USER MANUAL

PFA-9400(-i) AUGER FEED SYSTEM

Shut down power before opening the auger feed system!

The auger feed system contains exposed live parts!

Only to be opened by authorized personnel!

WARNING

Although utmost care has been given to the quality of this equipment during the design and manufacturing stages, technical malfunctions can never be ruled out. ***The user should provide for an adequate alarm system and/or emergency provisions to prevent a technical failure of the equipment and peripheral facilities leading to danger to people, animals or property.***

NOTE DOWN THE FOLLOWING IN CASE OF AN EMERGENCY

- **Installer settings**
- **Circumstances in which the emergency occurred**
- **Possible causes**
- **Software version number**

Please contact our Customer Service Department, if you have any questions. Be sure to have all necessary data at hand. To ensure a speedy solution to the malfunction and to avoid any misunderstandings, it is advisable to note down the cause and the circumstances in which the malfunction occurred before contacting us.

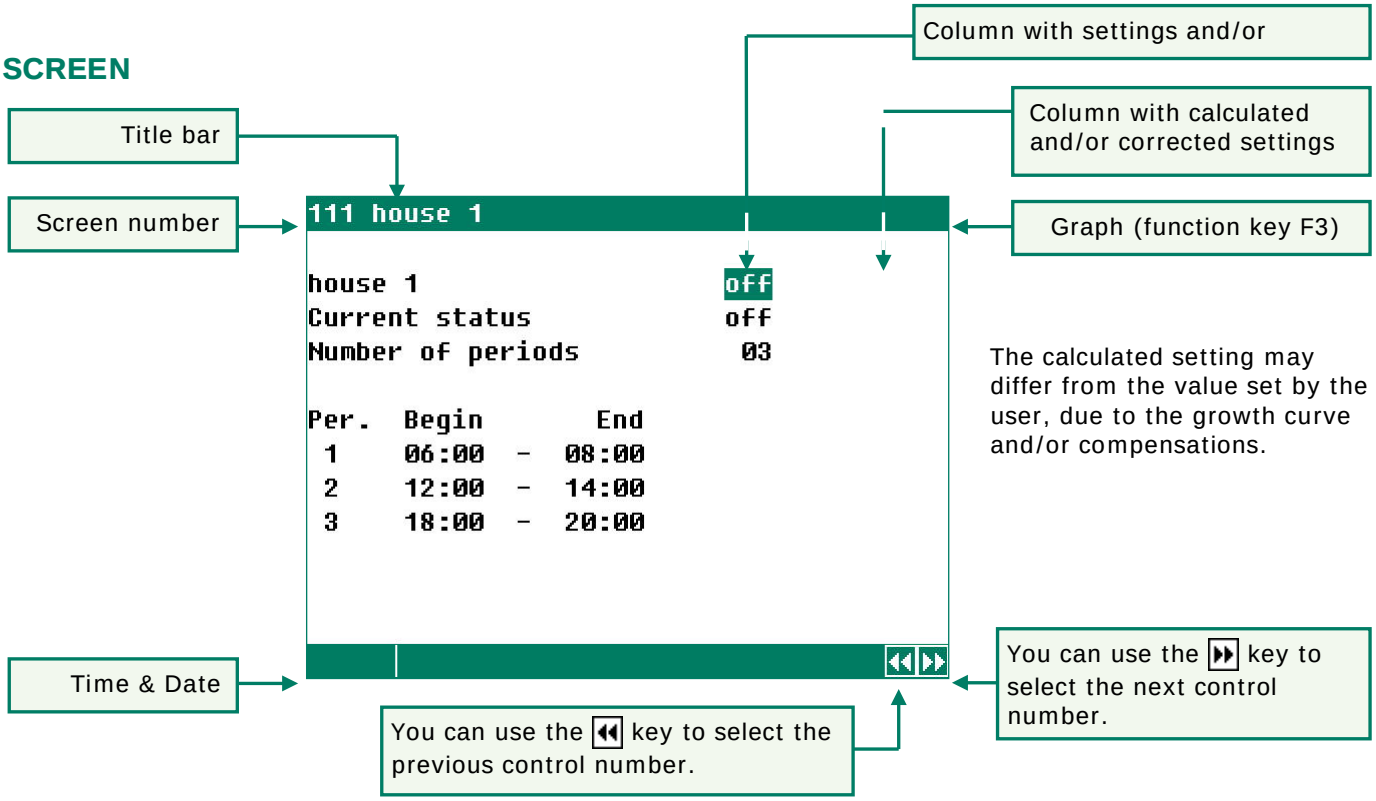
Application notes

DVS feed system	ANote-PFA94DVS-N-ENxxxxx
Data communication	ANote-DataCom-N-ENxxxxx
Remote control	ANote-Remote-N-ENxxxxx

xxxxx = application note version number.

INTRODUCTION

SCREEN

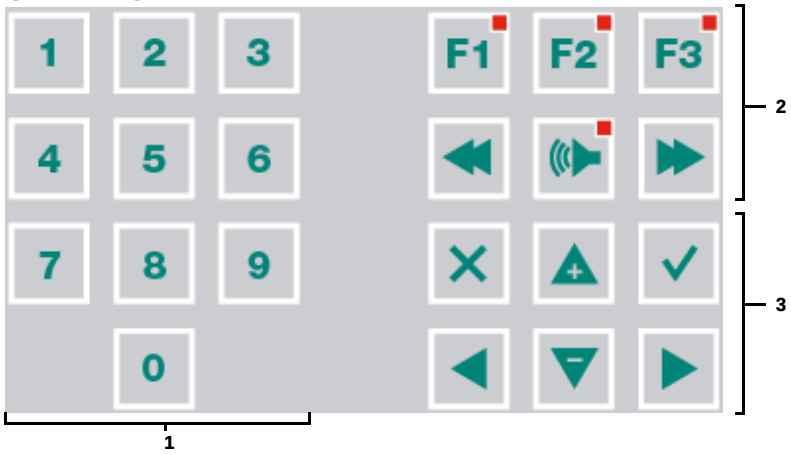


When the symbol is shown in the title bar and you press function key F3, the settings are displayed graphically. Press F3 again to switch off the graphic display. Whenever a key is pressed, the screen will be lit for a couple of minutes so that you can also see the settings and measurements in a dark animal house.

SCROLL WINDOW

If a window contains more lines than the screen can display, the title bar will show the symbol. This symbol indicates that you can call up the remaining settings and/or measurements using the up and down cursor keys ( ).

OPERATION



Caution!
Only press the keys with the tip of your finger. Sharp objects can damage the keyboard!

The keyboard can be divided into three basic groups:

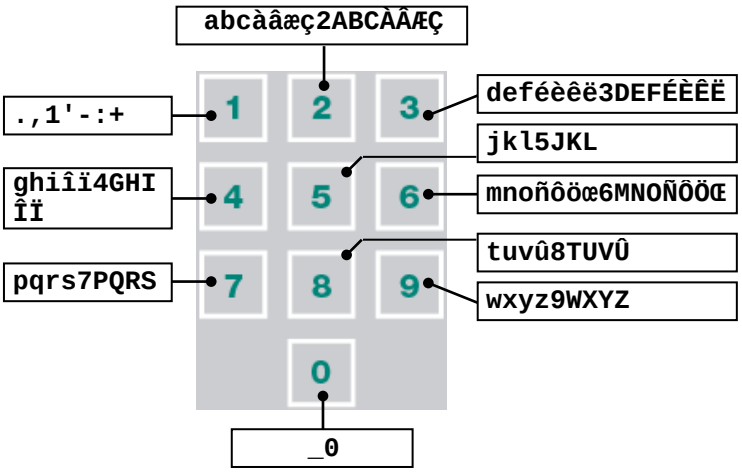
1. Numerical keys
2. Function keys
3. Navigation keys

Adding or removing a period

1. Press the [Enter] key (edit mode)
2. Press and hold the [F1] function key and then press the:
3. [+] key to add a breakpoint/period (provided that the maximum value for periods/breakpoints has not been reached)
4. [-] key to remove a breakpoint/period (provided that there is at least one period/breakpoint)

The number of breakpoints/periods is adjusted automatically.

1 NUMERICAL KEYS (0..9)



The numerical keys can be used to enter a screen number or edit a setting or a text.

Entering text (installer mode)

The numerical keys 2..9 can be used to edit the name of a timer. The maximum text length is 15 characters (including spaces). The character you enter is shown in a little box. Press the numerical key repeatedly until the character to be selected is shown. You can enter a punctuation mark by repeatedly pressing numerical key 1 until the relevant punctuation mark is shown. You can enter a space using the 0 key.

Press once for **a**, twice for **b**, etc. You can use the ▶ and ◀ keys to move the cursor. Where relevant, e.g. for menu options etc., the text will automatically start with an initial capital.

2 FUNCTION KEYS (GRAPH, ALARM, PREVIOUS / NEXT CONTROL ETC.)

Function key F1 (change language)

Changing language: Press and hold function key F1 and use the left or right arrow key to select the relevant language.

Function key F3 (graph)

Use this function key to place a graph in a screen. The “graph” function is active when the LED in the function key lights up. You can switch off the “graph” function by pressing the function key again (the LED in the key is off then).

The values in a graph are linked to the screen on the basis of which the graph was drawn up. The graph is updated automatically when you change the details on the screen.

If the details on the screen are displayed in graph form, the  symbol will be displayed in the top right corner of the menu line.

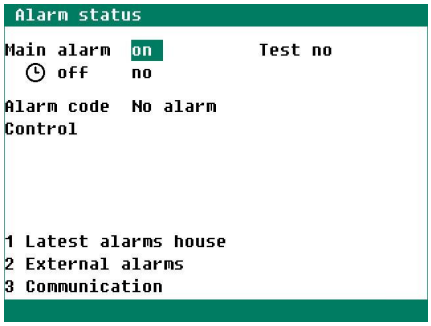
Select previous / next control

Select next/previous timer, time schedule, etc.

Alarm key

Short key for alarm screens The LED in the alarm key lights if one of the controls has an alarm situation.

You can switch the main alarm on or off in this screen. The LED will blink at a steady frequency if the main alarm is off. No alarms will be generated then.



Test *(alarm test)*

Test “yes”: This enables you to test the operation of the alarm relay (siren). If you enter "yes" in the **Test** line, the alarm relay (siren) will be switched on for 10 seconds.

You can clear the alarm test time by setting "no" in the **Test** line.

off *(alarm temporarily off)*

Off: “**yes**”: This enables you to temporarily switch off the alarm (siren). This does not apply to the hardware alarms; they cannot be switched off temporarily.

The main alarm is switched off for 30 minutes (the LED will blink irregularly). The main alarm is switched on automatically again after 30 minutes. The alarm relay will de-energize again, causing an alarm, if the cause of the alarm has not been removed.

You can clear the temporary alarm deactivation time by setting "no" in the 🕒 oFF line.

If no access code has been installed on the PFA-9400, or if you have already entered the correct access code, you can switch off the main alarm.

Attention **NEVER FORGET TO SWITCH THE ALARM BACK "ON" when you have switched this feature off 'temporarily', e.g. to solve a problem.** Failing to switch it back on may have adverse effects for people, animals, equipment or property.

Preferably use the 🕒 oFF *(alarm temporarily off) function to solve a problem.*

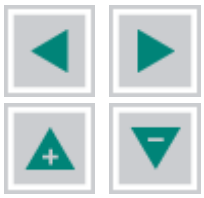
3 NAVIGATION KEYS (MENU, CURSOR, MODE)

Cancel

This key cancels changes or menu option selections.

Press and hold this key to select the main menu.

Move cursor



Move cursor

Pressing and holding the key: move cursor to the first/last setting on the screen.

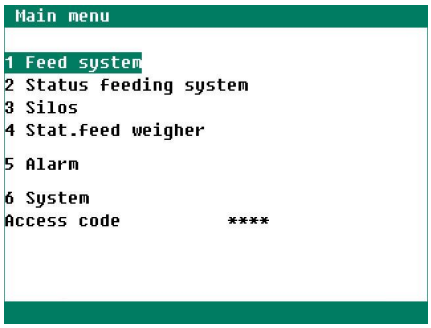
Move cursor or change value

Confirm

- Menu option
- Start change
- Confirm change

- The cursor is displayed as a green rectangle, e.g. 08:00.
- While a change is being made, the cursor is displayed as a black border, e.g. 08:00.

MAIN MENU



If you use an access code, it is advisable to write the code down and store it somewhere safe. If you forget the access code, you can no longer change any settings. As soon as one access code is active, you can only change the setting by entering the correct access code. The access code remains active until you select the “PFA-9400” screen (overview screen). After selecting this screen you will have to enter the access code again to be able to change a setting.

ACCESS CODE

You can use access codes, e.g. to protect your computer against unauthorized access. If you want to prevent non-authorized users from changing settings on your auger feed system, you can have an access code set. An access code consists of a combination of 4 digits. You can have a maximum of 2 access codes set by your installer.

LINKING THE FEED SYSTEM TO THE PL-9x00

The PFA-9400 feed computer can be linked to the PL-9x00 poultry computer to enable the controllers to exchange data to control the feed system. In fact, the PFA-9400 feed computer can be controlled by several PL-9x00 poultry computers. This is the reason why some settings such as filling, component names, etc. can only be changed or entered on the PFA-9400 feed computer.

	Settings can be changed on			
	PL-9x00 (screen no.)		**PFA-9400** (screen no.)	
Silo contents	No, copy of PFA-9400	(211)	**Yes** [1]	(31)
Component names	No, copy of PFA-9400	(212)	**Yes**	(32)
Silo assignment	No, copy of PFA-9400	(213)	**Yes** [1]	(33)
Alternative components	No, copy of PFA-9400	(214)	**Yes** [1]	(34)
Mix silo remainder	No, copy of PFA-9400	(215)	**Yes** [1]	(35)
Silo status	No, copy of PFA-9400	(216)	**Yes** [1]	(36)
Filled	No, copy of PFA-9400	(217)	**Yes**	(37)
Feed weighing status	Menu option disabled	(25)	**Yes** [1]	(4)
Dosing timer	**Yes**	(5131..5136)	No, copy of PL-9x00	(111..116)
Week programme	**Yes**	(51381..51386)	No, copy of PL-9x00	(121..126)
Feed mixture	**Yes**	(221..226)	No, copy of PL-9x00 [1]	(131..136)
Dosage curve	**Yes**	(5371..5376)	No, copy of PL-9x00	(1411..1461)
Feed mixture curve	**Yes**	(231..236)	No, copy of PL-9x00 [1]	(1412..1462)
Curve overview	**Yes**	(241..246)	**Yes**	(1414..1464)
Clear counter (dosing)	No, copy of PFA-9400	(41..46)	**Yes**	(1511..1561)
Growth curve - animal weight	**Yes**	(166)	No [2]	
Animal data	**Yes**	(641)	No [3]	
Alarm counters	**Yes**	(491..496)	No, copy of PL-9x0	(1731..1736)
First day of the week	No, copy of PFA-9400	(53)	**Yes**	(61)
Beginning of new day	No, copy of PFA-9400	(53)	**Yes**	(61)

All data that concerns the “Feed system” menu option is copied from the relevant PL-9x00 poultry computer, except for the “Overviews” menu option. This means that you can only change the data on the corresponding PL-9x00 poultry computer.

[1] Does not apply if only one PSW-1 silo weigher is present.
[2] The “Animal weight” option is not available in the “Curves” submenu.
[3] The animal data submenu only lets you call up an overview of the animals present. No other options are available.

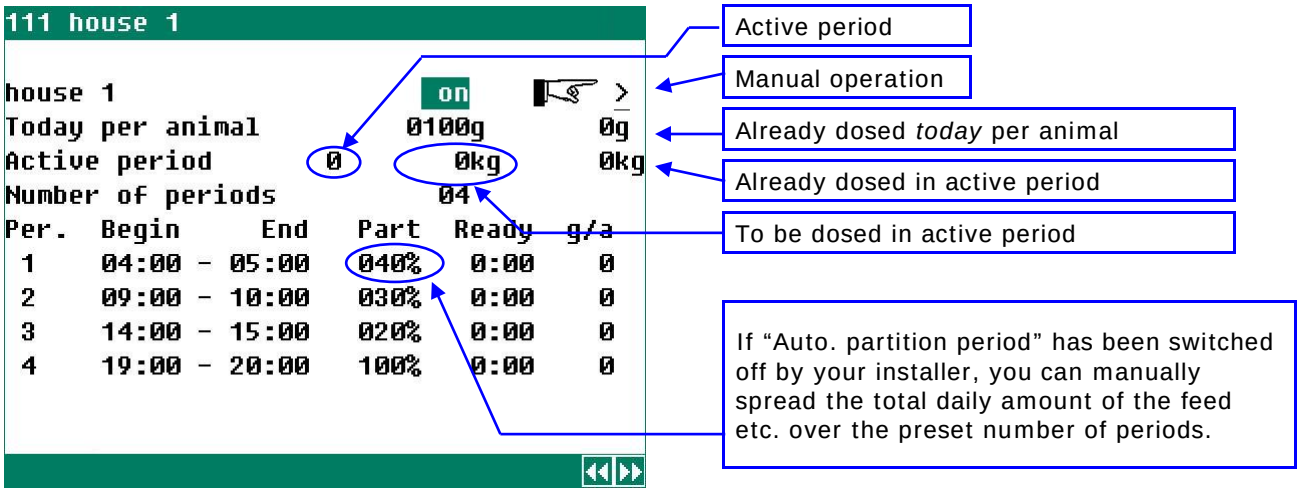
When copying a setting or several settings from another controller via the communication loop, “Communication” is shown in the top right-hand corner of the screen.

TIMERS

A maximum of 24 periods can be set on a timer. All times have to be consecutive times. On a standard dosage timer, the difference in time between the beginning and the end of a period and the difference in time between two consecutive periods must be at least 1 minute. However, if your installer has set a “Filling time” and/or an ”Emptying time” for the auger in question, the following applies: Difference in time between two consecutive periods = 1 minute + Maximum filling time + “Emptying time”.

Overlapping feeding times are not allowed if one of the augers is not driven by a “release contact”, nor are overlaps of the feeding times with other timers allowed in that case. The number of animals at the start of the first actual feeding cycle started by the dosing timer determines the calculated amount to be dosed for that day. If the number of animals changes in the meantime (due to animals dying, being removed or added), this does not affect the calculation.

In addition to the number of animals, the amount of feed per animal is also decisive for the amount to be dosed. If the dosage curve is active, the current amount per animal is calculated from the dosage curve, using the day number. If the curve is not active, you can set the current amount of feed per animal at “Today per animal”.



If the house is coupled to a PL-9x00 poultry computer, “Communication” will display in the top right-hand corner of the screen and the timer (house) settings will be copied from the corresponding poultry computer with the same communication number (see screen 7321x on the PFA-9400).

- The amount to be dosed is calculated/recalculated between two periods.
- **WITH** “Auto. partition period” - The total daily amount is spread over the number of periods set.
- **WITHOUT** “Auto. partition period” - If the sum of the percentages set under “Part” is less than 100%, ***the shortage of the prior periods will be corrected to 100% in the last dosing period, regardless of what you have entered in the last period.***

- The dosed amount per period is listed under the last column (g/d or ml/d). If the amount to be dosed is reached within the period, the time when the cycle has ended is shown under “Ready”.
- If something has gone wrong in previous cycles, this will be corrected in the last cycle if possible, until the entire amount has been dosed.

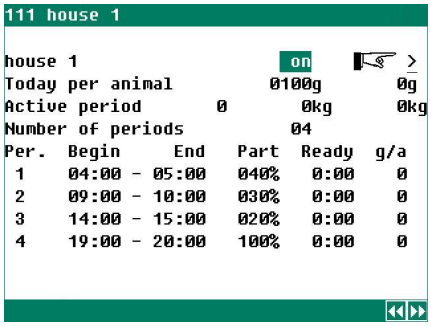
If the cursor is on **Curve setting** and you press the confirmation key, the dosage curve for the house in question will be displayed. You may now change the curve settings or switch off the curve. Press the cancel key to return to the previous screen. If you have switched off the curve, the “Curve setting” text will be replaced by “Today per animal” and you can no longer access the dosage curve from this screen (the dosage curve is off).

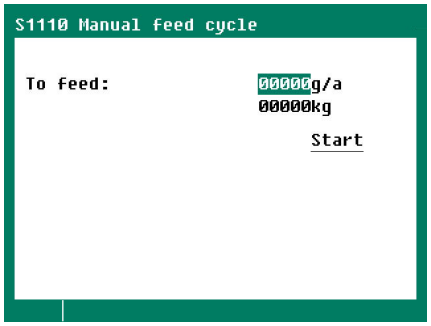
The data of houses 2 to 6 can be changed and/or called up in a similar manner.

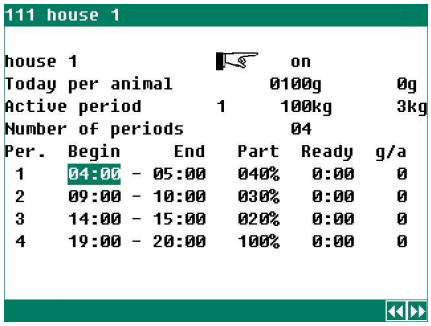
MANUAL OPERATION

Manual operation is only possible with a ***dosing timer that is "on".***

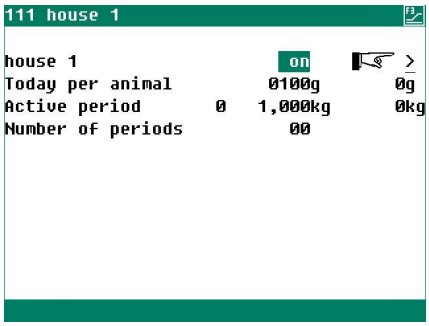
Number of perios > 0

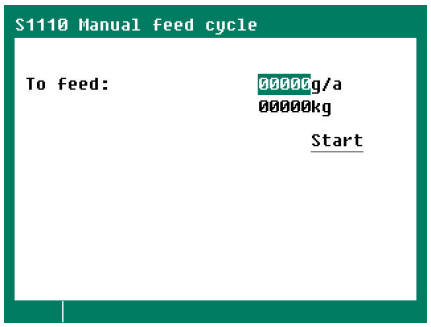


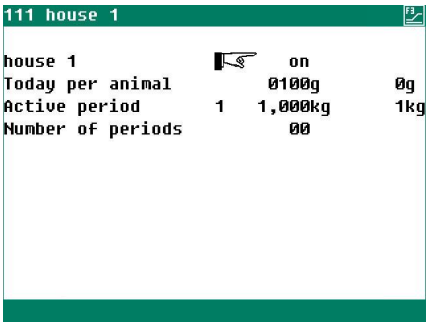




Number of periods = 0 (only manual operation possible)







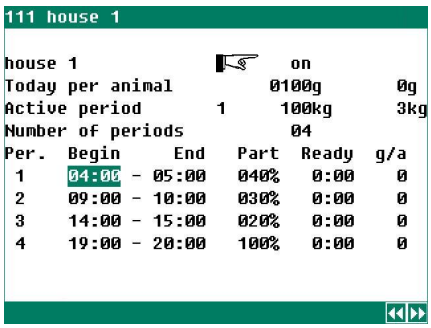
- Place the cursor on the link behind the hand ☞ > and press the ↵ key.
- The *"Manual feed cycle"* screen appears. Enter the amount of feed (per animal or total) that you want to feed manually in this screen. *If you set a greater amount than the maximum daily dosage, no more feeding will take place in the remaining feed cycles.*
- Select the **Start** link and press the ↵ key.
- The hand ☞ is placed in front of the clock status to show that the manual feed cycle has started.

There are two possible situations:

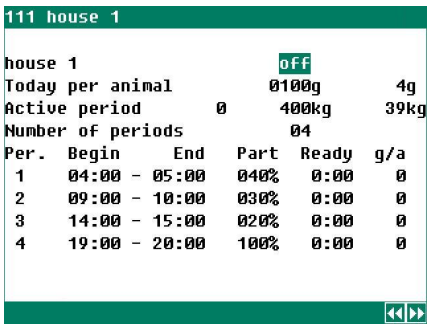
1. Not all feeding periods have elapsed: the amount of feed you feed manually is deducted from the remaining dosage for this day.
2. All feeding periods have taken place (or the number of periods is 0). *This means that you are feeding extra*, the amount of the manual feed cycle is added to the total daily dosage.

Note! If you start a manual feed cycle, pay attention that no other house is or becomes active during the time required for the feed system to dose the amount set (only one feed system can be active at any one time, otherwise a "*Dosing alarm*" will occur).

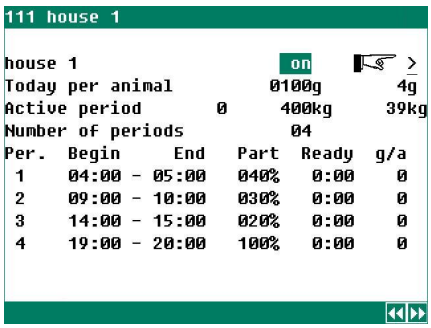
Abort manual feed cycle



Manual feed cycle



Switch timer "off"



Switch timer "on"

- Go to the "*Timers*" screen, select the required house e.g. "*House 1*" and switch off the timer; the manual feed cycle will be aborted now.
- Then set the "***Timer***" for the selected house (House 1) to "***on***" again (**DO NOT FORGET this, or else no more feeding will take place**).
- The manual operation hand is behind "*On*" again to indicate that the manual feed cycle was aborted and that you can start a new manual feed cycle.

Create stock

Your installer can set either of the following options:

- Stock is created only ***in the last period***, the feed chain will not run then. You will get a dosing alarm if the stock has not been created before the end of the period.
- Stock is created immediately ***after every period***. If the dose as set has not been achieved, a dosing alarm will be generated at the end of the day.

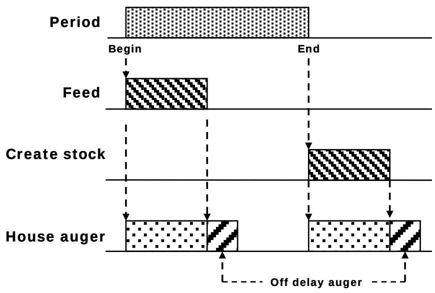
The stock (amount) *created in the last feed cycle* is not added to the amount already dosed until *the next day*.

In the last period

111 house 1					
house 1			on		
Today per animal	+00g		0717g		14g
Active period	0		400kg		40kg
Number of periods			04		
Per.	Begin	End	Part	Ready	g/a
1	04:00	05:00	040%	0:00	0
2	09:00	10:00	030%	0:00	0
3	14:00	15:00	020%	0:00	0
4	19:00	20:00	100%	0:00	0

After every period

2 Status feeding system			
Active house			house 1
Stat.feed weigh.		Weigher	standby
	Timer	Auger	Demand
house 1	off	0m26	yes
house 2	off	off	yes
house 3	off	off	no
house 4	off	off	no
house 5	off	off	no
house 6	off	off	no
Release sensor		no feed	



Create stock

Stock has been created

TIMER OVERVIEW

A graphic overview of the timers is displayed on the screen. Only the on/off times of the timers which have been activated are shown.

ALARM (DOSAGE ALARM)

1181 Alarm house 1	
Alarm	on
Minimum dosage	100%
Present dosage	0%
Dosage calculated	256g/a
Present dosage	0g/a
Alarm status	No alarm

A dosing timer (feed or water) lets you set the minimum amount to be dosed here (as a percentage of the amount to be dosed).

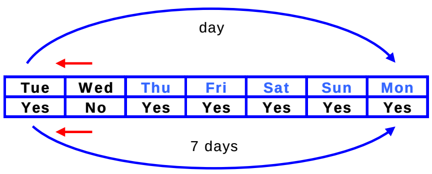
The amount to be dosed is calculated for every feeding cycle. If the amount dosed is less than the minimum dose at the end of the feeding cycle, a dosing alarm will be generated.

You can clear the dosing alarm by switching the alarm off and then on again in this screen.

The data of houses 2 to 6 can be changed and/or called up in a similar manner.

WEEK PROGRAMME

121 Week program house 1	
Week program	yes
Days in cycle	7 days
Active on	
Tue	yes
Wed	no
Thu	yes
Fri	yes
Sat	yes
Sun	yes
Mon	yes



You can use “Week programme” to set the timer (feed timer) such that it is not switched on every day, for example so that feeding takes place on 6 days and no feeding takes place on the seventh day.

The data of houses 2 to 6 can be changed and/or called up in a similar manner.

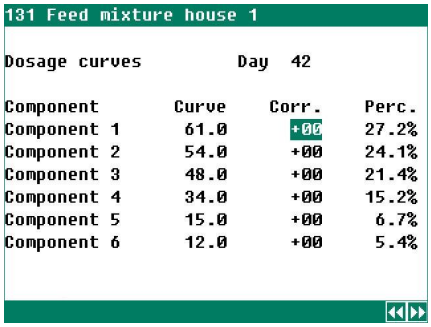
FEED MIXTURE (not applicable with a PSW-1 silo weigher)

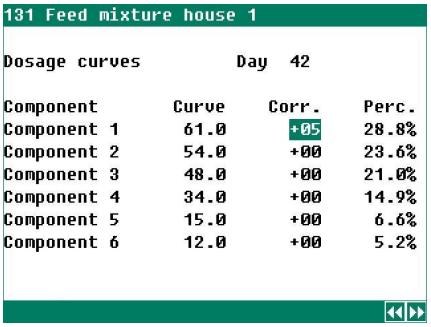
You can call up/set the feed mixture for every individual timer, provided that:

- The “Mixture curve” of the timer (house) has been activated in the installation code.
- The feed mixture curve of the timer itself is also “on”.

The current feed mixture will then be calculated from the curve settings. You can change the calculated feed mixture by entering a correction for the units calculated in the “Corr.” column.

WITH A FEED MIXTURE CURVE

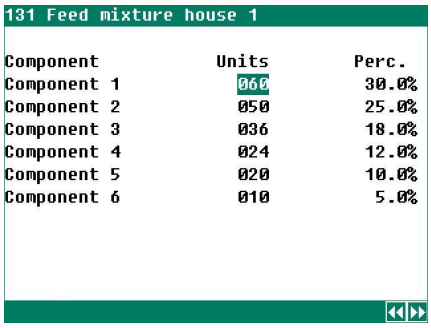




Since the percentages shown in the "Perc." column are rounded values, the percentages shown can differ approx. 0.1% from the actual calculated percentages.

Note! The values shown in the "Curve", "Corr." and "Units" columns show the mutual dosing ratios of the different components. These values do not show their percentage of the total mixture. The percentage in the mixture is calculated automatically for every component on the basis of the ratios set.

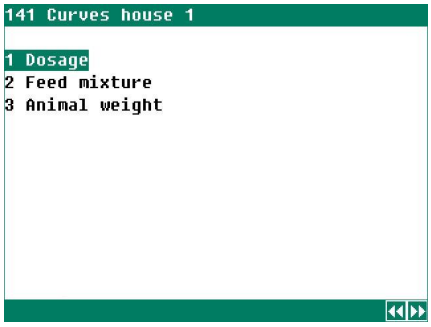
WITHOUT A FEED MIXTURE CURVE



You can set the mutual dosing ratios of the different components in this screen. The percentage is calculated automatically on the basis of the ratios set.

You can set and/or call up the feed mixtures of the other timers, if installed, in the same way.

CURVES



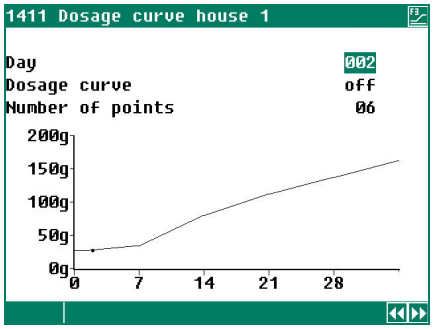
Several curves are available to gradually and automatically change the feed amounts and mixing ratios of the various types of feed. A curve can consist of a maximum of 15 breakpoints.

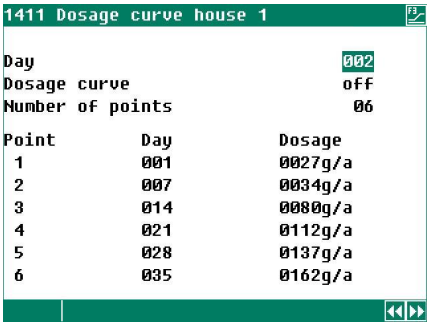
Depending on the current day number, the current setting is determined from the curve. The auger feed system uses this calculated setting to control the amount of feed dosed (provided that the curves are *on*).

Note!

- The day numbers in the curve have to be consecutive numbers (see example).
- If the day number of the first breakpoint is greater than 1, the setting for the first breakpoint will be maintained until the preset day number.

DOSAGE





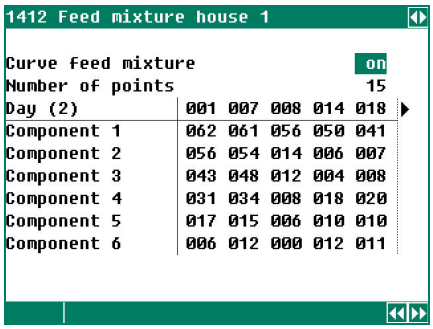
If the installer has activated the dosage curves, you can use **programmable curves** to have the amount per animal increase automatically as the animals grow older. You set a day number and the amount of feed per animal per day in the dosage curve. You can set a separate dosage curve for every house.

A curve can consist of a maximum of 15 breakpoints; the day number must be between 1 and 999. The current day number is increased automatically at "Beginning new day".

The total amount to be dosed is calculated again every day using:

- the curve settings
- the current day number
- the current number of animals in the house.

FEED MIXTURE (not applicable with a PSW-1 silo weigher)



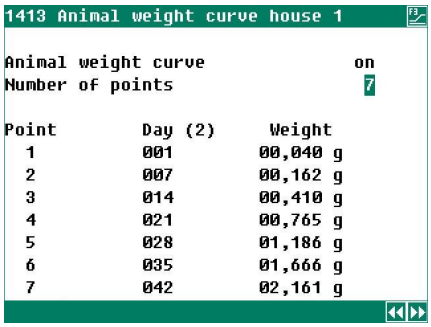
You can vary the mixture, depending on the age of the animals.

Note!

- You set a mixing ratio here instead of percentages of the total dose.
- If you change the number of components in screen 32 (Component name), **the feed mixture (mixing ratio) will also change**.
- If the Dosage curve is off, you can set the day number of the curve in this screen.

Day (2) : The current day number is displayed between brackets behind “Day”. The arrow keys ◀▶ in the screen indicate that there are more columns with settings.

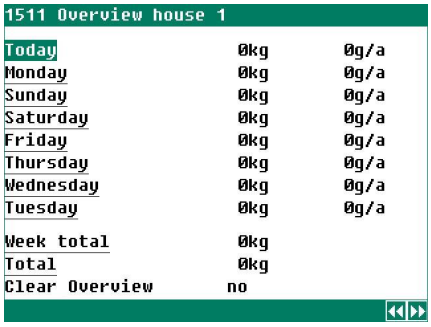
ANIMAL WEIGHT

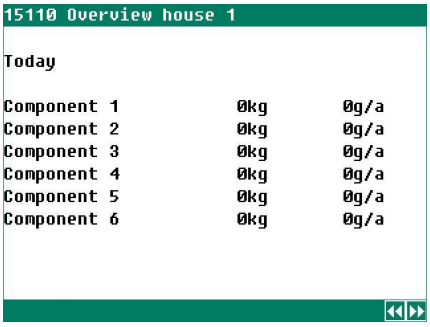


At present, the growth curve of the animal weight is only used for information and does not have any other function.

OVERVIEWS

OVERVIEW OF AMOUNT FED





Overview of the amount fed in which the total amount is shown, as well as the amount per animal (if animal data is available). As the numbers displayed are rounded, they can differ from the actual value.

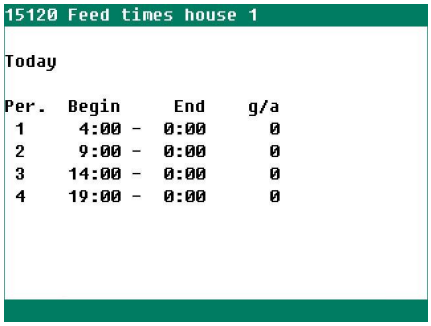
The overviews of houses 2 to 6 can be called up in a similar manner.

Clear overview

All amounts fed, stored in the memory, for the selected house (including today's amount fed and the feed times stored) are deleted.

⚠ **Note!** **When the overview is cleared the data for today is also deleted.**
The corresponding counter on the PL-9x00 poultry computer is also cleared.

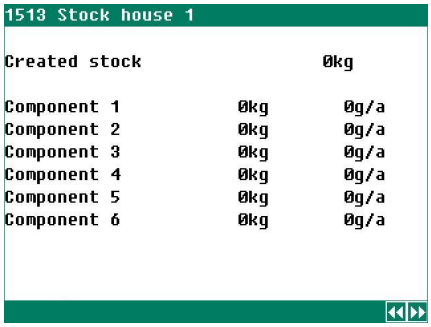
FEED TIMES OVERVIEW



If a dosing timer is used, you can request the amount fed per animal per feeding period.

The overview of houses 2 to 6 can be called up in a similar manner.

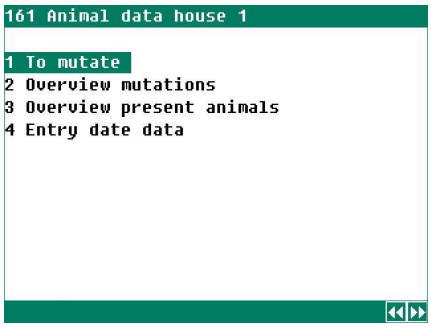
STOCK OVERVIEW

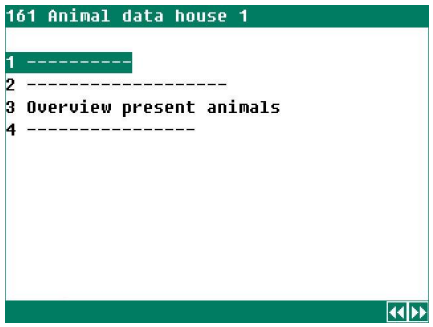


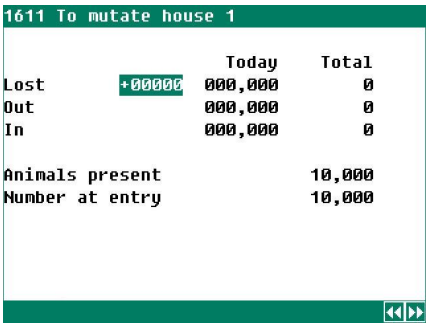
Besides the total amount of stock created, the share per component is shown as well. This screen also shows the calculated amount per animal.

The stock created for houses 2 to 6 can be called up in a similar manner.

ANIMAL DATA







The house is connected to a PL-9x00 poultry computer.

Use the ◂◂ and ▸▸ keys to select the next/previous house if several houses with management data are present.

TO MUTATE

Lost	Enter the number of animals that have died here. “Today's” mortality (or death rate) is lowered automatically by the value entered after which the entry is erased. If you have entered an incorrect value you can correct this by entering a positive value.
Lost “Today”	Today's total mortality
Lost “Total	"Total" shows the total mortality calculated using the mortality of the previous days and of “Today”
Out	If animals are removed from the house in the meantime, you can enter the number of animals removed at 'Out'.
Out “Total”	The “Total” number of animals removed.
In	If more animals are put in the house in the meantime, you can enter the number of animals added at 'In'.
In “Total”	The “Total” number of animals added.
Animals present	This is the sum of the number of animals originally placed in the house – the total mortality - total out + total in.
Number at entry	This is the number of animals originally placed in the house, i.e. at the start of the production round.

MUTATIONS OVERVIEW

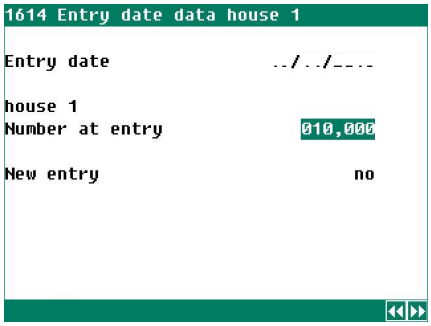
An overview of the daily mortality, the daily number of animals removed (out) and the daily number of animals added (in) is shown.

OVERVIEW OF ANIMALS PRESENT

An overview of the daily remaining number of animals in the house is shown.

ENTRY DATA

This data in this screen has to be entered at the start of a new round, i.e. when a new flock or herd of animals is placed. The auger feed system uses this data to calculate the remaining number of animals, the feed dosage etc.



Entry date: The entry date is entered automatically if you enter “yes” at “New entry”.

Number at entry: This is the number of animals originally placed in the house, i.e. at the start of the production round.

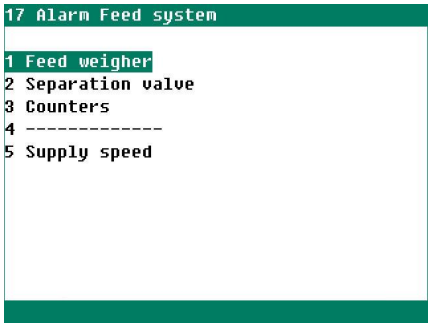
New entry: If you enter “yes” at “New entry”:

- the “Lost” table is erased.
- the entry date is filled in.
- the fill ratio is re-calculated (if the fill ratio depends on the entry details)
- feed dosing is started (if a feeding cycle is active)

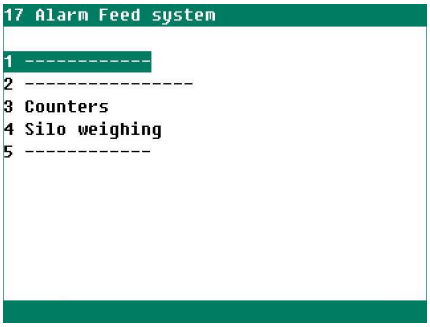
The entry date is used to determine the age of the animals. This setting is also used to fill the mortality table that is related to the animals' age. The auger feed system can store the details of the past 7 days.

FEED SYSTEM ALARM

PFB-35/70



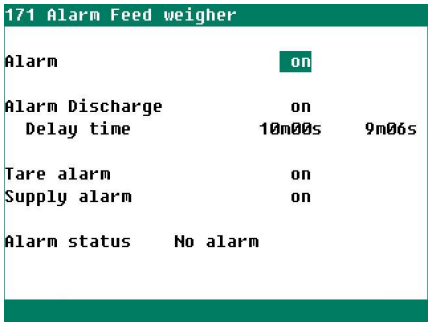
PSW-1



Always set the alarm to “on” again after remedying the fault.

Menu item 4 will show if a counter is connected to a PSW-1 silo weigher.

FEED WEIGHER

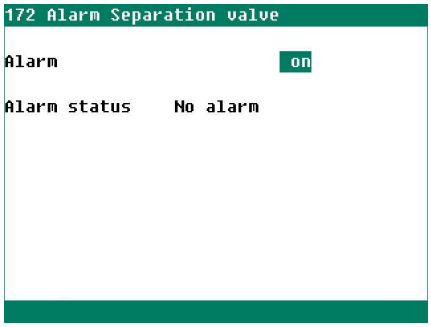


This screen enables you to switch the alarm of the feed weigher off/on, see also screen 4 “Status feed weigher”, page 21.

In addition, this screen enables you to switch the “Discharge alarm” on/off and set the delay time for the “Discharge alarm”.

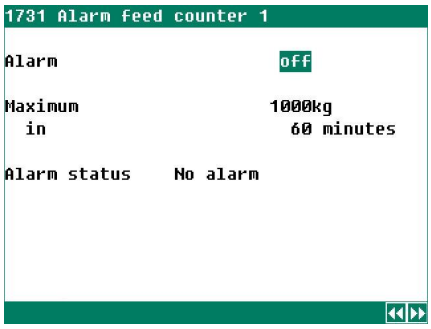
The “Discharge alarm” serves to detect whether the feed under the feed weigher is actually discharged. If the discharge auger is driven and the sensor under the feed weigher detects feed during the “delay time”, a “Discharge alarm” will be generated after the “Delay time” has expired.

SEPARATION FLAP



This screen enables you to switch the alarm of the “Separation valve” on or off.

COUNTERS

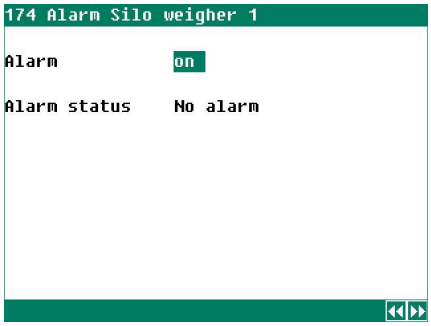


To be able to detect possible broken pipes or leaks in time, this screen enables you to set the maximum amount of feed that can flow through the pipes during the preset period before an alarm is generated. If the counter is linked to a dosing timer, the dosing timer output will also be switched off.

You can set and/or call up the alarms of counters 2 to 6 in the same way.

If the counter of the PFA-9400 is linked to a counter of the PL-9x00 poultry computer, the screen that is shown will be a copy of the screen of the PL-9x00 poultry computer. You cannot switch the "Counter" alarm on or off on the PFA-9400; this is only possible on the PL-9x00 poultry computer.

SILO WEIGHING



This screen enables you to switch the alarm of the "Silo weighers" on or off.

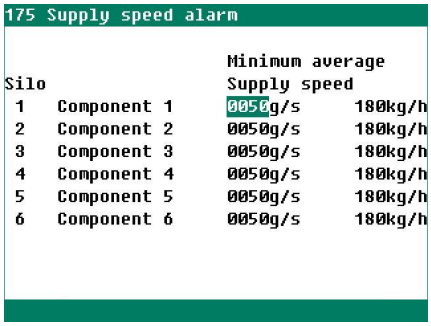
Use the ◀◀ ▶▶ keys to select the next/previous silo weigher.

You can change or call up the settings and measurements of silo weigher 2 in the same way.

SUPPLY SPEED ALARM

You can set the minimum average supply speed in this screen; if the average supply speed is below the preset speed for 60 seconds, the "supply speed" alarm will be generated.

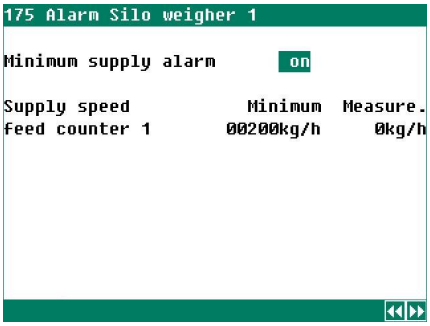
PFB-35/70



The setting is automatically converted into kg/hour.

You can set and/or call up the settings and measurements of silos 2 to 16 in the same way.

PSW-1

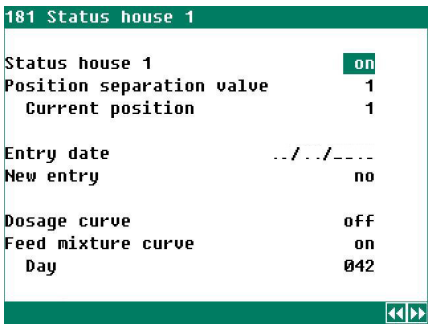


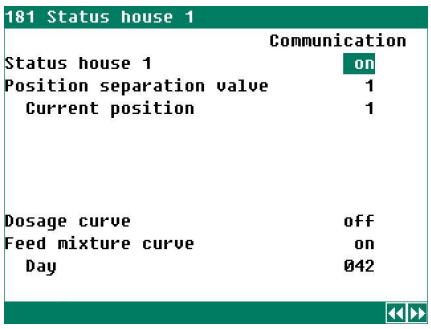
Use the ◀◀ ▶▶ keys to select the next/previous silo weigher.

You can change or call up the settings and measurements of silo weigher 2 in the same way.

STATUS

HOUSE STATUS





All data in this screen is copied from the PL-9x00 poultry computer.

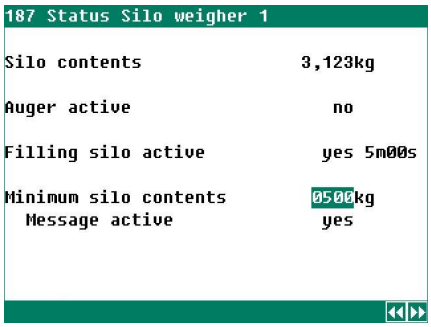
You can use the status to switch the feed timer of the house on/off (see also screens 111 to 116, timers for houses 1 to 6).

To create a new entry, i.e. when placing a new flock or herd of animals in the house, change the setting “no” for “New entry” to “yes”.

- The entry date is made equal to the current (today's) date.
- The number of animals is set to “Number at entry”.
- The mortality table is deleted (Note! The day number is **NOT adjusted automatically**, you will have to do this yourself).

Furthermore you can change the dosage curve, the curve of the feed mixture (not applicable for a PSW-1 silo weigher) and the day number of the curves in this screen.

SILO WEIGHER STATUS

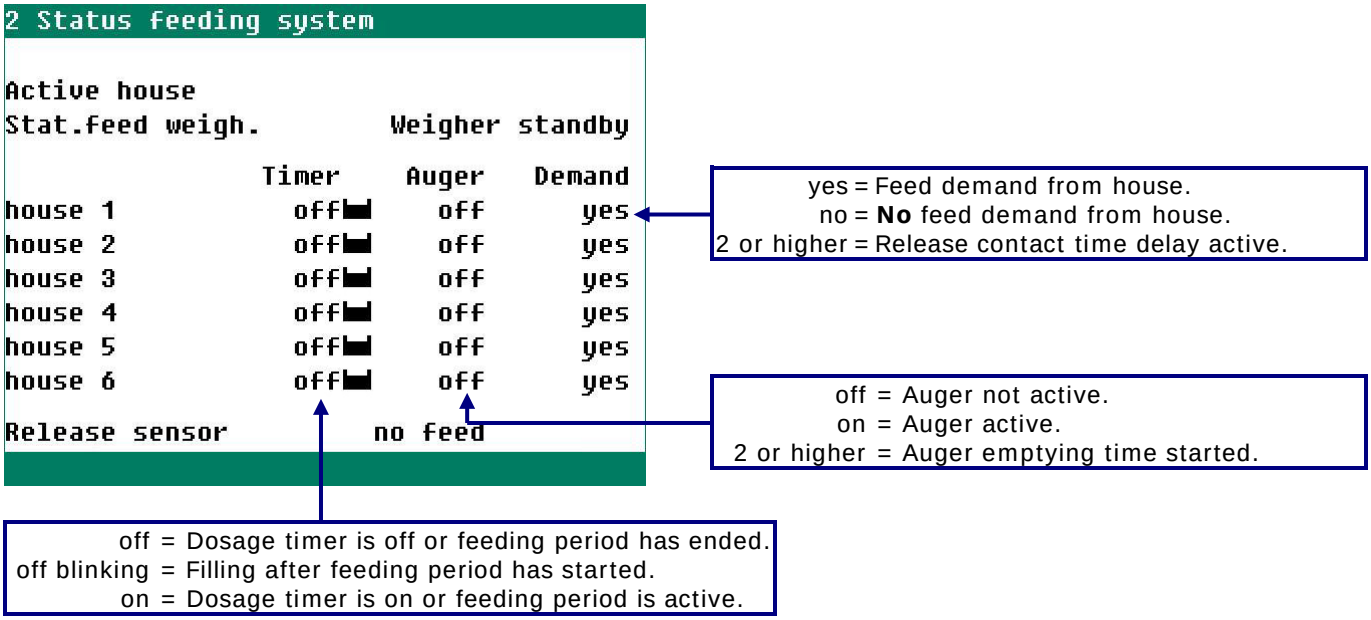


← Filling status is active (time is counting down)

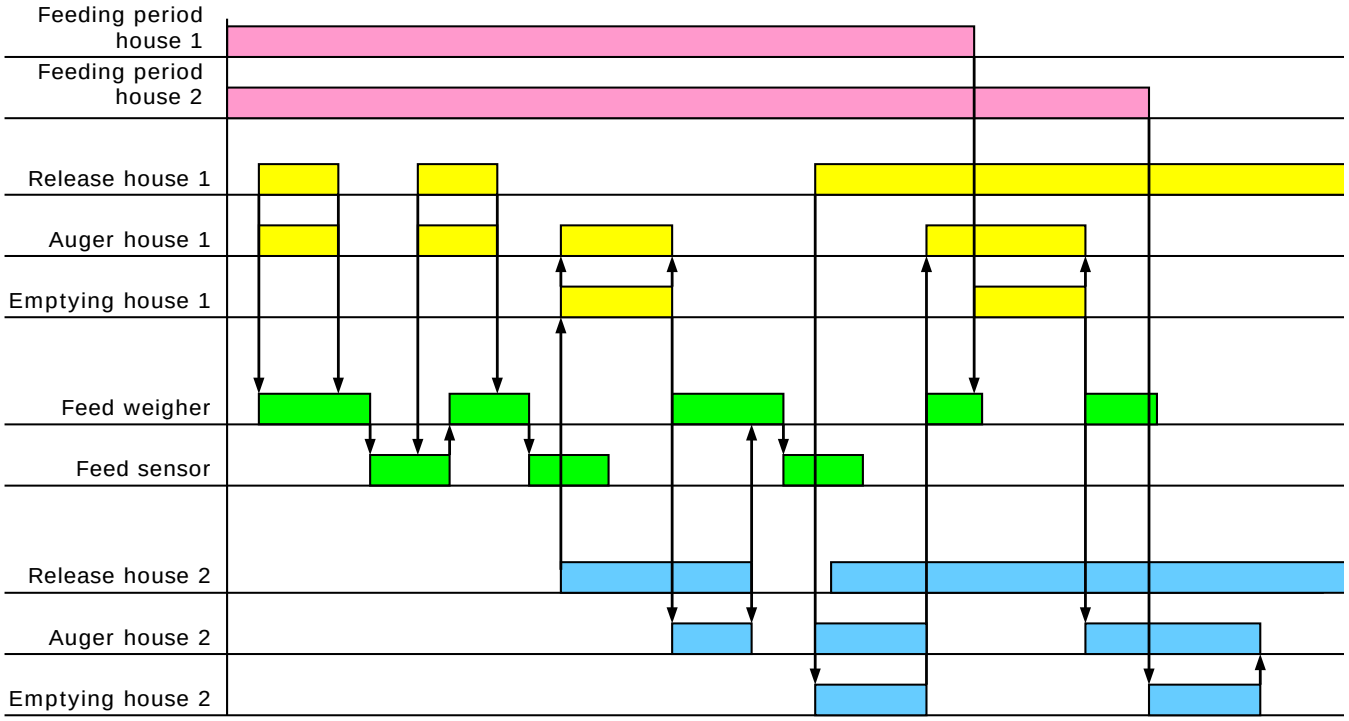
You can call up the status of silo weigher 2, if installed, in the same way.

- **Silo contents:** This line displays the current silo contents.
- **Auger active:** The current auger status is shown in this line. Yes: silo auger running, No: silo auger not running.
- **Filling silo active:** The weight filled is determined automatically. If the silo contents increase by more than 50 kg every 30 seconds, the PFA-9400 assumes that filling is taking place (silo filling is active). You cannot zero the silo contents while filling is active. If the weight has not increased for the last 5 minutes, the filling status will be cancelled.
- **Minimum silo contents (option):** As soon as the silo contents drop to below the “Minimum silo contents” setting and the message is active, the corresponding relay (message) is switched on. You can switch off the message by entering 'No' for “Message active”. **Note!** If you would like to receive a new message if the contents drop to below the minimum again, reactivate the message after filling.

STATUS FEEDING SYSTEM



Example of feeding using release contacts



After the release contact has been broken again, the current portion is finished first, and then the feed weigher hopper is filled until the feed sensor detects feed, so that the next feed request can be dealt with faster.

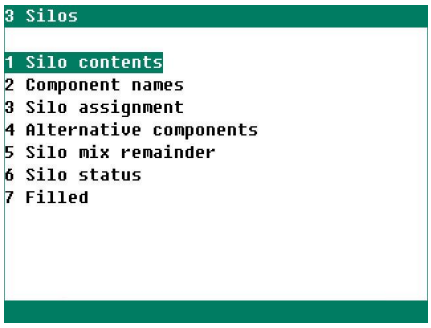
E.g. after the release contact of house 1 is broken again and the release contact in house 2 is made, the emptying time of house 1 starts in order to empty the hopper. The feed in the hopper will then be delivered to house 1 after all. However, this means that after the release contact in the house has been broken (hopper in house is “full”) the hopper in the house must still have sufficient capacity to store at least the contents of the feed weigher hopper.

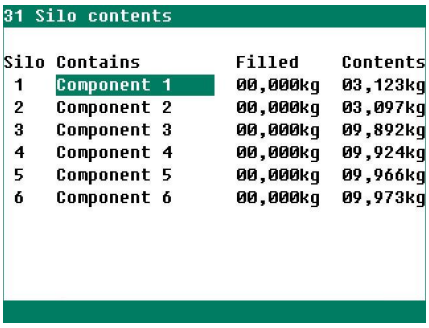
When the end of a feeding period is reached, the last portion is finished first before the hopper emptying time starts. At the end of the dosing cycle, the feed will always be delivered to the correct house.

The time delay “**on the release contact**” must prevent the auger from switching continuously on and off, this negatively affects the service life of the auger motor (default delay time = 0 seconds).

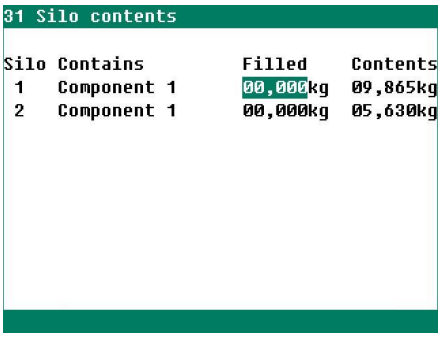
SILOS

SILO CONTENTS





PFB-35/70



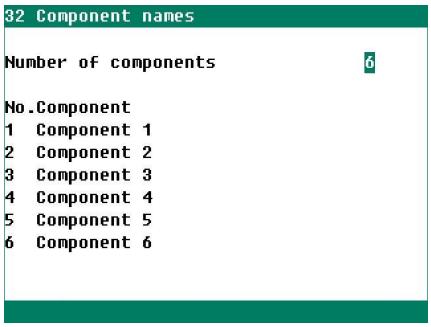
PSW-1

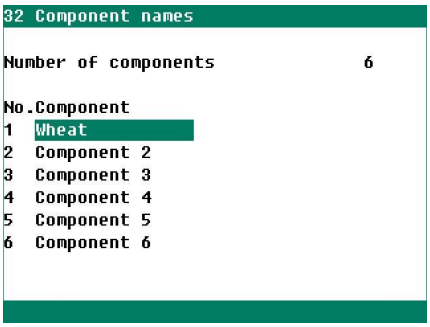
Which component is in the silo and what the current silo contents are (stock or shortage) is indicated for every silo. You can also enter the filled volume per silo; the silo content value will be updated with this volume immediately and the filled counter will be reset to 0 automatically.

If there are 9 or more silos the title bar will be expanded with the ⇕ symbol. This symbol indicates that you can call up the other silos using the "up" and "down" cursor keys (▲ ▼).

Note! You cannot mix different types of feed if you use silo weighing. In the event of silo weighing, your installer assigns the silo directly to a house.
A PSW-1 silo weigher automatically records the filling data. Only enter the filling data if the silo weigher could not automatically update the filling data itself, e.g. because the silo weigher was off.

COMPONENT NAMES





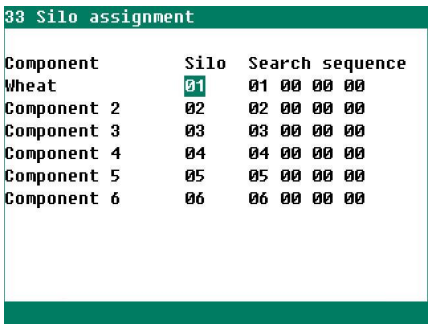
You can use the 0..9 keys to change the names of the components. See page 6 for further information on editing text.

We recommend not setting more types of component than required. If you have more types of component than silos and you change the component type in a silo, you also have to change the mixture, the curve settings, the silo contents and the silo assignment. If you fail to do this, the "Component not in silo" error message will be displayed in the Alarms screen.

Example: you have 3 silos and 4 types of component. Component 3 is in silo 3 and then you change the type of component in silo 3 from component 3 to component 4. Proceed as follows then:

- Change mixture.
- Change silo contents.
- Change silo assignment.

SILO ASSIGNMENT



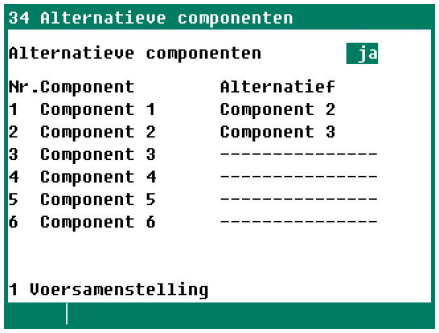
The "*Silo*" column shows the **active silo** from which the component is dosed.

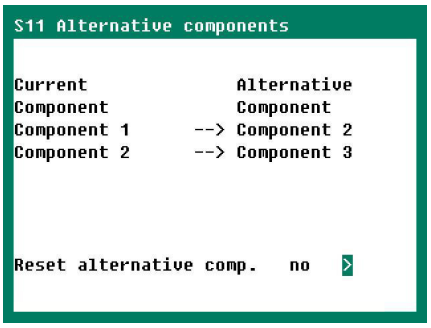
If more components of the same type are present, you can fill in the numbers of the silos containing the same type of component in the search sequence. Should a silo get "blocked" for any reason (e.g. due to a silo alarm or if the current silo number from which the component is to be dosed is set as 0), the program will automatically look for a silo containing the same type of component. If you do not fill in a sequence and a silo gets "blocked" the "**invalid silo**" alarm will be displayed.

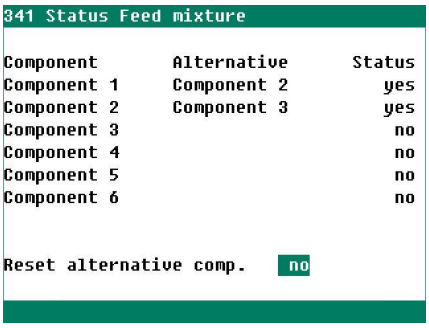
Always fill in the "Search sequence"; the search sequence settings will be copied to the "Silo" column after a reset.

ALTERNATIVE COMPONENTS

If you have set an alternative component for a component and there is a supply alarm for the component in question, the computer will automatically switch over to the alternative component.







The “Status feed mixture” screen only shows the components that form a part of the current feed mixture.

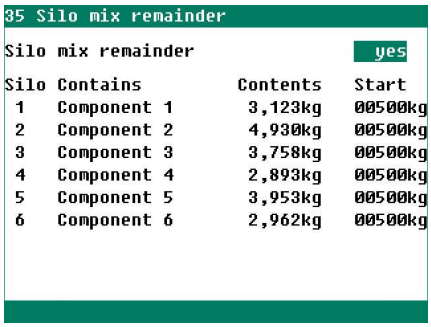
You can use the “Reset alternative comp.” setting to clear all alternative components (all statuses will be set to “off”). After a reset, it may take some minutes for feeding to start again (the new feed mixture must be determined).

If “Alternative components” is set to “yes”, the central screen will be displayed to show that the feed computer has selected an alternative component. Press the link behind “Reset alternative comp.” > to bring up the previous screen on the display.

MIXING THE SILO REMAINDER

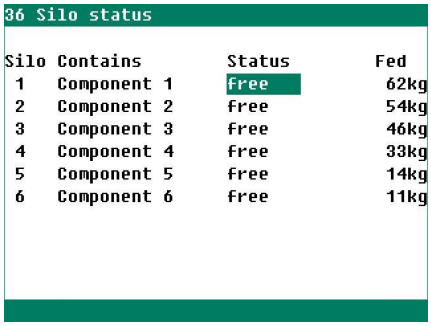
If the silo is nearly empty, the remainder in the silo will be mainly made up of salts, minerals and finely ground feed. If the silo weight drops to below the preset value, the controller will try to mix the remainder. However, “Silo mix remainder” must be active then and there must be a similar type of feed (component) in another silo.

- If this condition is complied with, the remainder will be mixed on the basis of 50% remainder + 50% feed from another silo.
- If this condition is NOT complied with, the remainder will be mixed on the basis of 50% remainder + stop (find similar feed type) + 50% remainder.



If there are 9 or more silos the title bar will be expanded with the ⇕ symbol. This symbol indicates that you can call up the other silos using the “up” and “down” cursor keys (▲ ▼).

SILO STATUS



In addition to the current silo status, this screen also shows how much feed has been dosed from the silo today.

You can change the status shown (e.g. from “free” to “blocked” or vice versa). It may take tens of seconds before the status is transferred to the PFB feed weigher.

If there are 9 or more silos the title bar will be expanded with the ⇕ symbol. This symbol indicates that you can call up the other silos using the “up” and “down” cursor keys (▲ ▼)..

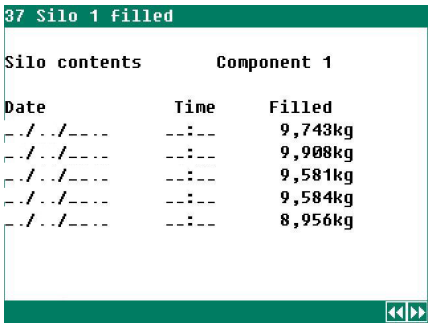
The silo status can be blocked by:

- A manual change of status.
- No feed being supplied from the selected silo.
- The feed supply speed being too low.

A silo is unblocked:

- After restarting the feed weigher (see screen 3: “Status feed weighing”).
- By briefly pressing the [RESET] key on the PFB feed weigher.
- At midnight (24:00 hours).

FILLED



An overview of the last 5 times that you have entered the filling details in screen 21 “Silo contents” is shown for every individual silo. In addition to the amounts, the dates and times of filling are also shown. It is important that you enter these details immediately after filling (before the next feeding period).

You can set and/or call up the settings and measurements of silos 2 to 16 in the same way.

FEED WEIGHER STATUS

This screen shows the status of the PFB feed weigher. You can also switch the alarm generated by the PFB feed weigher on or off in this screen (except the communication alarm).

```
4 Stat.feed weigher
Position separation valve          1  1
Current status      Filling feed hopper
Alarm                          No alarm
Contents feed hopper             10,990g
Active auger                    house 1
Active silo                           3
Current component           Component 3
Present dosage                    250kg
To feed                           761kg
Alarm                              on
Restart weigher                    no
1 Overview components
```

← See the table below
← See alarm codes page 23

← Active auger / active valve
← Current silo number (0 = Error in search sequence)
← The component name is only shown while filling the weighing hopper.

← The total amount of feed that still has to be fed by the current auger / active valve today[1].
← While dosing, you can call up an overview of the amount dosed so far.

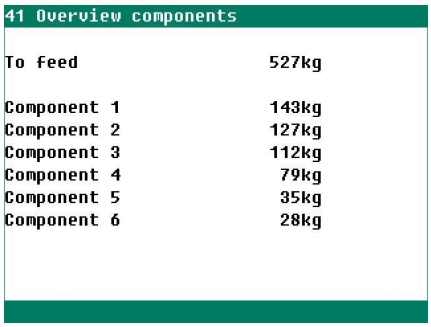
[1] If no dosage timer is installed, the capacity of the feed hopper in kg per weighing (portion) is shown here.

If there is an alarm and you enter “Restart” or “Abort”’ at “Restart weigher”:

- the active alarm will be switched off (reset)
- *Restart*: the system will try to finish the active portion.
- *Abort*: the active weighing cycle will be aborted (reset) and a new weighing cycle will be started.

Current status	Description
Weigher standby	The weigher is waiting for a start command before starting a new weighing cycle
Wait for release	Because there is feed in front of the feed sensor the feed weigher cannot start a new weighing cycle. ***NOTE! This has nothing to do with whether or not you work with release contacts.***
Closing discharge hatch	The weighing cycle starts again after the discharge hatch has been closed. This is repeated until the feeding cycle has been completed.
Calculating dosage	The amount to be dosed per component is determined on the basis of the feed mixture.
Taring feed hopper	The empty feed weighing hopper is tared.
Filling feed hopper	After taring the feed weighing hopper, the silo auger is started and the weighing hopper is filled with the components indicated.
Discharging feed hopper	The discharge hatch is opened after filling the weighing hopper with the right amount of every component.
End of weighing cycle	The feeding cycle has been completed.
Restart weighing cycle	You may have to restart the feeding cycle after a fault (alarm; see also “PFB feed weigher alarm”).

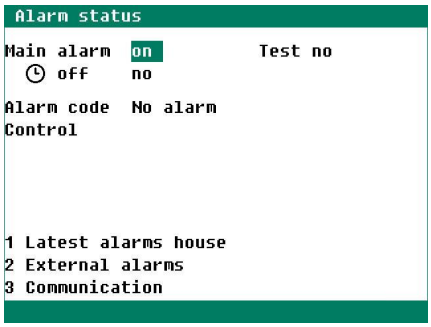
OVERVIEW OF COMPONENTS

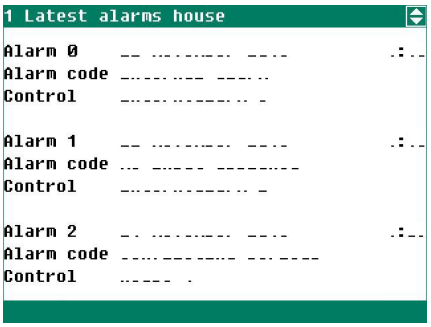


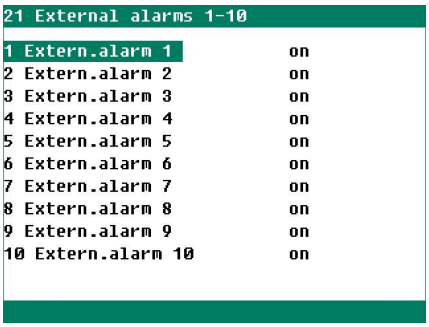
If the amount still to be dosed in the active period is not equal to 0, you can call up the “Overview components” screen.

In addition to the total amount still to be fed, this screen also shows the amounts still to be dosed for the individual components.

ALARM (F2: ALARM STATUS)







Alarm status

You can switch off the main alarm in this screen. In addition, the alarm cause and control are displayed (and possibly the terminal number or address). See also “Alarm key” page 6.

Latest alarms

The last 5 alarm causes which caused the alarm relay to de-energize are stored. The dates and times of the alarms are displayed in addition to their causes.

Alarm 0: The cause of the *most recent alarm* is displayed at “Alarm 0”, in addition to the time until which the alarm has been/was active.

Press the down arrow key to display the data of the previous alarms.

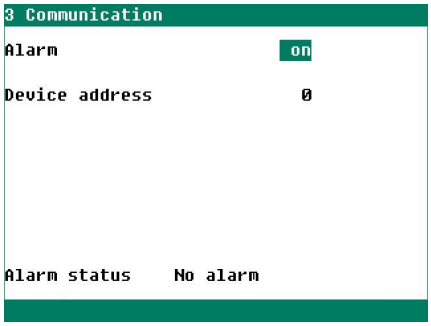
External alarms

Your installer can change the names of the external alarms into any name of your choice (max. 15 characters).

No alarms from feed weigher

You do **not get an alarm** on the PFA-9400 feed computer although the **alarm relay** of the PFB-35/70 feed weigher **has been energized**. The alarm has probably been switched off in the “Status feed weighing” screen. As a result, the alarms that come from the PFB-35/70 are **not passed on** to the PFA-9400 feed computer. Switch the alarm “on” again (see screen 4 Status feed weigher).

COMMUNICATION ALARM



A communication alarm can occur for a main station that has not received any data from a device which forms a part of the same RS-485 data communication loop.

If the “Communication alarm” is switched off, it will automatically switch on again after the main station has communicated with the device in question again.

Installation errors such as “Output already assigned”, “Incorrect output type”, “Input already assigned” etc. have to be solved first before putting the system into operation.

Attention **NEVER FORGET TO SWITCH THE ALARM BACK "ON"** when you have switched this feature off 'temporarily', e.g. to solve a fault. Failing to switch it back on may have adverse effects for people, animals, equipment or property.

Preferably use the ⏲ off *(alarm temporarily off)* function to solve a problem.

ALARM CODES

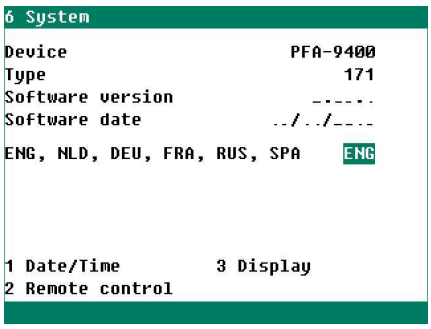
If “Communication” is shown in the top right-hand corner of the alarm screen, you cannot switch off the alarm on the PFA-9400, but you should do this on the PL-9x00 poultry computer that is linked with it.

Alarm code	Description
Supply speed	The supply speed has been lower than the minimum supply speed setting for the last 60 seconds. The silo status is set to “blocked”.
Discharge alarm	The discharge auger is sent a control signal and the sensor under the feed weigher detects feed during the “Delay time”. Check the discharge system. Check the hopper under the feed weigher.
Alarm external house	Alarm in another house, only if a communication loop is present. This alarm does not trigger the alarm contact of the feed computer.
Alarm unknown xxx	A non-documented alarm code has occurred (code xxx).
Alarm silo x	Silo number x is blocked. Supply speed too low, check that there is still feed in the silo, check the silo auger.
Beginning new day in period	The “Beginning new day” time is in a period; this is not allowed. The “**Beginning new day” time must NOT BE IN a period.**
Load cell x faulty	• Load cell x: Not connected. • Load cell x: The voltage between E- and S+ and/or between E- and S- is not between 2.0 V and 3.0 V. Check the voltage. Check the wiring.
Capacity silo too low	The feed dosage calculated is higher than the weighing capacity of the silo.
Communication error	• No communication with feed weigher. • Faulty communication address. • **No communication PCB in the feed weigher.** • Poor connection with the feed weigher.
Component not in silo	• The mixture shows a value unequal to 000 for the components which are not used. • The silo contents show the silo with the component as blocked, see page 20. • The component assigned to the silo according to the silo contents displayed is not what should be in the silo according to the silo assignment.
Configuration changed	Module configuration (inputs/outputs etc.) changed. Read in the module number again
Dosage too low	The amount of feed or water dosed is less than the preset minimum amount to be dosed, see page 11
External alarm x	Your installer can change the names of the external alarms into any name of your choice (max. 15 characters).
Incorrect type of input	The input type set does not match the input type based on which the control can control
Incorrect type of output	The output type set does not match the output type that the control can control
Faulty terminal setting	Faulty assignment. The function that you assign to the terminal is not supported by the module.
No addresses in loop	The PFA-9400 has been set as the main station but no value (000) has been entered at “Number of addresses in loop” (000).
No communication address	Device address of feed computer and/or feed weigher is missing.
No weight reduction	The weight in the mixer does not decrease at all or does not decrease sufficiently during the “Empty mixer” status; check the mixer/discharge auger.
No input assigned	No input terminal number entered
No maximum sensor	If you use the “Create stock” setting, you have to install a maximum sensor in the “hopper” of the house.
No PFB-35/70	An input/output refers to the PFB-35/70 feed weigher but no PFB-35/70 has been installed.

Alarm code	Description
No information from houses	A central control installed on the feed system has not received any data from the external controller to control the central control (e.g. an incorrectly set feed weighing computer or an incorrect central control number, communication loop broken etc.). If the PFA-9400 is connected to a PL-9x00 poultry computer: • The timer at the PL-9x00 has not been set to communication. • The communication number of the house on the PFA-9400 does not match the communication number of the timer on the PL-9x00. • The feed system on the PL-9x00 has not been set to PFA-9400 • The feed counter on the PL-9x00 has not been set to PFA-9400 • You are using two dosing timers and the "Counter in group" setting of one of the relevant counters has been set to "Both groups". This is not allowed; choose "Animals 1" or "Animals 2". • Three or more timers on the PL-9x00 have been set to communication, this is NOT allowed. • The PL-9x00 poultry computer is "*off*". • Software version in PL-9x00 should be at least version 1.34 or higher.
No output assigned	No output terminal number entered
No feed weigher	The counter has been set to "PFB-35/70 feed" or "PFB-35/70 water" but no feed weigher has been installed.
No release sensor	If you use the "Empty auger" setting, you have to install a release sensor in the "hopper" of the house.
Input already assigned	The input has been assigned to two or more controls.
Running time expired Invalid valve position	• The separation valve has been sent to a new position, but the valve failed to reach this position within the running time set. • The current position of the separation valve is different from the valve position required (*you have not entered a separation valve position at the auger yet*). Check the position of the separation valve. Separation valve has been set to manual operation. Check the contents of the hopper. Check the contact input (the M-input LED will illuminate!).
Discharge hatch closed Discharge hatch opened	The hatch has not opened/closed after 10 seconds although it was sent a drive signal to open/close it.
Maximum supply alarm	The counter exceeds the maximum setting within the time set, see also page 15.
Mixer not empty	There is too much remaining feed in the mixer when filling the mixer. Check the cause (feed encrustation etc.), and manually drain the mixer. Then restart the feed system.
Module not installed	The module number set for the terminal does not exist.
Module not responding	Module address not found, check the settings on the module
Module reset alarm	Module continues to reset due to a fault, check the module
Unknown type of terminal	This type of terminal does not exist
Not a valid input	The input number does not exist on the module.
Invalid mix percentages	The preset mixing percentages, where the mixer is active for a short time, must be ascending (i.e. must go up). Check the mixing percentages.
Not a valid period	• The times set for a timer must be ascending and the difference between "Begin" and "End" must be at least 1 minute. • **Date and/or time** on the PFA-9400 feed computer are different from the date and/or time on the PL-9x00 poultry computer. • The PL-9x00 poultry computer is connected to a PFA-9400 feed computer which makes use of **filling and lag times**. For further details see timers, page 9.
Invalid poultry computer	The required software version is not present in the poultry computer. Update the software of the poultry computer.
Invalid mixture	The mixture is on -0.0% for all components, although an amount to be dosed is calculated.
Invalid silo	The component is not in the silo selected, see page 19. This error message may also occur if a **component has not been assigned to a silo** but a value has been entered next to the component in the mixture, see also pages 11 to 13.

Alarm code	Description
Not a valid counter	The type of counter is different from the type of timer (e.g. feed counter selected for water dosing or the type of timer has been set to communication and no food weigher has been installed).
Not a valid output	The output number does not exist on the module.
Invalid silo output	The output number does not exist on the module.
Invalid feed computer	The required software version is not present in the feed computer. Update the software of the feed computer.
Invalid feed weigher	• An input/output refers to a feed weigher but no feed weigher has been installed. • The required software version is not present in the feed weigher. Update the software of the feed weigher.
Invalid search sequence	• Silo number does not exist. • Silo assignment changed. • The silo number has been set to 0; the component must always be followed by a valid silo number. • A non-existent silo number has been entered for the component.
Conflicting periods	The 'Conflicting periods' error message occurs if 1 or more feed dosing timers have to be active at the same time.
Slides x not closed Slides x not open	• The slide has been sent to a new position, but the slide failed to reach this position within the running time set. • The current slide position does not match the required slide position. Check the slide position. Slide is in manual mode. Check the contents of the hopper. Check the contact input (the M-input LED will illuminate!).
Slides x: Invalid position	The two contact inputs of slide x are “in”. Check the slide operation. Check the contact inputs (M-inputs).
Sensor faulty	The values measured by the sensor are outside the preset limits. Check the sensor.
Feed detected by sensor	The feed sensor is covered by feed at the moment when the discharge hatch opens.
Silo already assigned	The same number has been entered a number of times in the silo assignment search sequence, see page 19.
Silo xx empty	Silo number xx is empty.
Silo no. already assigned	The silo number set has already been assigned to another silo.
Invalid silo weigher	The software version in the PSW-1 silo weigher is not up to date. Contact your supplier. Update the software.
Tare: fluctuating value	The weight measured is unstable (due to a 'rocking' weighing hopper, for example). Vibrations from the surrounding environment influence measurements.
Tare: value too high	The value measured after taring is too high.
Tare: value too low	The value measured after taring is too low.
Counter already assigned	The counter has been assigned to two or more controls.
Output already assigned	The output has been assigned to two or more controls.
Feed weigher (xx)	xx = alarm code received from the PFB-35/70 feed weigher; see page 21 for more information about the causes of the alarm of the PFB-35/70.
Invalid feed weigher	The required software version is not present in the PFB feed weigher. Update the software of the PFB feed weigher.

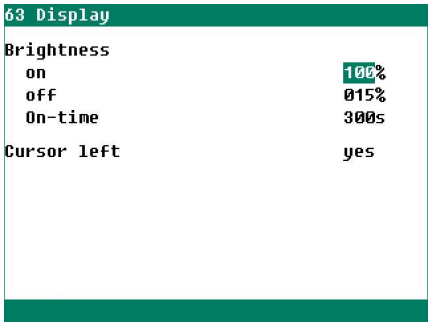
SYSTEM



This screen shows the device name, the device type (171=PFA-9400), the program version, program date and other information.

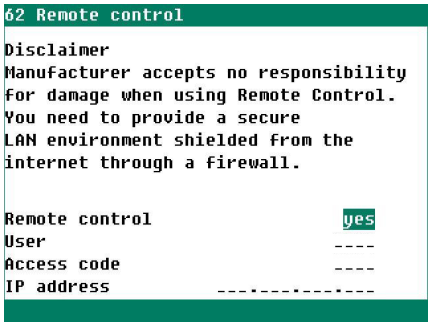
Set the language to ENG (English) for this manual. You can also change the language by pressing and holding functional key F1 while simultaneously pressing the left or right cursor key.

DISPLAY



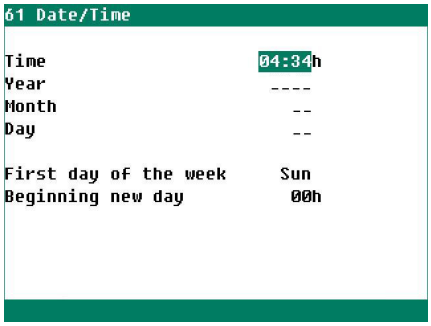
Brightness	To set the brightness of the background lighting
on	To set the brightness of the active situation (operating mode).
off	To set the sleep mode brightness.
On-time	Number of seconds during which the screen is lit after the last time a key is pressed. Setting 0 seconds does not switch off the screen lighting.
Cursor left	“Yes”: when changing a setting, the cursor is placed on the digit which is the furthest to the left. “No”: when changing a setting, the cursor is placed on the digit which is the furthest to the right.

REMOTE CONTROL



Remote control: See “Application note Remote control: ANote-Remote-N-ENxxxxx”

DATE/TIME



In addition to the date and time, you can set the time when a new day starts at “Beginning new day”.

Be careful when changing the “Beginning new day” setting; if this time is in a dosing period the “Conflicting periods” error message will be generated.