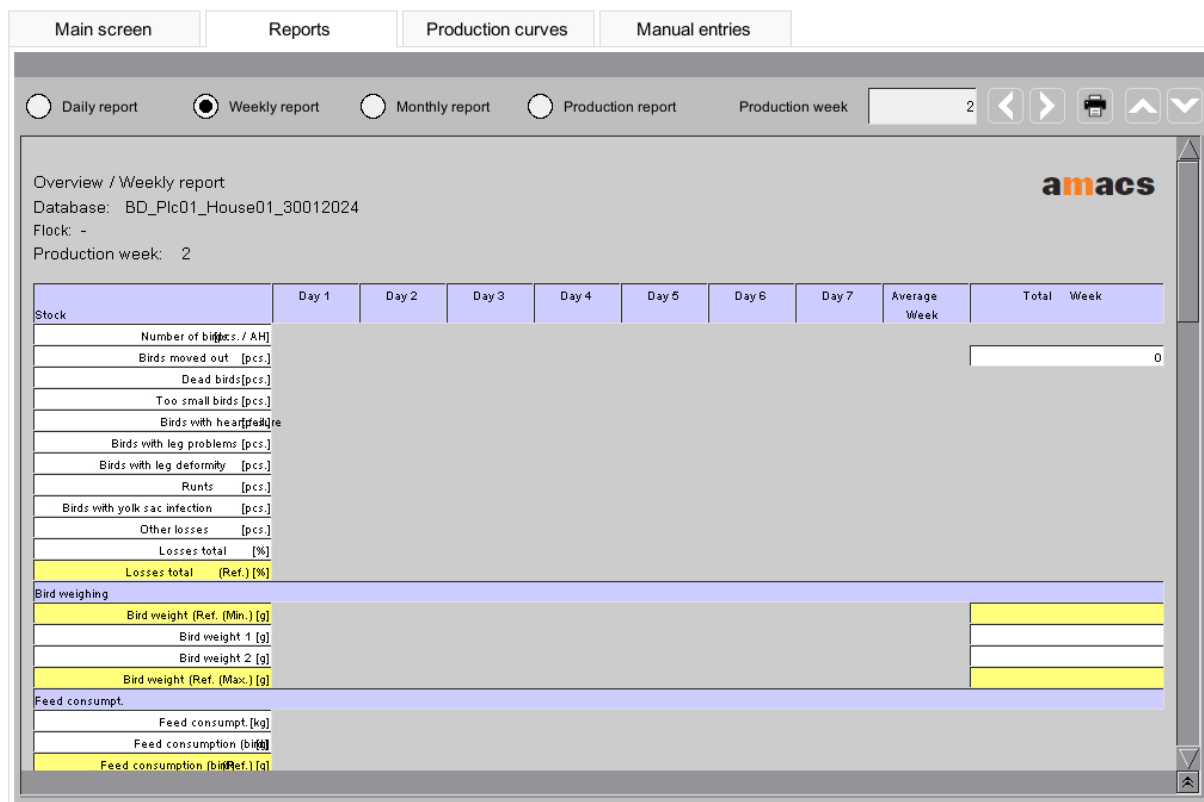


Figure 3-6: Sample report

After selecting the report, you can configure the following settings:

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

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

- Daily report**

This report shows which data were added to the database after production closed for the specific day. This displayed report can be changed one day forward or back using the arrow keys. Additionally, there is a calendar function ("Date: ...") available to select the correct day.



Figure 3-7: Daily report

- **Weekly report**

This report shows which data were added to the database for the specific week. The displayed report can be changed one week forward or back using the arrow keys.



Figure 3-8: Weekly report

- **Monthly report**

This report shows which data were added to the database for the selected month. This displayed report can be changed one month forward or back using the arrow keys. Additionally, there is a calendar function ("Date: ...") available to select the correct day.



Figure 3-9: Monthly report

- **Production report**

This report shows which data were added to the database for the selected production.



Figure 3-10: Production report

- **Scroll**



Use the scroll function to move to the report's previous or next page if the report consists of multiple pages.

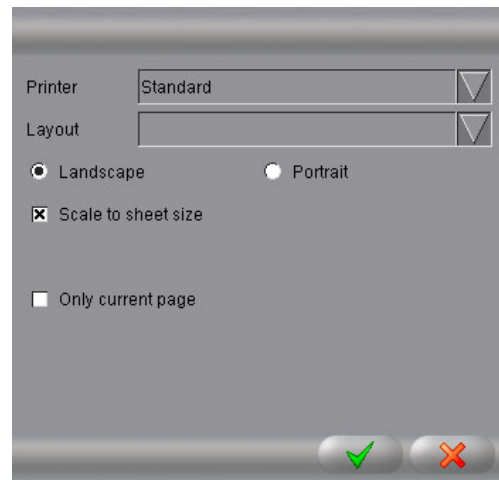
- **Print**



The report can be printed by the connected printer. Click on the "Print" button, which is located in the top right corner, to define the appearance of the printout, select the printer and submit the print job.

Figure 3-11: Printing

1. In the first field, select the configured **printer**. The default setting is "**Standard**".
2. Use the function "**Layout**" to define whether only the current **ListView** with lines should be printed, or a **FrameListView** with index.
3. Select either "**Landscape**" or "**Portrait**" to define whether the image should be printed in landscape or portrait mode. The default setting is "**Landscape**".
4. Using the "**Scale to sheet size**" function, you can adjust the printout to the size of the paper sheet. This function is activated by default.
5. The option "**Only current page**" does not have any functionality here.
6. Start the print job by clicking on the **green checkmark**, or cancel it by clicking on the **red X**. If you select "Cancel", the menu closes.



3.3 Viewing and creating curves

Clicking on the "**Production curves**" tab opens a window in which 10 individual curves can be created and saved.



Figure 3-12: Displaying the production curves panel

Clicking on a curve composition opens the window in which the current production values are shown as a curve with reference values for comparison.

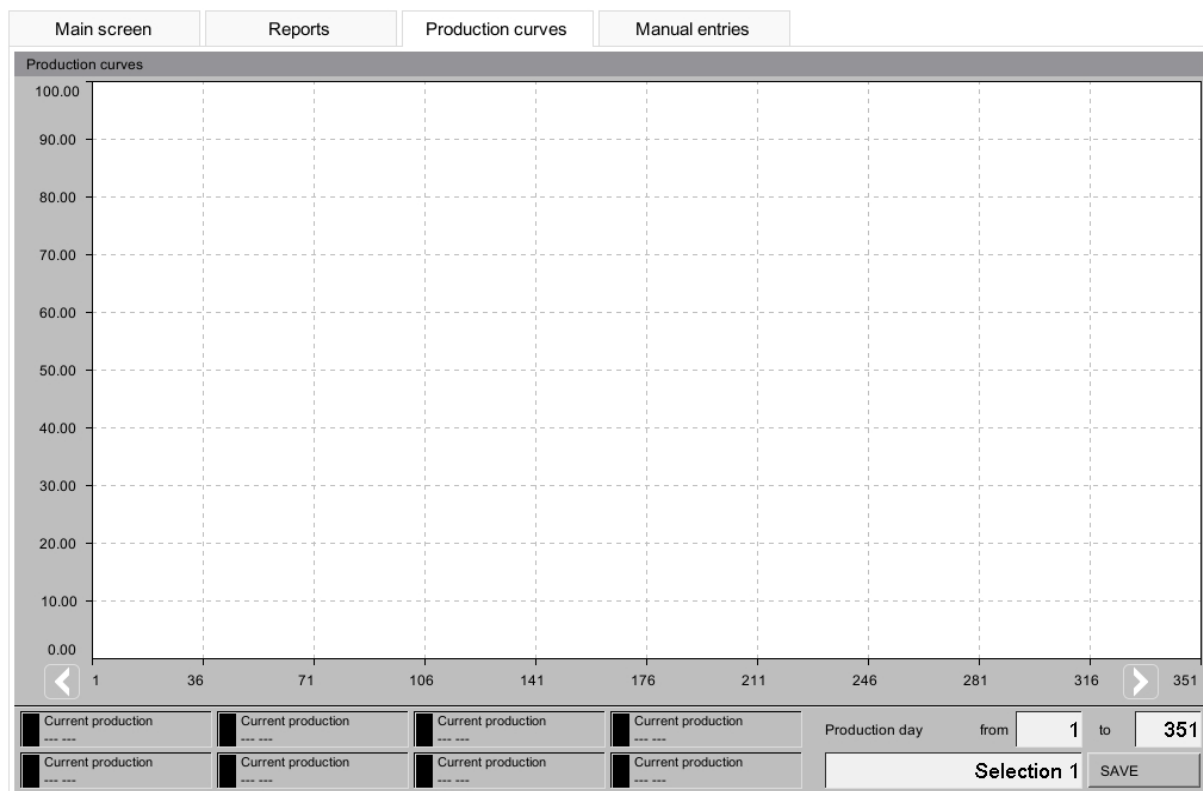


Figure 3-13: Curves

Creating curves

1. Selecting a data point

Click on one of the 8 information fields in the lower part to add or delete a curve.

2. Selecting a curve

In the window "Curve selection", decide from which production (**Database**), from which area (**Table**) the information should be displayed, and which **Value** should be shown.

Additionally, you can define which **colour** and **scaling** the curve should have.

Click on "**Accept**" to use these settings for the curve view.

Clicking on "**Remove curve**" deletes the current curve from the curve view.

To leave the menu without accepting the settings, click on the "**X**" in the top right corner.

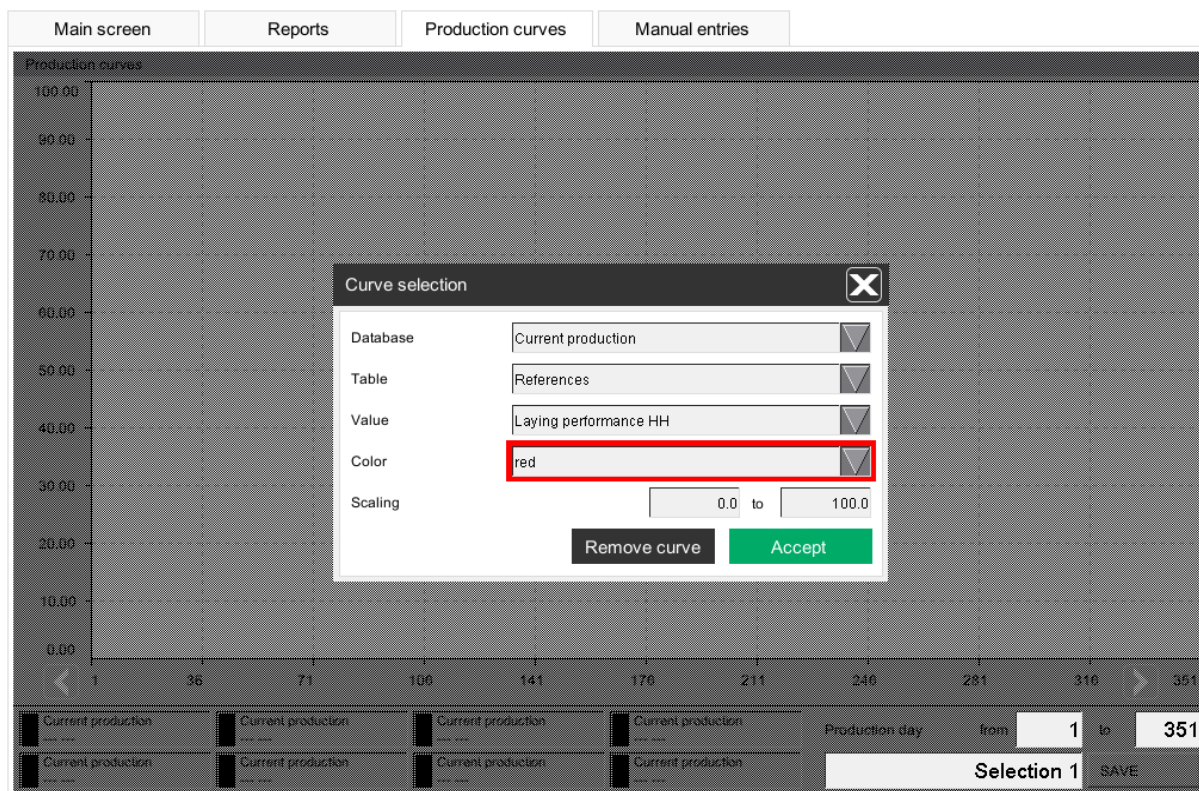


Figure 3-14: Creating curves

3. Production day from – to

To display the values of a limited period, enter the first and last production day for which you want to see data.

4. Saving a composition

In the lower right-hand part of the window, you can add a name for your selection and store it permanently by clicking on "**Save**".

3.4 Manual entries

Clicking on the **"Manual entries"** tab 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 days have not been entered on the same day, the values can be entered belatedly via the field **Date** in the lower right corner of the screen. Add the entered values to the database by clicking on the **"Save"** button.

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

Main screen		Reports		Production curves		Manual entries	
Egg class	Number	Egg mass kg	Price pcs.	Price total	Medicine	Volume ml	
Egg class 0	0	0.00	0.00	0.00	Type A	0.00	
Egg class 1 (XL)	0	0.00	0.00	0.00	Type B	0.00	
Egg class 2 (L)	0	0.00	0.00	0.00	Type C	0.00	
Egg class 3 (M)	0	0.00	0.00	0.00	Type D	0.00	
Egg class 4 (S)	0	0.00	0.00	0.00	Reason	—	
Egg class 5	0	0.00	0.00	0.00	Save manual entries		
Egg class 6	0	0.00	0.00	0.00	Date : 08.02.2024 ... < > SAVE		
Body-checked eggs	0	0.00	0.00	0.00			
Cracked eggs	0	0.00	0.00	0.00			
Soiled eggs	0	0.00	0.00	0.00			

Figure 3-15: Manual input of egg numbers

- **Egg classes**

In the left-hand part of the menu, you can enter the total number of eggs for the egg classes and the unit price.

- **Medicine**

The right-hand part of the menu allows recording of the administered medicines including quantity and reason.

4 Settings

To access the settings, click on the tab icon for **Production data – Settings**. Under this tab, you can configure and monitor production data and define bird management settings.

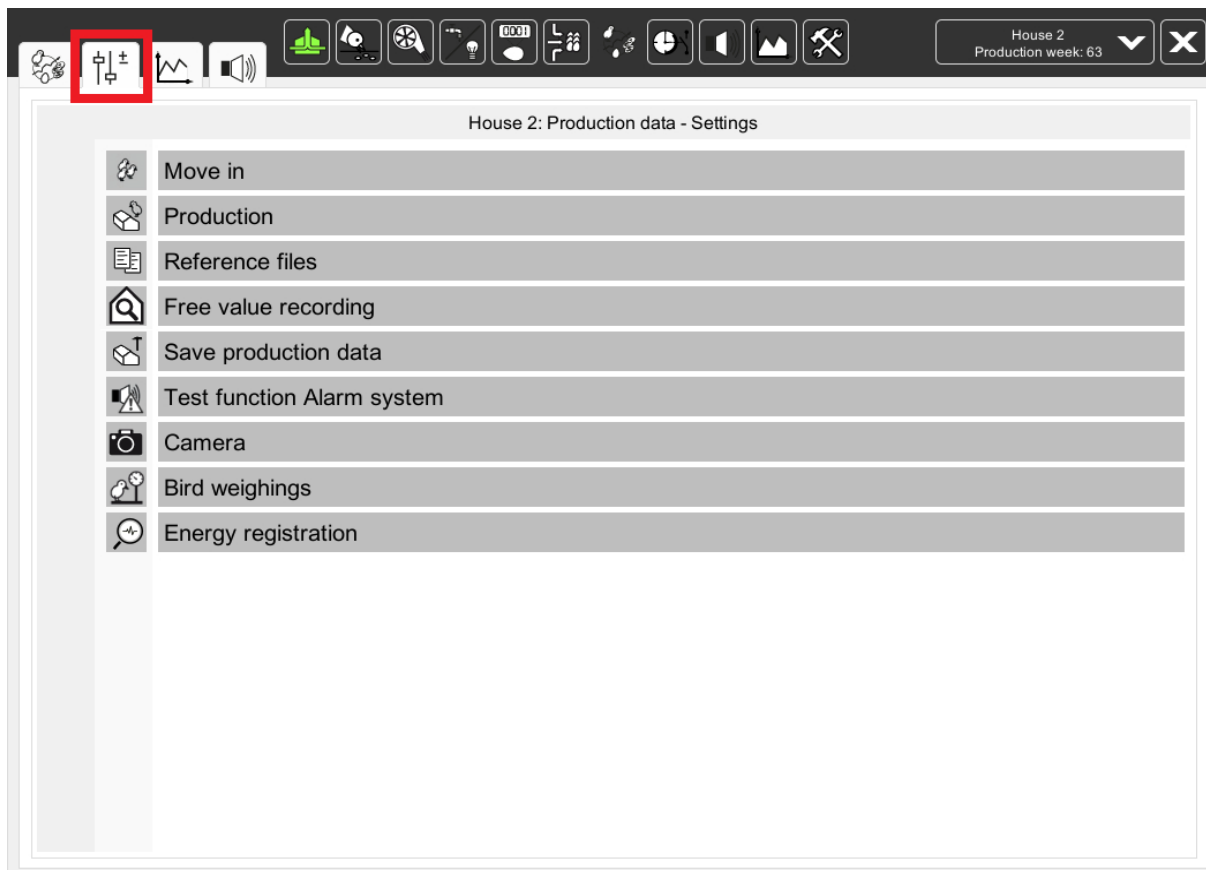


Figure 4-1: Opening the production data settings

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.

NOTICE!

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.

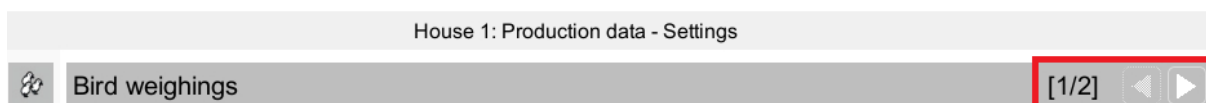


Figure 4-2: Switching between the screens

5 Moving in and production

To access the bird management settings, open the **"Move in"** and **"Production"** menus under the **"Production data settings"**.



Figure 5-1: Opening the move in / production settings

The next chapters refer to the production data settings **"Move in"** and **"Production"**, which can be accessed using the menu points of the same name.



Figure 5-2: Move in

Production					
Production data					
Birds moved in on	09.02.2024	Number of birds	20000		
Start production at	...	09.02.2024	with production day	1	Start production Finish production House in pause mode
Finish production at	...	24.01.2025	Production range	350 Days	
Start production week	Monday		Close day at	23:45 Clk	
Flock identification					
Production monitoring					
Monitoring house temperature after end of production		Duration of monitoring	24 h	Remaining time	OFF
Finished		Max. exceeding of house temp. to outside temp.	10.0 °C	Current	-10.0 °C
Monitoring water consumption after end of production		Duration of monitoring	24 h	Remaining time	OFF
Finished		Maximum flow	60.0 l/h	Current	0.0 l/h

Figure 5-3: Production

5.1 Moving birds in

To move birds in and to define the move-in date, open the **"Move in"** menu under the production data settings, which leads to the entry mask of the bird management settings.

Move in

Birds moved in on

... 09.02.2024 Move in 20000

01	02	03	04
5000	5000	5000	5000

Birds moved in 20000 Losses total 0 Dead birds total 0

Number of birds in the house 20000 Losses today 0 Dead birds today 0

Figure 5-4: Moving birds in

1. Define the move-in date

... 09.02.2024

Clicking on the button with the three dots opens a calendar in which you can enter the move-in date.

FEBRUARY 2024

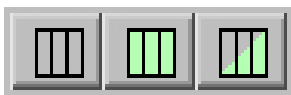
MO	TU	WE	TH	FR	SA	SU
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

✓ ✗

Figure 5-5: Defining the move-in date

2. Select sections

If the birds are not distributed in all sections but should only be moved into certain tiers, you can activate/deactivate certain sections by mouse click. The deactivated sections are greyed out.



You can also change the selection of activated sections using the three function keys ("**No selection**", "**Select all**" and "**Invert selection**") in the top right corner of the screen.

3. Enter the number of birds

In the selection menu, select the item "**Move in**", enter the number of birds and confirm your input by pressing "**Enter**".



Figure 5-6: Entering the number of birds

4. Move birds in



Click on the green arrow to distribute the birds over the selected sections.



NOTICE!

If you entered an incorrect bird number by accident, use the item "**Move out**" in the selection menu to correct your input. This option is only available when production has started.



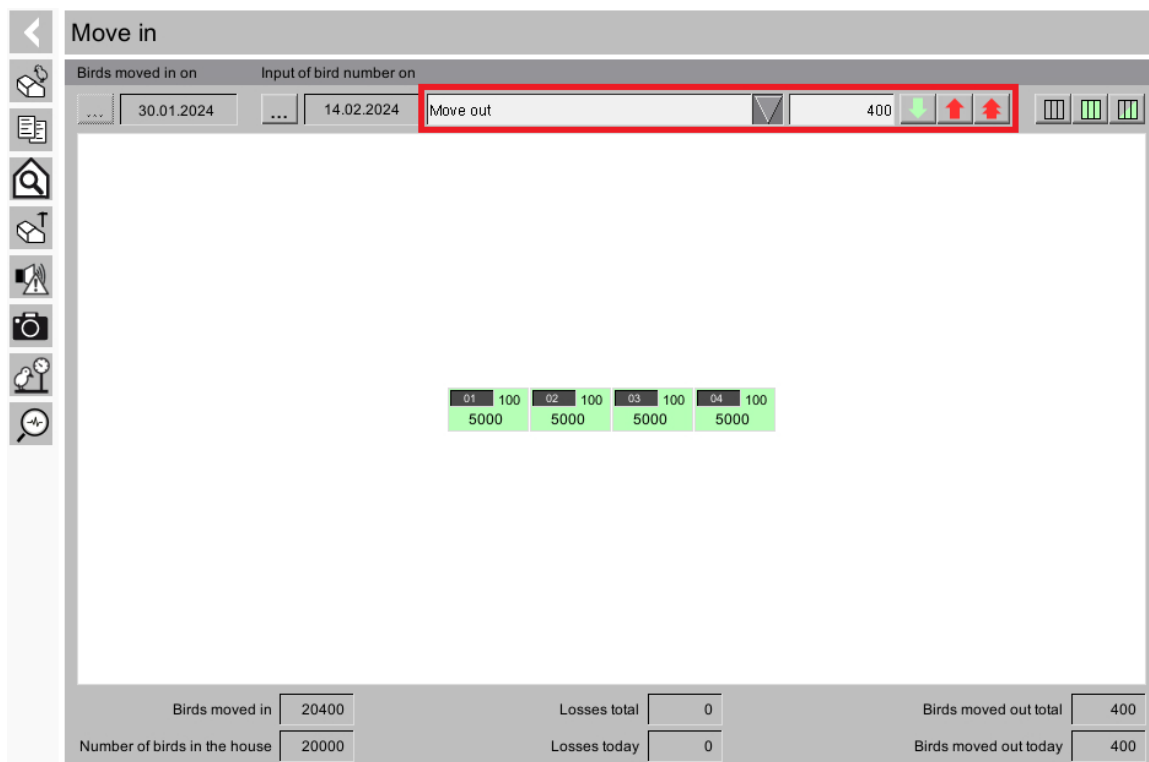


Figure 5-7: Moving birds out



Enter the number of birds you want to move out and confirm this input by pressing "**Enter**". Then click on the green arrow.

In the top right corner of the affected sections, the number of moved-out birds appears and remains visible until the end of the production day. Use the red arrows to undo the last move-out or the move-out of the entire production day.

5.2 Starting production

To define the move-in date and start production, open the "**Production**" menu under the production data settings. In this menu, you can start and stop production or switch the house to pause mode.

Figure 5-8: Production start settings

NOTICE!

The settings for "**Birds moved in on**" and "**Number of birds**" are retrieved from the **Move in** menu and cannot be changed here.

1. Start production at

Since the move-in date and the production start are not always identical, the date on which production should start can be added using a calendar. Open this calendar by clicking on the button with the three dots.

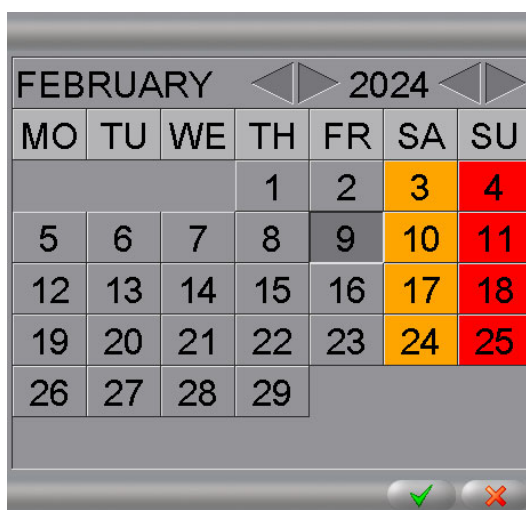


Figure 5-9: Production start: defining a date

2. with production day

If a production cycle is started even though no birds are in the house, the calendar day can be assigned a production day. This can be helpful where the house is pre-heated or where feed is delivered to the house and must match production. The move-in date is usually day "0". Accordingly, the house is heated and the feeding system is filled on day "-1".

3. Start production week

On many farms, the production week starts and ends on the same day of the week, e.g. Thursday. To adjust reports accordingly, enter the day of the week on which a new production week starts here.

4. Close day at

To ensure that the data recorded for the day can be saved in the database at an individually defined time, enter the time at which the day should close 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 at

Enter the expected move-out date in the field "Finish production at". If the move-out date changes, this input can be adjusted even during production. The necessary feed quantity can be calculated in advance based on the end of production, for example.

Enter the date using the calendar, which opens after clicking on the button with the three dots.

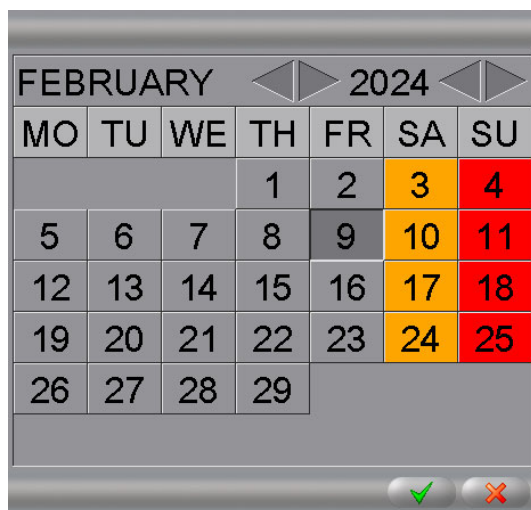


Figure 5-10: Production end: defining a date

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.

NOTICE!

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

8. Start production

Once all inputs have been made, start production by clicking on the **"Start production"** button. It is only now that fans and other modules will become active and react according to the configured data.

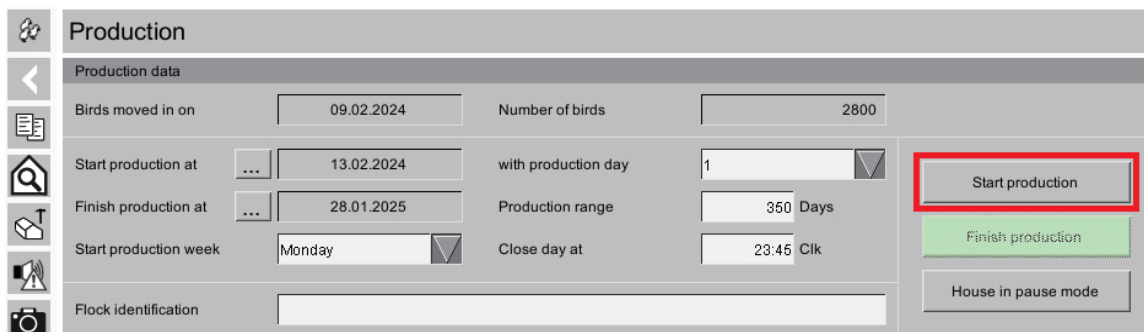


Figure 5-11: Starting production

Immediately after starting production, you can move birds, enter dead birds, etc. The corresponding steps are explained below.

NOTICE!

Each time you enter a date for a new production start, a new database for the respective batch is created. If you simply need to interrupt production, do not enter a different start date than the one you entered previously. Otherwise all accumulated values are reset to zero.

5.3 Moving birds

If it becomes necessary to move birds or if the symmetric distribution of bird numbers done by amacs is not sufficient, you can also move birds individually. To move birds, open the **"Move in"** menu under the production data settings, which leads to the entry mask of the bird management settings.

Move in

Birds moved in on: 30.01.2024 Input of bird number on: 15.02.2024

Moving 5000 ✓

01 5000 02 5000 03 5000 04 5000

Birds moved in: 20400 Losses total: 0 Birds moved out total: 400
 Number of birds in the house: 20000 Losses today: 0 Birds moved out today: 400

Figure 5-12: Moving birds

1. Select "Moving"

In the selection menu, select the item **"Moving"** (figure 5-12). This option is only available when production has started.

2. From – to

Click on the source section, **hold the left mouse button** and select the target cage section to which you want to move some of the birds. As shown in figure 5-12, the source section is marked yellow and the target section is marked green.

3. Move birds

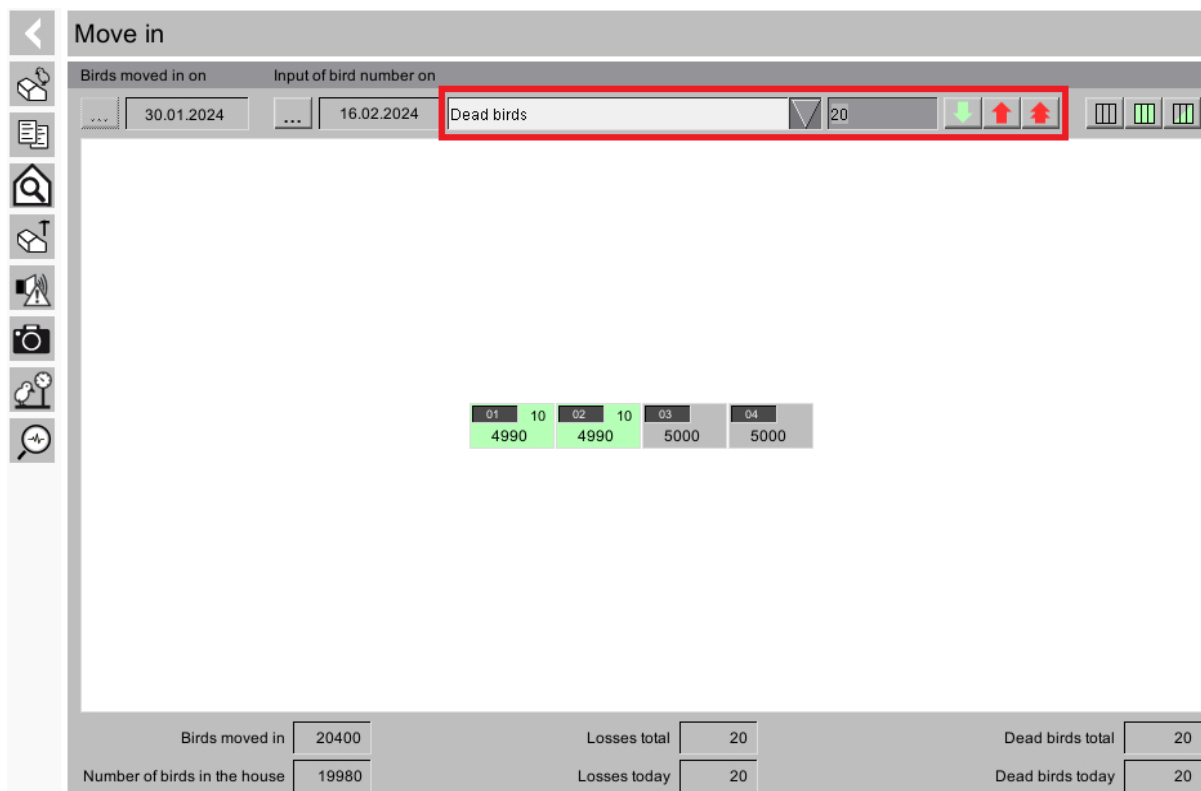
Enter the number of birds to be removed from this section and confirm by pressing **"Enter"**. This change is accepted by clicking on the checkmark next to the number.

Moving 5000 ✓

Figure 5-13: Moving birds – Number of birds

5.4 Entering dead birds

The daily management tasks include recording and entering losses per section in the database. To enter dead birds, open the **"Move in"** menu under the production data settings, which leads to the entry mask for bird management settings.



Move in

Birds moved in on: 30.01.2024 Input of bird number on: 16.02.2024

Dead birds

01	10	02	10	03	04
4990	4990	5000	5000		

Birds moved in: 20400 Losses total: 20 Dead birds total: 20
 Number of birds in the house: 19980 Losses today: 20 Dead birds today: 20

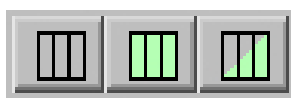
Figure 5-14: Entering dead birds

1. Select "Dead birds"

In the selection menu, select the item **"Dead birds"** (figure 5-14). This option is only available when production has started.

2. Select sections

If the birds are not distributed in all sections but should only be moved into certain tiers, you can activate/deactivate certain sections by mouse click. The deactivated sections are greyed out.



You can also change the selection of activated sections using the three function keys (**"No selection"**, **"Select all"** and **"Invert selection"**) in the top right corner of the screen.

3. Number of dead birds

Enter the number of birds to be removed and confirm by pressing **"Enter"**. This change is accepted by clicking on the green arrow next to the number field.

In the top right corner of the affected sections, the number of dead birds appears (figure 5-14) and remains visible until the end of the production day.

Figure 5-15: Entering the number of birds

Use the red arrows to undo the last input or the inputs for the entire production day.

5.5 Moving birds in later

To move birds in at a later date, open the **"Move in"** menu under the production data settings, which leads to the entry mask for bird management settings.

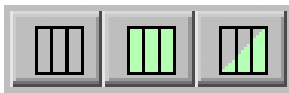
Figure 5-16: Moving birds in later

1. Select "Move in"

In the selection menu, select the item **"Move in"** (figure 5-16).

2. Select sections

If the birds are not distributed in all sections but should only be moved into certain tiers, you can activate/deactivate certain sections by mouse click. The deactivated sections are greyed out.



You can also change the selection of activated sections using the three function keys ("**No selection**", "**Select all**" and "**Invert selection**") in the top right corner of the screen.

3. Enter the number of birds

Enter the number of birds and confirm the input by pressing "**Enter**".



Figure 5-17: Entering the number of birds

4. Move birds in



Click on the green arrow to distribute the birds over the selected sections.



NOTICE!

If you entered an incorrect bird number by accident, use the item "**Move out**" in the selection menu to correct your input. This option is only available when production has started.



5.6 Moving birds out earlier

To move birds out earlier, open the **"Move in"** menu under the production data settings, which leads to the entry mask for bird management settings.

The screenshot shows the 'Move in' interface. At the top, there's a header 'Move in'. Below it, there are two date fields: 'Birds moved in on' (30.01.2024) and 'Input of bird number on' (14.02.2024). A dropdown menu is open, showing 'Move out' selected. To the right of the dropdown, there's a numerical input field with '400' and three arrow buttons (green down, red up, red up). Below the dropdown, there's a table with four columns labeled '01', '02', '03', and '04'. Each column has a '100' in the top row and '5000' in the bottom row. At the bottom of the interface, there are four summary fields: 'Birds moved in' (20400), 'Losses total' (0), 'Birds moved out total' (400), and 'Number of birds in the house' (20000). There are also 'Losses today' (0) and 'Birds moved out today' (400) fields.

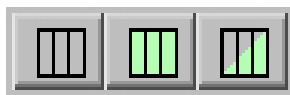
Figure 5-18: Moving birds out earlier

1. Select "Move out"

In the selection menu, select the item **Move out** (figure 5-18).

2. Select sections

If the birds are not distributed in all sections but should only be moved into certain tiers, you can activate/deactivate certain sections by mouse click. The deactivated sections are greyed out.



You can also change the selection of activated sections using the three function keys ("**No selection**", "**Select all**" and "**Invert selection**") in the top right corner of the screen.

3. Enter the number of birds

Enter the number of birds and confirm the input by pressing **"Enter"**.

The image shows a close-up of the input field. It contains the text 'Move out' and a dropdown arrow. To the right of the dropdown, there's a numerical input field with '400' and three arrow buttons (green down, red up, red up).

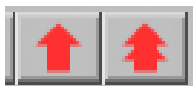
Figure 5-19: Entering the number of birds: moving out



Click on the green arrow. In the top right corner of the affected sections, the number of moved-out birds appears and remains visible until the end of the production day.

Use the red arrows to undo the last move-out or the move-out of the entire production day.

5.7 Undoing 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, which are enabled when entering e.g. dead or ill birds, etc.

The following entries can be undone with these function keys:

1. the last entry,
2. today's entries.

5.8 Finishing production

To finish production, open the **"Production"** menu under the production data settings. In this menu, production can be started, stopped or the house can be switched to pause mode.

Figure 5-20: Finishing production

NOTICE!

All controlled mechanisms, including ventilation, are stopped when production has been completed.

Remember to **switch the house to pause mode**, if necessary, so the values entered for "House in pause" remain active.



WARNING!

Risk of asphyxiation for humans and birds

If production is stopped and there are still birds in the house, large concentrations of harmful gases may accumulate.

- Ensure adequate fresh air supply to prevent the accumulation of harmful gases.
- Do not enter the house or use adequate protective gear in case harmful gases have accumulated!

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.

- 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.

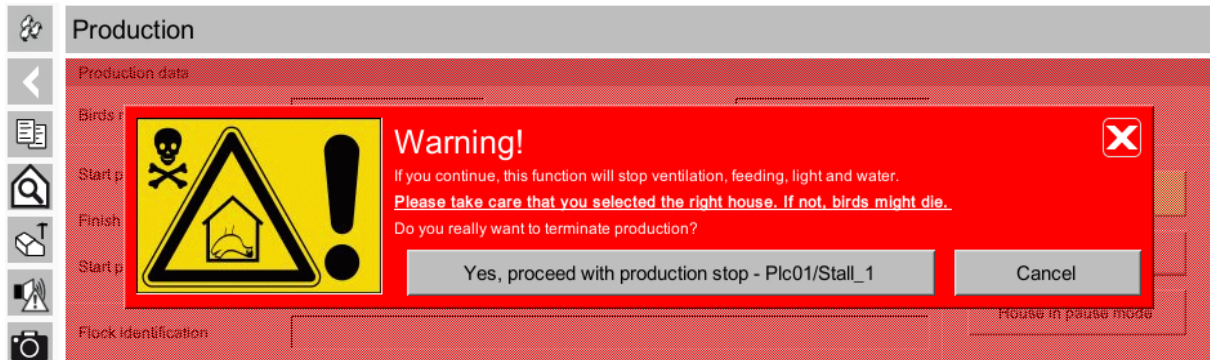


Figure 5-21: Warning: finishing production

5.9 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 expired and no alarm was generated;
- production is restarted; or
- the button "**Stop monitoring**" on the production main screen is actuated.

5.9.1 Settings

To activate monitoring, open the "**Production**" menu under the production data settings. Monitoring values and settings can be found in the "**Production monitoring**" submenu.

Production monitoring			
Monitoring house temperature after end of production		Duration of monitoring	24 h
Active		Max. exceeding of house temp. to outside temp.	10.0 °C
		Remaining time	23:57:28
		Current	-10.0 °C
Monitoring water consumption after end of production		Duration of monitoring	24 h
Active		Maximum flow	60.0 l/h
		Remaining time	23:57:28
		Current	0.0 l/h

Figure 5-22: Monitoring after the 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, which would lead to permanent deactivation of this function.

- **Remaining time**

During production, this field indicates that monitoring is switched **OFF**. After the completion of production, the remaining monitoring time is displayed. If one of the monitoring times has expired, the field shows "**00:00:00**". If both monitoring times have expired, the fields show the text "**OFF**".

- **Maximum values**

House temperature: The house temperature may exceed the outside temperature by no more than the value "**Max. exceeding of house temp. to outside temp.**" during the monitoring time.

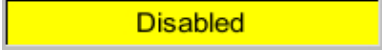
Water: The current water consumption in litres per hour must not exceed the value "**Maximum flow**". When monitoring water consumption, the valve is automatically opened for the duration of the check. If this is not desired, set the monitoring time to 0 h or deactivate the monitoring function in the 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.

5.9.2 Monitoring status

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

	Displayed when production has finished and the monitoring times have expired.
	Displayed when production has finished and the monitoring times have not yet expired.
	Displayed when monitoring has been deactivated by the alarm settings.
	Displayed in the event of a monitoring alarm.
	Displayed during ongoing production.



NOTICE!

If an alarm is detected, the error message

"Monitoring house temperature after end of production" or

"Monitoring water consumption after end of production"

is displayed in the alarm line.

5.9.3 Main screen

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

The monitoring display contains the same information as shown in the settings. However, it is not possible to configure settings because the displayed values are only provided for information. Additionally, a button for ending monitoring can be used to stop monitoring prematurely.



NOTICE!

The button is protected against inadvertent actuation by a security prompt.

The screenshot shows the AMACS main screen with a top toolbar and a navigation bar. The main content area displays production data for the week of 09.07.2024 to 15.07.2024, indicating 'NO PRODUCTION!'. Below this is a table with production data for two houses. A red box highlights the monitoring section for house 1, which shows an 'Alarm' status for 'Monitoring house temperature after end of production'. The alarm details include a duration of 24 hours, a remaining time of 22:05:00, and a current temperature of 0.0 °C. The text 'BIRDS IN HOUSE !?' is displayed in red. A 'Stop monitoring' button is visible at the bottom of the monitoring section. The bottom of the screen features a 'Production comment' field and a 'Save' button.

No.	1. Weight / Target / Ø	Daily weight gain	Uniformity	Standard deviation	2. Weight / Target / Ø	Daily weight gain	Uniformity	Standard deviation
1	0 g / 0 g / 0 g	0 g	0 %	0 g				
2	0 g / 0 g / 0 g	0 g	0 %	0 g				

Monitoring house temperature after end of production		Duration of monitoring	Remaining time
Alarm	Max. exceeding of house temp. to outside temp.	24 h	22:05:00
			Current 0.0 °C

Monitoring water consumption after end of production		Duration of monitoring	Remaining time
Active	Maximum flow	24 h	22:05:00
			Current 0.0 l/h

BIRDS IN HOUSE !? Stop monitoring

Production comment	Date	Time
	09.07.2024	14:52:27~

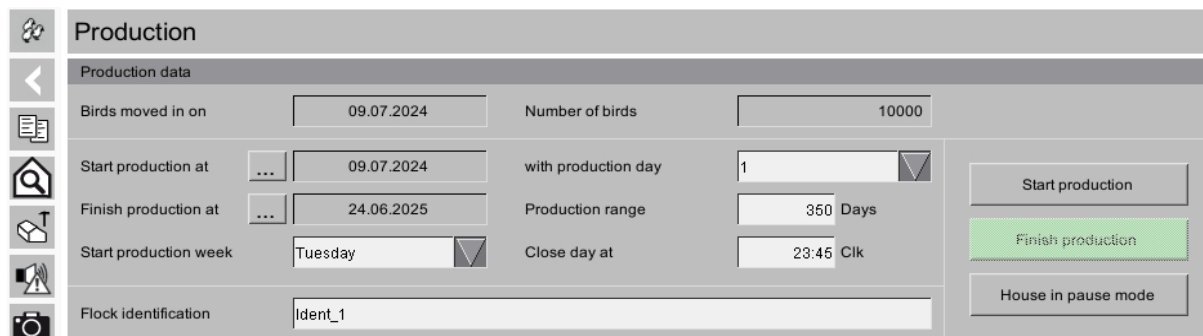
Save

Figure 5-23: 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.

5.10 House in pause mode

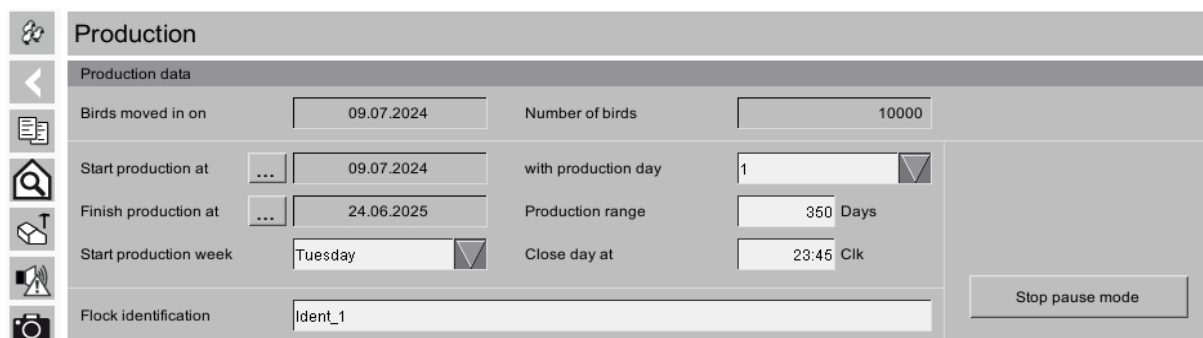
To activate the pause mode, open the **"Production"** menu under the production data settings. In this menu, production can be started, stopped or the house can be switched to pause mode.



Production			
Production data			
Birds moved in on	09.07.2024	Number of birds	10000
Start production at	09.07.2024	with production day	1
Finish production at	24.06.2025	Production range	350 Days
Start production week	Tuesday	Close day at	23:45 Clk
Flock identification	Ident_1		
			Start production Finish production House in pause mode

Figure 5-24: Activating the pause 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".



Production			
Production data			
Birds moved in on	09.07.2024	Number of birds	10000
Start production at	09.07.2024	with production day	1
Finish production at	24.06.2025	Production range	350 Days
Start production week	Tuesday	Close day at	23:45 Clk
Flock identification	Ident_1		
			Stop pause mode

Figure 5-25: Deactivating the pause mode

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

**⚠ WARNING!****Risk of asphyxiation for humans and birds**

If production is stopped and there are still birds in the house, large concentrations of harmful gases may accumulate.

- Ensure adequate fresh air supply to prevent the accumulation of harmful gases.
 - Do not enter the house or use adequate protective gear in case harmful gases have accumulated!
-

6 Reference files

To load reference data and specify default production values, open the **"Reference files"** menu under the production data settings.



Reference files

Figure 6-1: Opening reference files settings

Production Reference files [1/1] ⏪ ⏩

Reference curves

Hatching date: 11.07.2024 ... Age: (1/0 - 7)

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
Body-checked eggs	63 g	73 g	68	0.00
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

Figure 6-2: Reference files

6.1 Reference curves

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

6.1.1 Loading reference curve

Reference curves

Hatching date: 11.07.2024 ... Age: (1/0 - 7)

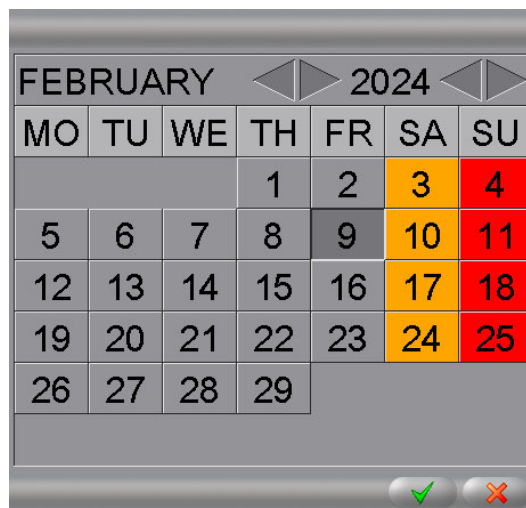
Reference file: Bovans Goldline ▾ **Load**

Figure 6-3: Loading a 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 6-4: Hatching date



2. Reference file

You can select different reference files provided for the different breeds from the selection field **"Reference file"**.

3. Load reference values

Activate the stored reference file by clicking on the **"Load"** button. The name of the loaded reference file is displayed instead of the selection field.

6.1.2 Deleting reference curve

If you loaded an incorrect reference file by mistake, you can deactivate it using the **"Delete"** button. After deleting the reference file, the input fields for loading a new reference file are displayed again.

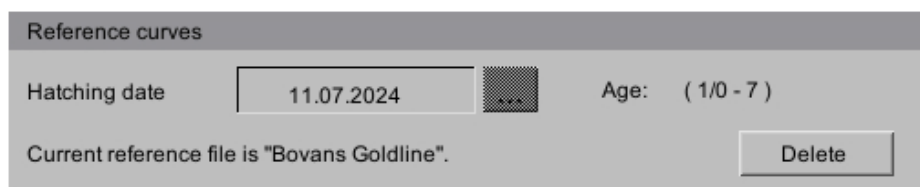


Figure 6-5: Deleting a reference curve

6.2 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 3.4 "Manual entries".

Egg class	Weight from to		aver.	Egg price
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
Body-checked eggs	63 g	73 g	68	0.00
Cracked eggs	63 g	73 g	68	0.00
Soiled eggs	63 g	73 g	68	0.00

Figure 6-6: Defining egg classes based on weight

NOTICE!

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

6.3 House parameters

The "**House parameters**" can be used to easily make visual changes to the display of the images.

Figure 6-7: House parameters

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	

- The position of the house on the module screens ("X offset house position" and "Y offset house position" as well as the height and width of the house on 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.
- Additionally, the broken visualisation of the feed columns can be selected here.

7 Free value recording

To perform special analyses, open the **"Free value recording"** menu under the production data settings.



Free value recording

Figure 7-1: Opening the free value recording settings

Free value recording										
Global variables				Value	Values : last minute			Values : last hour		
					Average	Min.	Max.	Average	Min.	Max.
0.	Pic01_Stall_1_Z2TempCalc	...		28.0	28.0	28.0	28.0	28.0	28.0	28.0
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

Figure 7-2: 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.



Global variables		Value	Values : last minute			Values : last hour		
			Average	Min.	Max.	Average	Min.	Max.
0.	Plc01_Stall_1_Z1TempCalc	...	33.6	33.6	33.6	29.2	28.0	33.6
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								

Variablenliste			
//localhost/Plc01/Stall_1/Production/ProductionData/R_HouseValue0_Name			0.0
NAME	TYPE		
IOOUT_Plc01_Stall_1_Production_Feeding_Weigh1_CalibrationSet	ULINT		0.0
IOOUT_Plc01_Stall_1_Production_Feeding_Weigh1_TaraSet	ULINT		0.0
IOOUT_Plc01_Stall_1_Production_Feeding_Weigh2_CalibrationSet	ULINT		0.0
IOOUT_Plc01_Stall_1_Production_Feeding_Weigh2_TaraSet	ULINT		0.0
Plc01_Stall_1_10_AHBirds	DINT		0.0
Plc01_Stall_1_10_Birds	DINT		0.0
Plc01_Stall_1_11_AHBirds	DINT		0.0
Plc01_Stall_1_11_Birds	DINT		0.0
Plc01_Stall_1_12_AHBirds	DINT		0.0
Plc01_Stall_1_12_Birds	DINT		0.0
Plc01_Stall_1_1_AHBirds	DINT		0.0
Plc01_Stall_1_1_Birds	DINT		0.0
Plc01_Stall_1_2_AHBirds	DINT		0.0
Plc01_Stall_1_2_Birds	DINT		0.0
Plc01_Stall_1_3_AHBirds	DINT		0.0
Plc01_Stall_1_3_Birds	DINT		0.0
Keine Variable			0.0

Figure 7-3: Free value recording: selecting inputs

8 Saving production data

To save settings and production data permanently on the FarmController's hard disk, open the **"Save production data"** menu under the production data settings.



Figure 8-1: Save production data settings

 NOTICE!

ALL settings, including house-specific settings, are saved and/or reloaded when saving and restoring the production data.

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

1. On the first screen, you can save the current settings and load saved settings.
2. On the second screen, you can load standard settings.

8.1 Saved settings

Under **"Saved settings"**, there are 8 memory slots under which you can save settings.

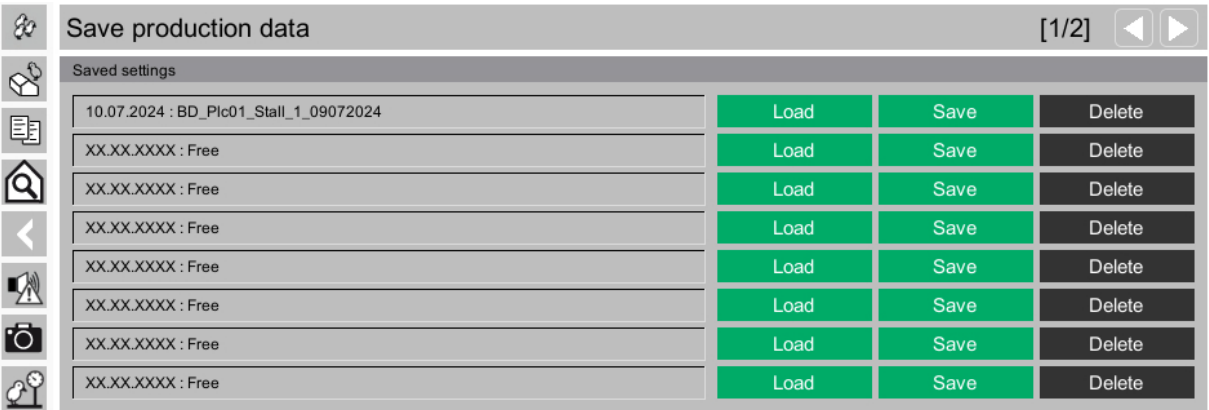


Figure 8-2: Saving production data

 NOTICE!

As all settings made in advance will be changed, select this option with care. You will also be asked to confirm your settings via a security prompt.

- **Save:**
Click on the **"Save"** button to save all the menu settings stored in the various menus.

- **Load:**
Click on the "**Load**" button to reload the settings that were previously saved.
- **Delete:**
Click on the "**Delete**" button to delete the saved entries.

8.2 Standard settings

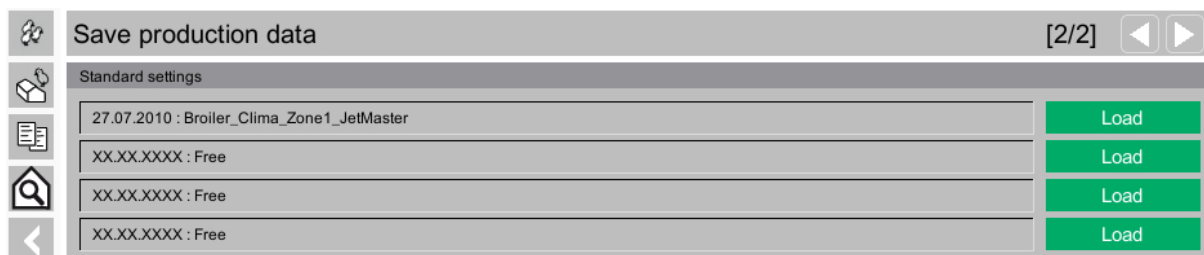


Figure 8-3: Standard settings

Under "**Standard settings**", 4 memory slots are visible, from which you can load standard settings saved in the Amacs system. Clicking on the "**Load**" button activates the standard settings.

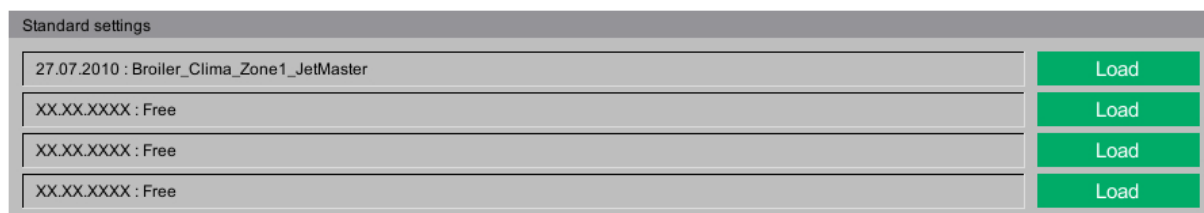


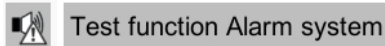
Figure 8-4: Loading standard settings

NOTICE!

As all settings made in advance will be changed, select this option with care. You will also be asked to confirm your settings via a security prompt.

9 Test function alarm system

In each house, the operator can easily test whether the alarm relay is triggered, with the purpose of checking the alarm chain up to the phone call made by the autodialler. To do this, open the **"Test function alarm system"** menu under the production data settings.



Test function Alarm system

Figure 9-1: Opening the test function alarm system settings

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 test, the alarm relay is triggered and the following alarm message is displayed:

PlcXX HouseXX: Test function alarm system

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

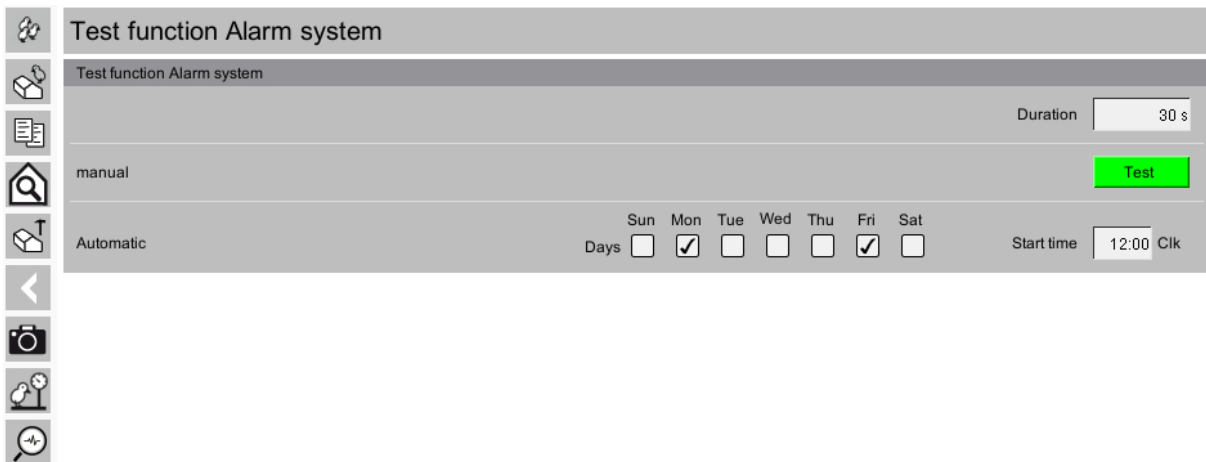


Figure 9-2: Test function alarm system

- **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 9-3: Maintenance instructions alarm system

10 Camera

 NOTICE!

Before purchasing cameras, consult a technician to discuss compatibility.

AMACS is able to display images from up to 9 cameras (webcams). To access the settings, open the **"Camera"** menu under the production data settings.



Figure 10-1: Opening the camera settings

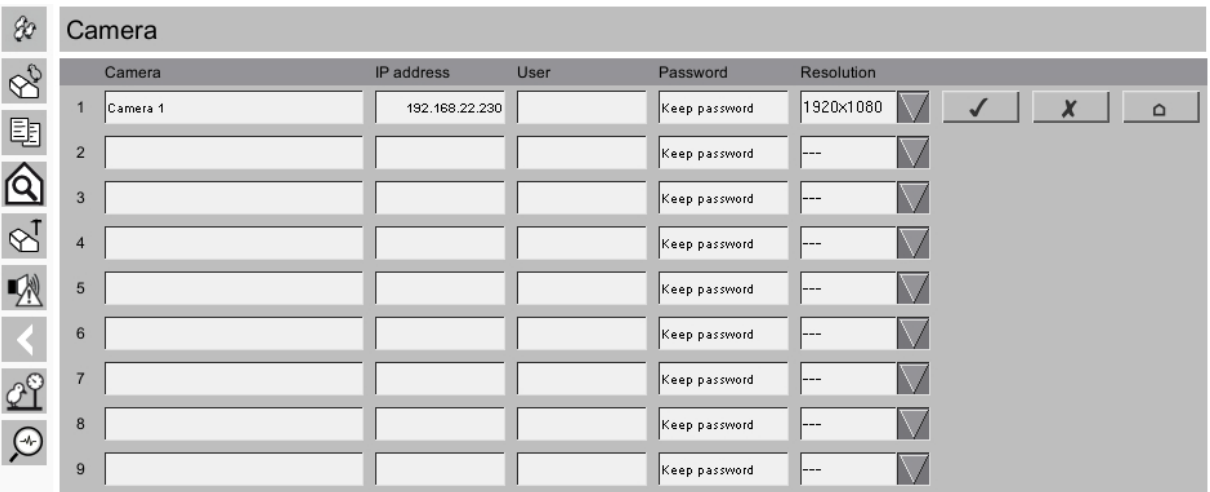


Figure 10-2: Camera

You can indicate a **description**, the **IP address**, the **user name** and camera's **password** where authentication is necessary and the **resolution** for each camera. When selecting "---" as resolution, the image is displayed in the camera's standard size.



If you change the settings of the respective cameras, you must check and save these settings by clicking on the **checkmark** next to the settings. Clicking on the **X** deletes the camera. Service technicians can use the button with the **house icon** to go directly to the camera's web interface.

You can control and update the camera image using the buttons in the bottom left corner (figure 10-3).



Figure 10-3: Menu to display the camera

11 Bird weighing

11.1 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 searched weight is saved for bird weighing, which can be used in a breeder house for weighing males and females on the same scale, a second scale is displayed in each case.

No changes to the settings can be made here.

House 1
Flock: ▼

Main screen Reports Production curves Manual entries

Production data

Current production week from 29.01.2024 up to 04.02.2024

Birds moved in on: 30.01.2024 Birds moved in: 12000 Start production at: 30.01.2024 Flock: 01.02.2024

Current production day: 0 Current production week: 1 Current life week: 1 Close day at: 23:45 Clk

Closing ☐ Save data ☐ Reset data ☐ Optical egg counters ☐ Error: 0

No.	1. Weight / Target / Ø	Daily weight gain	Uniformity	Standard deviation	2. Weight / Target / Ø	Daily weight gain	Uniformity	Standard deviation
1	70 g / 81 g / 70 g	11 g	38 %	11 g	70 g / 81 g / 70 g	10 g	40 %	12 g
2	70 g / 81 g / 70 g	10 g	40 %	12 g	70 g / 81 g / 70 g	10 g	40 %	12 g

Production comment

Date 01.02.2024 Time 08:31:18* Save

Figure 11-1: Main screen production



If more than 12 bird scales have been configured, the overview screen shows two arrow buttons at the right-hand side next to the scales. These buttons can be used to display all other scales.

11.2 Settings

To configure the bird scales, open the "**Bird weighings**" menu under the production data settings.



Bird weighings

Figure 11-2: Opening the bird weighings settings



NOTICE!

Depending on the number of scales installed in a house, information for each scale is displayed in the following menu:

[5/8]



All settings relating to bird weighing can be found on up to **8** different settings screens. Use the arrows at the top right to switch between the screens.

1. On the first screen or the first screens (if more than 6 bird scales are installed in the house), an overview of the current values of the scales and their standard settings are displayed.
2. On the last screen or the last screens (if more than 6 bird scales are installed in the house), the calculations of all bird scales can be adjusted and the load cells calibrated.

11.2.1 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.



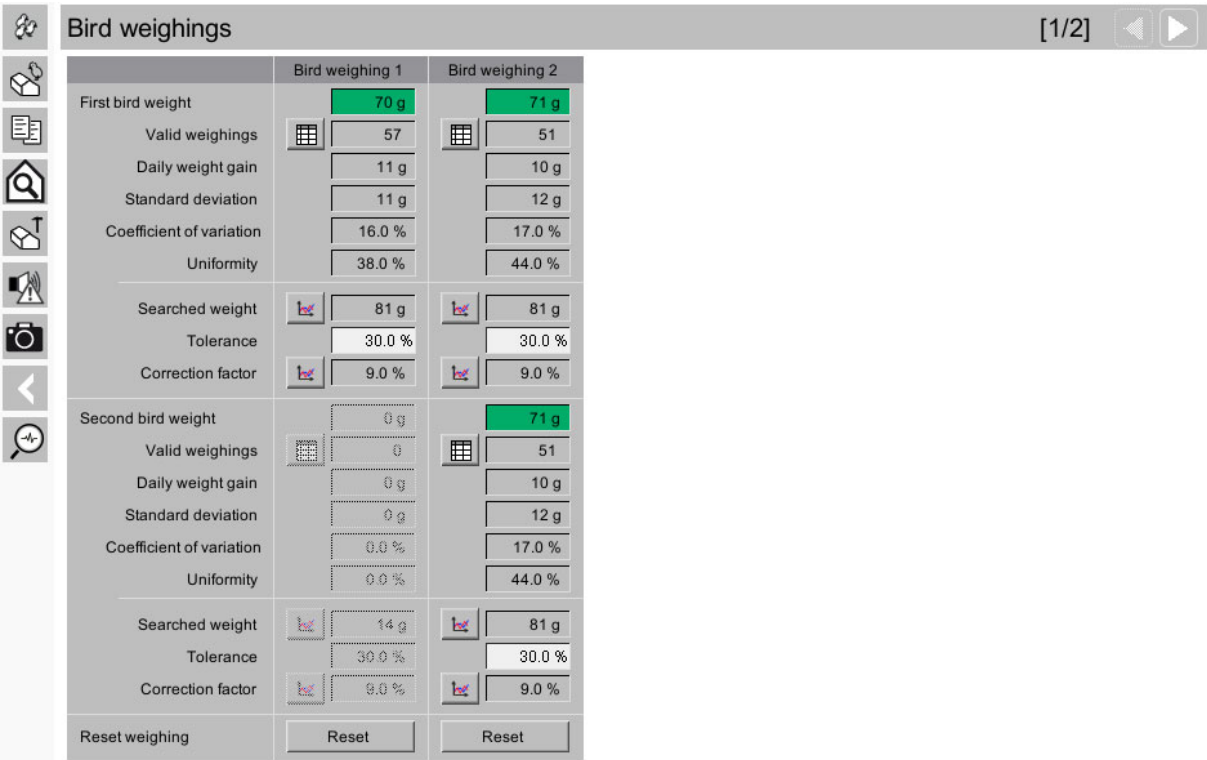


Figure 11-3: Overview of bird scale data

11.2.1.1 Statistical values

First bird weight		70 g		71 g
Valid weighings		57		51
Daily weight gain		11 g		10 g
Standard deviation		11 g		12 g
Coefficient of variation		16.0 %		17.0 %
Uniformity		38.0 %		44.0 %

Figure 11-4: 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.



Click on the table icon to open a window displaying the last 20 valid weighings including weight, time and date for control purposes.

Figure 11-5: Valid weighings

Bird weight 1 ✕			
Valid weighings (First bird weight)			
No.	Weight	Time	Date
5	101 g	11:33:49~	25.07.2024
4	76 g	11:23:46~	25.07.2024
3	76 g	10:30:18~	25.07.2024
2	101 g	10:26:05~	25.07.2024
1	76 g	10:22:09~	25.07.2024

- **Daily weight gain**

The daily weight gain indicates how much weight the birds gained weight in the past 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 mean, i.e. the standard deviation is expressed here as a 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.

11.2.1.2 Bird-specific scale setting

Searched weight		81 g		81 g
Tolerance		30.0 %		30.0 %
Correction factor		9.0 %		9.0 %

Figure 11-6: Standard settings scale

- **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 by clicking on the button with the curve icon. This opens a new window.



NOTICE!

The values in this curve can be changed and saved in the same way as described in more detail in the "**Set curves**" chapter of the manual "**99-94-0420 AMACS – General operation**".

- **Tolerance**

When weighing the birds, the scale always compares the measured weight with the current searched weight. Entering e.g. 30 % specifies that weighings that are measured within this tolerance are accepted as valid. 30 % is the default tolerance.

- **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 by clicking on the button with the curve icon. This opens a new window.



NOTICE!

The values in this curve can be changed and saved in the same way as described in more detail in the "**Set curves**" chapter of the manual "**99-94-0420 AMACS – General operation**".

11.2.1.3 Resetting weighing

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

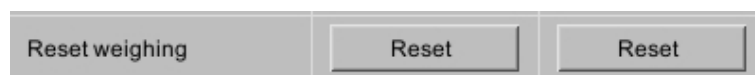


Figure 11-7: Resetting a weighing

11.2.2 Calculation

Bird weighings [2/2]							
General settings							
Weighing from		08:00 to 20:00 Clk		Calculation cycle		50	
☐ Registration upon increase of weighing value ☒ Registration upon reduction of weighing value				Range for uniformity around average value		10.0 %	
				Setting Curves Searched weight to		5000 g	
No.	Type	Raw value	Tare value	Calib. value	Calibration weight	Tare weight	Weighing value
1	DMS	0	0	1000	1.00 kg	0.09 kg	0.093 kg
	☒ First bird weight ☐ Second bird weight			Limit area for stable weighing value: Lower 100 g Top 300 g			
2	0-10 Volt	0.000 V	0.000 V	1.000 V	1.00 kg	0.00 kg	0.000 kg
	☒ First bird weight ☐ Second bird weight			Limit area for stable weighing value: Lower 100 g Top 300 g			
3	DMS	0	0	1000	1.00 kg	0.00 kg	0.000 kg
	☒ First bird weight ☐ Second bird weight			Limit area for stable weighing value: Lower 100 g Top 300 g			

Figure 11-8: Bird weighings: calculation, calibration

General settings			
Weighing from		08:00 to 20:00 Clk	
☒ Registration upon increase of weighing value ☒ Registration upon reduction of weighing value		Calculation cycle 50	
		Range for uniformity around average value 10.0 %	
		Setting Curves Searched weight to 5000 g	

Figure 11-9: Calculation

- Weighing from (time of weighing)**
 The period in which birds should be weighed is entered in the fields "Weighing from - to".
- Registration upon**
 Use the settings "Registration upon increase of weighing value" and "Registration upon reduction of weighing value" to indicate whether a weighing should be registered when the weighing value increases and/or when it decreases.
- 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.

- **Setting curves searched weight**

To adjust the Y-scale of the searched weight curve to the breed, the setting range for the searched weight can be entered under "Setting Curves Searched weight to".

11.2.3 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.

Weighing				Calibration					
No.	Type	Raw value	Tare value	Calib. value	Calibration weight	Tare weight	Weighing value		
1	DMS	0	0	1000	1.00 kg	0.00 kg	0.000 kg		
	☒ First bird weight	☐ Second bird weight	Limit area for stable weighing value:		Lower	100 g	Top	300 g	
2	0-10 Volt	0.000 V	0.000 V	1.000 V	1.00 kg	0.00 kg	0.000 kg		
	☒ First bird weight	☐ Second bird weight	Limit area for stable weighing value:		Lower	100 g	Top	300 g	
3	DMS	0	0	1000	1.00 kg	0.00 kg	0.000 kg		
	☒ First bird weight	☐ Second bird weight	Limit area for stable weighing value:		Lower	100 g	Top	300 g	

Figure 11-10: Calibration

11.2.3.1 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.

11.2.3.2 Limit area for stable weighing value

The weighing values are filtered based on a stable weighing value to ensure they are stable. The provisional bird weight may only vary for a certain period around the **lower limit** to also be registered. If the measured value varies outside of and within the limit, the determined weight is only registered if it remains **twice as long above** the top limit.

11.2.3.3 Number

Nr
1
2

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

Zero value		Calib. value	
Raw value	Weight	Raw value	Weight
0	0.000 kg	1000	1.000 kg
		25.07.2024 09:54:48~	25.07.2024 09:54:51~

Figure 11-11: Bird weighing number

11.2.3.4 Type

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.

11.2.3.5 Raw value

The signal presently measured by the input board is displayed here.

NOTICE!

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

11.2.3.6 Calibration weight

As a rule, the calibration weight is 0 kg. However, if the zero point has shifted, the weight that is displayed when the scale is empty can be entered here.

11.2.3.7 Calibration of a weighing unit with strain gauge signal

Calibrate and read out the input board used by the system for strain gauge weigh bars (W2, code no.

91-04-0009) with the procedure described here.

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

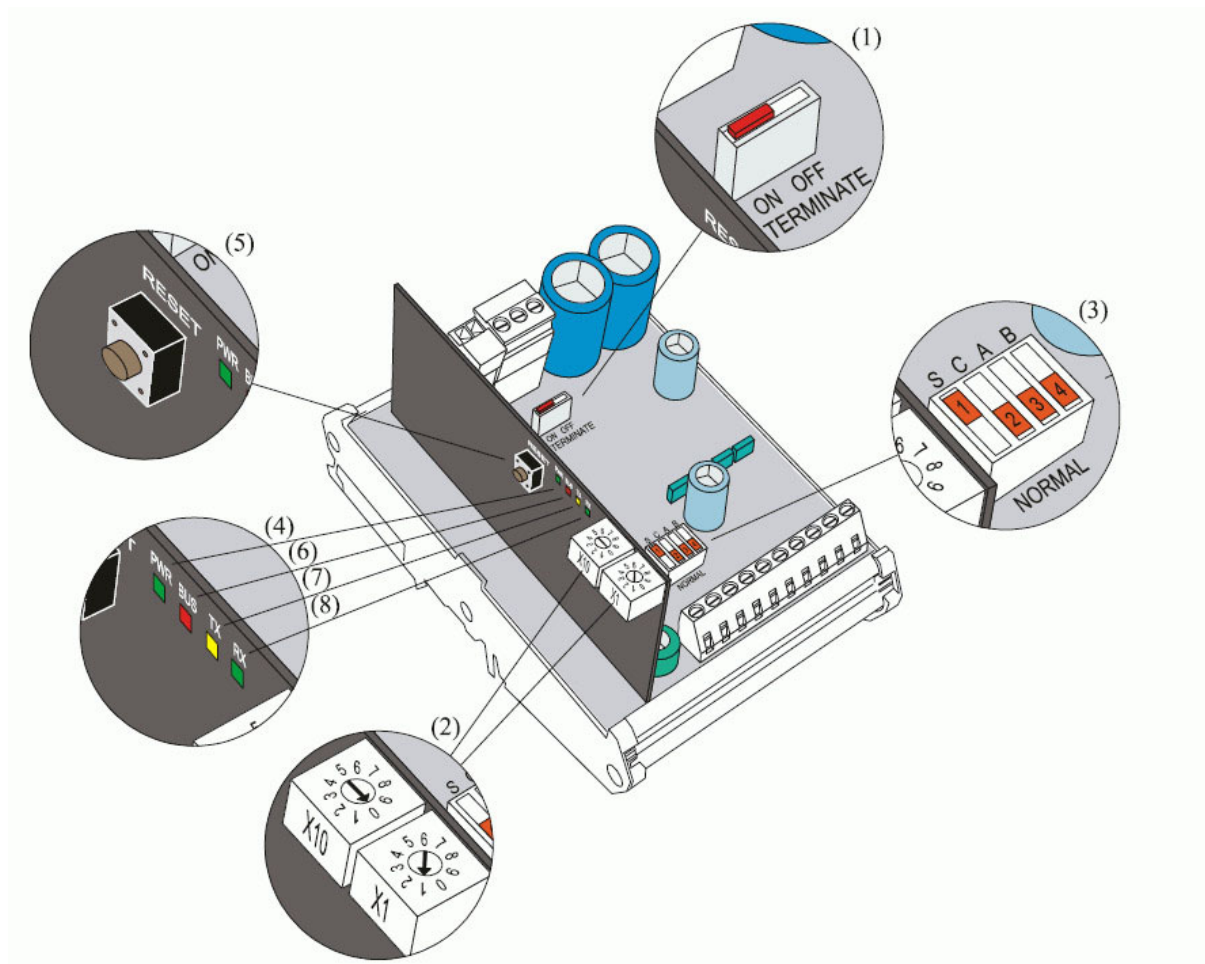


Figure 11-12: Calibrating the W2 weighing module

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 the calibration, click on the buttons to the right of the **tare value**, the **calibration value** and the **tare weight**. If they are green, the board transmits the saved values to AMACS.
15. Finally, enter the weight with which the board was calibrated under "**Calibration weight**".

Weighing				Calibration			
No.	Type	Raw value	Tare value	Calib. value	Calibration weight	Tare weight	Weighing value
	DMS	0	0	1000	1.00 kg	0.00 kg	0.000 kg

Figure 11-13: Calibration: entering the weight

NOTICE!

(*) = 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 there is no connection to the scale;
3. the calibration weight is too light. The calibration weight must be at least 1 per mill (preferably at least 10 per cent) of the nominal load. Nominal load means that the load cell is 100 % loaded (2 mV/V).
4. errors occur during data storage.


NOTICE!

The scale's calibration should be checked at regular intervals and repeated if necessary. In addition, the automatic calibration procedure can be bypassed by manual input.

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

The "**Tare value**" and the "**Calibration value**" (the value adopted by the load cells at a specific weight) are saved on the board.

No.	Weighing	Raw value	Tare value	Calibration		Tare weight	Weighing value
	Type			Calib. value	Calibration weight		
	DMS	0	0	0	1.00 kg	-0.00 kg	0.000 kg

Figure 11-14: Calibration: reading out values

1. To read out the calibration, click on the buttons to the right of the **tare value**, the **calibration value** and the **tare weight**. If they are green, the board transmits the saved values to AMACS.
2. To be able to display the correct weight, the weight with which the board was calibrated must be entered under "**Calibration weight**".



11.2.3.8 Manual calibration of the bird scale

No.	Weighing	Raw value	Tare value	Calibration		Tare weight	Weighing value
	Type			Calib. value	Calibration weight		
	DMS	0	0	1000	1.00 kg	0.09 kg	0.093 kg

Figure 11-15: Manual calibration

1. Write down the "**Raw value**" when the scale is not loaded and enter it in the "**Tare value**" field.
2. Load the scale with a known weight. Enter this value in the "**Calibration value**" field.
3. Finally, enter the weight with which the board was calibrated under "**Calibration weight**".



NOTICE!

Minimum difference 4 V/4 mA: The difference between the two positions "**Tare value**" and "**Calibration value**" should amount to at least 4 V/4 mA to guarantee an acceptable calibration value.

11.2.3.9 Calculated weighing value

The "**Weighing value**" resulting from the basic values entered in the previous menus is calculated and displayed here.

12 Energy registration

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

To configure the energy consumption, open the "**Energy registration**" menu under the production data settings.



Energy registration

Figure 12-1: Opening the energy registration settings

Energy registration [1/1]					
Overview	Climate	Feeding	Egg collection	Supply	Accessories
Functional area Overview	Maximum Ø	Current	Today	Total	
Climate - Exhaust air	--:--:--:--:--:--?	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Climate - Fresh air	--:--:--:--:--:--?	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Climate - Cooling	--:--:~:~:~:~:~:~?	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Climate - Heating	--:~:~:~:~:~:~:~:~?	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Feeding - Feed transport	--:~:~:~:~:~:~:~:~?	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Supply - Light	--:~:~:~:~:~:~:~:~?	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Supply - Water	--:~:~:~:~:~:~:~:~?	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Supply - Aviary drives	--:~:~:~:~:~:~:~:~?	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Egg collection - House	--:~:~:~:~:~:~:~:~?	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Accessories - Time switches	--:~:~:~:~:~:~:~:~?	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Accessories - Drip oiler	--:~:~:~:~:~:~:~:~?	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Accessories - consumer	--:~:~:~:~:~:~:~:~?	0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Total	--:~:~:~:~:~:~:~:~?	0.000 kW	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 12-2: Energy registration

The display provides several selection fields which you can use 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.

12.1 Overview

Functional area Overview	Maximum Ø	Current	Today	Total
Climate - Exhaust air	--:--:-- --:--:--? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Climate - Fresh air	--:--:-- --:~:~? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Climate - Cooling	--:~:~ --:~:~? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Climate - Heating	--:~:~ --:~:~? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Feeding - Feed transport	--:~:~ --:~:~? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Supply - Light	--:~:~ --:~:~? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Supply - Water	--:~:~ --:~:~? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Supply - Aviary drives	--:~:~ --:~:~? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Egg collection - House	--:~:~ --:~:~? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Accessories - Time switches	--:~:~ --:~:~? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Accessories - Drip oiler	--:~:~ --:~:~? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Accessories - consumer	--:~:~ --:~:~? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh
Total	--:~:~ --:~:~? 0.000 kW	0.000 kW	0.000 kWh	0.0 kWh

Figure 12-3: Energy registration 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.

12.1.1 Resetting records

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

Figure 12-4: Resetting records

A button which can be used to reset the maximum value analysis is situated below the functional area.

All values (**Maximum**, **Today** and **Total**) can be reset for all categories by clicking an additional button below.

A security query is included when clicking the reset buttons to prevent accidental activation. In addition, date and time of the previous reset are displayed.

12.1.2 Curve recording

Curve recording Individual consumer:	☒ current output	☒ interval output
--------------------------------------	--	---

Figure 12-5: Curve recording

The curve recording for each consumer can be switched on and off with this function.

 **NOTICE!**

This does not affect the category curve recordings. They remain active in all cases.

12.2 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.

Overview	Climate	Feeding	Egg collection	Supply	Accessories
----------	---------	---------	----------------	--------	-------------

Figure 12-6: Functional areas

Overview	Climate	Feeding	Egg collection	Supply	Accessories			
Functional area Supply			Performance	Cos φ	Current	Today	Total	
Light - Light group 1			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Light - Light group 2			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Light - Light Rest area			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Light - Light Litter area			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Water - Valve			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Aviary drives - Flap grid			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Aviary drives - Pop holes			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Aviary drives - Nest ejection system			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh

Figure 12-7: Functional areas; example: supply



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

NOTICE!

The values in this curve can be changed and saved in the same way as described in more detail in the "**Set curves**" chapter of the manual "**99-94-0420 AMACS – General operation**".

- **Cos Phi**

In addition, the cos ϕ (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.

12.3 Additional power consumers

To register additional power consumers in a house, which are not activated by the control system, 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.

Overview	Climate	Feeding	Egg collection	Supply	Accessories			
Functional area Accessories			Performance	Cos φ	Current	Today	Total	
Time switches - Time switch 1			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2 Limit 1			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2 Limit 2			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2 Limit 3			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2 Limit 4			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2 Limit 5			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2 Limit 6			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
Drip oiler - Drip oiler 1			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
consumer - consumer 1			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh
consumer - consumer 2			0.000 kW		1.00	0.000 kW	0.000 kWh	0.0 kWh

Figure 12-8: Additional power consumers

The names can be assigned during configuration so they are also used in the displays and curve views.

12.4 Curve recording

To access the curve recording, click on the tab icon for **production data curves**.



Figure 12-9: Curve recording



With the top button on the left-hand side, you can create curve compositions for the currently open house. You can retrieve curves from all areas of the house.



To create a curve composition of all houses, select the second button on the left-hand side. The menu opening now lists the curves for all houses and subordinate areas.



NOTICE!

The curve composition can be modified as described in more detail in the "**Set curves**" chapter of the manual "**99-94-0420 AMACS – General operation**".

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.

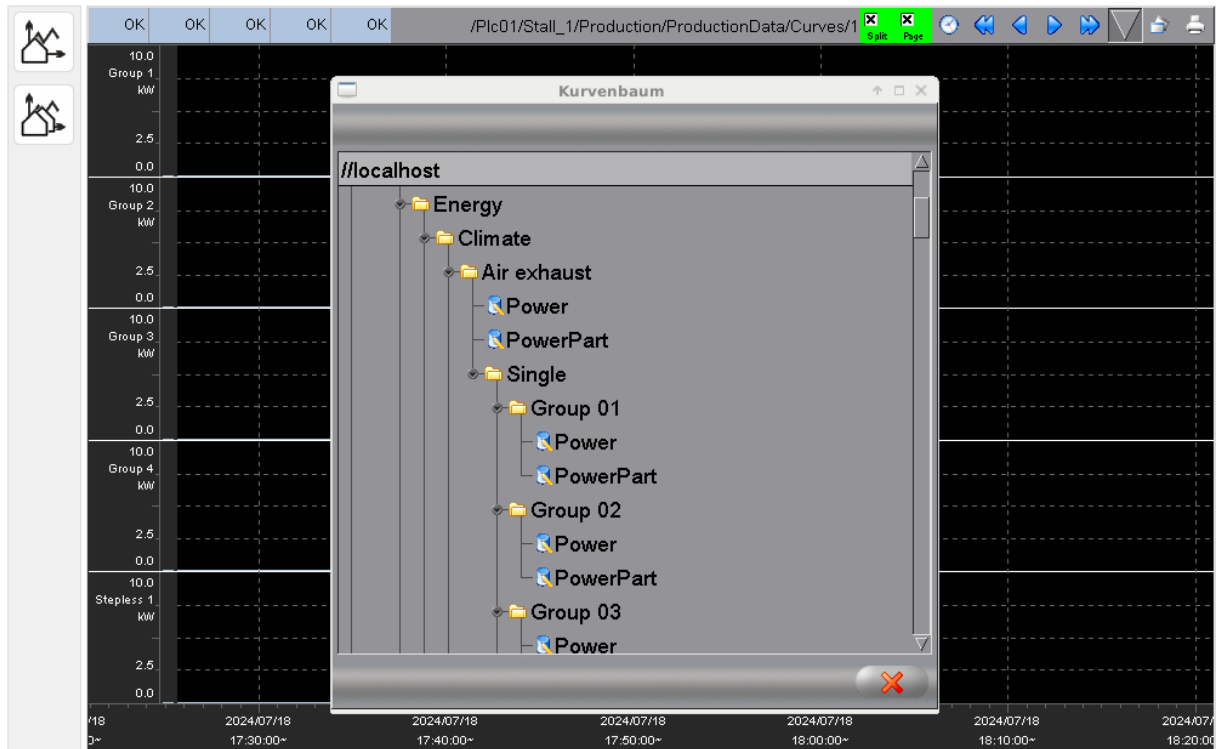


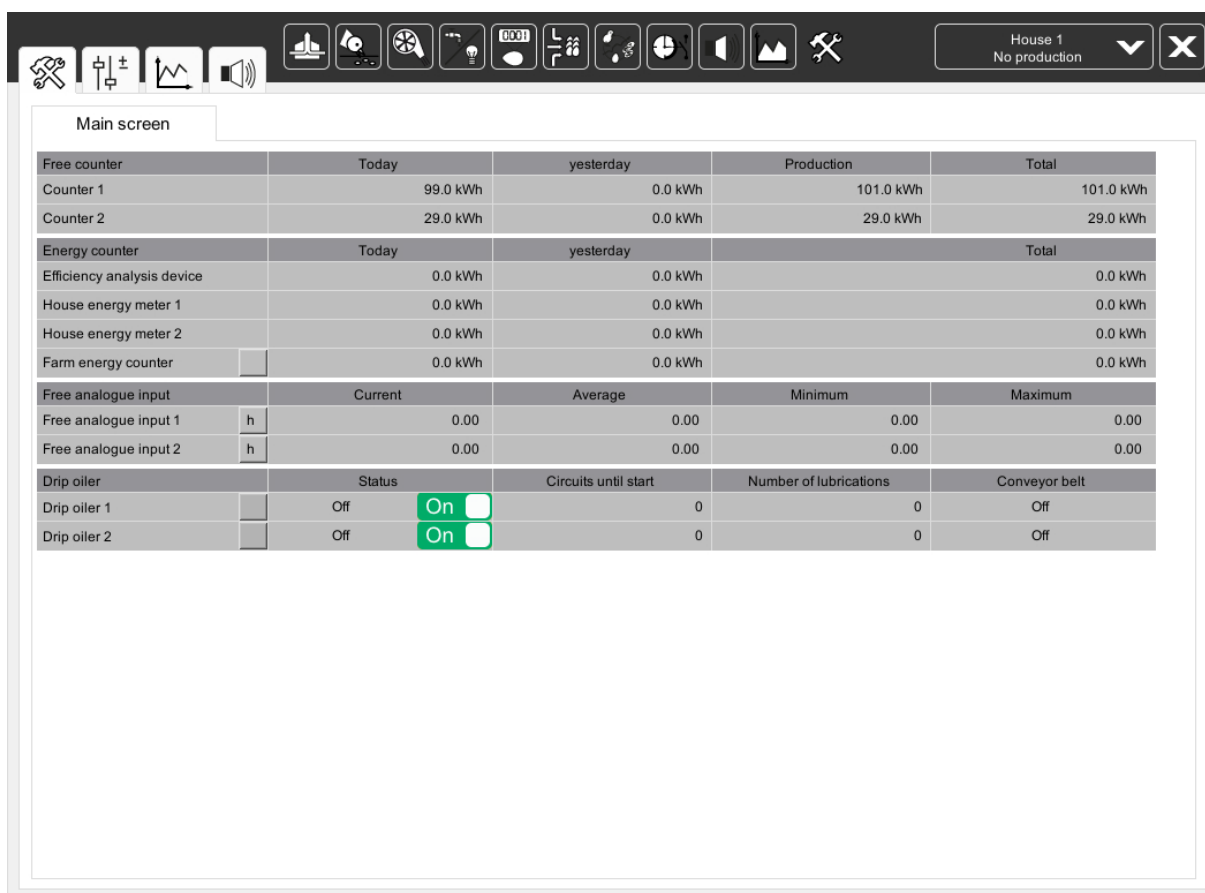
Figure 12-10: Energy curve composition

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.

13 Accessories

To be able to record the consumption of power, gas, heat quantities, etc., or the values supplied by special sensors, AMACS allows the configuration of free counters, analogue inputs, drip oilers, energy counters, efficiency analysis devices and even farm energy counters. These can be set and displayed via the screen.



The screenshot shows the 'Main screen' of the AMACS interface. At the top, there is a navigation bar with various icons and a dropdown menu for 'House 1' showing 'No production'. Below the navigation bar, the main content area displays several tables of data:

Free counter	Today	yesterday	Production	Total
Counter 1	99.0 kWh	0.0 kWh	101.0 kWh	101.0 kWh
Counter 2	29.0 kWh	0.0 kWh	29.0 kWh	29.0 kWh

Energy counter	Today	yesterday	Total
Efficiency analysis device	0.0 kWh	0.0 kWh	0.0 kWh
House energy meter 1	0.0 kWh	0.0 kWh	0.0 kWh
House energy meter 2	0.0 kWh	0.0 kWh	0.0 kWh
Farm energy counter	0.0 kWh	0.0 kWh	0.0 kWh

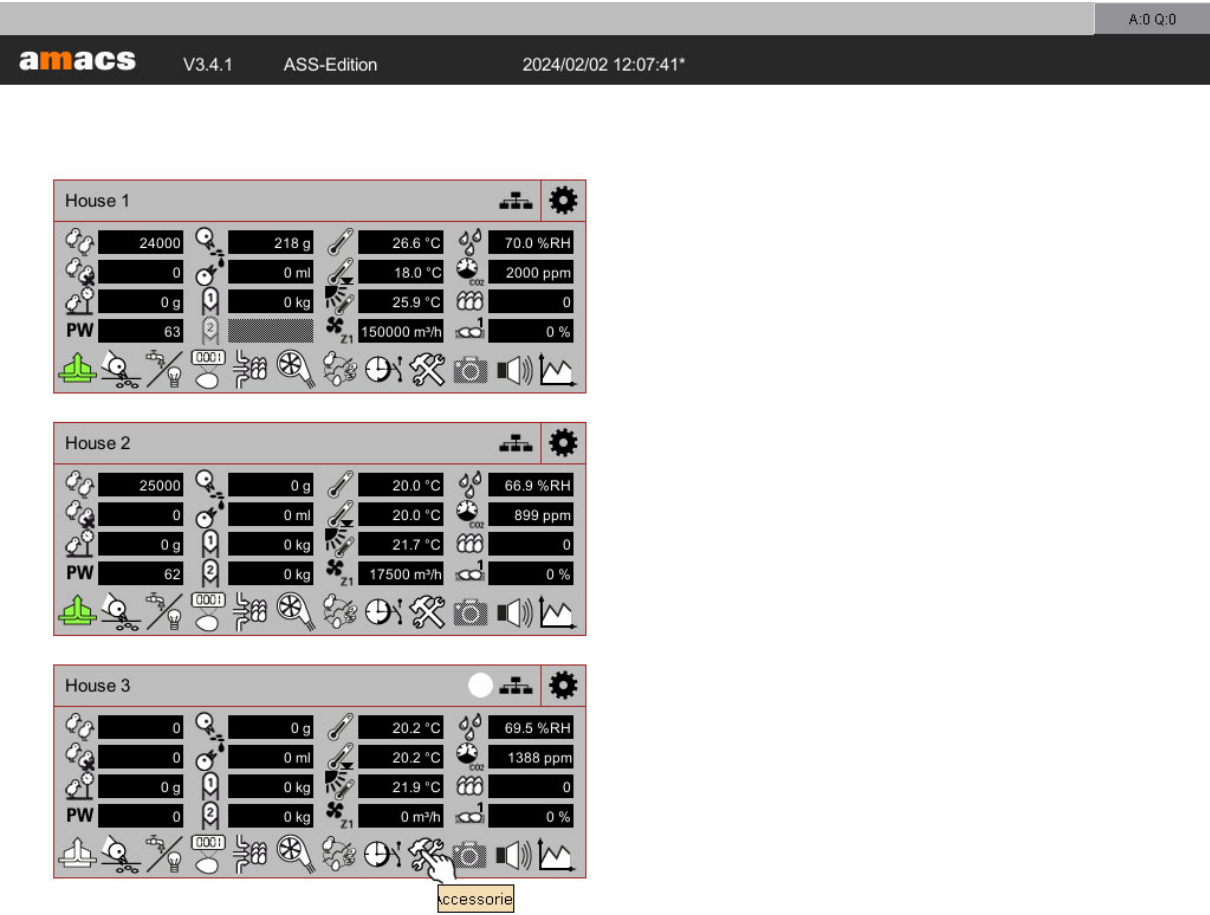
Free analogue input	Current	Average	Minimum	Maximum
Free analogue input 1	0.00	0.00	0.00	0.00
Free analogue input 2	0.00	0.00	0.00	0.00

Drip oiler	Status	Circuits until start	Number of lubrications	Conveyor belt
Drip oiler 1	Off ☒	0	0	Off
Drip oiler 2	Off ☒	0	0	Off

Figure 13-1: Overview screen accessories



To access the accessories overview screen, click on the accessories icon underneath every house view. The accessories overview screen only opens if you have the required rights.



13.1.1 Description

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

13.1.2 Status display

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

13.1.2.1 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 counter)**

If the farm energy counter includes the option rate for changeover, click on the button next to the counter's name to switch between the consumption of the different rates. The name of the displayed rate is shown in the name field.

13.1.2.2 Analogue inputs

1. **Hour/minute values**

Click on the button **h/m** next to the counter's name to switch from hourly average values to minute average values.

2. **Current**

The current value is displayed here.

3. **Average h/min**

The current average value of the past hour/minute is displayed here.

4. **Minimum h/min**

The current minimum value of the past hour/minute is displayed here.

5. **Maximum h/min**

The current maximum value of the past hour/minute is displayed here.

13.2 Settings

To access the settings, click on the tab icon for **Accessories – Settings**. The accessories can be analysed and adjusted here.

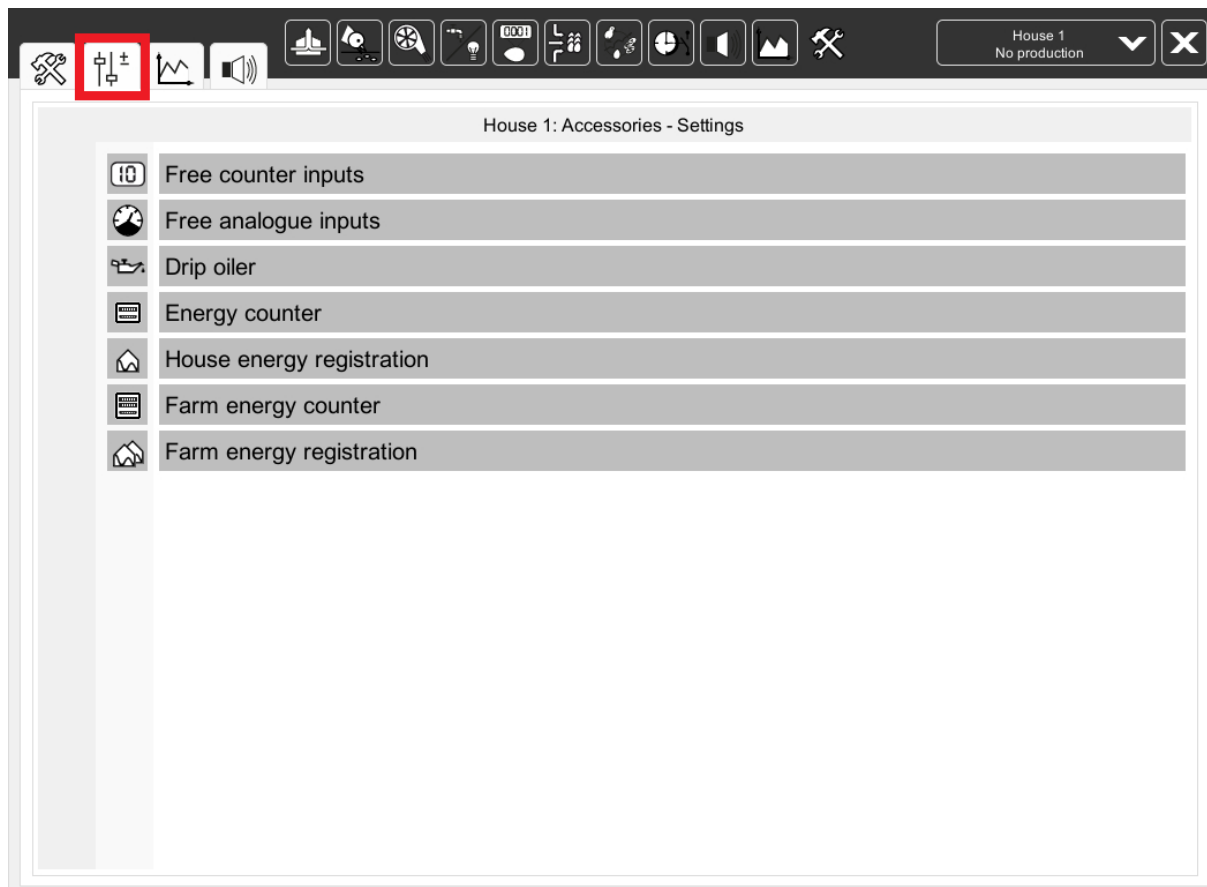


Figure 13-4: Opening the accessories settings

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

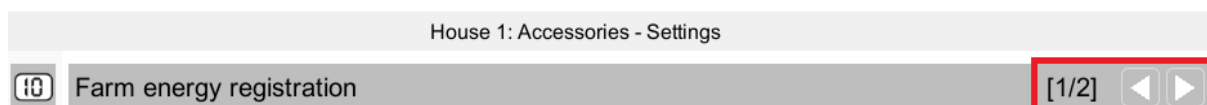


Figure 13-5: Switching between the screens

13.3 Free counter inputs

The free counters are used to record consumed heat quantities, gas, etc. A maximum of **10** counters can be configured.

To access the settings, open the **"Free counter inputs"** menu under the accessories settings.



Figure 13-6: Opening the free counter input settings

No.	NAME	Unit	Comma	Impulse	Daily value	Production value	Total value	
1	Counter 1	kWh	1	1.000	341.0 kWh	343.0 kWh	343.0 kWh	Reset
2	Counter 2	kWh	1	1.000	29.0 kWh	29.0 kWh	29.0 kWh	Reset

Figure 13-7: Free counter inputs

- Name of the counter**
 Assign a name to the individual counters in the column "**Name**" (for example based on the counter's application: gas). These names also appear on the accessories main screen.
- Unit**
 Indicate the unit with which the values should be displayed in the "**Unit**" column.
- Comma**
 Enter the number of decimal places to be displayed in the "**Comma**" column.
- Impulse**
 Enter the measured value per impulse in the "**Impulse**" column.
- Counter values**
 The values are calculated based on the impulse value and the counter value.
 - Daily value**
 The current daily value is displayed here.
 - Production value**
 The value counted throughout the whole production cycle is displayed here.
 - Total value**
 The total value counted by the counter is displayed here.
- Reset**
 Click on the "**Reset**" button to reset the daily value, the production value and the total value. The reset button turns green while resetting.

13.4 Free analogue inputs

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

To access the settings, open the "**Free analogue inputs**" menu under the accessories settings.

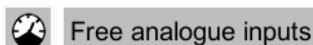


Figure 13-8: Opening the free analogue inputs settings

Free analogue inputs									
No.	NAME	Unit	Comma	Raw value	Zero value		Calib. value		Measured value
					Raw value	Value	Raw value	Value	
1	Free analogue input 1		2	0		-40.00		60.00	0.00
2	Free analogue input 2		2	0		-40.00		60.00	0.00

Figure 13-9: Free analogue inputs

- **Name of the input**

The free analogue inputs can be assigned names here. Enter the name in the "**Name**" column (for example based on the application: temperature). This name also appears on the accessories main screen.

- **Unit**

Indicate the unit with which the values should be displayed in the "**Unit**" column.

- **Comma**

Enter the number of decimal places to be displayed in the "**Comma**" column.

- **Raw value**

The value presently measured by the input is displayed here.

- **Zero value – Raw value**

The raw value for calibrating the beginning of the measuring range is displayed here.

- **Zero value – Value**

Enter here the beginning of the sensor's measuring range, or the value determined by a special measuring device read out simultaneously with "Zero value – Raw value".

- **Calibration value – Raw value**

The raw value for calibrating the end of the measuring range is displayed here.

- **Calibration value – Value**

Enter here the end of the sensor's measuring range, or the value determined by a special measuring device read out simultaneously with "Calibration value – Raw value".

- **Measured value**

The currently measured value of the sensor is shown here.

13.5 Drip oilers

13.5.1 Settings

Drip oilers lubricate the conveyor chains along the egg collection system. The applied film of oil reduces wear of the chain and the chain line and lowers the power requirements of the drive motors.

To access the settings, open the "**Drip oiler**" menu under the accessories settings.



Figure 13-10: Opening the drip oiler settings

The settings for up to 5 drip oilers are displayed per screen.

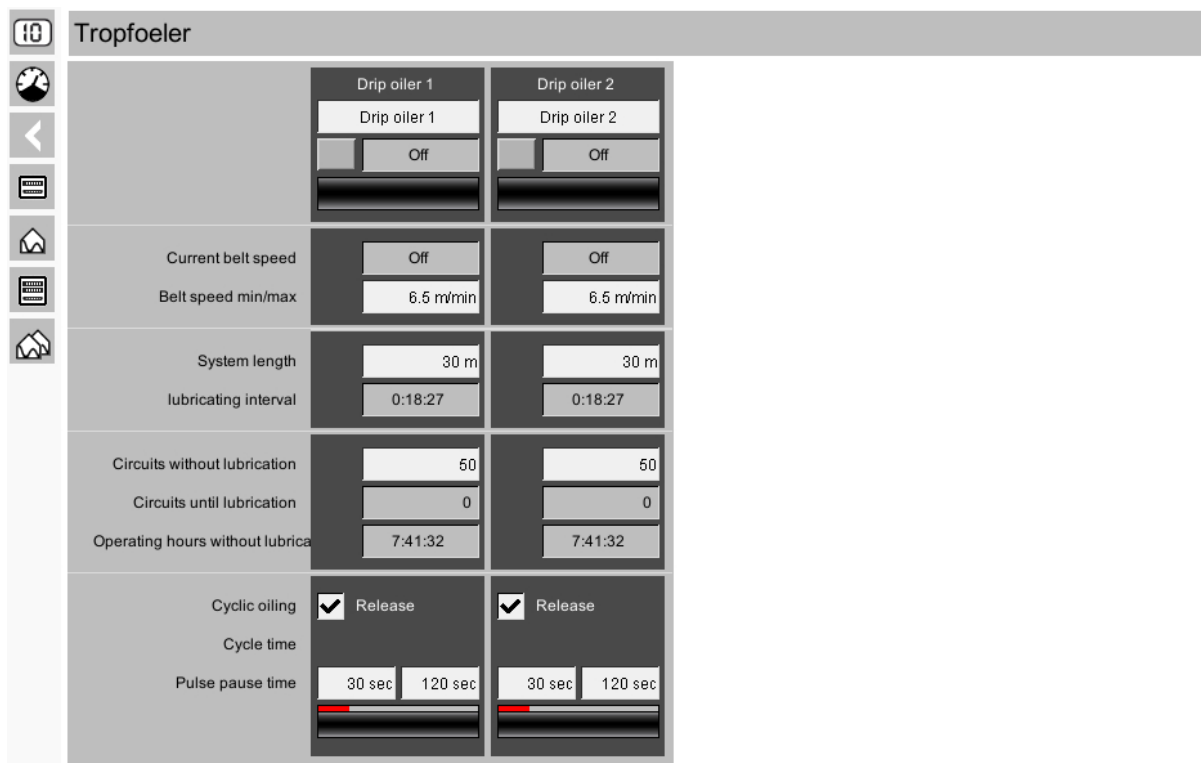
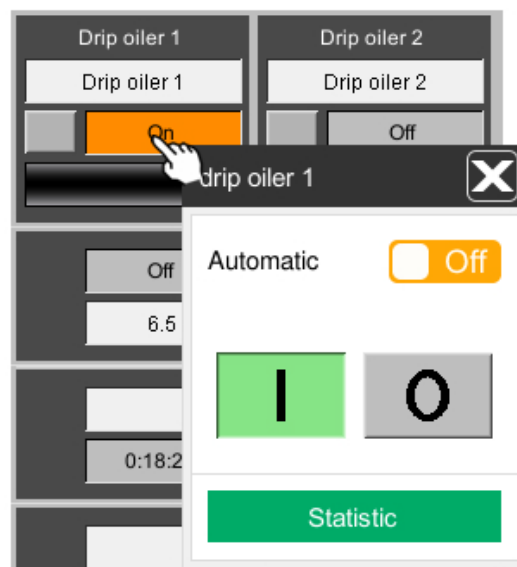


Figure 13-11: Drip oilers

- **Drip oiler status** In the upper part, the **name** of each drip oiler is shown. It can also be changed here.

Furthermore, the status of the drip oiler is indicated as **On** or **Off**. Clicking on the button, automatic operation can be switched off and the drip oiler's valve can be operated manually. The colour of the button changes from grey to orange.

Figure 13-12: Manual / automatic operation of drip oilers



Statistic

Click on the **"Statistic"** button (see figure 13-12) to open the operating hours of a component.

Figure 13-13: Operating hours of drip oilers

The hours operated **"today"** and in **"total"** are displayed here. Click on the **"Reset"** button to reset the values to **0**. Close the window by clicking on **"Back"**.

The screenshot shows a window titled "drip oiler 1". Inside, there's a section for "Lubrication" which includes "Operating hours". It displays "today" and "total" both as "0.5 h". A "Reset" button is located to the right of these values. At the bottom of the window is a large "Back" button.

The button for direct start is located to the left of the **On/Off** button. This function can also be started by means of an external input. The colour of the button changes from grey to green for active lubrication.

Additionally, a bar graph indicates the lubrication progress.

- Belt speed**

"Current belt speed" indicates the current state of the belt which requires lubrication.

- For a digital drip oiler, a grey field with the text **"Off"** is shown when the belt is switched off. If the belt is switched on, the field turns green and the text **"On"** is displayed. The belt then runs at the speed set under **"Belt speed min/max"** [m/min].
- For an analogue drip oiler, a grey field with the text **"Off"** is shown when the belt is switched off. If the belt is switched on, the field turns green and the speed determined by the analogue input and the values entered under **"Belt speed min/max"** [m/min] is indicated.

- System length**

The length of the system in meters must be entered under **"System length"** to calculate the required lubricating interval and the number of circuits. Based on this information, the lubricating interval (hh:mm:ss) can be determined.

$$\text{Lubricating interval [min]} = (\text{system length} * 4) / \text{max. belt speed}$$

- **Circuits**

To determine when lubrication starts, the number of "**Circuits without lubrication**" must be entered. The field "**Circuits until lubrication**" indicates how many more circuits the belt must run before lubrication starts. Lubrication starts when "Circuits until lubrication" is down to 0 circuits. Additionally, a green bar graph indicates the progress of the current circuit. "**Operating hours without lubrication**" shows the calculated time for "**Circuits without lubrication**" in hh:mm:ss.

$$\text{Operating hours without lubrication [min]} = ((\text{system length} * 2) / \text{max. belt speed}) * \text{circuits without lubrication}$$

- **Cyclic oiling**

For cyclic lubrication (oiling), the valve of the oiler can be controlled by pulses. This can be an advantage for oilers without knurled screw.

- The release box of the **digital oiler's** cyclic lubrication must be checked to create a pulsing output signal. If cyclic lubrication is not required, the "Release" box must remain unchecked.

The parameter "**Pulse pause time**" is used to set the desired pulse length and pause time. The sum of these two times is the cycle time. The lower bar graph indicates the pulse length for the entire cycle in red. The yellow bar graph shows the progress of the current cycle.

- For the **analogue drip oiler**, no general release is set for cyclic lubrication. Instead, define a speed in m/min up "**to**" which cyclic lubrication is desired. If cyclic lubrication is not necessary, enter a speed of 0 m/min.

The time for which the valve should be open (in seconds) is calculated based on the "**Cycle time**" to be entered here (in seconds), "**Cyclic lubrication up to**" and the "**Current belt speed**".

$$\text{Pulse time} = (\text{cycle time} / \text{cyclic lubrication up to}) * \text{current belt speed}$$

To guarantee a minimum **pulse pause time**, the pulse and pause time can be entered here in seconds. The lower bar graph indicates the calculated pulse length for the entire cycle in red. The yellow bar graph shows the progress of the current cycle. The two lower orange bar graphs indicate the minimum pulse pause time.

All settings and operations of the drip oilers are registered and shown in the "**LOGGING**".

13.5.2 Main screen

Main screen				
Free counter	Today	yesterday	Production	Total
Counter 1	6747.0 kWh	0.0 kWh	3758.0 kWh	6749.0 kWh
Counter 2	29.0 kWh	0.0 kWh	0.0 kWh	29.0 kWh
Energy counter	Today	yesterday	Total	
Efficiency analysis device	0.0 kWh	0.0 kWh	0.0 kWh	
House energy meter 1	0.0 kWh	0.0 kWh	0.0 kWh	
House energy meter 2	0.0 kWh	0.0 kWh	0.0 kWh	
Farm energy counter	0.0 kWh	0.0 kWh	0.0 kWh	
Free analogue input	Current	Average	Minimum	Maximum
Free analogue input 1	h 0.00	0.00	0.00	0.00
Free analogue input 2	h 0.00	0.00	0.00	0.00
Drip oiler	Status	Circuits until start	Number of lubrications	Conveyor belt
Drip oiler 1	Off 	0	0	Off
Drip oiler 2	Off 	0	0	Off

Figure 13-14: Drip oilers on the main screen

The names of all drip oilers are listed on the accessories main screen. A button for **direct start** is located to the right of the name. Even further to the right, the screen shows:

- the status display **On/Off** with a switch for automatic/manual operation (described in more detail in chapter 13.5.1);
- the number of "**Circuits until start**";
- the "**Number of lubrications**";
- the status display **On/Off** for "**Conveyor belt**".

13.5.3 Database recordings

The operating hours of the individual drip oilers as well as their energy consumption are recorded in the house's production database. The recorded data can then be found in the production reports as daily, data, monthly and production value.

Operating hours / WEEKLY REPORT

Database: BD_Plc01_Stall_1_OFFLINE

Flock: -

Production week: 0



Date	PW/PD-WD	Drip oiler 1	Drip oiler 2
15.08.2024	0/0 - 4	0.00 h	0.00
Total sum		0.00h	0.00

Figure 13-15: Report operating hours of drip oilers

Date	PW/PD-WD	Drip oiler 1	Drip oiler 2
15.08.2024	0/0 - 4	0.000 kWh	0.000 kWh
Total sum		0.000 kWh	0.000 kWh

Figure 13-16: Report energy recording of drip oilers

To record the energy consumption correctly, enter the corresponding data of the connected drip oilers in the energy registration settings menu (production data).

Energy registration [1/1]						
Overview Climate Feeding Manure drying Egg collection Supply Accessories						
Functional area Accessories		Performance	Cos ϕ	Current	Today	Total
Time switches - Time switch 1		0.000 kW	1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2		0.000 kW	1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2 Limit 1		0.000 kW	1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2 Limit 2		0.000 kW	1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2 Limit 3		0.000 kW	1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2 Limit 4		0.000 kW	1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2 Limit 5		0.000 kW	1.00	0.000 kW	0.000 kWh	0.0 kWh
Time switches - Time switch 2 Limit 6		0.000 kW	1.00	0.000 kW	0.000 kWh	0.0 kWh
Drip oiler - Drip oiler 1		0.000 kW	1.00	0.000 kW	0.000 kWh	0.0 kWh
Drip oiler - Drip oiler 2		0.000 kW	1.00	0.000 kW	0.000 kWh	0.0 kWh
consumer - consumer 1		0.000 kW	1.00	0.000 kW	0.000 kWh	0.0 kWh
consumer - Consumer 2		0.000 kW	1.00	0.000 kW	0.000 kWh	0.0 kWh

Figure 13-17: Drip oilers in the energy recording settings menu

13.6 Energy counters

The energy counters are simple counters which can detect and record 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.

To access the settings, open the **"Energy counter"** menu under the accessories settings.



Figure 13-18: Opening the energy counter settings

Energy counter [1/1]									
Counter	Category	Impulse value	+Σ	Today	yesterday	Total			
MB Efficiency analysis device	—		☒	0.0 kWh	0.0 kWh	0.0 kWh			
1 House energy meter 1	Manure drying	100.000 Pulse / kWh	☐	0.0 kWh	0.0 kWh	0.0 kWh			
2 House energy meter 2	Manure removal	100.000 Pulse / kWh	☐	0.0 kWh	0.0 kWh	0.0 kWh			
House energy Σ				0.0 kWh	0.0 kWh	0.0 kWh			

Figure 13-19: Energy counters

- **Counter**

The energy counters can be assigned names here. Assign a name in the column "**Counter**" (for example the application of the energy counter: heating). This name also appears on the accessories main screen.

- **Category**

Each energy counter with its measured consumption can be assigned to a functional area (climate, feeding, etc.). If the measured value of the energy counter does not belong to a specific area, enter "- - -" 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, you can use the installed energy counters 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.

- **Consumption values**

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

13.7 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.

To access the settings, open the **"House energy registratio"** menu under the accessories settings.



Figure 13-20: Opening the house energy registration settings

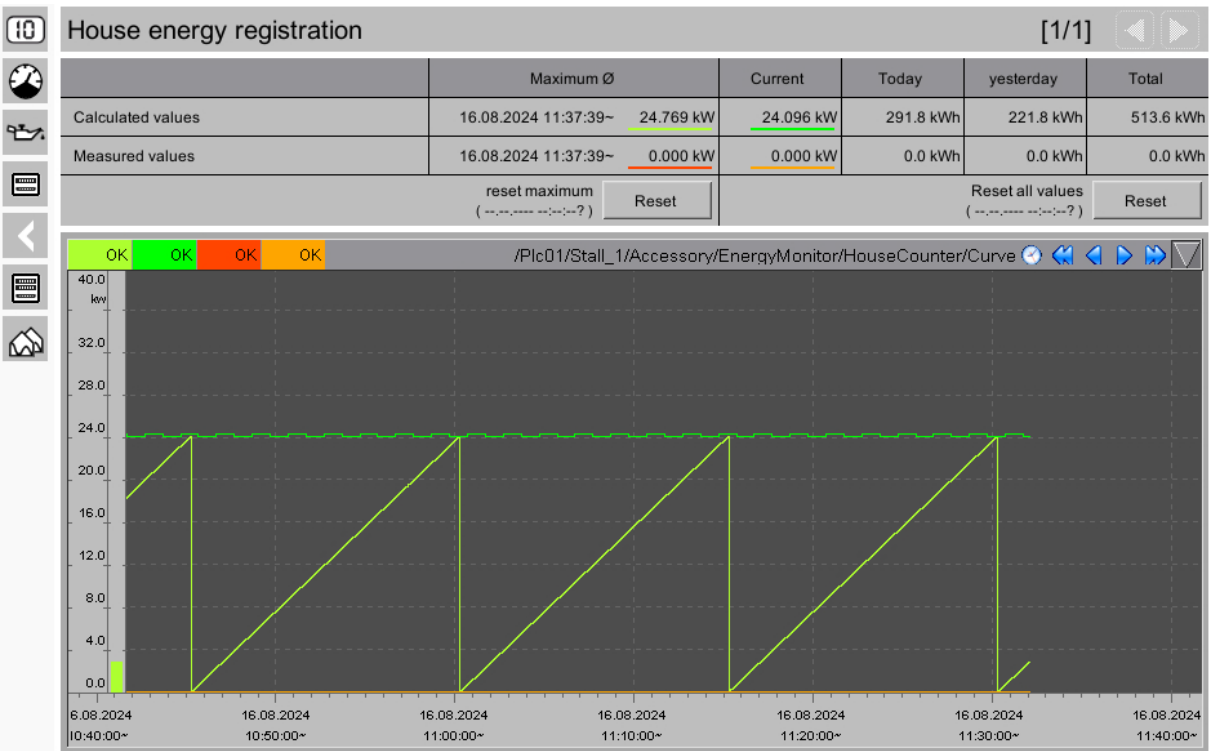


Figure 13-21: House energy registration

13.7.1 Overview

The table shows the totalled values of the energy registration of **all** houses (see chapter 12 "Energy registration") in the field **calculated values**.

If energy counters have been installed in the house to measure the energy consumption (see chapter 13.6 "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	16.08.2024 11:37:39~ 24.769 kW	24.096 kW	291.8 kWh	221.8 kWh	513.6 kWh
Measured values	16.08.2024 11:37:39~ 0.000 kW	0.000 kW	0.0 kWh	0.0 kWh	0.0 kWh

Figure 13-22: Table house energy registration

- **Maximum**

The field "**Maximum Ø**" 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.

- **Consumption values**

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

13.7.2 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.

reset maximum (16.08.2024 11:37:39~)	Reset	Reset all values (16.08.2024 11:37:39~)	Reset
---	-------	--	-------

Figure 13-23: Resetting records



NOTICE!

Resetting the maximum value may make sense after the system has been optimised for energy distribution and power input.

13.7.3 Curve recording

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

- 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 **dark green curve** indicates the progress of the currently calculated power input.
- The developing of the maximum value of the measured power input is also indicated in the curve recordings, by a **red line**.
- 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 scaling of the curve automatically depends on the determined maximum value.

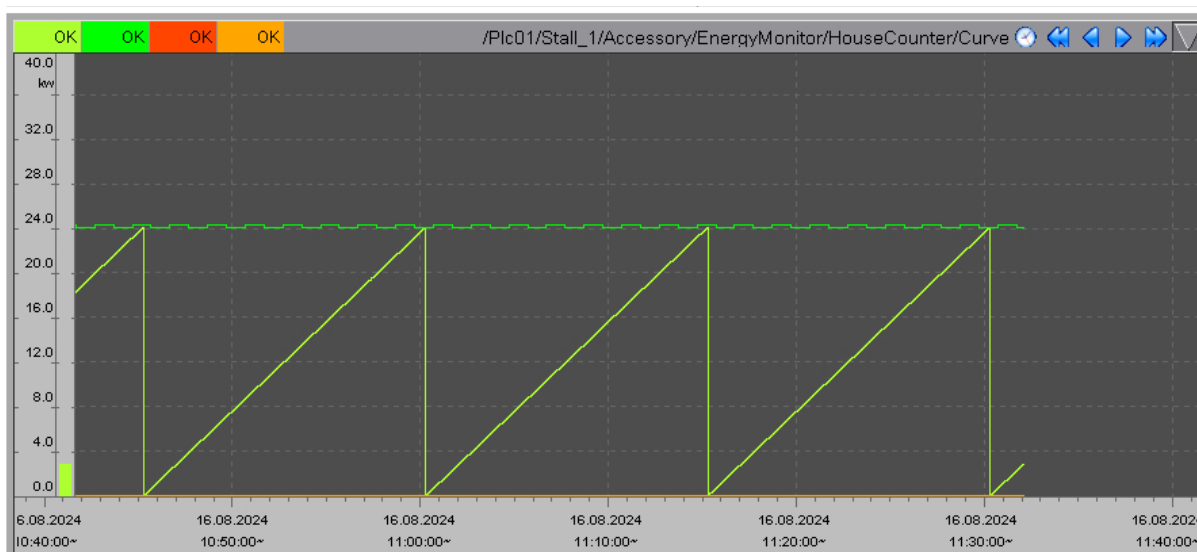


Figure 13-24: Curve view house energy registration



NOTICE!

The curve view can be modified as described in more detail in the "**Curve overview**" chapter of the manual "**99-94-0420 AMACS – General operation**".

13.8 Farm energy counter

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.

To access the settings, open the **"Farm energy counter"** menu under the accessories settings.



Figure 13-25: Opening the farm energy counter settings

Farm energy counter				[1/1]			
					Today	yesterday	Total
Farm energy counter	Impulse value	100.000	Pulse / kWh		0.0 kWh	0.0 kWh	0.0 kWh
☒ Rate 0	Description	Main rate			0.0 kWh	0.0 kWh	0.0 kWh
☐ Rate 1	Description	Secondary rate 1			0.0 kWh	0.0 kWh	0.0 kWh

Figure 13-26: Farm energy counter

13.8.1 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.

13.8.2 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.



NOTICE!

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.



13.9 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.

To access the settings, open the "**Farm energy registration**" menu under the accessories settings.

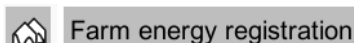


Figure 13-27: Opening the farm energy registration settings

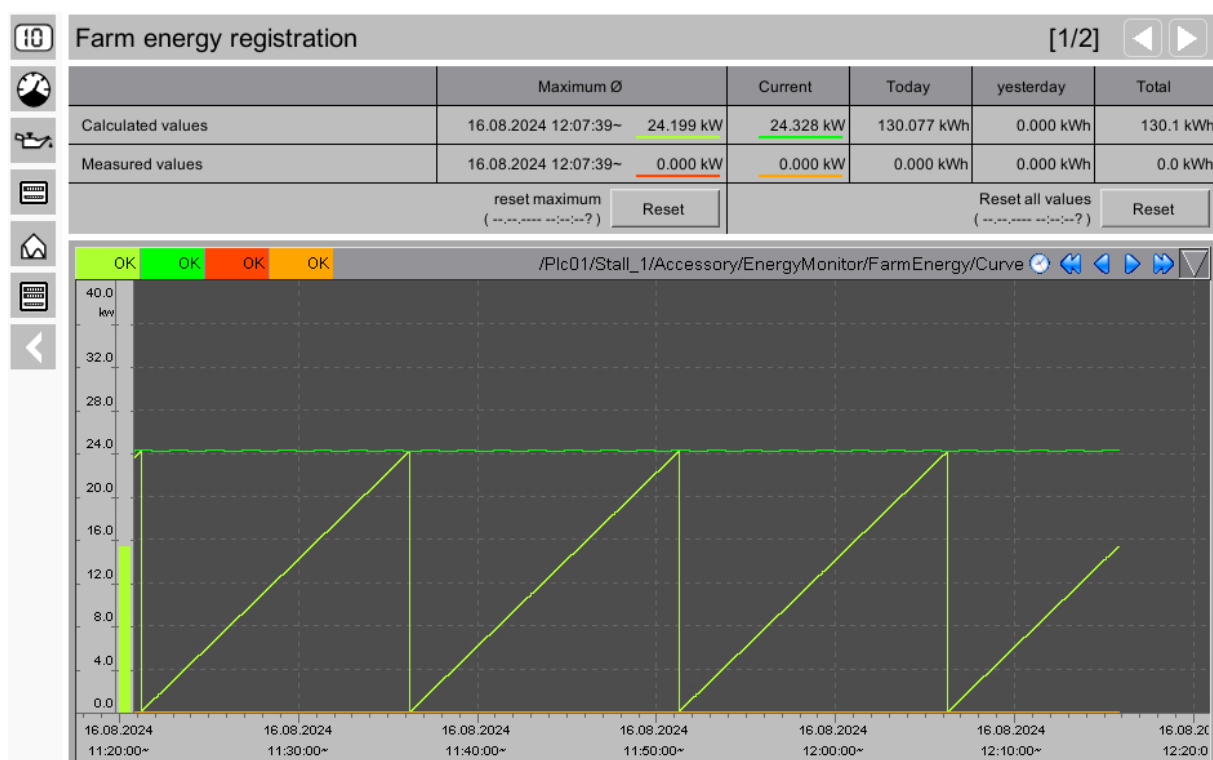


Figure 13-28: Farm energy registration

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.

13.9.1 Overview

The table shows the totalled values of the energy registration of **all** houses (see chapter 12 "Energy registration") in the field **calculated values**.

If the counter of the energy provider (see chapter 13.8 "Farm energy counter") 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	16.08.2024 12:07:39~ 24.199 kW	24.328 kW	130.077 kWh	0.000 kWh	130.1 kWh
Measured values	16.08.2024 12:07:39~ 0.000 kW	0.000 kW	0.000 kWh	0.000 kWh	0.0 kWh

Figure 13-29: Table farm energy registration

- **Maximum**
The field "**Maximum Ø**" 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.
- **Consumption values**
In each row, the registered consumption values for today, yesterday and total are displayed in kWh.

13.9.2 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.

reset maximum (.._.._.._ ..:..:..?)	Reset	Reset all values (.._.._.._ ..:..:..?)	Reset
--	-------	---	-------

Figure 13-30: Resetting records

NOTICE!

Resetting the maximum value may make sense after the system has been optimised for energy distribution and power input.

13.9.3 Curve recording

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

- 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 **dark green curve** indicates the progress of the currently calculated power input.
- The developing of the maximum value of the measured power input is also indicated in the curve recordings, by a **red line**.
- 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 scaling of the curve automatically depends on the determined maximum value.

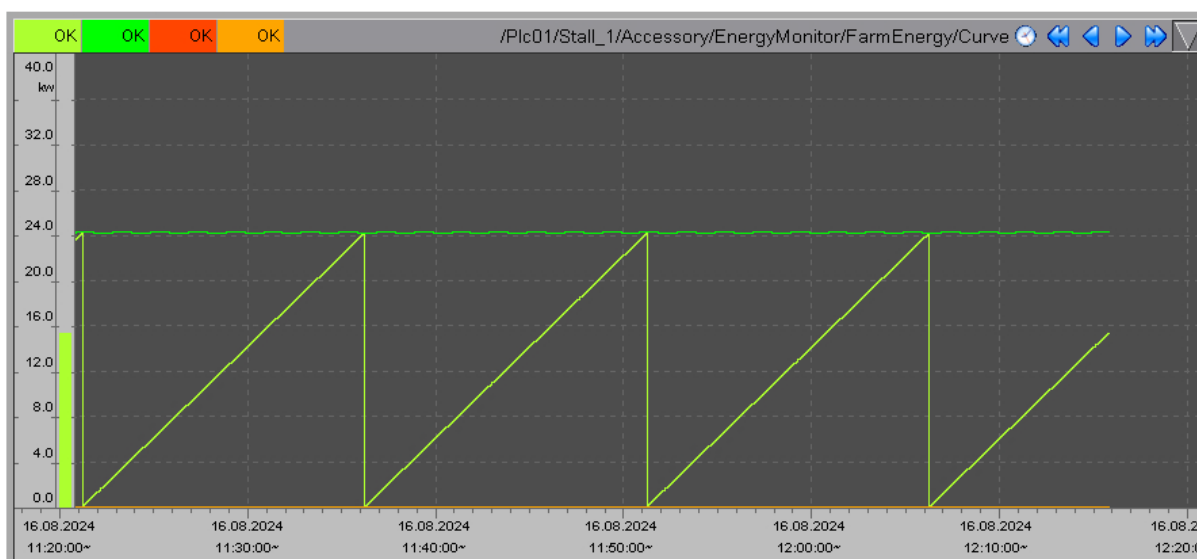


Figure 13-31: Curve view farm energy registration

NOTICE!

The curve view can be modified as described in more detail in the "**Curve overview**" chapter of the manual "**99-94-0420 AMACS – General operation**".

13.9.4 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.



NOTICE!

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

Figure 13-32: Synchronisation farm energy registration

- **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.

14 Free time switches

To control e.g. the lighting in the house, 10 free analogue or digital time switches can be configured with AMACS.

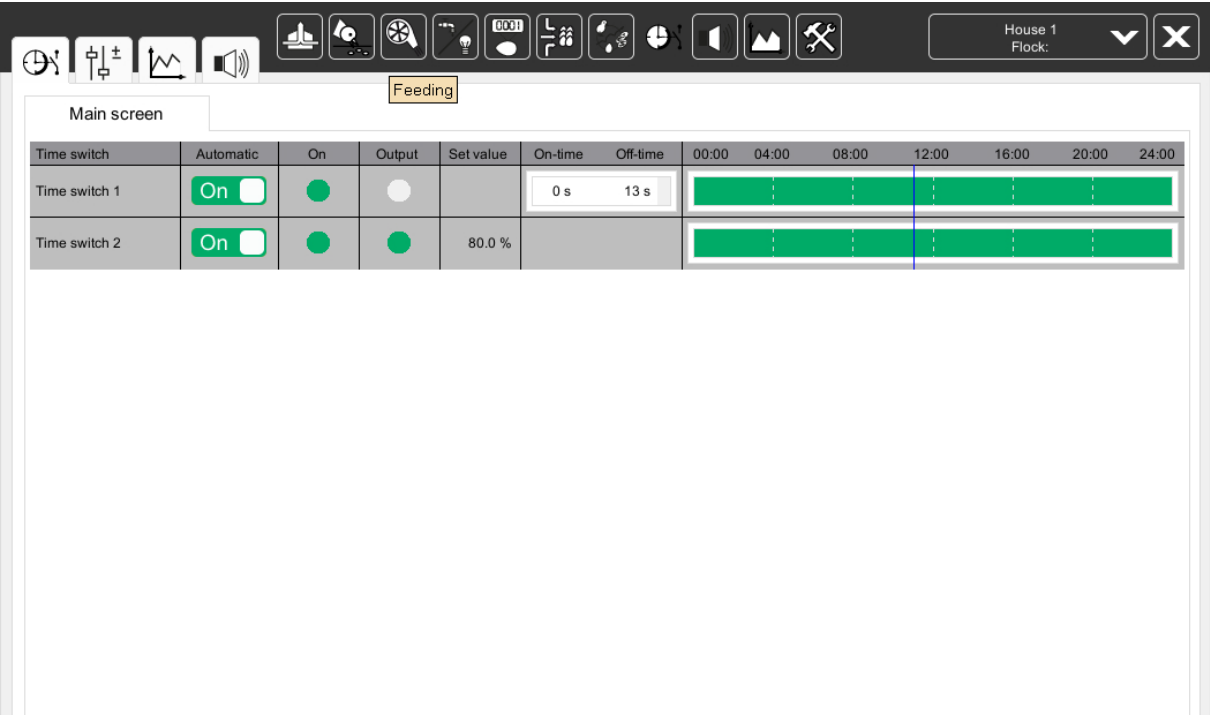


Figure 14-1: Overview screen time switches



To access the free time switches overview screen, click on the time switch icon underneath every house view. The overview screen only opens if you have the required rights.

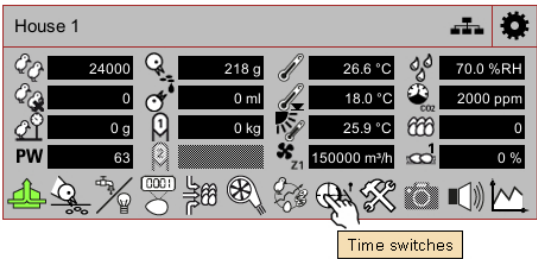
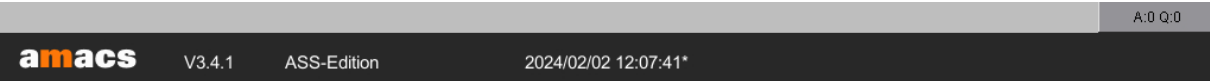


Figure 14-2: Opening the free time switches

14.1 Main screen

In the free time switches main 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.

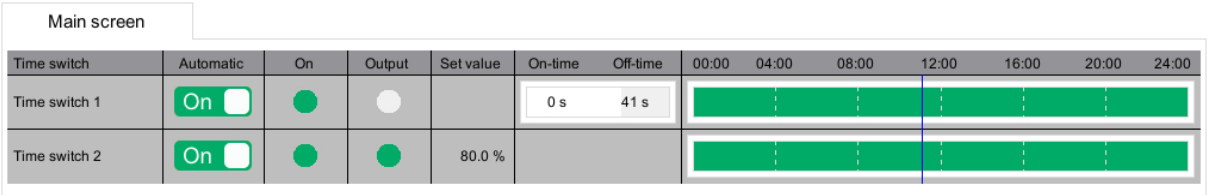


Figure 14-3: Main screen time switches

14.1.1 Time switch names

Time switch

Time switch 1

The time switches can be assigned names here. Enter the name of each free time switch separately in the settings.

14.1.2 Status display

Automatic

On

Output

On

The operating state of the time switch is displayed here. Automatic operation can be switched on or off.

Set value

On-time

Off-time

0 s

41 s

The defined on times and off times of the digital time switches or the set value of the analogue time switches are displayed here.

00:00

04:00

08:00

12:00

16:00

20:00

24:00

The **switch-on times** and **switch-off times** for today are displayed here.

14.1.2.1 Status

Use the On/Off switch to turn automatic operation on and off (see chapter 14.1.2.2).

Colours:

Automatic operation				Manual operation			
Automatic On Output On			Automatic operation OFF	Automatic On Output Off			Manual operation OFF
Automatic On Output On			Automatic operation ON Output switched	Automatic On Output Off			Manual operation ON Output switched
Automatic On Output On			Automatic operation ON Output not switched				

- 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 because of 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 because of the pulse pause mode.

14.1.2.2 Automatic operation on/off

Click on the **On/Off** button to open a control panel. Depending on whether the element is digital or analogue, either a switch or a slider control are displayed. They can be used to switch the drive from manual to automatic operation or to switch it on and off, respectively.

Figure 14-4: Automatic operation on/off

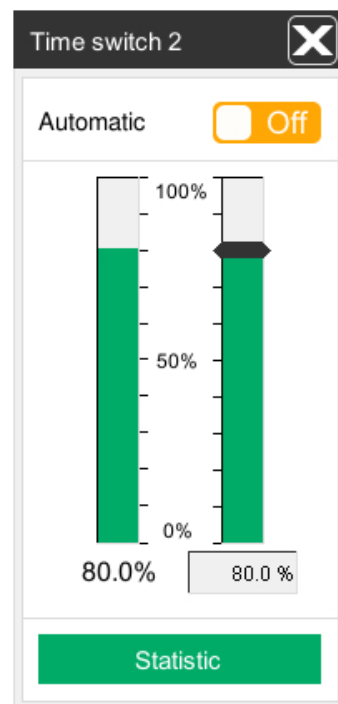
Use the **On/Off** slider at the top to change the operation mode from automatic to manual.

For a **digital** element, you can turn the time switch on and off using the I/O buttons.

For an **analogue** element, you can either reach the required position using the black slider or enter the corresponding value in the input field below the set position.

WARNING!

Work at electrical systems (drives, fans, etc.) must only be carried out if the protective switch is in the OFF position. Drives can be activated without warning, e.g. by the time switches. Observe local safety instructions and regulations.



14.1.2.3 Operating hours

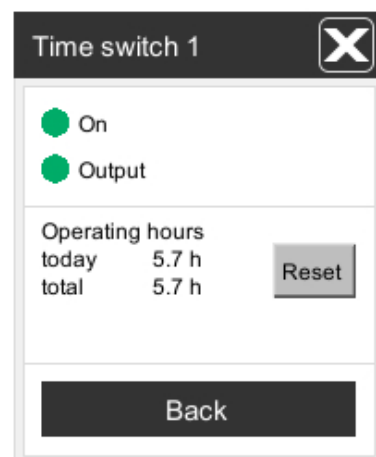
To determine service intervals, it is helpful to know the operating hours of your drives.

Statistic

Click on the **"Statistic"** button (see figure 14-4) to open the operating hours of a component.

Figure 14-5: Operating hours

The hours operated **"today"** and in **"total"** are displayed here. Click on the **"Reset"** button to reset the values to **0**. Close the window by clicking on **"Back"**.



14.2 Settings

To access the settings, click on the tab icon for **Time switch – Settings**. Here, you can view and configure the time switches' status messages.

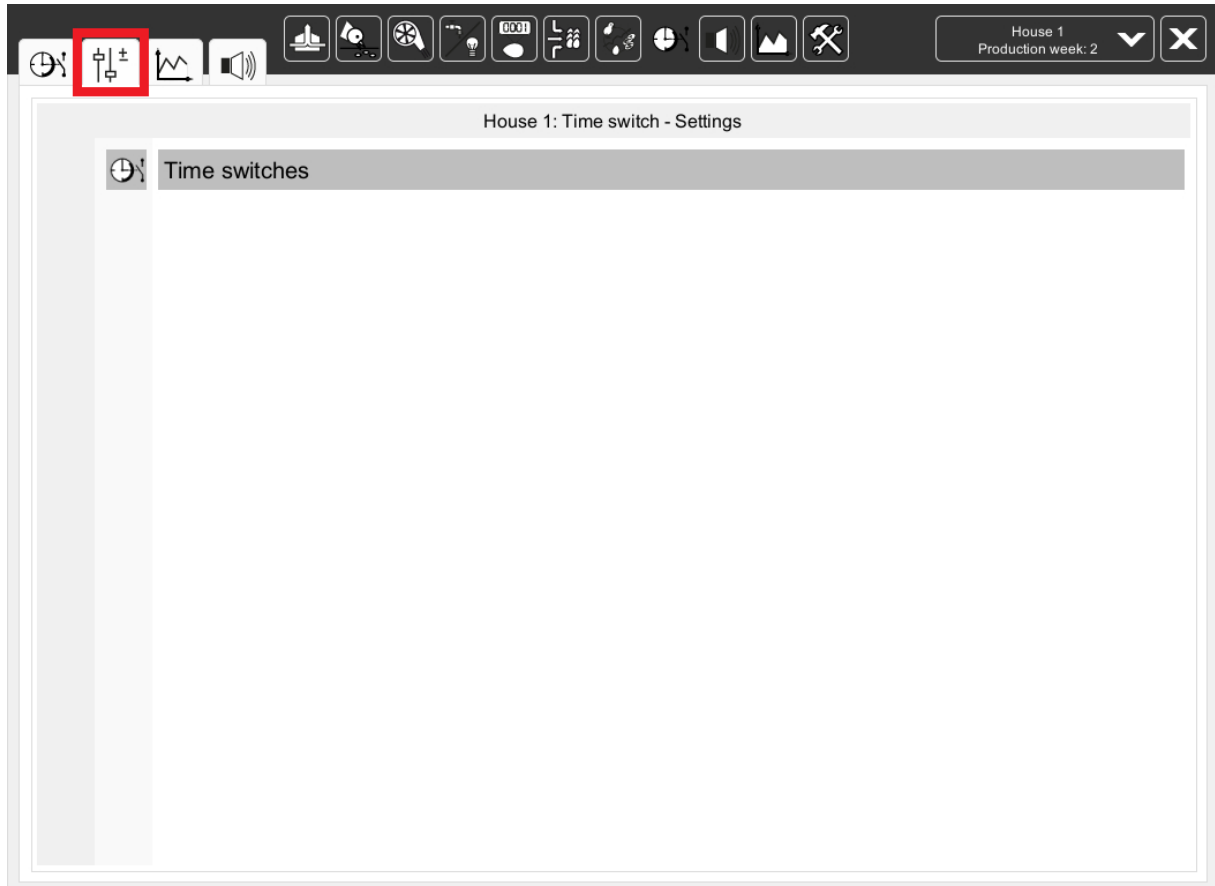


Figure 14-6: Opening the time switch settings

Use the arrow keys in the upper right corner to switch between the time switches.



Figure 14-7: Switching between the time switches

14.3 Timer

14.3.1 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.

Time switch 1 [1/2]

Switch times

Time switch 1

00:00 04:00 08:00 12:00 16:00 20:00 24:00

Mon
Tue
Wed
Thu
Fri
Sat
Sun

Automatic On-time Off-time

On still 0 sec still 5 sec

Time switch active from production day

all	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	Start	End			On-time	Off-time	
☒	01:20	01:30			0 s	0 s	
☒	00:00	24:00			60 s	60 s	
☐	00:00	24:00			0 s	0 s	
☐	00:00	24:00			0 s	0 s	
☐	00:00	24:00			0 s	0 s	
☐	00:00	24:00			0 s	0 s	
☐	00:00	24:00			0 s	0 s	
☐	00:00	24:00			0 s	0 s	
☐	00:00	24:00			0 s	0 s	
☐	00:00	24:00			0 s	0 s	
☐	00:00	24:00			0 s	0 s	

Figure 14-8: Parameter settings for digital time switches

Time switch 2 [2/2]

Switch times

Time switch 2

00:00 04:00 08:00 12:00 16:00 20:00 24:00

Mon
Tue
Wed
Thu
Fri
Sat
Sun

Automatic Set value

On 70.0 %

Time switch active from production day

all	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	Start	End			from	to	
☒	04:00	17:00			10 %	70 %	
☐	00:00	24:00			0 %	0 %	
☐	00:00	24:00			0 %	0 %	
☐	00:00	24:00			0 %	0 %	
☐	00:00	24:00			0 %	0 %	
☐	00:00	24:00			0 %	0 %	
☐	00:00	24:00			0 %	0 %	
☐	00:00	24:00			0 %	0 %	
☐	00:00	24:00			0 %	0 %	
☐	00:00	24:00			0 %	0 %	
☐	00:00	24:00			0 %	0 %	
☒	Time switch active from production day					-2	

Figure 14-9: Parameter settings for analogue time switches

- Name of the time switch**

Time switch names can be assigned by entering a name (for example based on the application of the time switch: light) in the field in the upper left corner. The name also appears in the time switch main screen.

- **Switch times**

all	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	Start		End		On-time		Off-time
☒	01:20	–	01:30		0 s		0 s
☒	00:00	–	24:00		60 s		60 s
☐	00:00	–	24:00		0 s		0 s
☐	00:00	–	24:00		0 s		0 s
☐	00:00	–	24:00		0 s		0 s
☐	00:00	–	24:00		0 s		0 s
☐	00:00	–	24:00		0 s		0 s
☐	00:00	–	24:00		0 s		0 s
☐	00:00	–	24:00		0 s		0 s
☐	00:00	–	24:00		0 s		0 s
☐	00:00	–	24:00		0 s		0 s
☐	00:00	–	24:00		0 s		0 s
☐	00:00	–	24:00		0 s		0 s
☒	Time switch active from production day						-2

Figure 14-10: Switch times

Days of the week

Define here how the time switch should switch based on the days of the week. Individual settings for each day are possible. Use the tab "all" to configure the same settings for all weekdays.

 NOTICE!

When you make changes in the "all" tab, the settings for individual weekdays 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.

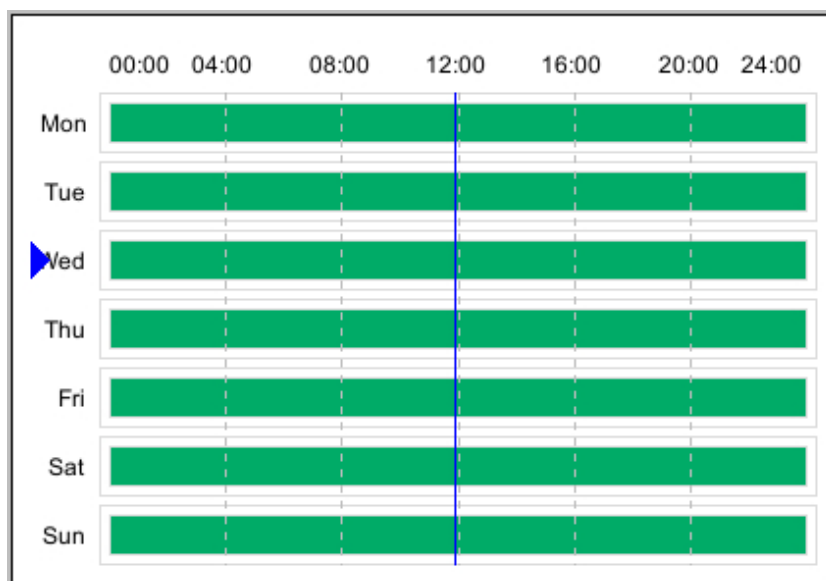


Figure 14-11: Overview of switch times per weekday

- **Depending on production start**

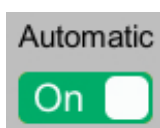
In addition to the switch times, you can configure settings for the start of the time switch depending on the production day. Checking the box causes the time switch to start working automatically when production is started. A popup specifies the day (assuming production start = 0) with which the time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

☒ Time switch active from production day

-2

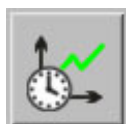
Figure 14-12: Start of production

- **Automatic switch**



The automatic status is displayed here. By clicking on the **On/Off** button, a window with information and for switching opens (see chapter 14.1.2.2 and see chapter 14.1.2.3).

- **Switch times in a curve diagram**



Clicking on the curve button opens a curve diagram of the corresponding time switch. This function can be used to monitor past switch times.

	all	Mon	Tue	Wed	Thu	Fri	Sat	Sun
		Start		End		On-time		Off-time
☒		01:20	–	01:30		0 s		0 s
☒		00:00	–	24:00		60 s		60 s
☐		00:00	–	24:00		0 s		0 s
☐		00:00	–	24:00		0 s		0 s
☐		00:00	–	24:00		0 s		0 s
☐		00:00	–	24:00		0 s		0 s
☐		00:00	–	24:00		0 s		0 s
☐		00:00	–	24:00		0 s		0 s
☐		00:00	–	24:00		0 s		0 s
☐		00:00	–	24:00		0 s		0 s
☐		00:00	–	24:00		0 s		0 s
☐		00:00	–	24:00		0 s		0 s
☒	Time switch active from production day							-2

Figure 14-14: On time and off time

- Cycle times**

The bars in the lower part of the menu indicate for how long the on cycle or off cycle will still be active. This information is also displayed in the main overview of the time switches.

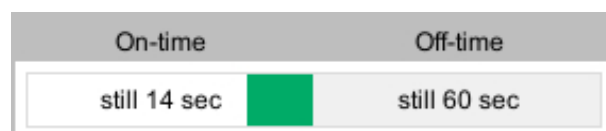


Figure 14-15: Cycle times

14.3.3 Analogue time switch

Time switch 2

[2/2]

Switch times

Time switch 2

00:00 04:00 08:00 12:00 16:00 20:00 24:00

Mon

Tue

Wed

Thu

Fri

Sat

Sun

Automatic

Set value

On

70.0 %

all	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	Start	End	from	to			
☒	04:00	17:00	10 %	70 %			
☐	00:00	24:00	0 %	0 %			
☐	00:00	24:00	0 %	0 %			
☐	00:00	24:00	0 %	0 %			
☐	00:00	24:00	0 %	0 %			
☐	00:00	24:00	0 %	0 %			
☐	00:00	24:00	0 %	0 %			
☐	00:00	24:00	0 %	0 %			
☐	00:00	24:00	0 %	0 %			
☐	00:00	24:00	0 %	0 %			
☐	00:00	24:00	0 %	0 %			
☐	00:00	24:00	0 %	0 %			
☒	Time switch active from production day						-2

Limit switch

☒ Connect limit switch in parallel

Limit switch

15 % 30 % 45 % 60 % 75 % 90 %

Switch-on and switch-off phase

Switch-on phase

15 min

Switch-off phase

15 min

Figure 14-16: Analogue time switch

- Set value**

Use the control parameters "**from**" and "**to**" per switch time to define from which and up to which level the light intensity may increase during the ramp time.

all	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	Start		End		from		to
☒	04:00	–	17:00		10 %		70 %
☐	00:00	–	24:00		0 %		0 %
☐	00:00	–	24:00		0 %		0 %
☐	00:00	–	24:00		0 %		0 %
☐	00:00	–	24:00		0 %		0 %
☐	00:00	–	24:00		0 %		0 %
☐	00:00	–	24:00		0 %		0 %
☐	00:00	–	24:00		0 %		0 %
☐	00:00	–	24:00		0 %		0 %
☐	00:00	–	24:00		0 %		0 %
☐	00:00	–	24:00		0 %		0 %
☐	00:00	–	24:00		0 %		0 %
☐	00:00	–	24:00		0 %		0 %
☒	Time switch active from production day						-2

Figure 14-17: Set value

- Current set value**

The bar of the current set value indicates the current intensity.

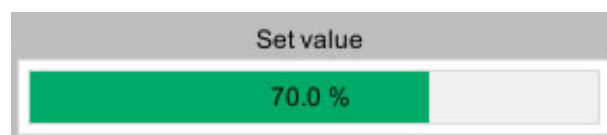


Figure 14-18: Current set value

- Switch-on and switch-off phases**

If the light can be controlled e.g. by a dimmer, you can 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.

Switch-on and switch-off phase	
Switch-on phase	15 min
Switch-off phase	15 min

Figure 14-19: Dimming behaviour

Example:

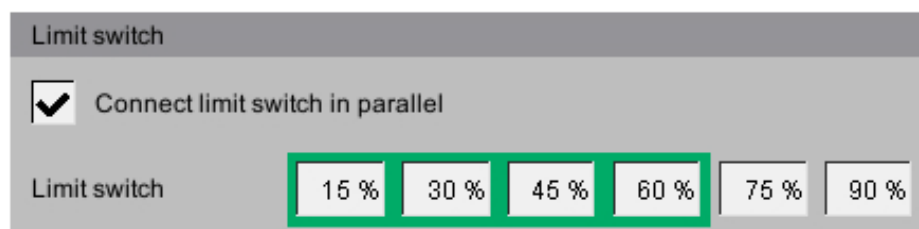
If the light is switched on at 4 a.m., it is dimmed e.g. over a period of 15 minutes until the maximum limit value is reached at 4.15.m.

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 configured. To define the switch-on time, enter the value at which the respective output should be activated for the limit switches.

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



Limit switch

☒ Connect limit switch in parallel

Limit switch

15 %	30 %	45 %	60 %	75 %	90 %
------	------	------	------	------	------

Figure 14-20: Ramp time

15 Alarmbeschreibung

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.

To access the **alarm settings**, click on the tab icon "**Alarm**".

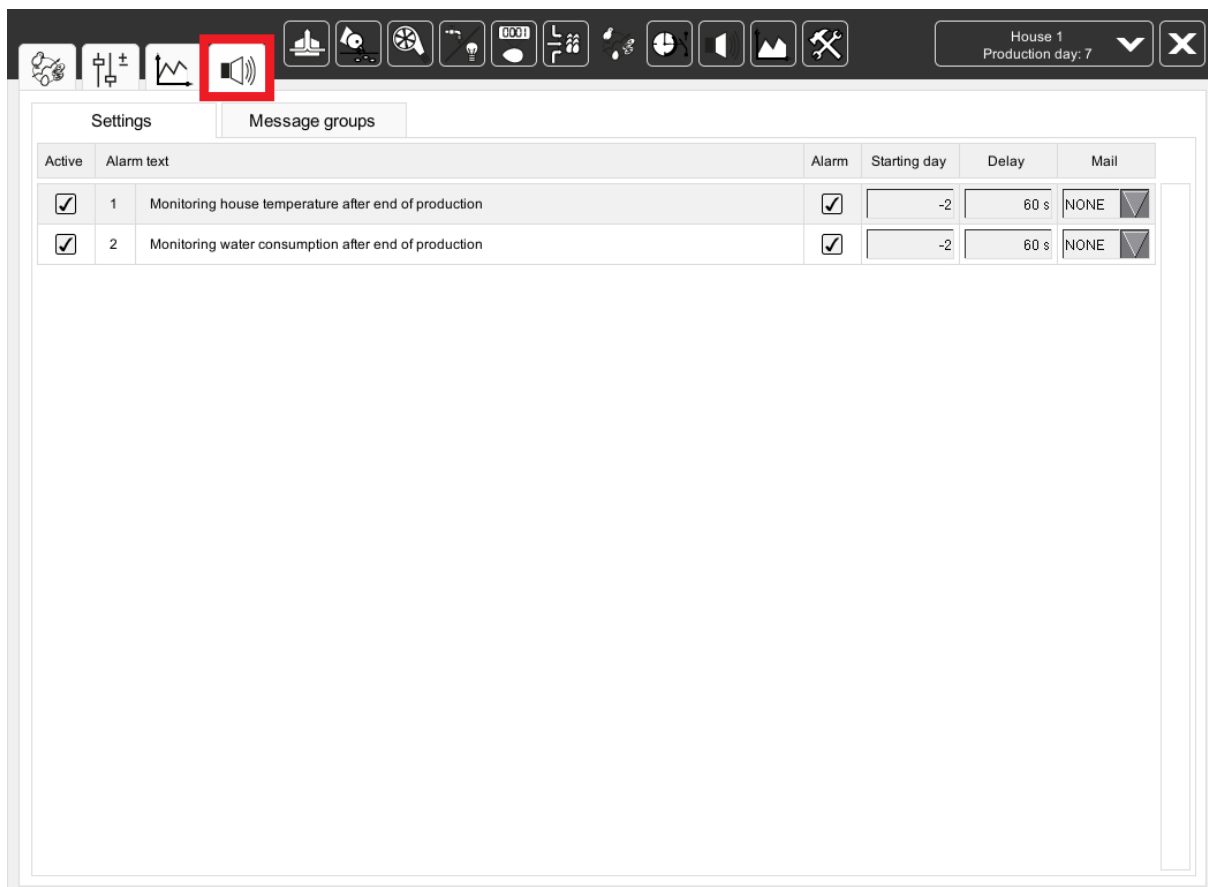


Figure 15-1: Opening the alarm settings

CAUTION!

All alarms are activated by default!

Before deactivating an alarm, check whether this alarm is truly not required. Alarms help you find issues that may endanger the health of your birds early on.

Do not think of alarms as a nuisance, but see them as a chance to keep the productivity of your house at the same high level.

**NOTICE!**

How to configure the alarm settings is explained in more detail in the "**Alarm settings**" chapter of the manual "**99-94-0420 AMACS – General operation**".

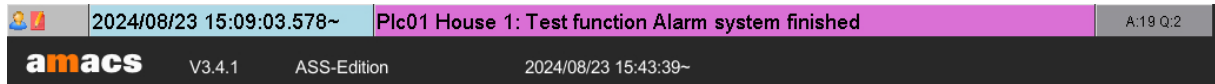


Figure 15-2: Alarm line

Alarms displayed in the message line and their causes:

- **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.