User’s Manual

MC 95 A Breeder

Code No. 99-97-1326

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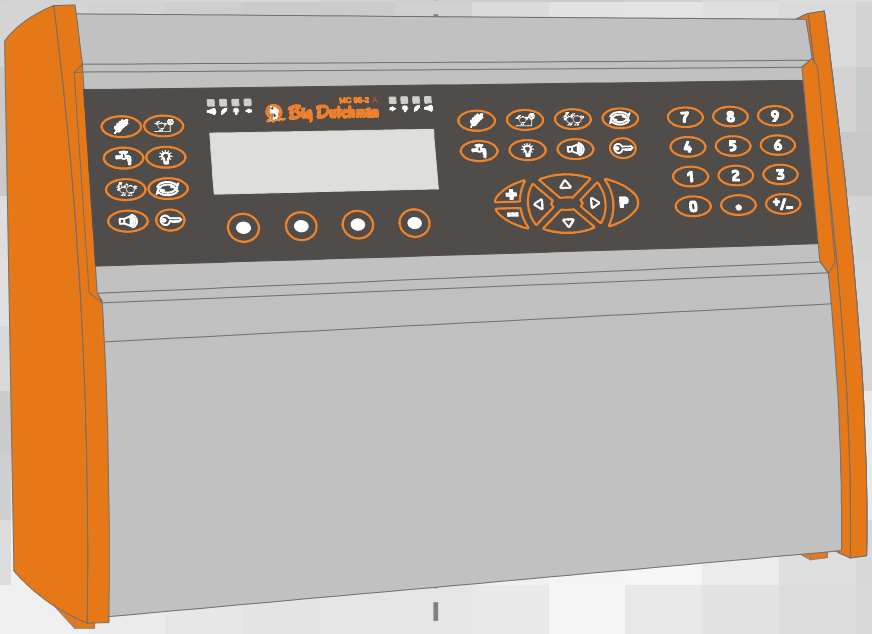
MC 95 A Breeder

User's Manual



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Releases:

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

Software version 4.6

It was released in March 2006.

Product and Documentation Changes

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The date of the latest revision of this manual is indicated on the front page.

NOTE

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IMPORTANT

- Read this manual thoroughly before installing and using MC 95 A.
- Big Dutchman recommends the installation of an alarm system in connection with MC 95 A. In connection with control and inspection of the feeding system, interruptions, malfunctioning or faulty settings may result in economic loss. It is very important to test the alarm system and the connected alarm-related equipment at least once a week, preferably more frequently.

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1 INTRODUCTION

This manual describes operation, setting and installation of the MC 95 A-1 and MC 95 A-2 production computers.

MC 95 A was especially designed for production control in houses with broilers, where MC 95 A can control feed supply, lighting and water and record the feed and water consumption as well as the number and weight of the birds. MC 95 A can give an alarm in case of error conditions and be connected to a printer and a PC.

MC 95 A-2 allows independent control of two houses, provided that a shared FW 99B feed weigher is used.

MC 95 A is a basic unit which allows the installation of accessories as required. The accessories include a printer and data network module which allows printouts and PC connection respectively.

Big Dutchman congratulate you on your new

MC 95 A production computer

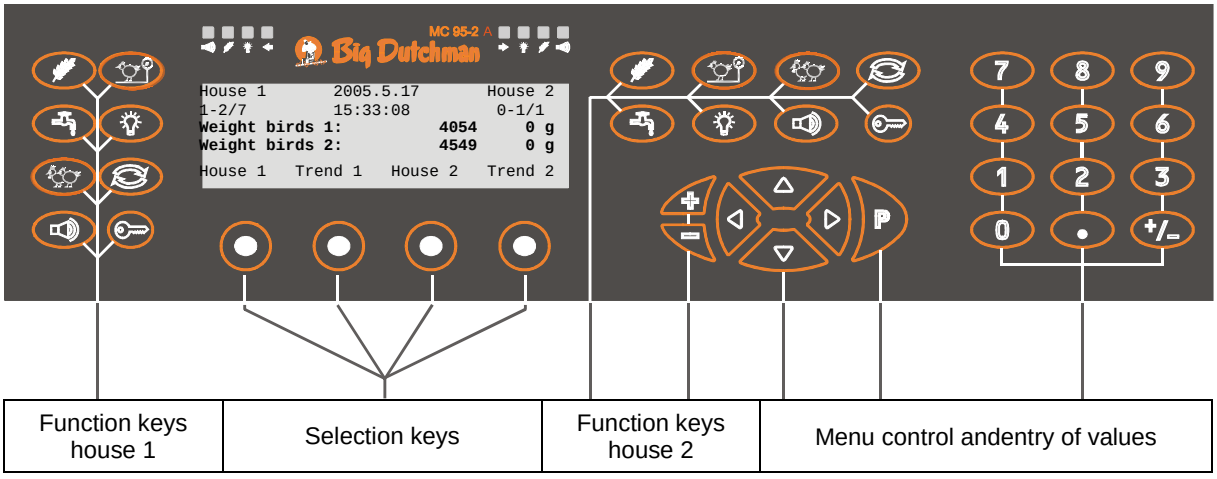
2 OPERATION

This section describes operation of MC 95 A. The section includes:

- Keyboard chapter 2.1
- Lamp indications chapter 2.2
- Entry of values chapter 2.3
- Menu survey chapter 2.4
- Access to the most important functions chapter 2.5

2.1 Keyboard

MC 95 A is controlled by means of one key at a time only - never two or more at the same time.



Function keys house 1	Selection keys	Function keys house 2	Menu control andentry of values

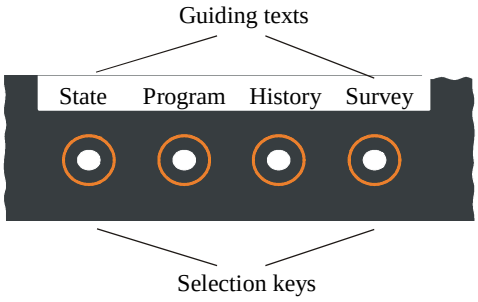
2.1.1 Function Keys

Each of these keys presents a menu - see outline in section 2.4.

			Menu survey
	Feed control:	Setting the feed program, feed mixture and control method. Display of key figures from current and previous batches.	Figure 2 - Figure 3 Page 13 - 14
	Bird weighing:	Display of key figures from current and previous batches.	Figure 4 Page 15
	Water:	Setting the water program. Display of key figures from current and previous batches.	Figure 5 Page 16
	Lighting:	Setting the lighting program. Light intensity control. Display of light meter.	Figure 6- Figure 7 Page 17 - 18
	Number of birds:	Entry of dead birds, stocked and depopulated birds. Display of key figures from current and previous batches.	Figure 8 Page 19
	Start/end of batch:	Start and end of a batch. Display of environmental sensors.	Figure 9 - Figure 10 Page 12 - 21
	Alarms:	Setting alarm limits. Acknowledging alarms. Display of previous alarms.	Figure 11 Page 22
	Key button:	Installation and service functions. Event log.	Figure 12 - Figure 16 Page 23- 27

2.1.2 Selection Keys

The four keys below the display are called "selection keys". The function of each key varies depending on the function texts at the bottom of the display.The selection keys are used to select menus/sub-menus and to enter data.



The first 3 selection keys are normally used to select sub-menu items in the menu, and the fourth selection key is normally used for returning to the previous level of the menu.

2.1.3 Keys Used to Change Settings

P	The P-key allows the user to change settings and data. When the P-key is pressed, brackets ([…]) appear around the parameter, which can now be changed.
▲ ◀ ▶ ▼	The manoeuvre keys allow the user to "scroll" in the screen and select the parameter to be changed.
− +	The + and - keys are used to change settings and data.

2.1.4 Numerical Keyboard

0 1 . . . 9	Used for entry of figures,e.g. delivered feed **[6000]kg**.
. +/−	Used for entry of decimals and/or negative values.

2.2 Lamp Indications

A number of lamps on the front of MC 95 A indicate various operating conditions.

Red alarm lamp:	No light:	No alarm
	Flashing quickly:	Active alarm
	Flashing slowly:	Active alarm which has been acknowledged
	Constant light:	Alarm not acknowled., but alarm condition has now disappeared
Yellow feed lamp:	No light:	No feeding now.
	Constant light:	Feeding system activated.
Gul lys-lampe:	No light:	House lighting off.
	Constant light:	House lighting on.
Green arrow:	Only available on the 2-house computer. The lamp indicates whether operations are currently being performed in the left or right side.	
At end of batch or in connection with manual control:	The three lamps ALARM, FEED and LIGHT are flashing.	

2.3 Entry of Values

The MC 95 A menus show a number of texts, values and other data.

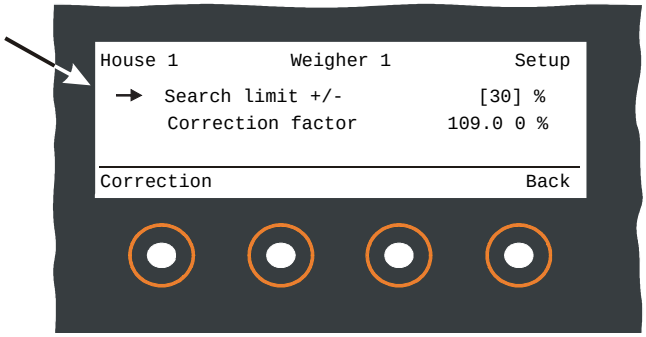
Fixed readouts: The display shows measured values and calculated figures, presented to the user for information. These values are fixed and cannot be changed by the user.

Variable values: In addition, the display shows a number of variable parameters, which the user can change. These include figures, time settings and texts.

When a value can be changed, this is indicated by means of an arrow → pointing at the active line.

Use the manoeuvre keys to select other values to be changed in this screen.

Press [P] to change the value.



Brackets ([…]) are placed around the parameter which can be changed.

Press either [+], [−] or [0] [1] . . . [9], to change the value.

```
House 1          Weigher 1            Setup
 → Search limit +/-          [30]     %
   Correction factor   109.0   0      %

Correction                            Back
```

When the required value has been entered, press OK to use the new value or Undo to return to the previous setting.

Most parameters can be changed by means of the +/- keys as well as the numerical keyboard.

```
Enter by means of [0] [1] . . . [9]

→Stocked birds:   [28000]

Undo                                  OK
```

However, certain parameters can only be changed by means of +/- (typically when choosing from a list of opportunities).

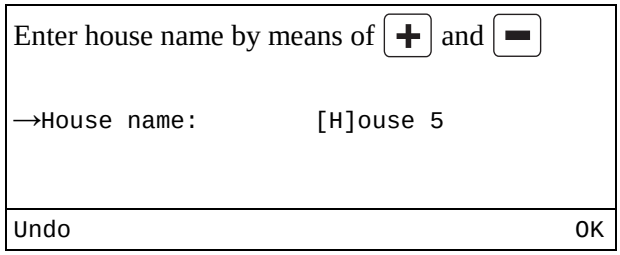
```
Enter by means of [−] [+]

→Feed system:            [ Chain feeding ]

Undo                                  OK
```

When entering values by means of the numerical keyboard it is possible to delete the last digit entered by pressing the Delete key.

```
→Correction factor            [19    ]

Undo                                  OK
```

Certain parameters (e.g. house name) are "free text", where the individual characters can be changed by means of +/-.

Use the manoeuvre keys to move the brackets to the other characters.



2.4 Menu Survey

This section describes all menus in MC 95 A.

Please be aware of the fact that some of the menus are dependent on the installation in question. Some menus may be missing in the display.

2.4.1 The Upper Level in the Menu Structure Is the Survey Display

This is where the house name(s), batch clock(s), current date and time, and the weight of the birds are output. If the user does not use the keyboard, MC 95 A automatically returns to the survey display after 5 minutes.

The selection keys provide quick access to:

- key figures for the past 24 hours
- key figures for batch to date
- curve display of feed, light and water programs
- printout - print required report or set-up
- trend function - the current weight and the weight of the birds during the last 3 days plus index
- 0-1/5 shows week 0-1 day number 5

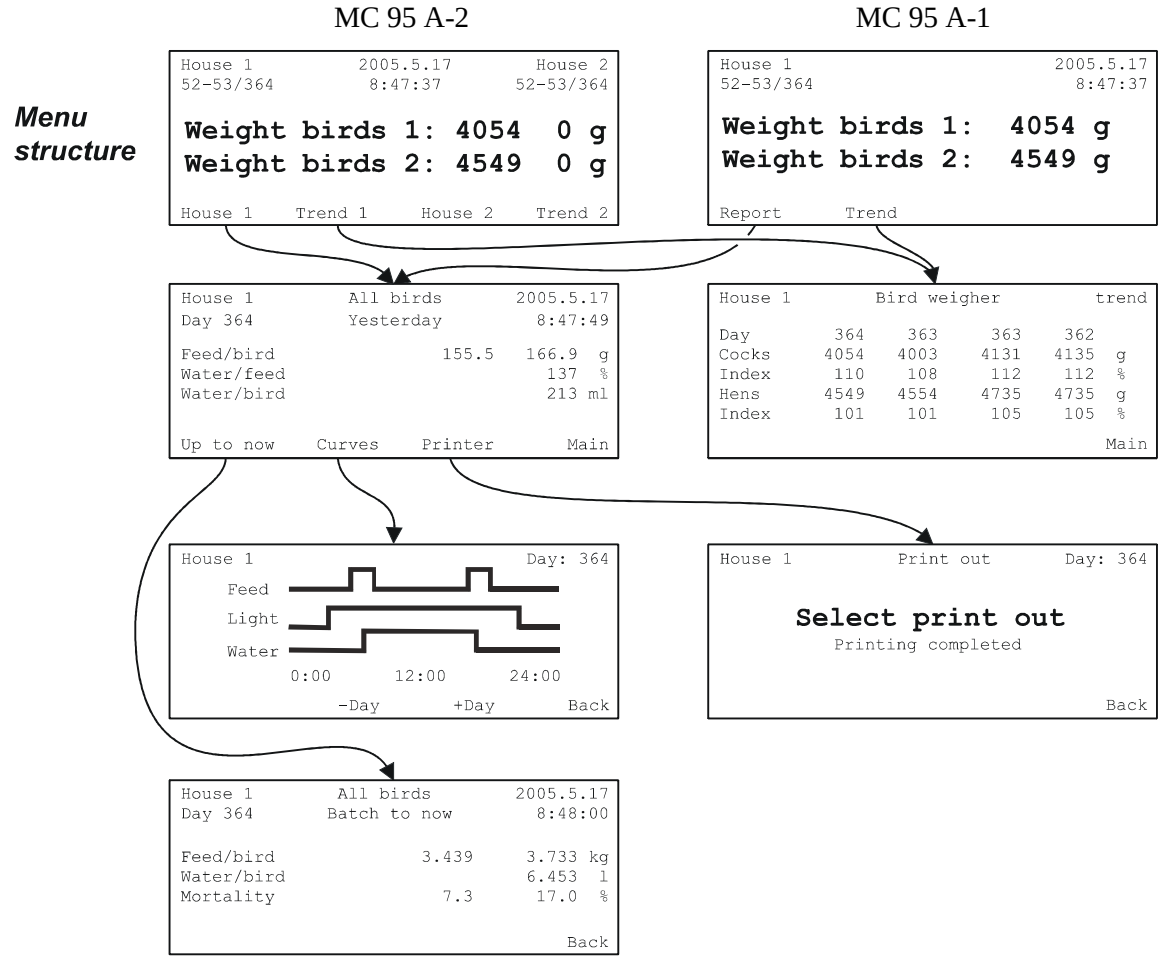


Figure 1: Menu survey

2.4.2 Feed

Display of the day's feed consumption per bird and the required daily quantity.

Entry of reference feed consumption per bird.

Display of historical feed data:

- key figures for this day's feeding periods
- key figures for the day
- key figures for batch to date
- key figures for previous batches (day and total)

continued overleaf

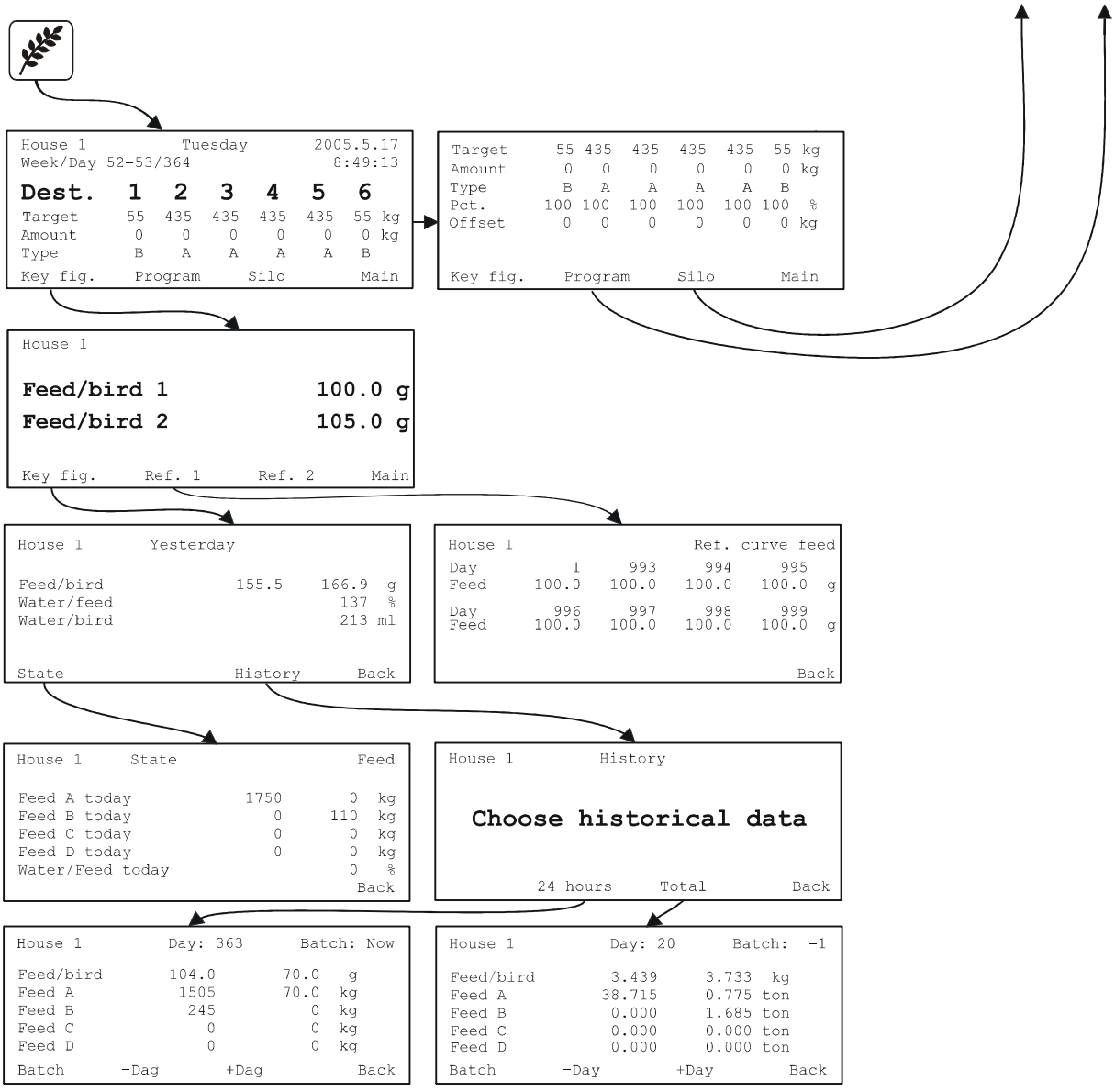


Figure 2: Feed, key figures

2.4.3 Feed (continued)

Entry of mixture program and feed program. Curve display of feed program.

For chain feeding only: Entry of the number of feedings per day, chain running time, manual start of chain.

Silo status: Entry of feed supplied. Setting of gradual change-over and automatic change of silos.

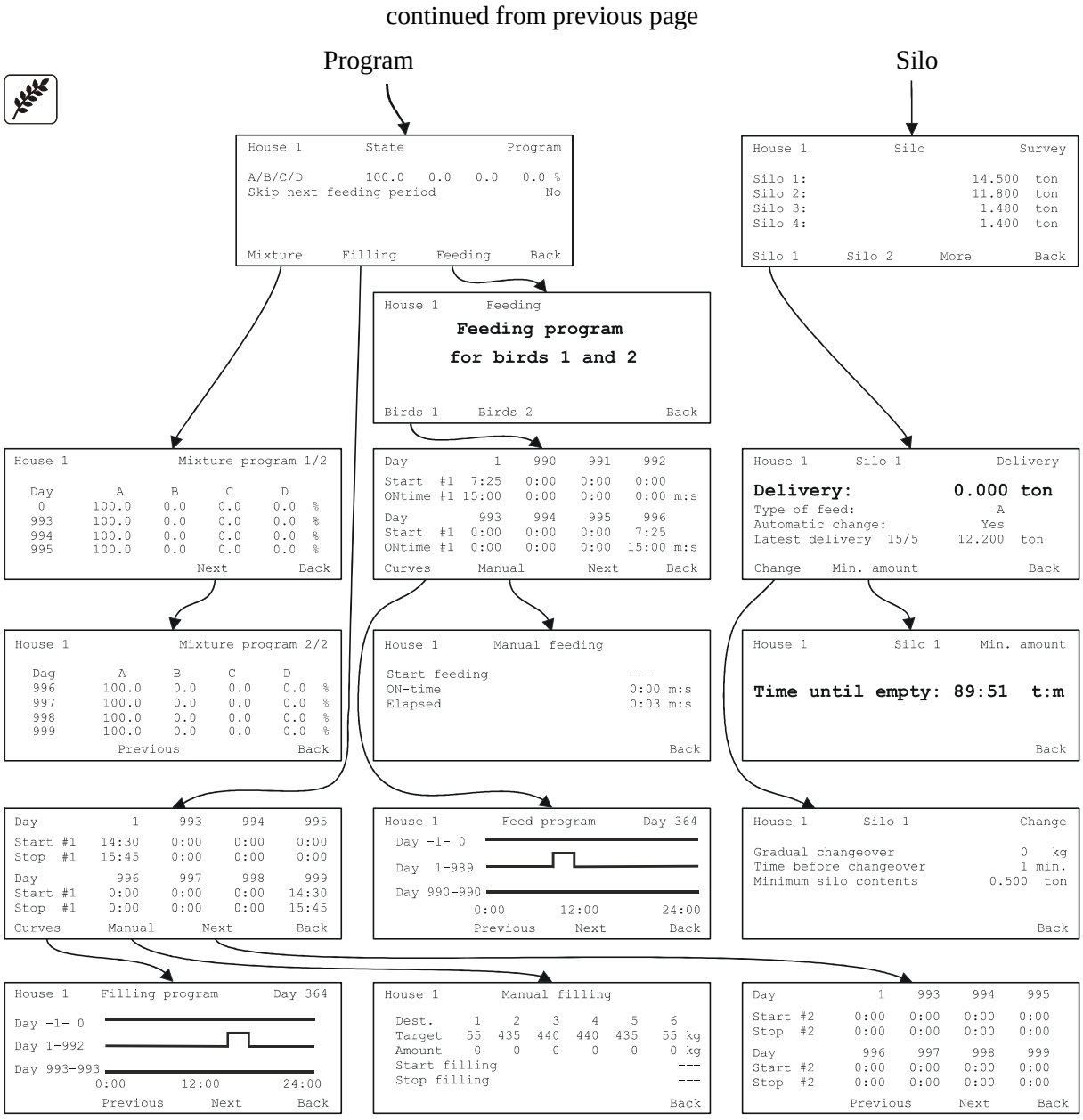


Figure 3: Feed, programs and silo

2.4.4 Bird Weigher

Display of current bird weigher and deviation in relation to reference weight (index figure).

Display of key figures:

- bird weigher
- growth
- standard deviation
- current reference weight
- number of birds weighed

Setting of weighing parameters:
Search limits, correction factor.

Display of historical data:
Bird weigher for current and previous batches.

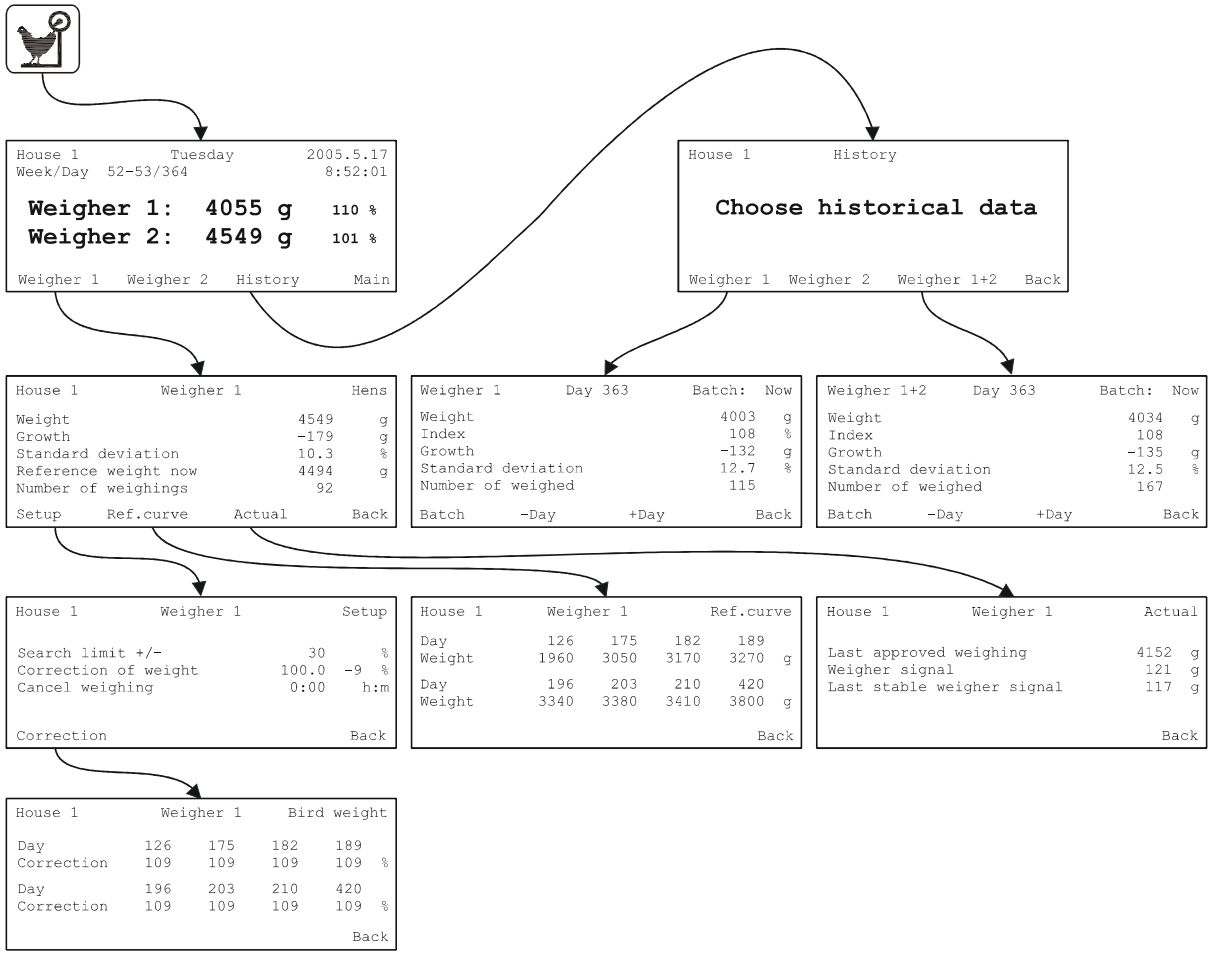


Figure 4: Bird weighing

2.4.5 Water

Display of the day's water consumption per bird and the required daily amount.

Entry of reference water consumption per bird.

Entry of water program. Curve display of water program.

Display of historical data:

- key figures for current batch
- key figures for previous batches

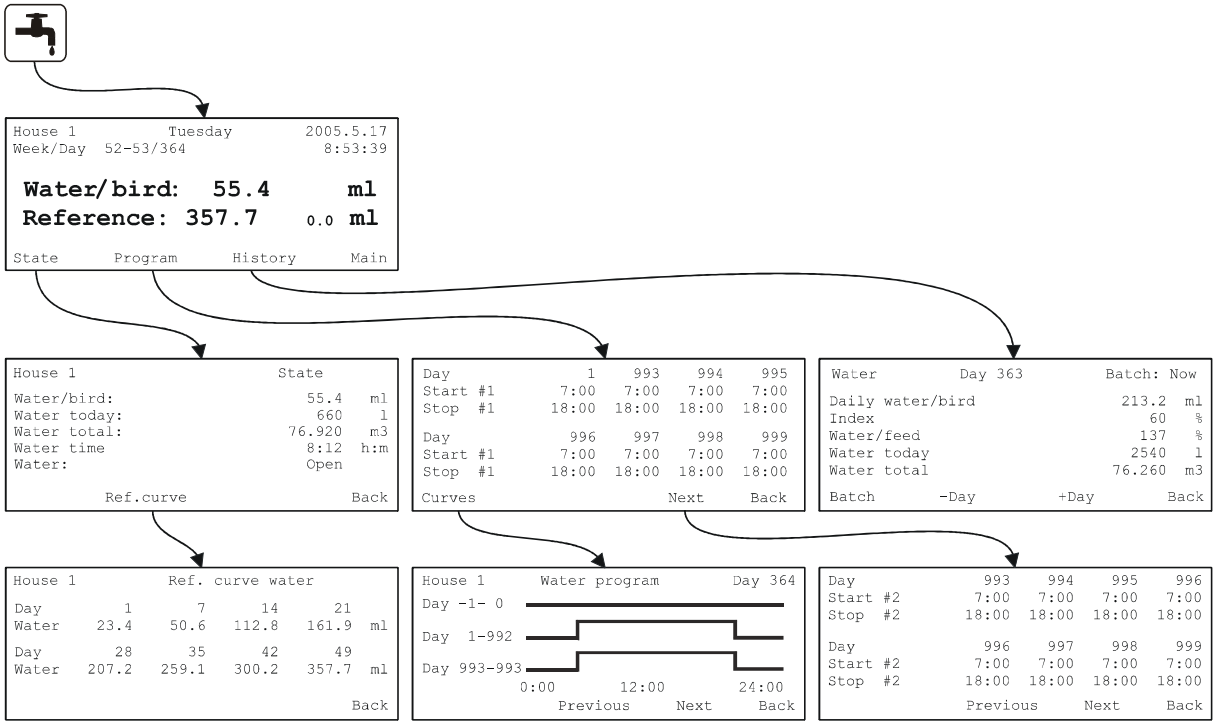


Figure 5: Water

2.4.6 Light

Display of light control status. 2-level light. On and off times.

Setting of light program. Setting the light intensity. Curve display of light program.

Display of historical light data:

- key figures for current batch
- key figures for previous batches

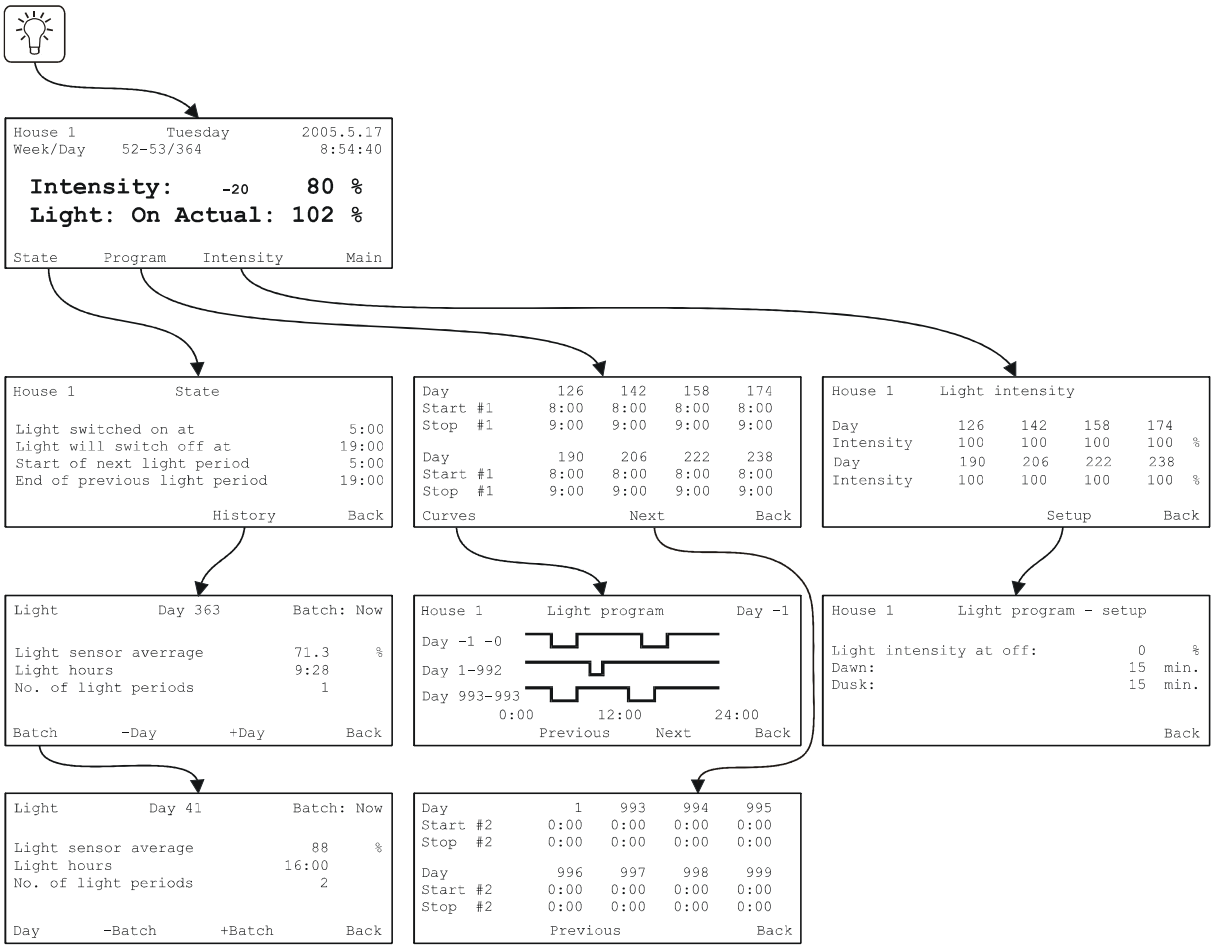


Figure 6: Light

2.4.7 Light (continued)

Display of light control status - 3-level light. On an off times.

Setting of light program. Setting of light intensity. Curve display of light program.

Display of historical light data:

- key figures for current batch
- key figures for previous batches

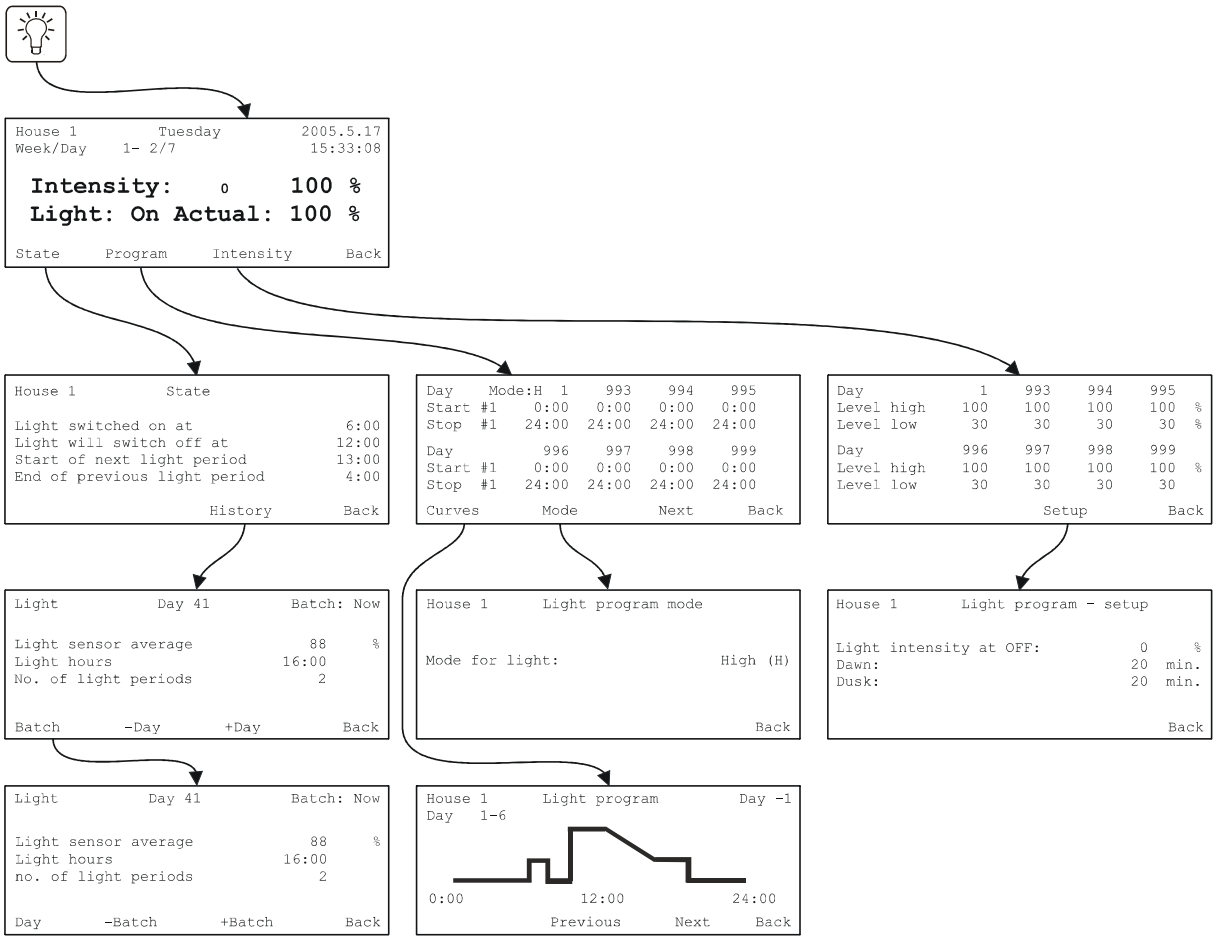


Figure 7: Light

2.4.8 Number of Birds

Display of mortality rate and deviation in relation to reference mortality (index figure).

Entry of number of dead birds, culled birds, birds for examination, extra stocked birds and depopulated birds.

Display of the number of living birds.

Entry of the number of stocked birds, reference mortality rate and parent bird data.

Display of historical data:

- key figures for current batch
- key figures for previous batches

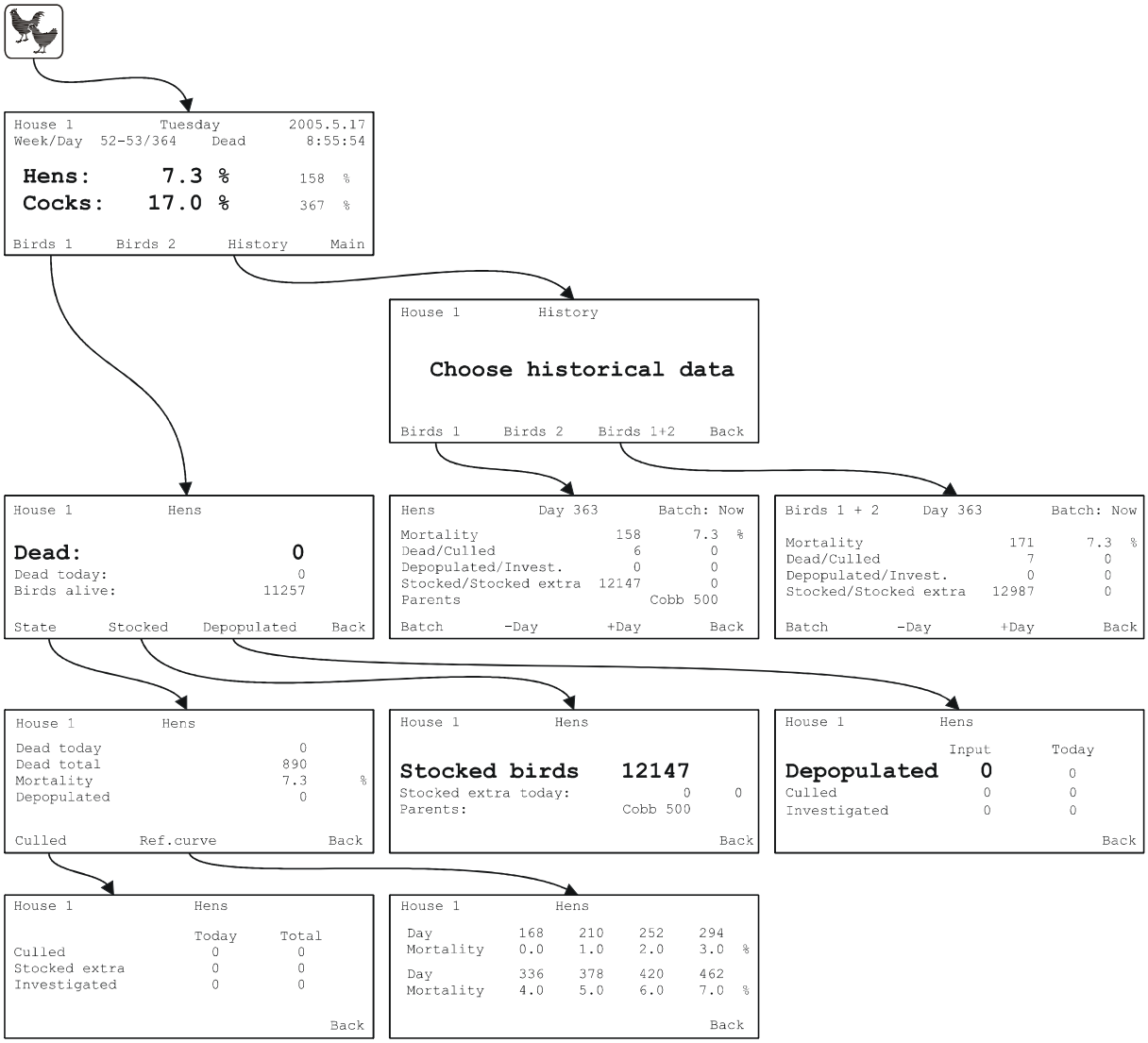


Figure 8: Number of birds

2.4.9 Start of Batch

Carry out the START OF BATCH function on MC 95 A.

Reading of the current values from the environmental sensors.

Entry of extra input.

Display of historical environmental sensor data:

- key figures from current batch

Display of historical extra input:

- key figures from previous batches

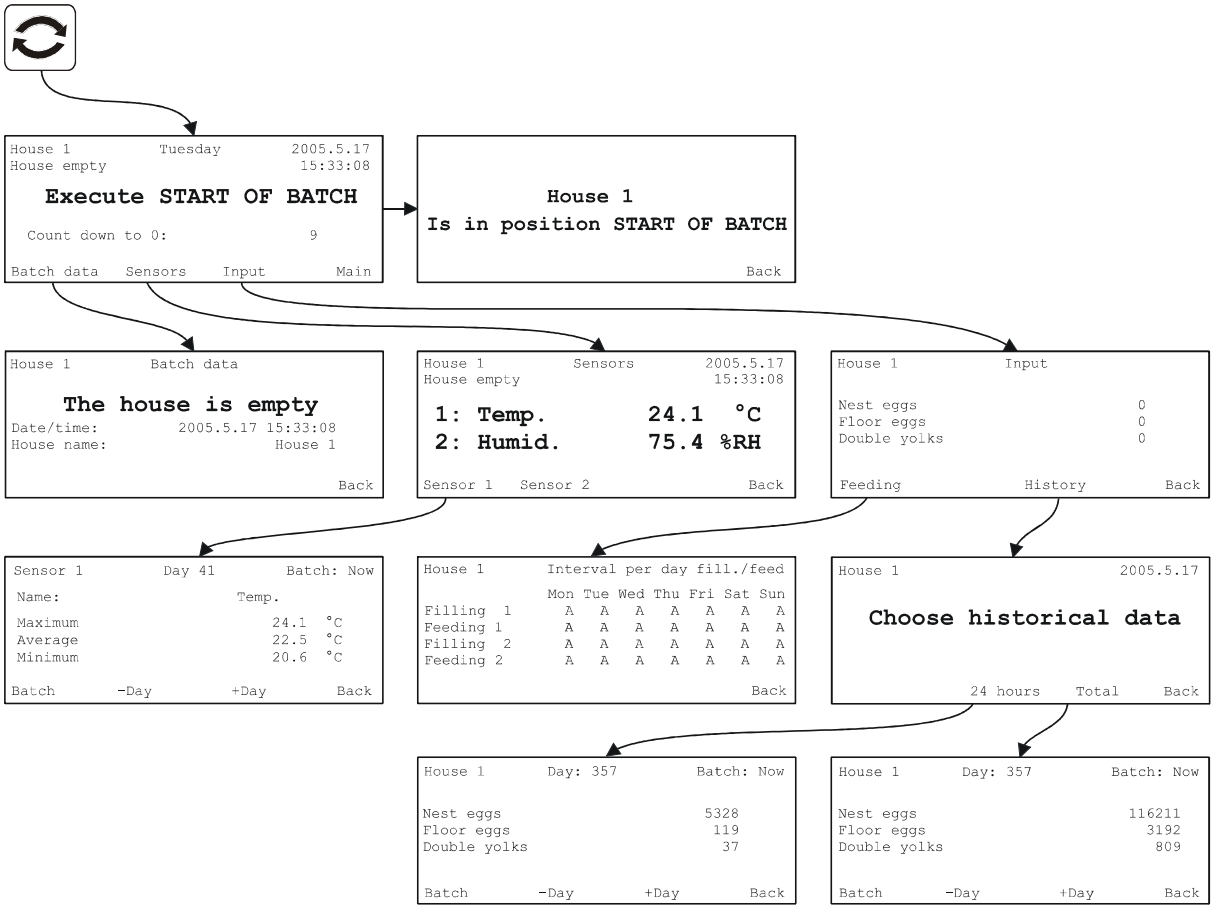


Figure 9: Start of batch

2.4.10 End of Batch

Carry out the END OF BATCH function on MC 95 A.

Reading of the current values from the environmental sensors.

Entry of extra input.

Display of historical environmental sensor data:

- key figures from current batch

Display of historical extra input:

- key figures from previous batches

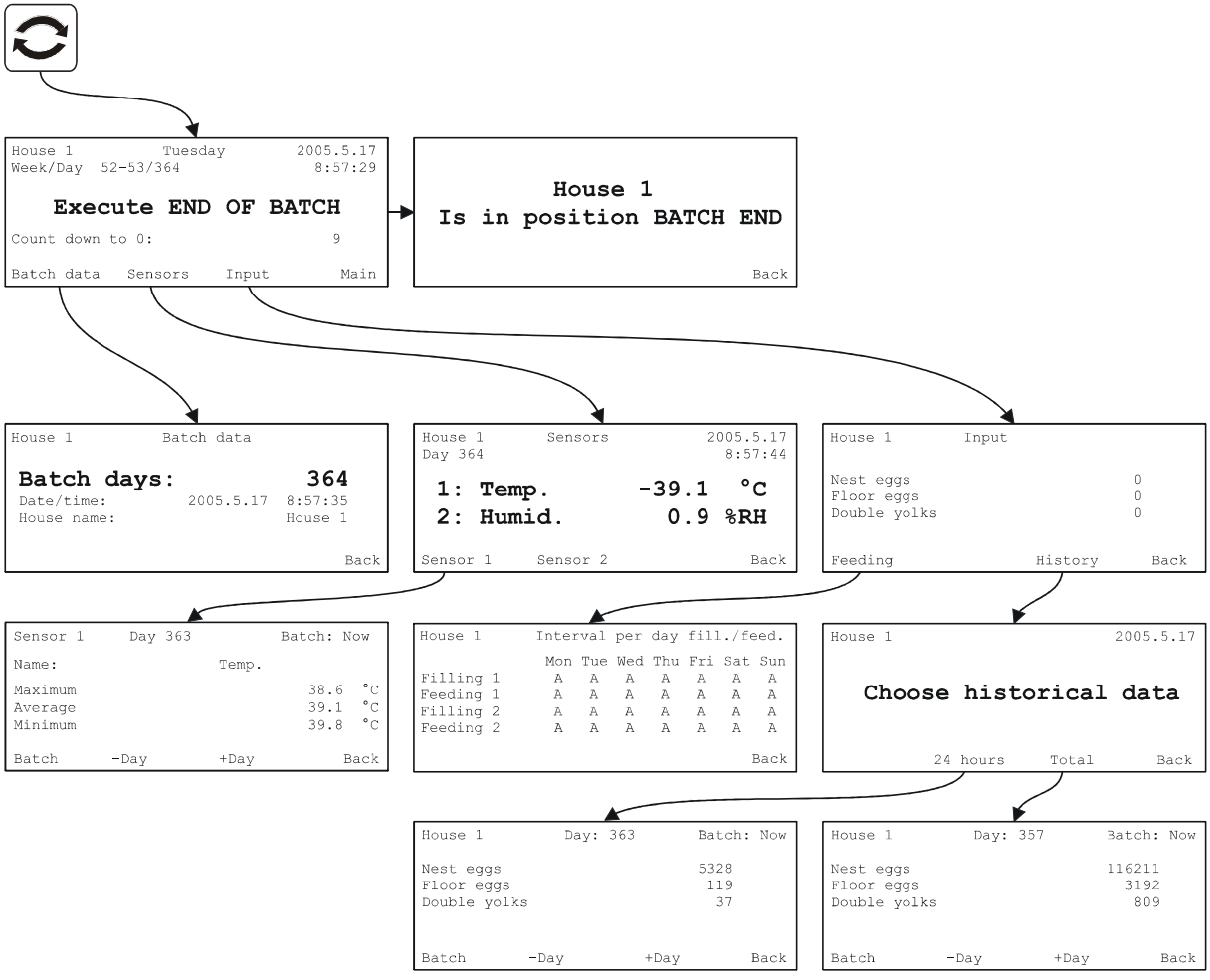


Figure 10: End of batch

2.4.11 Alarms

Display and acknowledgement of current alarms.

Setting of alarm limits.

Display of alarm log (previous alarms).

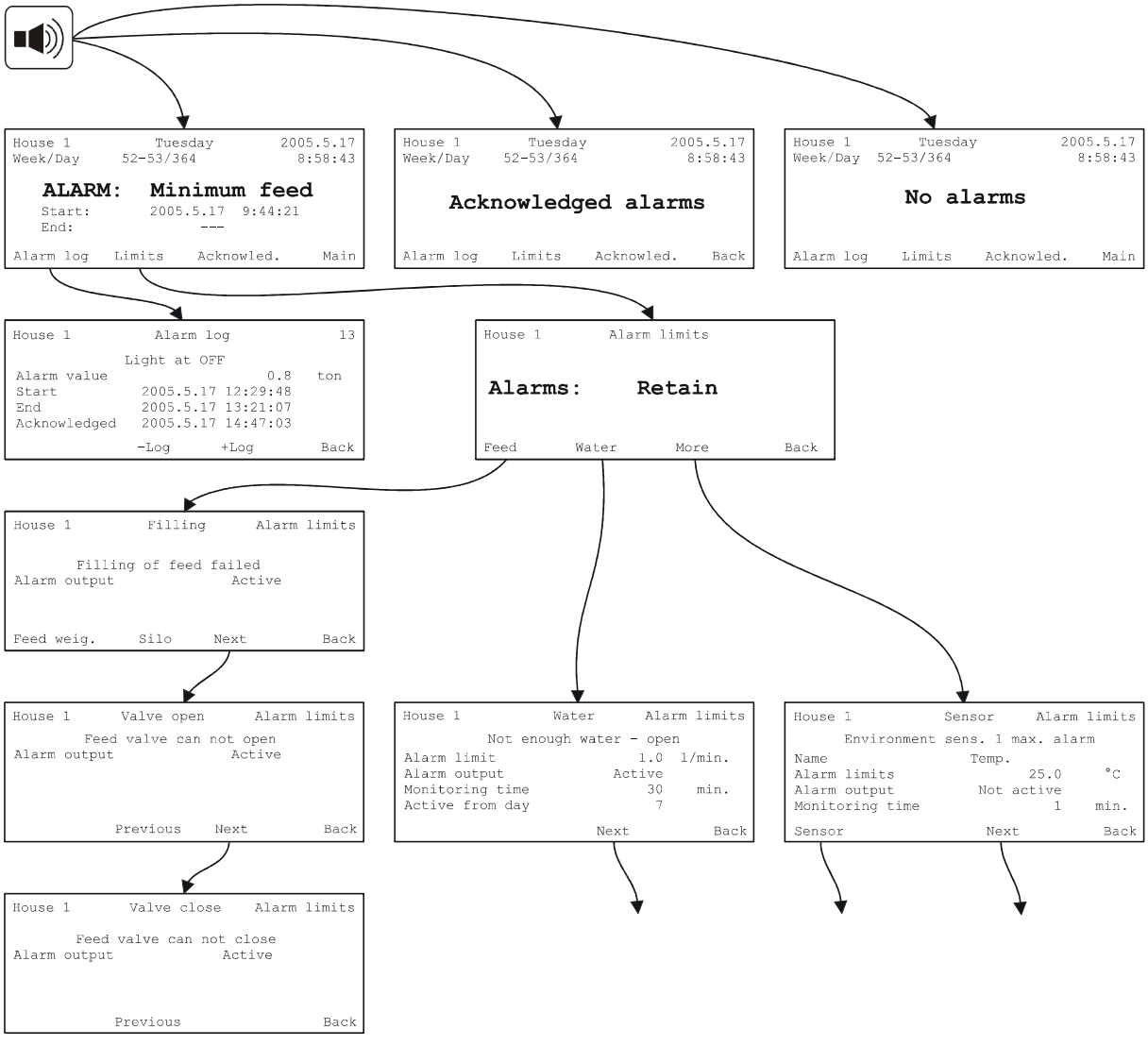


Figure 11: Alarms

2.4.12 Control Key - Installation

Setting of house name and language.

Setting of installation parameters:

- number of bird types
- storing batch data
- bird name and reference
- entry of egg data
- feeding system
- feed weigher

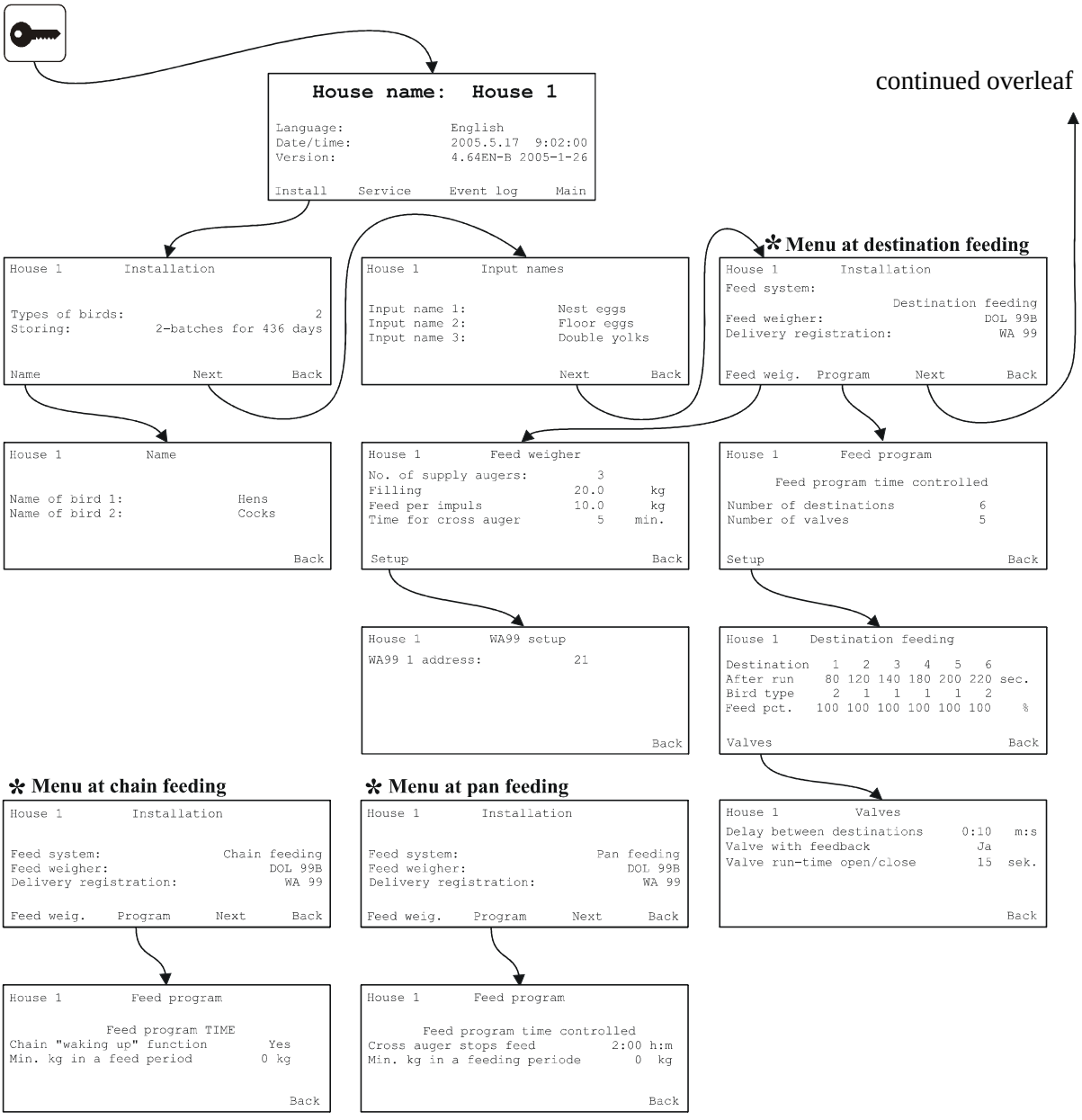


Figure 12: Control key, installation

2.4.13 Control Key - Installation (continued)

Setting of installation parameters:

- light control
- water meter and water control
- bird weighers
- environmental sensors

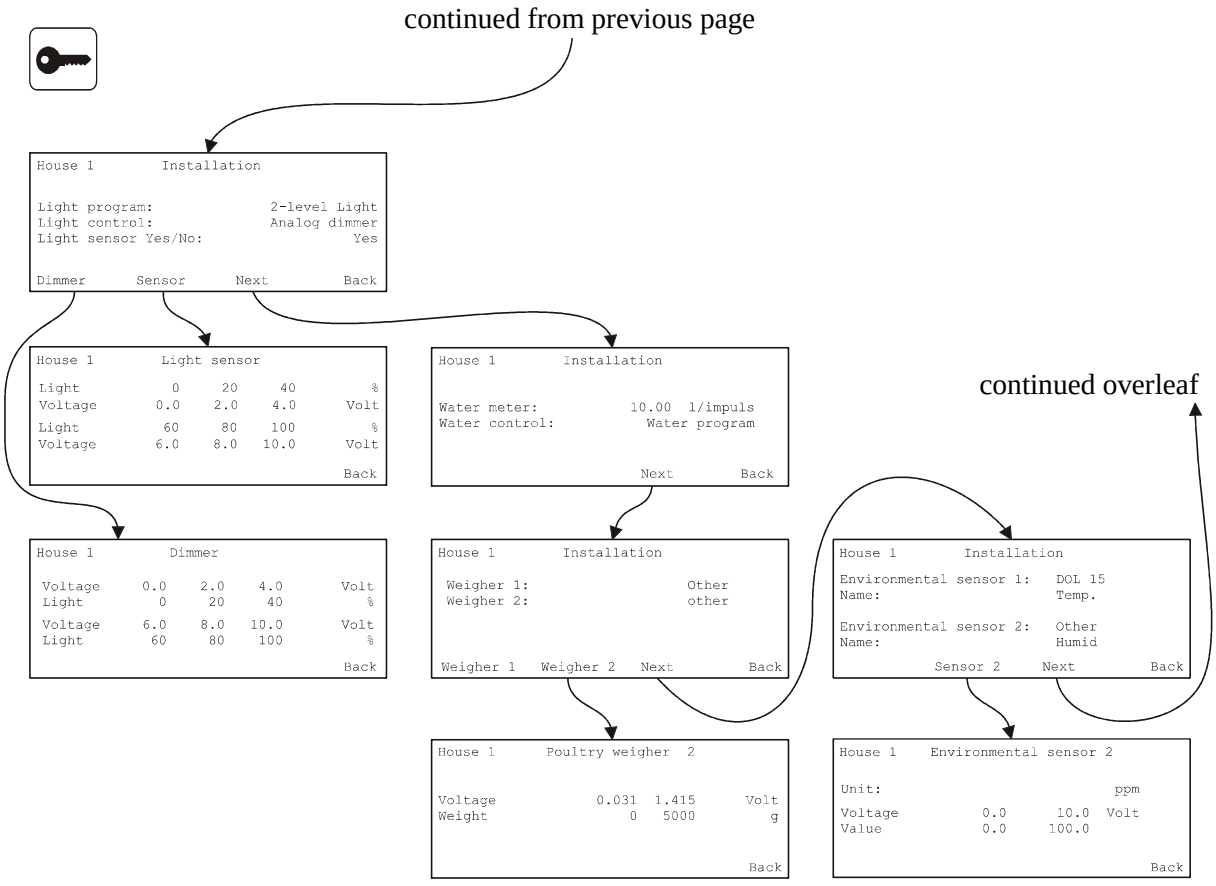


Figure 13: Control key, installation (continued)

2.4.14 Control Key - Installation (continued)

Setting of installation parameters:

- printer
- Info Matic
- password
- copy set-up to other house (MC 95 A-2 only)

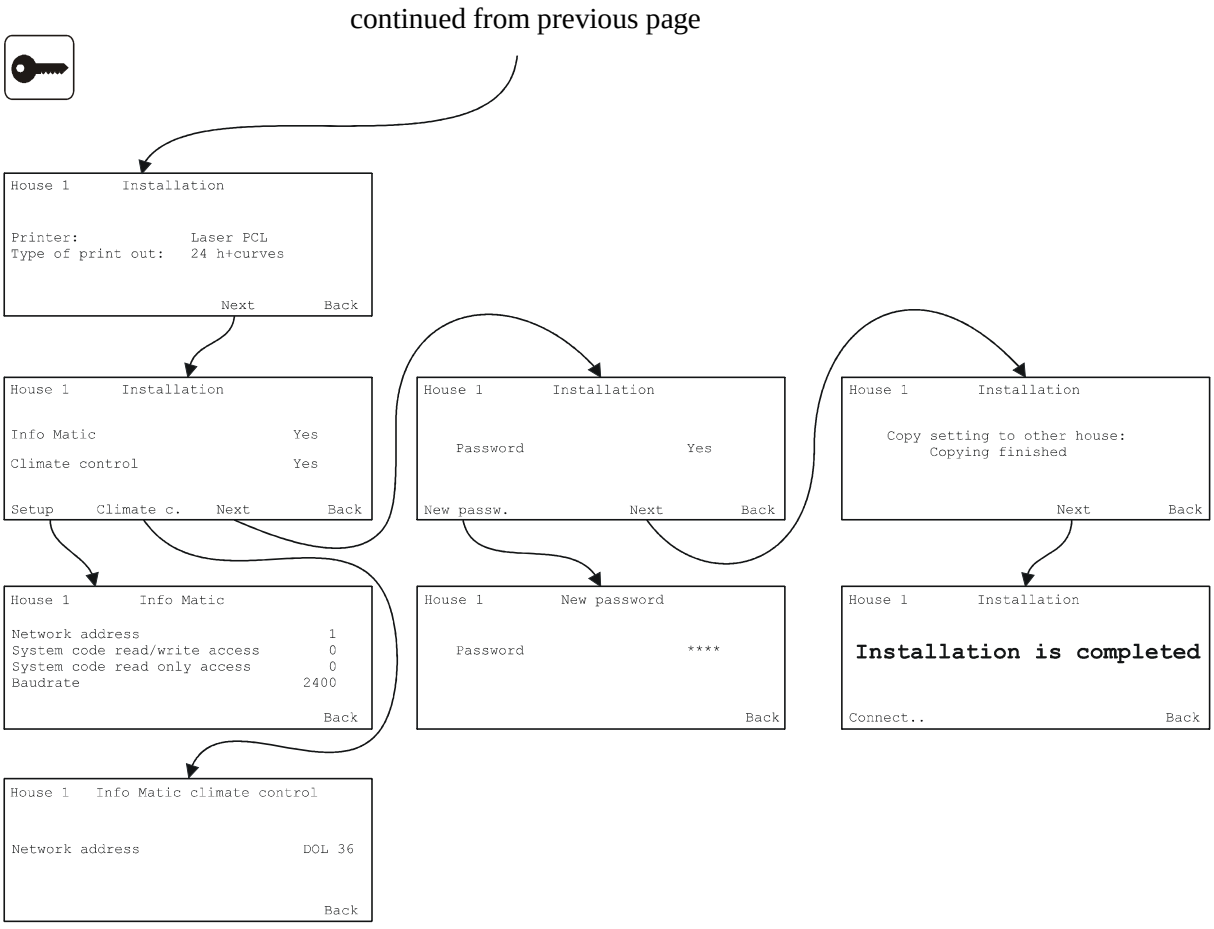


Figure 14: Control key, installation (continued)

2.4.15 Control Key - Service and Event Log

Service functions:

- automatic or manual control
- control and setting of all inputs and outputs (I/O)
- read current set-up
- calibration of feed weigher
- test of Info Matic

Operation log:

- list of the user's latest settings and changes

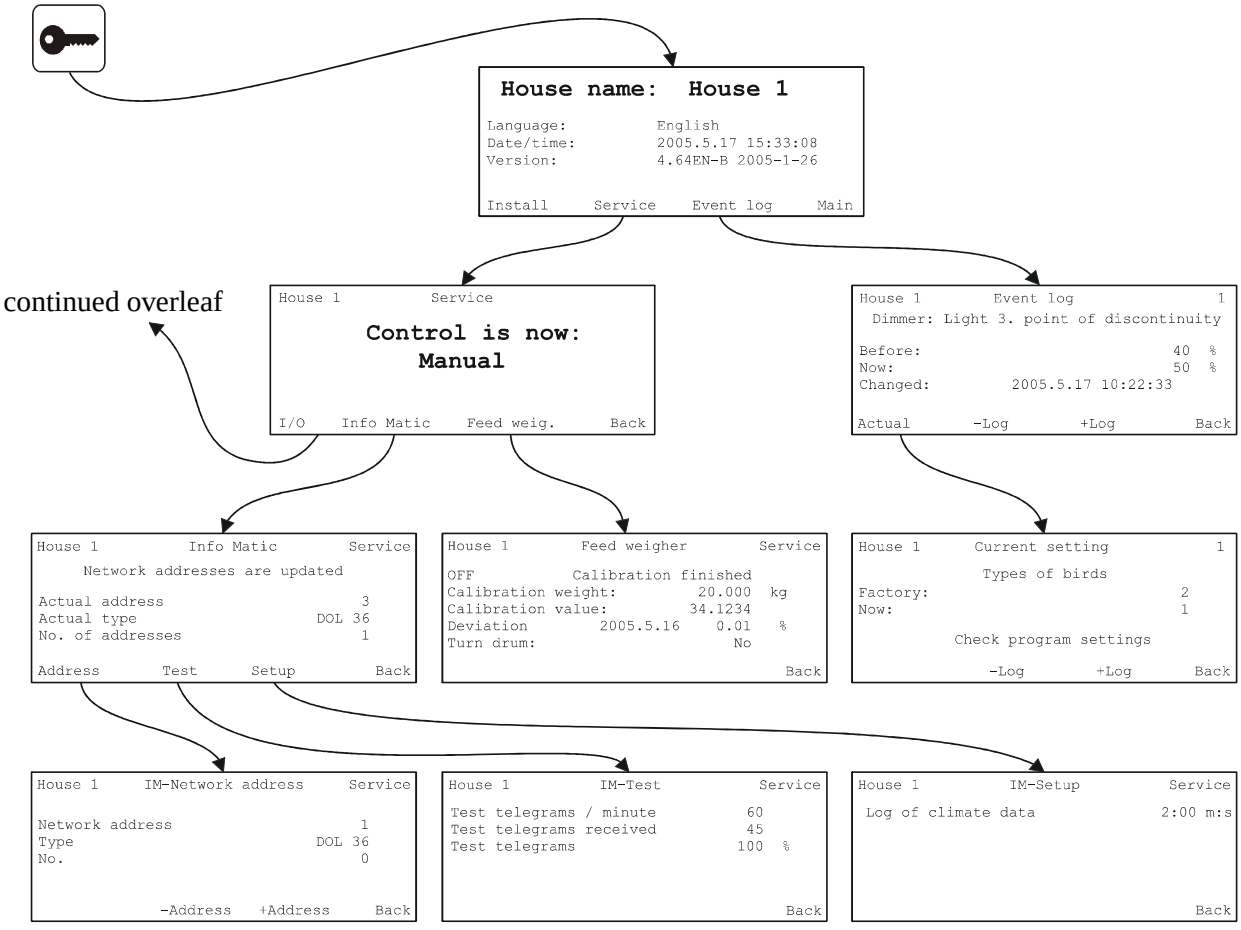


Figure 15: Control key, service and event log

2.4.16 Control Key - Service and Operation log (continued)

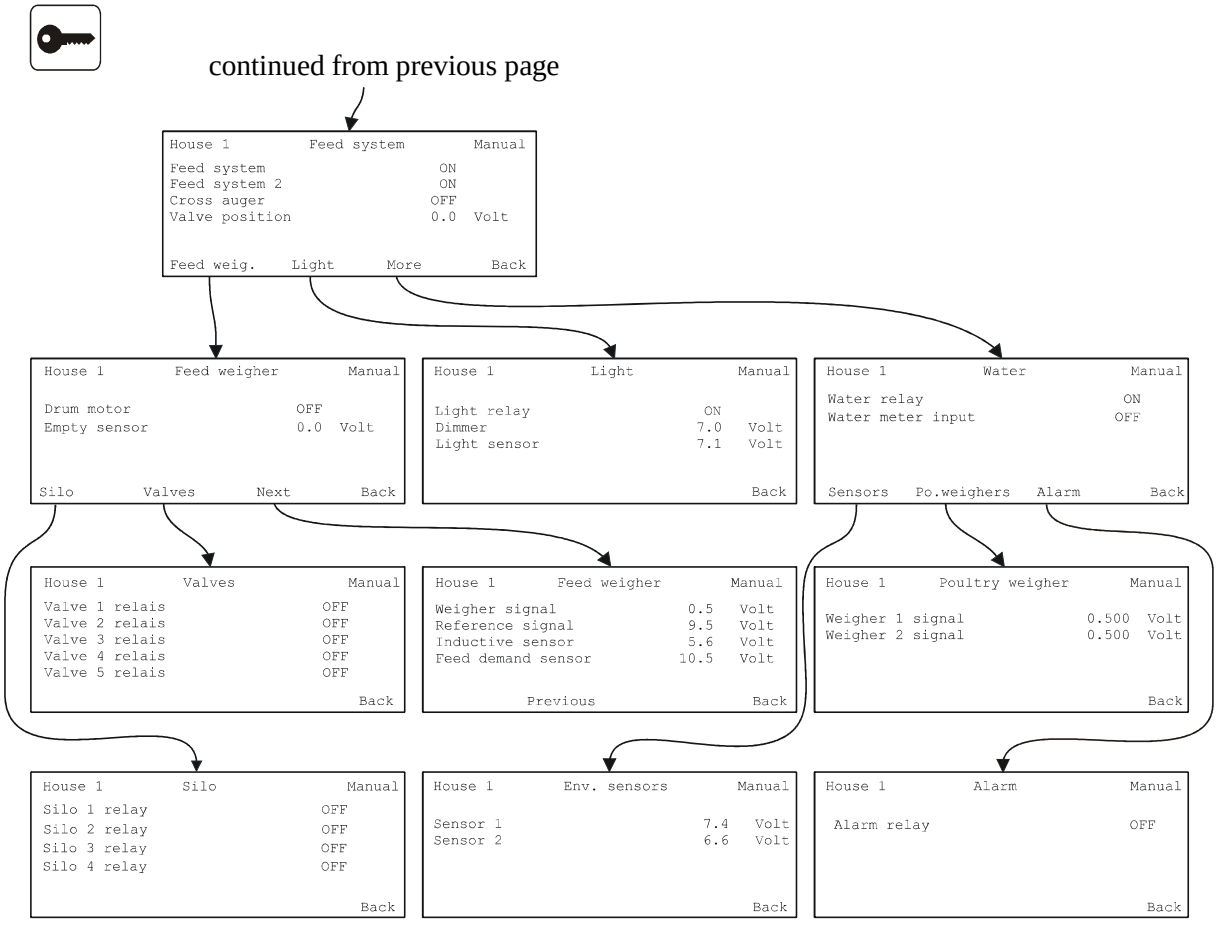


Figure 16: Control key, service and event log

2.5 Access to the Most Important Functions

This section describes how to quickly gain access to the most important functions in MC 95 A.

2.5.1 Daily Operation

Dead birds	**+ Birds 1/2**
Partial depopulation	**+ Birds 1/2 + Depopulated**
Supply of feed	**+ Silo + Silo 1/2/3**
Wheat %, adjustment	**+ Program**
Time before silo empty	**+ Silo + Silo 1/2/3 + Min. amount**
Manual bird weighing	
Stop feeding system	**Catching + feeding** (from survey display)

2.5.2 Settings / Changes

Program, filling	**+ Program + Filling**
Program, feed mixture	**+ Program + Mixture**
Program, water control	**+ Program**
Program, light control	**+ Program**
Reference curve, bird weigher	**+ Weigher 1/2 + Ref. curve**
Reference curve, water consumption	**+ State + Ref. curve**
Reference curve, mortality	**+ Birds 1/2 + State + Ref. curve**
Calibration of feed weigher	**+ Service + Feed weigher**

2.5.3 Displays - Destination Feeding

State, feeding	**+ Key fig.**
State, feed mixture	**+ Program**
State, chain feeding	**+ Program + Chain**
State, silo content	**+ Silo**
History, feed	**+ Key fig. + History**
History, bird weigher	**+ History**
History, water	**+ History**
History, light	**+ State + History**
History, dead/depopulated	**+ History**
History, environmental sensors	**+ Environment**
Alarm log	**+ Alarm log**
Alarm limits	**+ Limits**
Operation log	**+ Operation log**
Current setting	**+ Operation log + Current setting**

3 FUNCTIONS

This section describes all functions in MC 95 A.

3.1 General Information

3.1.1 Programs

Feed, water and light control runs according to 24-hour programs. A 24-hour program consists of a maximum of 16 start/stop times. 24-hour programs can be entered for 8 different day numbers.

The 24-hour program has 16 start/stop times, which indicate the active control periods. The start time must always precede the stop time. The 16 start/stop times are displayed and set on 16 different "program pages", which the user can scroll through by means of Previous and Next. If, for instance, 2 feeding periods are required in 24 hours, the user must enter 2 start times and 2 stop times in the first 2 pages of the feed program. See example below. The remaining 14 start/stop times are set to 0:00. If the active period should pass midnight, two periods has to be entered - one ending at 12:00 pm and one starting at 00:00 am.

Day numbers: The 24-hour program runs from the first day number (including it) until but not including the next day number. Before the first day number the control function is active 24 hours a day. This does not apply for filling up feed and feeding, when destination feeding has been selected. After the last day the computer controls according to the last program.

The entered program is easy to check by pressing Curves. The program is now shown in curve form.

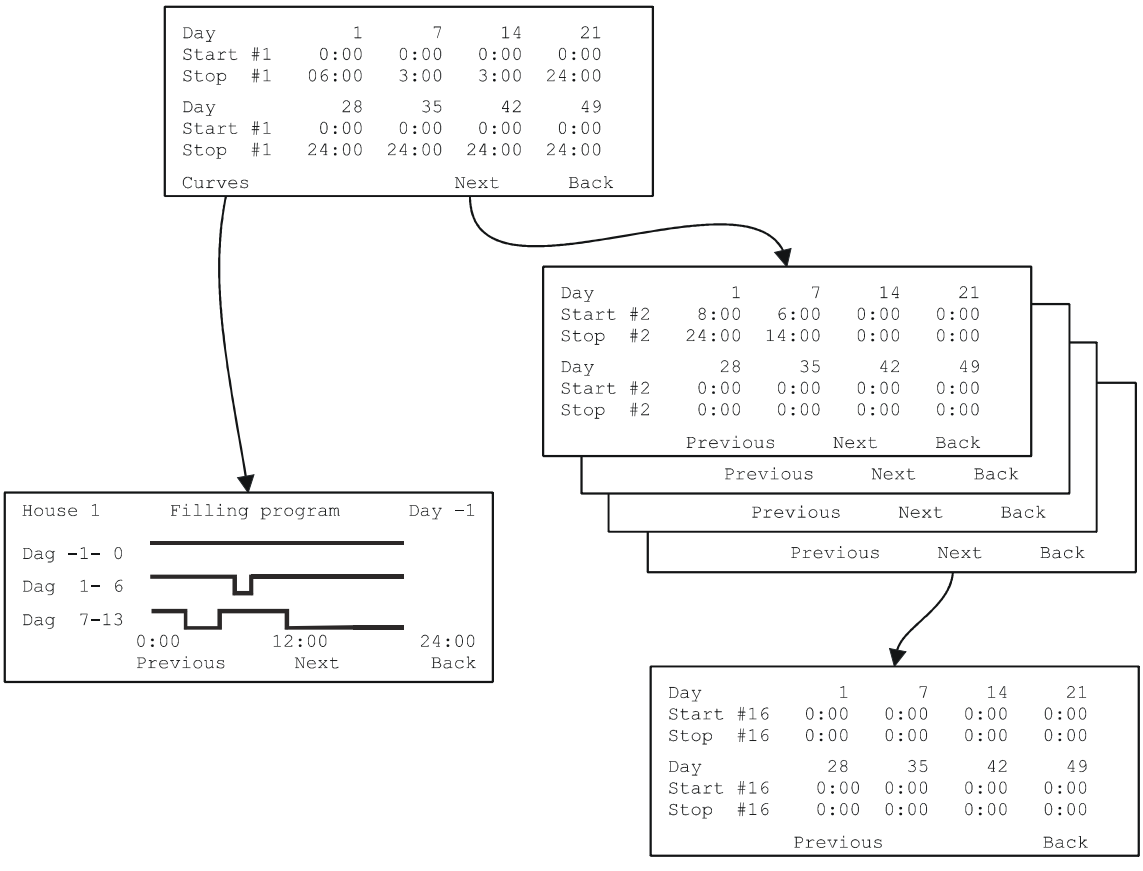


Figure 17: Programs

3.1.2 Reference Curves

Reference curves are used for:

- feed consumption per bird per day
- water consumption per bird per day
- broiler weight
- mortality

Weight/Weigher 1/Ref. curve

House 1	Weight 1			Ref.curve
Day	126	175	182	189	
Weight	1960	3050	3170	3270	g
Day	196	203	210	420	
Weight	3340	3380	3410	3800	g

Back

The selected reference is Cobb 500 1997 As hatched. The reference curves can be changed by the user.

Note: If **Type of bird** is changed, the reference does not change automatically.

The reference curves are used for:

- feed control in connection with restrictive feeding
- water control in connection with restrictive feeding
- bird weighing
- calculation of index figures (comparison with reference)
- comparison with current and previous batches

3.1.3 History

History is the display of data stored in MC 95 A. The data stored includes a wide range of key figures concerning feed control, bird weighing, water consumption, mortality etc. These figures are partly based on 24-hour values and partly on batch to date values.

Weight/History/Weigher 1+2

Weigher 1+2	Day 363	Batch: Now
Weight	4034	g
Index	108	
Growth	-135	g
Standard deviation	12.5	%
Number of weighed	167	

Batch -Day +Day Back

The history function can show data from the current batch and from previous batches.
The selection keys allow the user to change the **Day number** and the **Batch number**. -Day is used to display data from the previous day and +day is used to display data from the next day.

Index figures are shown to allow comparison with the current reference.

The batch key is only shown when previous batches are stored.

Weight/History/Weigher 1+2/Batch

Weigher 1 + 2	Day 14	Batch: -1
Weight		420 g
Index		100 %
Growth		67 g
Standard deviation		10.4 %
Number of weighed		816
Day	-Batch	+Batch Back

3.1.4 Password

It is possible to add a password in MC 95 A, meaning that the user has to enter a password in order to change data. The password is not necessary for scrolling the menus.

If you do not wish to use the password, it can be disconnected. The password is a figure between 0 and 9999. During the installation the password is connected or disconnected. The password will be shared in case a 2-house computer is used.

Installation/Install/Next

The password can be set to **Yes** or **No**. If the password is set to Yes, the sub-menu **New code** will appear.

House 1	Installation	
Password		Yes
New passw.	Next	Back

Installation/Install/Next/New code

The password is displayed by ****.

In order to see or change the password you need to know the current password or (it only applies in this menu) press 0 to have the password displayed.

House 1	New password
Password	****
	Back

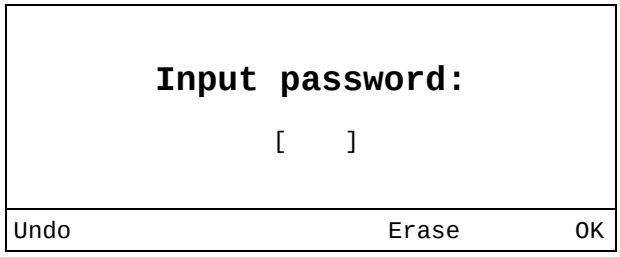
In the shown example the password is 1234.

House 1	New password
Password	[1234]
	Back

When the password is connected and you wish to change data, the following is displayed.

The numerical keyboard is used to enter the password.

Press **OK** after having completed the data entry.



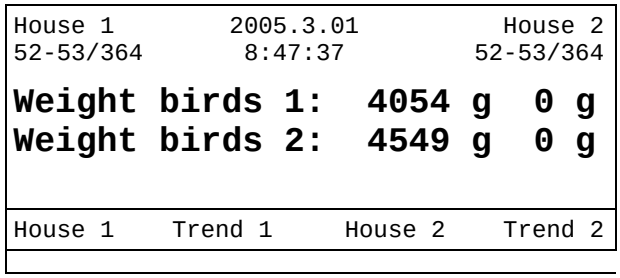
If the wrong password is entered, the following is displayed:

Press **Back** in order to enter the correct password.

Once the password has been entered, the code does not have to be entered until the survey is displayed.

3.2 Survey Display

The upper level of the menu structure is the survey display. This is where the house name(s), batch clock(s), current date and time, feed conversion ratio (FCR) and broiler weight values are always shown. If the user does not press a key, MC 95 A automatically returns to the survey display after 5 minutes.



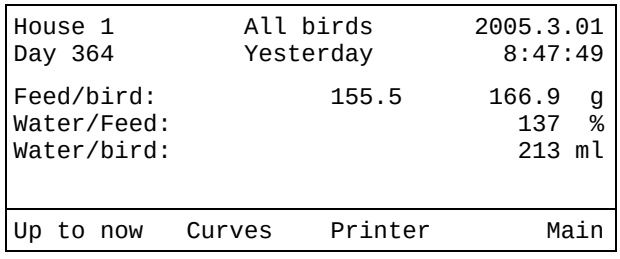
From the survey display the user can select **House/Report** and **Trend**:

3.2.1 House/Report

Survey display/House 1

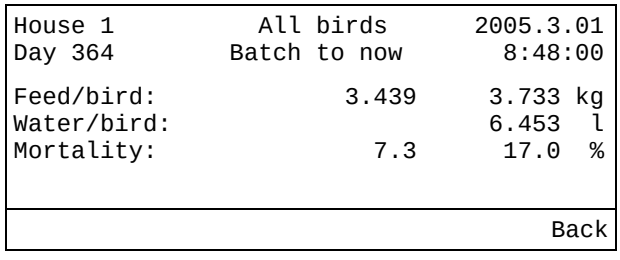
This screen shows key figures from **Yesterday**.

There is a quick short cut to **Curves**, so it is easy to get an overview of the programs for feed, light and water during the next 24 hours.



Survey display/House 1/Batch to now

This screen shows key figures from **Batch to now**. The left column shows feed consumed by birds type 1, and the right column shows feed consumed by birds type 2. Where there is only one column, the figure is for all birds.



The Printer function allows the user to print out a number of different reports. See section 6 which includes examples of reports.

Batch end report:	Is an extract from the 24-hour report. If the report is printed in Start of batch, feed from the minus day is not included. It is included when the report is printed in End of Batch.
Program set-up:	Report with feed, water and light program settings.
Silo status:	Report including all information about silos.
24-hour curve report:	Climate curves and period figures etc.

In addition, printer reports can automatically be printed in connection with period and day shifts. See technical manual.

3.2.2 Trend

This function shows the actual weight of the birds today and the last 3 days. Index is also shown in order to monitor the trend. The index is in proportion to the reference weight.

Survey display/Trend 1

House 1	Trend for bird weight				
Day	364	363	362	361	
Cocks	4054	4003	4131	4135	g
Index	110	108	112	112	%
Hens	4549	4554	4735	4735	g
Index	101	101	105	105	%

Main

3.3 Number of Birds

3.3.1 Two Types of Birds

If there are two sorts of birds in the same house, all of the following parameters must be entered separately for each "sex", and all key figures must be calculated for each "sex". Column 2 (small figures) show the actual mortality compared to the reference (index).

Number of birds

House 1 Tuesday 2005.3.01
Week/Day 52-53/364 Dead 8:55:54

Hens:	**7.3 %**	**158 %**
Cocks:	**17.0 %**	**367 %**

Birds 1 Birds 2 Historik Main

3.3.2 Dead Birds

This is where the dead animals are entered. It is possible to see the status as well as the history.

Number of birds/Birds 1

House 1 Hens

Dead:	**0**
Dead today:	0
Birds alive:	11257

State Stocked Depopulated Back

3.3.3 Stocked Birds

Number of birds/Birds 1/Stocked

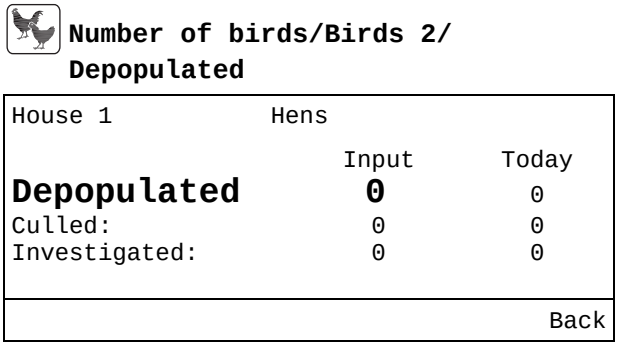
This is where the number of stocked birds is entered. It is important that this figure is correct as it is used for the calculation of key figures. **Extra stocked** today is used when birds taken out from another house is put in.

It is possible to enter information about the parent animals (Cobb 500). This information is included in the printer reports.

3.3.4 Depopulated Birds

In rearing houses hens are separated from the cocks, and as this separation is not a hundred percent, it is necessary to sort a few hens from the cocks and vice versa. The culled birds are either slaughtered or stocked in a house with birds of their own sex. Further some birds are culled for inspection etc.

Number of birds/Birds 2/ Depopulated



In the **Depopulated** sub menu it is possible to enter the number of culled birds and number of birds for inspection.

This is where the user enters the number of depopulated birds through partial emptying of the house. It must not be done, when the house is emptied completely.

3.4 Feed Control

In principle, the feeding system has been designed as shown below in 3.2.

1) Feed augers - up to 4 types of feed
2) Feed weigher, FW 99B
3) Distribution shutter
4) Cross augers
5) Chain feeding system
6) Pan feeding system
7) Cross auger containers
8) Feed demand sensor in container (one for each house)

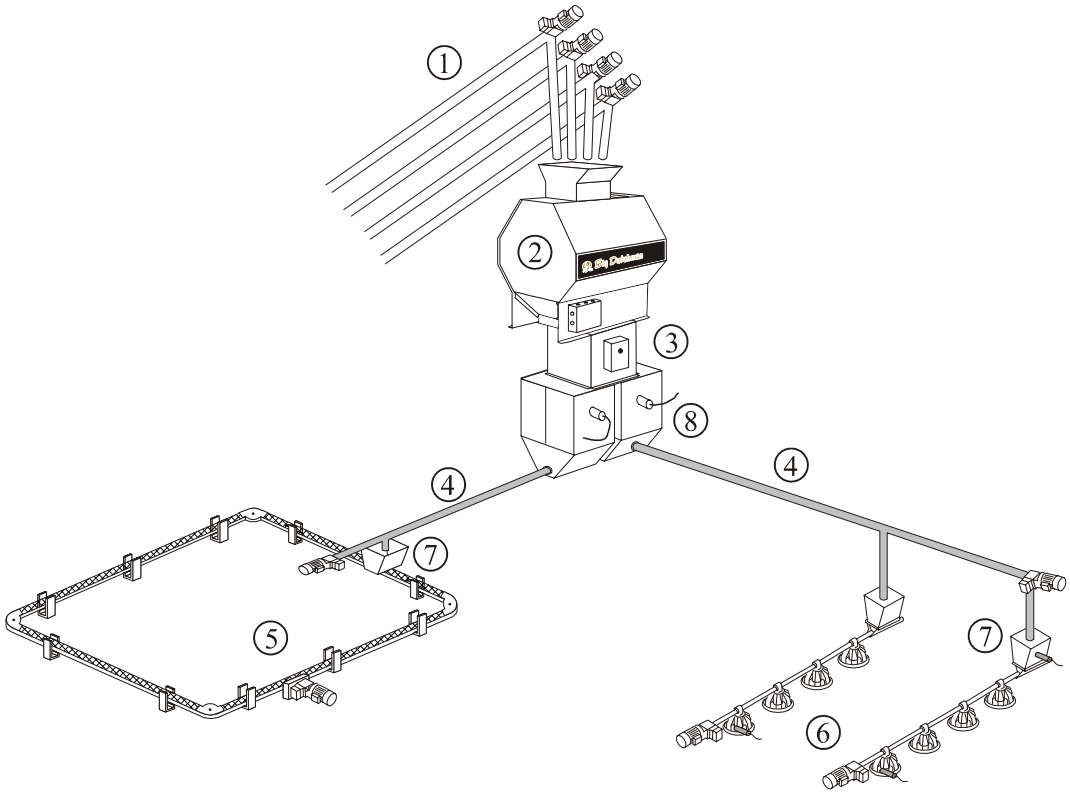


Figure 18: Chain feeding system and pan feeding system with FW 99B

In principle, the feeding system has been designed as shown below in Figure 19.

1) Feed augers - up to 4 types of feed
2) Feed weigher, FW 99B
3) Feed demand sensor
4) Cross augers
5) Feed valve
6) Destination container
7) Cross auger motor
8) Feeding system
9) Level switch, empty
10) Safety stop for cross auger
11) Level indicator sensor in control pan

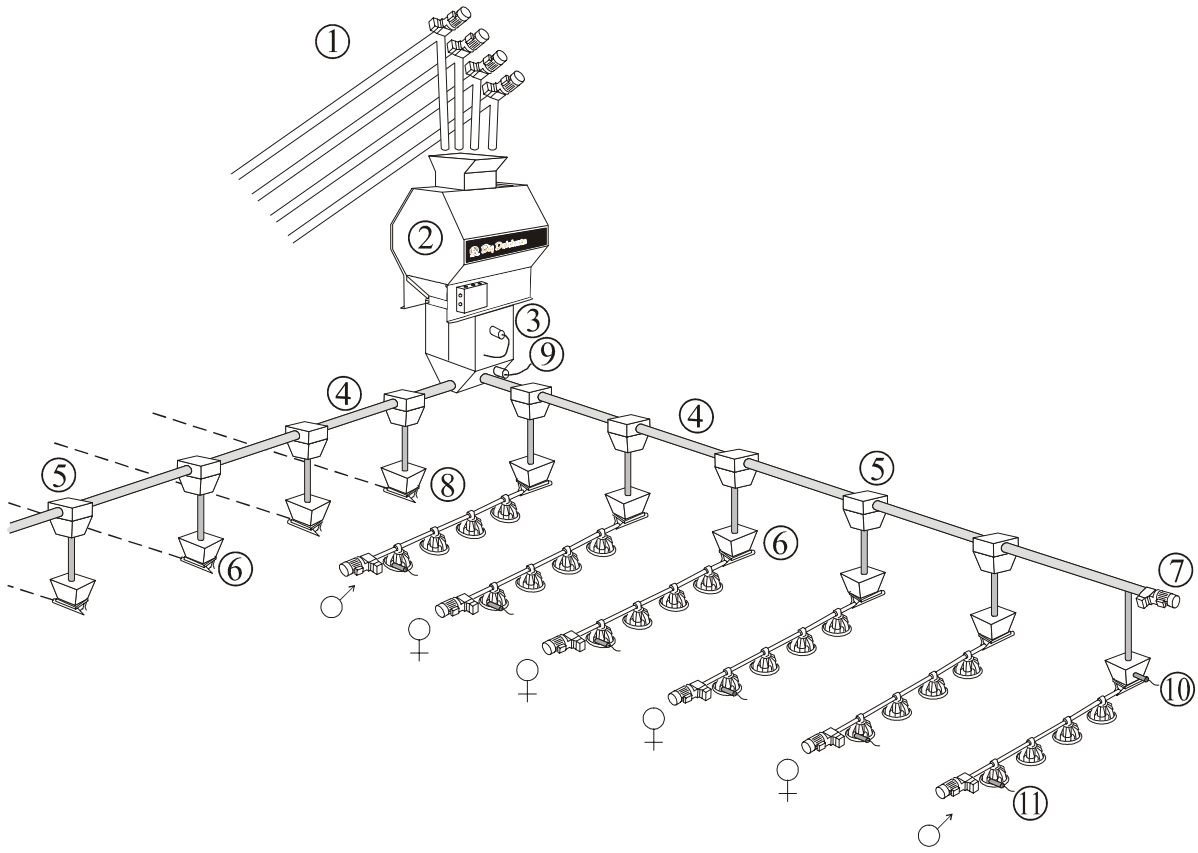


Figure 19: Destination feeding with FW 99B

3.4.1 Feed Weigher

The feed weigher can be one of the following types:

FW 99B:	MC 95 A controls FW 99B directly on the basis of a load cell signal and the feed demand sensors, and it controls the feed augers and the drum motor in FW 99B. It is possible to run with up to 3 feed types simultaneously.
Tip weigher:	Gives an impulse for each weighed out feed portion

3.4.2 Pan Feeding

In breeder houses destination feeding is always applied.

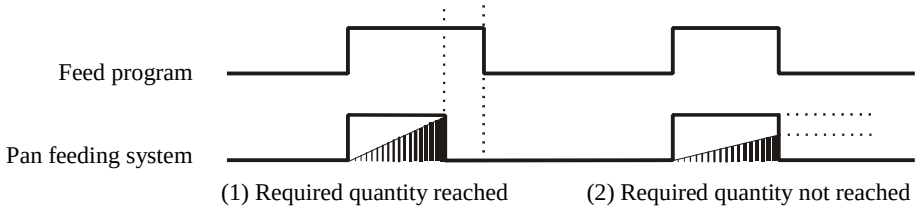
The following four control methods can be selected in connection with pan feeding:

Feed program OFF: Control of feed lines and cross auger interrupted (OFF). The system is not running.

Feed program AD-LIB: The feed lines and the cross auger are constantly active (ON). The system is only controlled by the level sensors in the reference pans. The cross auger is controlled by the sensor in the cross auger container.

Feed program time contr./Feed follows light time controlled:
The feed lines can only run in the periods determined by the feed or the lighting program. The cross auger is controlled on the basis of the sensor in the cross auger container.

Feed program restrictive/Feed follows light restrictive:
Restrictive control by required quantity as specified in the reference curve for feed consumption. Control of feed lines is active (ON) in periods determined by the feed or the lighting program and the required quantity of feed per bird. The cross auger is controlled by the sensor in the cross auger container.



(1) Feeding stopped, as required quantity has been reached

(2) Feeding is stopped by the feed program. The missing quantity is not fed.

Feed program restrictive with correction/Feed follows light restrictive with correction:
In restrictive feeding it is possible to "transfer" feed from one feeding period to another. One feeding period consists of one or more feedings. The start of a feeding period is determined by either the feed program or the light program. A feeding period starts with a feeding. The feeding stops when the cross auger has not been activated for a given period (Stop of feeding - cross auger). At the end of a feeding it is checked whether the supplied feed is more or less than the required feed quantity for the whole feeding period.

```
House 1          Feed program restrictive

Time to next feeding              0:15  h:m
Stop feeding – cross auger          15 min.
Min. correction                    250   kg
Max. correction +/-      10         30    %


                                        Back
```

Min. correction states how small the remaining feed quantity may be. If Min. correction is set to 250 kg a rest of less than 250 kg compared to required quantity will not cause an additional feeding.

Max. correction +/- states the max. feed transfer (+/-) allowed between 2 feeding periods.

Max. correction +/- can be set-up separately for the cases where feed is transferred to next feeding period (+10) and feed is deducted from next feeding period (-30).

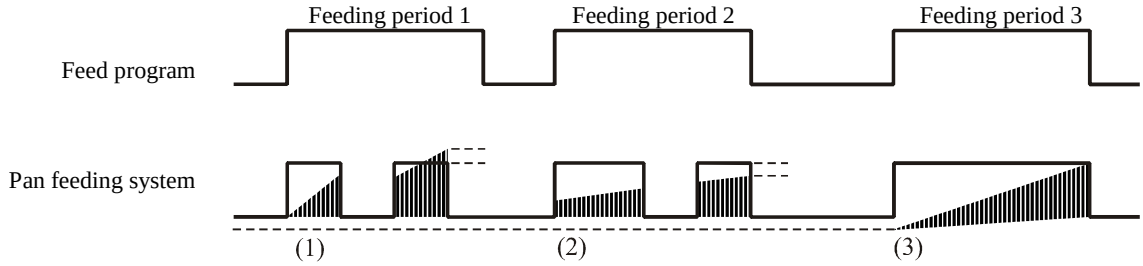
If the quantity is bigger, the feeding period is finished and the extra feed compared to required will be deducted from the required feed quantity for next feeding period.

If the quantity is less, an additional feeding will start at a given time (**Time to next feeding**). **Next feeding starts** states when a possible additional feeding will start. At the end of the additional feeding it is checked again, whether the supplied feed until now in the whole feeding period is bigger or less than the required quantity. If the quantity is reached, the feeding period is stopped. Otherwise feedings continue until either the required feed quantity is supplied or the feeding period is finished, determined by the feed program/light program. If the required feed quantity has not been supplied at the end of the feeding period the missing feed quantity is transferred to next feeding period.

House 1	Feed program restrictive
Start day restrictive feeding	7
Final day restrictive feeding	126
Actual correction	0.0 kg
Correction	Back

When a feding period is finished or started **Actual correction** will be updated/calculated.

Actual correction states the feed quantity (+/-) being transferred to next feeding period or if a feeding period is active, how much feed (+/-), transferred from last feeding period.



(1) One additional feeding. Too much feed will be deducted in next feeding period.

(2) One additional feeding, stopped by the feed program. Too little feed will be transferred to next feeding period.

(3) No additional feeding. Feeding stopped by the feed program. Feed quantity is as required.

Restrictive feeding (time controlled restrictive or time controlled restrictive with correction) is typically only active in a part of the production period. A start day (**Start day restricive feeding**) and an end day (**End day restrictive feeding**) states in which part of the production period the feeding is restrictive. Outside this period the feeding is "normal", thus pure time controlled on basis of either the feed program or the light program.

MC 95 A calculates **Feeding time** which states the time spent on feeding the required quantity per bird. The figure can be used for calculation of how fast the birds eat the required feed quantity. MC 95 A distributes the calculated feed quantity equally in all feeding periods independent on the duration of the these.

3.4.3 Manual Feeding

If pan feeding has been selected a manual period can be intercalated. If restrictive control has been selected a required quantity per bird should be entered.

The feeding goes on until the time has run out or until the required quantity has been reached.

```
House 1            State            Program

A/B/C/D         100.0   0.0   0.0   0.0  %
Manual start          2005-5-17    10:00:00
Manual stop           2005-5-17    11:00:00
Manual feed/bird                     0.0  g
Skip next feeding period                 No

Mixture    Program                    Back
```

3.4.4 Chain Feeding

Feed/Program/Chain

MC 95 A shows the status of the chain feed process.

Next start time can be changed in order to hasten or postpone the next feeding.

Running time shows the current running time of the chain.

```
House 1            Chain              Times

Next start time                 15:50
Previous start time             14:35
Running time                     0:00   m:s
Number of feedings       19        1
Manual start                     No

Runs/day    Setup                   Back
```

Number of feedings shows the number of feedings to be carried out today. Number of feedings can be adjusted and the correction will be shown. The system will operate with the same correction the following days.

It is possible to perform Manual start of the chain at any time (not during End of batch, however).

Feed/Program/Chain/Runs/Day

The number of times the chain starts is determined by this programme.

```
House 1          Chain feeding

Day          0     16     32     48
Number       0      4      8     12

Day         64     80     46    112
Number      16     20     24     28

                                Back
```

Feed/Program/Chain/Setup

All control programs for chain feeding use a setting which specifies the running time for one chain turn. It is important that this parameter is set correctly.

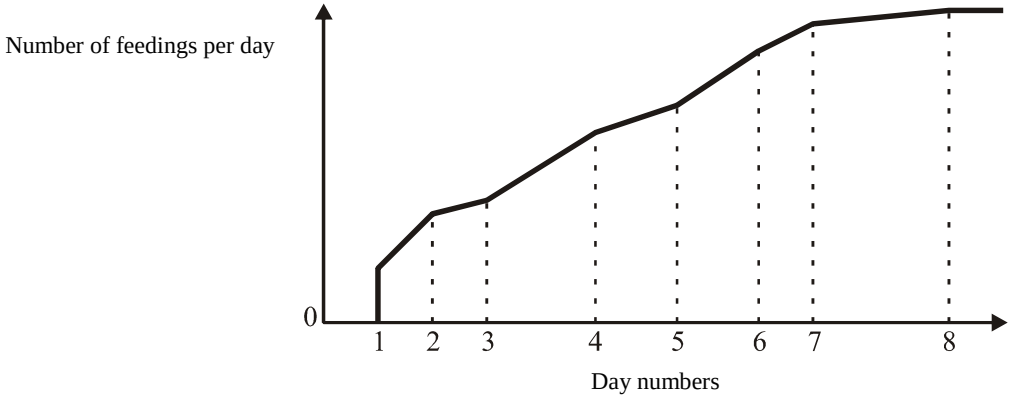
See also menu outline Figure 3.

```
House 1            Chain

Time for a chain turn          14:00   m:s

                                Back
```

The following two control methods can be selected in connection with chain feeding:

Feed program OFF: Feed chain and cross auger control is interrupted (OFF). The system is not running.

Feed program TIME/Feed follows light TIME:
A number of feedings per day must be entered at 8 different day numbers. The number of feedings is 0 (zero) before the first day number. The change in the number of feedings per day between 2 day numbers is linear, and the number is rounded off to the nearest integer. From the last day number the system continues with the number specified here. See also menu survey.



The feedings are distributed equally in the feeding periods specified. Extra feedings are distributed, starting at the last period.

7 chain feedingsin 3 feeding periods

If the number of feedings is lower than the number of feeding periods, feeding will take place once during each feeding period, starting with the first feeding period, till the required number has been reached.

2 chain feedingsin 3 feeding periods

”Waking up" function: A parameter can be entered which will make the chain start for a few seconds one minute before a new feeding. This means that the broilers are activated and "ready" when the feeding chain starts. See also technical manual.

3.4.5 Destination Feeding

The required quantity of feed (each filling up) for each installed destiination can be entered (0-999 kg). **Actual** is equal to the filled up quantity (instantaneous quantity). During filling up **Actual** is increased and at the beginning of a feeding session **Actual** is set to 0 kg.

Feed

```
House 1          Tuesday          2005.5.17
Week/Day 52-53/364                  8:49:19

Dest.       1    2    3    4    5    6
Target     55  435  435  435  435   55 kg
Amount      0    0    0    0    0    0 kg
Type        B    A    A    A    A    B

Key fig.     Program      Silo       Main
```

Feed

Target	55	435	435	435	435	55 kg
Amount	0	0	0	0	0	0 kg
Type	B	A	A	A	A	B
Pct.	100	0	0	0	0	0 %
Offset	0	0	0	0	0	0 kg

Key fig. Program Silo Main

It is also possible to choose between feed component A, B, C and D for each destination. If a FW 99B is installed it also possible to select "Mix" (mixture) for selection of **Type**.

Feed/Program

House 1 State Program

A/B/C/D	100.0	0.0	0.0	0.0 %
Skip next feeding/filling				No

Mixture Filling Feeding Back

"Mixture A/B/C/D" and submenu "Mixture" are only available when FW 99B is installed. **Skip next filling up/feeding session** is available. This means that the next planned filling up and feeding session are skipped. The ongoing filling up or feeding session is completed.

Feed/Program/Filling

Day	1	993	994	995
Start #1	14:30	0:00	0:00	0:00
Stop #1	15:45	0:00	0:00	0:00
Day	996	997	998	999
Start #1	0:00	0:00	0:00	14:30
Stop #1	0:00	0:00	0:00	15:45

Curves Manual Next Back

Filling up of the destination containers is made from: 8:00 - 9:00. Filling up starts by destination 1. Valve opens. The required quantity of feed is weighed. When the required quantity of feed is obtained and the container below the weigher is empty, the cross auger is running during the "After run" perioed to ensure that all the weighed feed has been delivered.

Subsequently, the valve closes and the process is continued by the next destination. Up to 16 filling up periods a day is possible.

Feed/Program/Feeding

Day		1	990	991	992	
Start	#1	7:25	0:00	0:00	0:00	
ONtime	#1	15:00	0:00	0:00	0:00	m:s
Day		993	994	995	996	
Start	#1	0:00	0:00	0:00	7:25	
On-tid	#1	0:00	0:00	0:00	15:00	m:s

Curves Manual Next Back

The feeding session takes place at 10:00 o'clock and lasts for 9 minutes. Up to 16 feeding periods a day is possible.

ON time by chain feeding is equal to the running time of the chain. ON time by pan feeding is equal to the time when the filling up motor for the pans is running.

Alarm

If the stop time in the feeding program is reached before all destinations are filled an alarm is released.

The alarm condition results in stop of filing up of feed and the cross auger wil be emptied during the "After run" period and the valve closes.

```
House 1        Tuesday          2005.5.17
Week/Day 52-53/364                8:58:43

Dest. filling not completed
Start:         2005.5.17  10:22:12
End:                  ---


Alarm log    Limits    Acknowled.    Main
```

Alarm/Alarm log

```
House 1         Alarm log                1
       Dest. filling not completed
Alarm value                          0.0
Start               2005.5.17 12:29:48
End                 2005.5.17 13:21:07
Acknowledged        2005.5.17 14:47:03


                   -Log    +Log       Back
```

Feed/Program/Filling/Manual

Manually filling up is carried out by entering **Required** for each destination and start the filling up by entering date and time.

```
House 1      Manual filling

Dest.       1    2    3    4    5    6
Target     55  435  440  440  435   55 kg
Amount      0    0    0    0    0    0 kg
Start filling                         ---
Stop filling                          ---


                                     Back
```

Feed/Program/Feeding/Manual

Manually feeding is carried out by entering "On Time" and start of feeding by entering date and time.

Running time indicates for how long the manual feeding has run.

```
House 1      Manual feeding

Start feeding                        ---
ON-time                          0:00 m:s
Elapsed                          0:03 m:s


                                     Back
```

Feed/Key figures

The following data are indicated from yesterday.The left column indicates feed/birds1 and the right column indicates feed/birds 2.

Water/feed and water/birds are average values for the two groups of birds.

```
House 1         Yesterday

Feed/bird                155.5  166.9  g
Water/Feed                      137  %
Water/bird                      213 ml


State                History       Back
```

Feed/Key figures/Status

House 1	State	Feed
Feed A today	1750	0 kg
Feed B today	0	110 kg
Feed C today	0	0 kg
Feed D today	0	0 kg
Water/Feed today		0 %

Back

The left column shows feed consumed by birds of type 1, and the right column shows feed consumed by birds of type 2. If only one type of birds is stocked, the right column will always be 0.

Feed/Key figures/History

House 1 History

Choose historical data

24 hours Total Back

Feed/Key figures/History/24-hours

House 1	Day: 363	Batch: Now
Feed/bird	104.0	70.0 g
Feed A	1505	70.0 kg
Feed B	245	0 kg
Feed C	0	0 kg
Feed D	0	0 kg

Batch -Day +Day Back

History/24-hour

The left column shows feed consumed by birds of type 1, and the right column shows feed consumed by birds of type 2. If only one type of birds is stocked, the right column will always be 0.

Feed/Key figures/History/Total

House 1	Day: 9	Batch: Now
Feed/bird	3.439	3.733 ton
Feed A	38.715	0.775 ton
Feed B	0.000	1.685 ton
Feed C	0.000	0.000 ton
Feed D	0.000	0.000 ton

Batch -Day +Day Back

History/Total

The left column shows feed consumed by birds of type 1, and the right column shows feed consumed by birds of type 2. If only one type of birds is stocked, the right column will always be 0.

3.4.6 Additional Functions

These functions can be activated in all control programs in all system types.

Skip next feeding period: The next feeding period is ignored when this function is active. The function is automatically deactivated when performed. See also menu survey Figure 1.

Stop feeding system for a certain period of time:
Described in section 3.2.2.

Minimum feed quantity during a feeding period:
The installation menu includes a function which allows the user to set the minimum quantity of feed in a feeding period. This function prevents small quantities of feed from being distributed poorly in the house.

3.4.7 Silo

When feed is delivered, the quantity must be entered in MC 95 A, which then currently calculates the content of the silos.

When entering the values the user must specify the silo, the quantity and the type of feed. MC 95 A registers the time of delivery.

Feed/Silo

House 1	Silo	Survey
Silo 1:		14.500 ton
Silo 2:		11.800 ton
Silo 3:		1.480 ton
Silo 4:		1.400 ton
Silo 1	Silo 2	Silo 3 Back

Feed/Silo/Silo 1

House 1	Silo 1	Delivery
Delivery:		**0.000 ton**
Type of feed:		A
Automatic change:		Yes
Latest delivery 15/5		12.200 ton
Change	Min.amount	Back

MC 95 A can work with 3 different types of feed: A, B and C.

These feed types are mixed as specified in the mixture program. It is possible to store the same feed type in several silos.

If, for instance, you keep Feed A in two silos but want MC 95 A to use Silo 1 before Silo 2, the feed in Silo 1 is selected as **Feed A Start** and the feed in Silo 2 as **Feed A**. You can also select **Start** for Feed B and C.

Example:

The typical use of start feed is:

Silo 1	Start feed	Feed A Start
Silo 2	Growth feed End feed	Feed A Feed A
Silo 3	Wheat	Feed B

When a new batch of birds is started, there will often be a remaining quantity of end feed in a silo. However, MC 95 A will not use this feed (although it is Feed A), because the start feed has been selected as Feed A Start. The growth feed is filled into Silo 2, and MC 95 A will automatically switch to Silo 2, when the start feed has been used up.

3.4.7.1 Change between Silos

MC 95 A can shift between silos in 3 different ways:

- automatically, when **Automatic change** is **Yes**
- automatically with gradual change-over, when **Automatic change** is **YES** and **Gradual change-over** exceeds **0 kg**
- manually, when **Automatic change** is **NO**

Automatic change without gradual change-over:

When the current silo runs empty, the silo content is less than Minimum silo contents, and Time before change-over has passed, the system changes to another silo with the same type of feed.

Feed/Silo/Silo 1/Change

House 1	Silo 1	Change
Time before changeover	1	min.
Minimum silo contents	0.500	ton
		Back

The type of feed in the silo is changed from **Start** and the content is set to **0.000 ton**.

If a silo runs empty and the feed quantity in MC 95 A's silo survey exceeds the Minimum silo contents, MC 95 A cannot perform the automatic change. Therefore, the quantity must be changed to 0.000 ton, so that MC 95 A can perform an automatic change.

Gradual change-over:

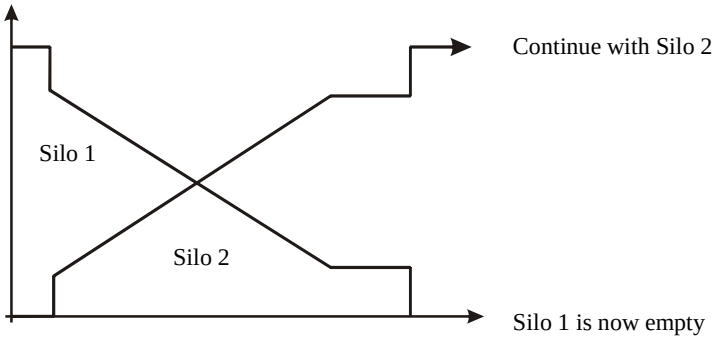
MC 95 A can perform gradual change-over between two silos, e.g. from start feed to growth feed (applies only to FW 99B).It is necessary to enter the required quantity of feed (kg), at which the gradual change-over must start.

Feed/Silo/Silo 1/Change

House 1	Silo 1	Change
Gradual changeover	0	kg
Time before changeover	1	min.
Minimum silo contents	0.500	ton
		Back

When the silo content reaches this quantity, a gradual change-over to a silo with the same type of feed is started. If there is no silo with the same type of feed, MC 95 A continues with the first silo.

Gradual change-over from Silo 1 to Silo 2



MC 95 A continues to take at least 20 % from the first silo till the silo is completely empty. In this way MC 95 A will ensure that the silo is emptied completely, even though the entered quantity of feed delivered is not quite correct.

Manual change:

When the silo runs empty, MC 95 A presents this screen:

Press Change to change to the new silo. The feed type in the first silo is changed from Start and the content is set to 0.000 ton.

Feed

```
2005.5.17
        Silo 1 is empty
          Change to silo 2
Silo is empty  2005.5.17  9:23:19
Silo 1 content:              0.150 ton
Undo                 Change
```

If the silo is not empty (if, for instance, the feed has clogged up the silo outlet), press Undo to continue with the same silo.

3.4.7.2 Time before Silo Runs Empty

MC 95 A calculates how many hours of consumption the remaining quantity of feed in the silo is expected to cover at the current feed intake of the birds.

Feed/Silo/Silo 1/Min.amount

```
House 1          Silo 1          Min.amount

Time until empty:  89:51 h:m

                                        Back
```

The beginning and end of the individual feeding periods is not taken into account. This means that MC 95 A can calculate that there is feed enough for 24 hours of consumption, but if the entire feeding takes place during one 4-hour feeding period, the silo may run empty earlier.

3.4.8 Mixture

MC 95 A can mix feed from up to 4 intake augers. The feed in the silos must be assigned one of the following 4 types.

Feed A	Feed B	Feed C	Feed D

These feed types must be mixed as specified in the mixture program. It is possible to store the same feed type in several silos.

Mixture of the different feed types is controlled by a program with 8 day numbers.

Enter the required quantity of feed B and C in per cent. The feed A percentage is then calculated automatically.

```
House 1                    Mixture program 1/2

Day          A       B       C       D
0        100.0     0.0     0.0     0.0 %
993      100.0     0.0     0.0     0.0 %
994      100.0     0.0     0.0     0.0 %
995      100.0     0.0     0.0     0.0 %

                                Next    Back
```

The selected mixture applies as from the day number until but not including the next day number. Before the first day number the mixture of the current day is used. The mixture ratio is corrected gradually between the day numbers to avoid sudden changes in the feed composition.

House 1				Mixture program 2/2
Day	A	B	C	D
996	100.0	0.0	0.0	0.0 %
997	100.0	0.0	0.0	0.0 %
998	100.0	0.0	0.0	0.0 %
999	100.0	0.0	0.0	0.0 %
	Previous			Back

The mixture ratio can be readjusted.

Press: + **Program**

Carry out the required adjustment by entering the required B and C percentage. The A percentage will be calculated automatically.

House 1	State	Program
A/B/C/D	75.0 25.0 0.0 0.0	%
Manual start	2005-5-17	10:00:00
Manual stop	2005-5-17	13:00:00
Manual feed/bird		0.0 g
Skip next feeding period		No
Mixture	Program Chain	Back

3.4.9 Two Feeding Systems (MC 95 A-2 only)

MC 95 A-2 can control the feed supply to two houses "simultaneously". MC 95 A-2 controls a distribution shutter, which is placed under the FW 99B feed weigher. (Does not apply to destination feeding).

The principle of feeding simultaneously in two houses is:

MC 95 A-2 shifts to the other house if feed is demanded from it and:

1) there is no feed demand in the current house for more than 1 minute
2) feeding has been active in the current house for more than 10 minutes

An initiated weighing process is always concluded.

NB Special conditions apply to chain feeding: When a chain feeding process has been initiated, operation and feed supply in the other feeding system is postponed (see example below).

Example:

Two chain feeding systems with the same feeding program

correct feeding

The feeding program has not been set correctly

feeding in House 2 is cancelled

In the latter case feeding will not be carried out as expected in House 2, as MC 95 A-2 will not accept running the chain outside feeding periods, not even if only a part of the chain run is outside the feeding period. Therefore, we recommend using long feeding periods and, as far as possible, different feeding programs for House 1 and House 2.

3.5 Water Control

MC 95 A can control the water supply by means of a solenoid valve. For reasons of safety the electrical installation must be designed to ensure that the solenoid valve opens if the power supply to MC 95 A is switched off.

Under Installation the following 5 control methods can be selected:

1) Always open:
   The water supply is always open (ON).
2) Always closed:
   The water supply is always closed (OFF).
3) Water program:
   Separate water control program. 8 day numbers must be entered in the water program, and for each day number the user can enter 16 opening/closing times. Until the first day number is reached the water supply is open 24 hours a day. Time controlled AD-LIB.
4) Light program:
   The same "on/off" times as in the light program are used. The user does not have to program the times again. Time controlled AD-LIB.
5) Restrictive:
   The same principle as restrictive feed control. The control unit follows a separate water program, and the water supply is cut off when a required quantity has been supplied. Time controlled restrictive.

3.6 Light Control

The light is always controlled in accordance with a light program. The on/off times of the light program are maintained from one day number to the next.

Up to 16 on/off times can be entered for each day number.

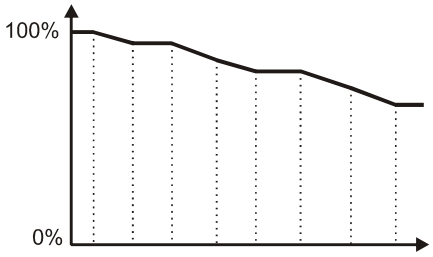
Light/Program

Day	1	993	994	995
Start #1:	5:00	0:00	0:00	0:00
Stop #1:	19:00	0:00	0:00	0:00
Day	996	997	998	999
Start #1:	0:00	0:00	0:00	0:00
Stop #1:	0:00	0:00	0:00	0:00

Curves Next Back

Up until the first day number the light is on 24 hours a day. The light intensity is the same as the one selected for the first day in the light program.

On the other hand, the light intensity, which is entered in a similar program, changes gradually during the same period.



Light/Intensity

House 1	Light intensity			
Day	1	993	994	995
Intensity	100	100	100	100 %
Day	996	997	998	999
Intensity	100	100	100	100 %

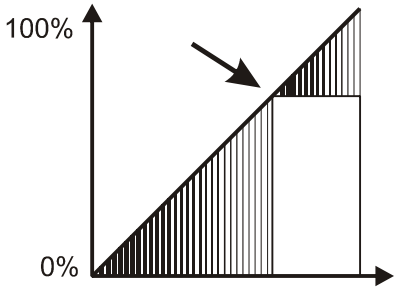
Setup Back

See also menu survey, Figure 6 and Figure 7.

Under **Installation** the user selects on/off light control or dimming.

The following options are possible:

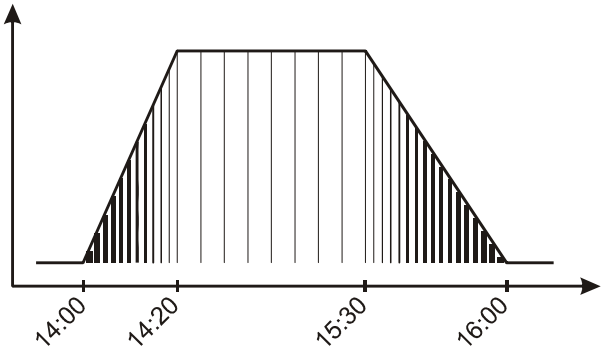
Relay:	On/off control in accordance with light program.
Analog dimmer:	The light is controlled in accordance with the light program and the intensity curve. Under Installation the dimmer characteristics must be entered: the control voltage required for a given light intensity. The light relay follows the light program (like item 1.).
Analog + relay:	Controlled in accordance with the light program and the intensity curve.At low intensity only the dimmer is used. At increasing intensity the relay light is connected and the light from the dimmer is reduced.Under Installation the user must specify the intensity at which change-over is required.



The user must specify the light intensity (in %) at which the relay must be activated.

When a dimmer is used, a light period starts with "dawn", where the light changes from "Night" to "Day" over a specified period. Similarly, a light period ends with "dusk".

If the light period specified is shorter than "dawn + dusk", the light intensity will increase until the middle of the period and then decrease.



Start:	14:00	Dawn:	0:20
Stop:	16:00	Dusk:	0:30

It is possible to readjust the current intensity. Press [💡] and [P]. The light intensity will then be increased/reduced in relation to the original light intensity. When a new batch is started, the manual readjustment is reset and the system starts with the programmed sequence.

If the adjustment is made when it is "dark", it will not result in a change in the intensity when the light is on. Similarly, adjustment carried out while the light is on will not cause any changes in the intensity when it is "dark".

A light sensor or voltmeter can be connected to an input on MC 95 A, so that an alarm can be given in case of too little or too much light in the house. The voltmeter does not measure the light intensity directly but rather the voltage from the dimmer, and it can be adjusted using a LUX meter. The light sensor characteristics are entered under Installation.

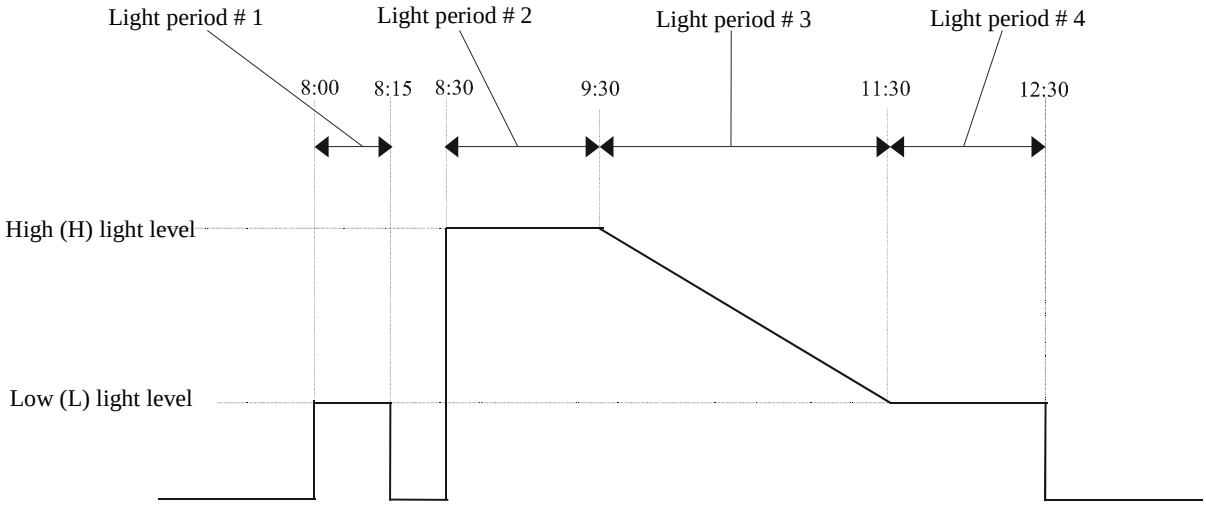
MC 95 A stores information about the light program.

Light/Status/History

This light data is found in the historical data. It is therefore possible to compare the light control of this batch with that of previous batches.

```
Light          Day 363          Batch: Now

Light sensor average:             71.3   %
Light hours:                      9:28
No. of light periods:                1

Batch        -Day        +Day          Back
```

Some kinds of productions demand a light program in which light control is possible. See the below figure (3-level control of light):



Before feeding a short light period (period #1) with low light intensity is required. This prepares the birds for the feeding and they will spread in the house.

During feed distribution some prefer to turn off the light. After this a light period with high light intensity is required. During this period the birds eat and drink and thereafter the light intensity is reduced for a period (period #3). Finally there is a light period (period #4) with low light intensity.

Installation/next

In the installation menu it is possible to choose between "2-level light" and "3-level light".

```
House 1          Installation

Light program:              [3-level light]
Light control                 Analog dimmer
Light sensor Yes/No:                    Yes

Dimmer       Sensor       Next         Back
```

Light/Light intensity

When analog dimmer is installed it is possible to set a high and low light intensity. In this example the light intensity is gradually changed from high to low. This menu indicates standard data.

Day	1	993	994	995	
Level high	100	100	100	100	%
Level low	30	30	30	30	%
Day	996	997	998	999	
Level high	100	100	100	100	%
Level low	30	30	30	30	%

Setup Back

The mode parameter can be as follows:

1) High (H) indicating that the light level will be constantly high for a given period
2) Low (L) indicating that the light level will be constantly low for a given period
3) High to low (↓) indicating that the light level will decrease from high to low during a given period.
4) Low to high (↑) indicating that the light level will increase from low to high level during af given period

The four light periods in the above light curve are programmed as shown in the following menus:

Light/Program

Light period #1

Day	Mode:L	1	993	994	995
Start	#1	8:00	0:00	0:00	0:00
Stop	#1	8:15	0:00	0:00	0:00
Day		996	997	998	999
Start	#1	0:00	0:00	0:00	0:00
Stop	#1	0:00	0:00	0:00	0:00

Curves Mode Next Back

Light/Program/Mode

Light mode can be programmed to: **Low (L)**

House 1 Light program mode

Mode for light: [Low (L)]

Back

Light/Program

Light period #2

Day	Mode:H	1	993	994	995
Start	#2	8:30	0:00	0:00	0:00
Stop	#2	9:30	0:00	0:00	0:00
Day		996	997	998	999
Start	#2	0:00	0:00	0:00	0:00
Stop	#2	0:00	0:00	0:00	0:00

Curves Mode Next Back

Light mode can be programmed to: **High (H)**

Light/Program/Mode

```
House 1     Light program mode

Mode for light:                [High (H)]




                                       Back
```

Light period #3

Light/Program

```
Day     Mode:↓       1     993     994     995
Start #3          9:30    0:00    0:00    0:00
Stop  #3         11:30    0:00    0:00    0:00

Day                996     997     998     999
Start #3          0:00    0:00    0:00    0:00
Stop  #3          0:00    0:00    0:00    0:00

Curves       Mode         Next          Back
```

Light mode can be programmed to: **High to low** (↓)

Light/Program/Mode

```
House 1      Light program mode

Mode for light:          [High to low(↓)]




                                       Back
```

Light period #4

Light/Program

```
Day     Mode:L       1     993     994     995
Start #4         11:30    0:00    0:00    0:00
Stop  #4         12:30    0:00    0:00    0:00

Day                996     997     998     999
Start #4          0:00    0:00    0:00    0:00
Stop  #4          0:00    0:00    0:00    0:00

Curves       Mode         Next          Back
```

Light mode can be programmed to: **Low (L)**

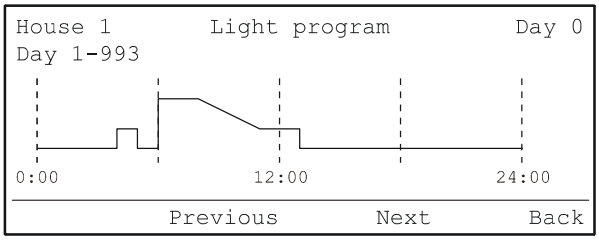
Light/Program/Mode

```
House 1      Light program mode

Mode for light:                  [Low (L)]




                                       Back
```

The program of "3-level light" is very flexible and makes 4 sequences of light a day possible as shown in the above curves.

Light/Program/Curves

In order to show periods in which the light intensity is increased or decreased, only one light curve is shown in each display. In the example, "next" is selected to see day no. 7-13 etc.

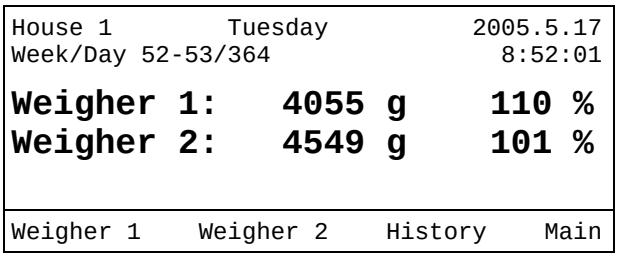


3.7 Poultry Weighing

MC 95 A can operate with 2 poultry weighers per house. The weigher type and characteristics are selected under Installation.

In connection with Manual poultry weighing the weight is entered directly in MC 95 A:

Press and **P**.



MC 95 A calculates the mean weight, standard deviation, deviation from reference (index) and the number of weighings of each poultry weigher.

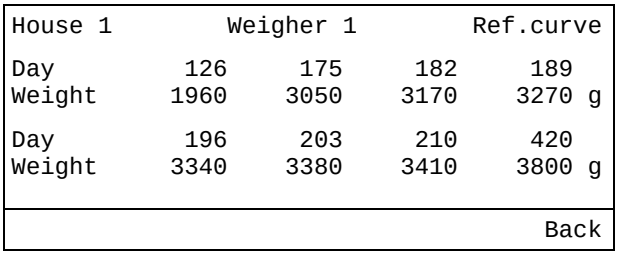
When weighing the birds the MC 95 A uses:

Weight/Weigher 1/Ref. curve

Reference curve:

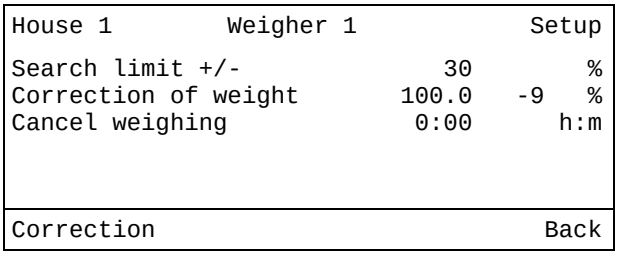
A curve representing the birds' expected weight.

The curve is entered for 8 day numbers.



Weight/Weigher 1/Setup

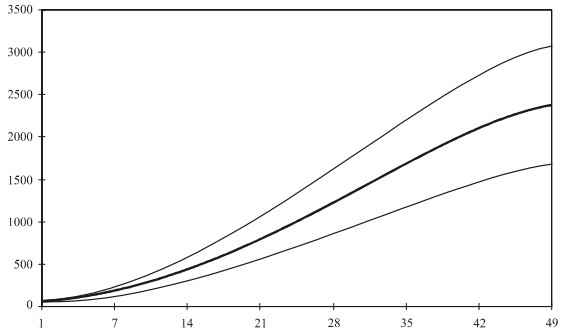
For **Weigher 1** and **Weigher 2** respectively it is possible to set a time for **Interrupt weighing** of birds after start of feeding.



Search limits:

The search limit is the permitted deviation from the reference curve.

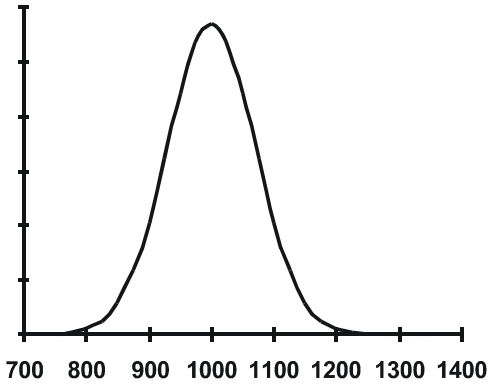
MC 95 A uses the search limit to sort out faulty weighings, e.g. when two birds steps onto the weigher at the same time.



Standard deviation:

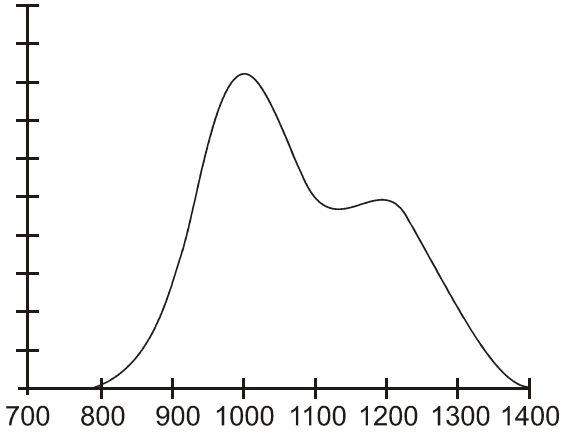
The standard deviation reflects the uniformity of the birds as regards weight. The higher the standard deviation (%), the lower the degree of uniformity of the birds - greater diversity.

If, for instance, the standard deviation is 10 %, 67 % of the birds weigh max. 10% more or less than the mean weight, when the birds follow the so-called normal distribution curve.



Note the irregular curve that occurs in connection with "As hatched" birds.

This distribution has a standard deviation of approx. 17 %.



Correction factor:

The natural behaviour of the birds means that the heaviest birds do not step onto the poultry weigher as often as the lighter ones. The weigher may therefore show a lower weight than the actual slaughtering weight. A correction factor should be entered to compensate for this.

The correction factor gradually corrects the weight, depending on the age of the birds.

If the weight is lower than the actual slaughtering weight, the deviation must be calculated in per cent and used as correction factor.

Example:

Slaughtering weight: 2190 g
Final weight, MC 95 A: 2110 g

Calculation: 2190 / 2110 * 100% = 103.8 %
The correction factor is set to 104 %.

The sub menu **Correction** has a correction curve including 8 points.

A further parameter (-1) has been added, which show how much the current "correction factor" is changed compared to the correction curve.

Weight/Weigher 1/Setup

House 1	Weigher 1	Setup
Search limit +/-	30	%
Max. correction	0	%
Correction of weight	108.0 -1	%
Correction		Back

The correction curve for Weigher 1. All values are default 109 %.

Weight/Weigher 1/Setup/Correction

House 1	Weigher 1			Correction
Day	0	16	32	48
Correction	109	109	109	109 %
Day	64	80	96	112
Correction	109	109	109	109 %
				Back

Interrupt weighing after feeding:

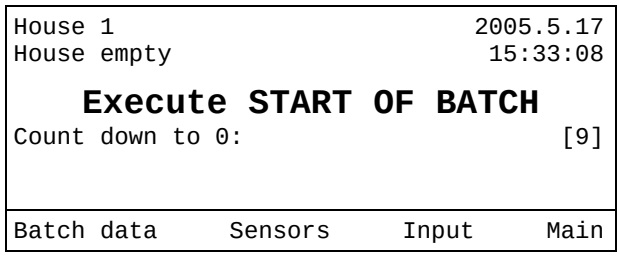
Breeders are typically fed once a day. Because they eat and drink a lot in a short time, their weight increases drastically during feeding. In a period of time after the feeding the birds have a "wrong" weight. In order to determine the correct average weight of all weighings during the day, it is necessary to ignore all weighings in a certain period during and after the feeding.

3.8 Start of Batch / End of Batch

It is important to carry out an **End of batch** at the end of a batch of broilers and to start a new batch with **Start of batch**. This ensures that the data of the ended batch is stored correctly and that MC 95 A does not control feed, water and light during the **House empty** period.

Start of batch and **End of batch** are activated as follows:

Press + P and count down to 0.

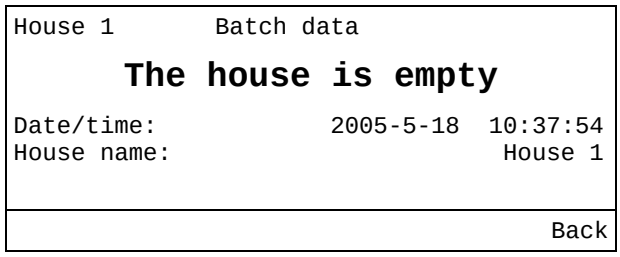


End of batch: All programs are set to OFF. Current batch data is stored in the historical data memory.
If the historical data memory is full, the very first batch leaves the log.

Start of batch: All registered data from current batches is reset.
All readjustments of the light program, feed program etc. are reset.

Batch data: Here the batch clock can be read and set. The batch clock starts with a "minus day" (preparation day, Day -1). It is important that the feeding system is filled on the "minus day", so that the quantity of feed which the feeding system can hold is not included in the calculated key figures. When a batch is ended and the feeding system is empty, you can print a batch end report, which includes the feed from the "minus day". When MC 95 A is in "End of batch", the figures in the display will include the feed from the "minus day".

Clock in MC 95 A:
This clock is set to the current date and time. The clock will run for approx. 2 months after a power failure. Summer and winter time values are entered by the user.

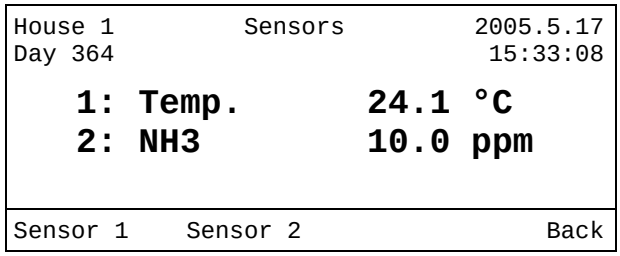


Batch/Sensors

Environment:

The two environmental sensors can be read. For both sensors the user has access to historical data, including maximum, mean and minimum values.

The environmental sensors are only used for alarm and report purposes.



Storing batch data: A batch must run for at least 15 days in order for it to be registered and stored as a batch.

Depending on the duration of the batches, the following can be stored:

- 7 batches of 124 days + current batch
- 4 batches of 218 days + current batch
- 2 batch of 436 days + current batch
  Only current batch of 872 days

3.8.1 Batch Change in Houses connected to Info Matic WebLink

IMPORTANT: The house computers must be operated correctly in connection with a batch change to ensure that data are distributed automa-tically in the correct batches.

Which house computers control the batch change?

In houses with a production computer:

- The production computer controls the batch change
- The climate computer has no influence on the batch change

In houses with a climate com-puter only:

- The climate computer con-trols the batch change

How to make batch change

1) Set the house computer, which controls the batch change in the house to “Batch end” when the house is empty
2) Leave the house computer in “Batch end” mode for at least two hours
3) After two hours the house can be set to “Batch start” again

Each time the house computer, which controls the batch change in the house, is set to “Batch end” for more than 30 min., a new batch is established.

3.9 Alarms

Press to gain access to the alarm system.

No alarms		is off. The display shows **`No alarms`**.
New active alarm		flashes quickly. The display shows information about the latest alarm. Alarms are acknowledged by pressing the selection key **`Acknowledge`**.
Active alarm which has been acknowledged		flashes slowly. The display shows **`Acknowledged alarms`**.
Retained alarm: The cause of the alarm has disappeared, but the alarm has not been acknowledged		is constantly lit. The display shows information about alarms.

3.9.1 Testing the Alarm System

The alarm system must be tested regularly - at least once a week.

```
House 1          Tuesday          2005.5.17
Week/Day 52-53/364                 15:33:12

                Alarm test

Start:              2005.5.17 15.30.04
End:                           ---

Alarm log    Limits    Acknowled.    Main
```

The alarm output in MC 95 A can be tested by pressing the alarm key for approx. 5 seconds. This will release a test alarm.

3.9.2 Alarm Log

The alarm log is a list containing the latest 20 registered alarms.

MC 95 A registers:

- the cause of the alarm
- the alarm value
- the time of the alarm
- the time when the alarm disappeared
- the time of acknowledgement

Alarm/Alarm log

```
House 1          Alarm log              11

              Minimum Feed
Alarm value:                       200 kg
Start:          2005-17-25   12:22:51
End:            2005-17-25   12:34:09
Acknowledged:   2005-17-25   12:31:30

                +Log      -Log       Back
```

3.9.3 Alarm Limits

All alarm limits must be checked in connection with installation, basic setting and batch start. The relevant alarms must be connected and disconnected, and the required alarm limit must be set.

Alarm/Alarm limits

```
House 1      Alarm limits

        Alarms:   Retain

Feed      Water       More        Back
```

Retained alarm: Alarms are active until acknowledged.

Not retained: Alarms are active until acknowledged or until the cause has disappeared.

Alarm/Alarm limits/Feed

```
House 1          Feed       Alarm limits

          Not enough feed intake
Alarm limit                  12        kg
Alarm output             Active
Monitoring time              30      min.
Active from day               7

            Previous      Next       Back
```

Example: Alarm limit for: **Not enough feed intake**

3.9.4 All Alarms in MC 95 A

Not enough feed intake at start:	The alarm is activated if the consumption is less after start of a feeding period (pan feeding) or after start of chain feeding than stated for the selected period. Can automati-cally be deactivated for the first days of the batch. When continuous feeding a new feeding period starts at 00.00 o'clock.
Too much feed intake after stop:	The alarm is activated if the consumption is bigger after stop of a feeding period (pan feeding) or after stop of chain feeding than specified for the selected period. Can automatically be deactivated for the first days of the batch.
Water/feed too high:	The alarm is activated if the water/feed ratio is bigger than specified for the selected period. Each time a new feeding period is started a new monitoring is started. Can automatically be deactivated for the first days of the batch.
Not enough feed intake:	The alarm is activated if the feed consumption is lower than specified for the selected period. Can automatically be deac-tivated for the first days of the batch. This alarm is only ac-tive in feeding periods.
Too much feed intake:	The alarm is activated if the feed consumption level is higher than specified for the selected period. It is always active - also outside feeding periods.
Feed weigher - No feed in silo:	Impossible to fill feed into the feed weigher. The silo is empty or the auger is disconnected/defective.
Feed weigher - Feed weigher cannot weigh:	The feed weigher fails to perform stable weighing - this may be due to vibrations.
Feed weigher - Feed weigher cannot be calibrated:	Alarm is released if the calibration of the feed weigher is not completed within a given period of time.
Feed weigher - Weigher cannot be emptied:	The drum in the FW 99B feed weigher cannot be turned or the stop position cannot be found.
Feed weigher - Low reference signal FW 99B:	Alarm is released if the MC 95 A registers that the reference signal from FW 99B is lower than 0.9 Volt during a given period of time.
Feed weigher - Missing feed type:	The alarm is released if a mixture program has been entered with a feed component which is not available in any of the silos. Check the status of the silos. It may be necessary to change the feed type in MC 95 A.
Feed weigher - Feeding system cannot switch over:	The FW 99B feed weigher wants to change to another house, but the distribution shutter does not react. Only applies to MC 95 A-2.
Silo 1,2,3 - Not enough feed in silo:	The quantity of feed in the silo is lower than the selected limit.
Silo 1,2,3 - Silo soon empty:	The silo now only contains sufficient feed for normal feeding for a given entered period.
Not enough water - open:	Released if the water consumption does not exceed a required quantity for a given period of time. Only applies when the water supply is open. The alarm can automatically be deactivated at the start of a batch.
Too much water - open:	Excessive water consumption for a given period of time. Only applies when the water supply is open.Can automatically be deactivated at the start of a batch.
Too much water - closed:	Excessive water consumption for a given period of time. Only applies when the water supply is closed.
Environmental sensor 1, 2 - max.:	Alarm when the maximum limit is exceeded.
Environmental sensor 1, 2 - min.:	Alarm when the minimum limit is exceeded.
Light sensor - Light not switched off:	If the light sensor detects that the light is not switched off as required.
Light sensor - Light not switched on:	If the light sensor detects that the light is not switched on as required.

START OF BATCH in climate controller:	If MC 95 A is set to START OF BATCH but the connected climate controller is not, the alarm is activated. The alarm is only possible when Info Matic is connected.
Destination filling not completed:	The required quantity of feed could not be delivered before end of filling time.
Valve cannot open:	If the valve cannot open
Valve cannot close:	If the valve cannot close.

3.9.5 Setting of Alarm Limits

Not enough feed intake at start:	The alarm is suited to ensure that the feeding system is in order when a feeding starts after having been stopped.At chain feeding. Monitoring time must not exceed the time for one chain turn.As principle rule set the alarm limit to 10 kg .
Too much feed intake after stop:	When a feeding period is finished (pan feeding) or the chain has finished a turn, it is monitored if too much is going through the feed weigher. A big consumption can indicate that something is wrong. What normally is done at the end of a feeding is that the cross auger containers are filled. The quantity of feed for that depends both on the capacity of the containers but also on how filled they were just before the feeding stopped. The alarm can be activated if the feed consumption after the end of a monitoring time and until start of a new feeding is higher than the alarm limit.
Water/feed too high:	This alarm is to ensure that the water/feed ratio is in order. Possible reasons for not being it are: 1) Defect in the water system 2) The birds are ill 3) Bad feed Please note that the water/feed ratio can be above normal, when outdoor temperature is high and no cooling system is in the house.
Not enough feed intake:	Is possible only in pan feeding systems. The alarm monitors if the consumption is too small when the feeding system runs. An alarm limit of 0.1 kg/min. and monitoring for 2 hours is recommended. It corresponds to 12 kg = feed weigher activated at least one time.
Too much feed intake:	This alarm monitors every day if too much feed is supplied to the house in a given period. A given system can, depending on size of supply augers and cross augers, deliver a certain feed quantity per unit of time. The alarm state will only occur when the system runs with max output for too long. An indication of how to set the alarm limits is to use number of birds and the feed reference as follows: Find the max value for the feed reference. Multiply the figure by number of birds in the house. Divide by 1000 to get the kg figure. This figure indicates the consumption a day. Set the alarm limit to consumption * 2.5: Ex.: Number of birds = 45000 Ref. feed/bird = 156 g (42 days) Kg on one day = 45000 * 156 / 1000 = 7020 kg Alarm limit = kg a day * 2.5 / (24 * 60) (min. a day) = 12.2 kg/min. Set monitoring time to e.g. 30 minutes. Alarm is activated if the feed consumption in a 30 min. period exceeds 12.2 * 30 = 366 kg. If this alarm is released without an error, the monitoring time must be increased to e.g. 1 hour.
Not enough water - open:	If the water consumption in a given period is too small, alarm is activated. Recommended setting for this alarm is 1.0 l/min. and a monitoring time of 30 minutes. This means that alarm is activated if the consumption is less than 30 litres every ½ hour.
Too much water - open:	If the water consumption in a given period is too high alarm is activated. A given system can depending on the capacity of the water supply deliver a certain quantity of water per unit of time. The alarm state will only occur when the system runs with max output for too long. A way to set this alarm is to measure the quantity of water passing per minute when the thinner supply tube for the drinking system is disconnected. Set the alarm limit to 1 litre less than the measured. Set the monitoring time to 30 minutes.
Too much water - closed	This alarm monitors if the water system is closed when it has to be. Recommended alarm limit is 0.1 l/min. and a monitoring time of 30 minutes.

3.10 Entry of Egg Data

Under the START OF BATCH/END OF BATCH key three production data can be entered dayily. Data is stored in the historical data memery as 24-hour and total values.

The three inputs are named under installation.

Batch

```
House 1          Tuesday          2005.5.17
Week/Day 52-53/364                 8:33:12

        Execute END OF BATCH

 → Count down to:                        9

Batch data     Sensors     Input      Main
```

Batch/Entry

```
House 1          Input

Nest eggs                                0
Floor eggs                               0
Double yolks                             0

                              History    Back
```

Batch/Entry/History

```
House 1           History

      Choose historical data

                 24 hours     Total     Back
```

Batch/Entry/History/24-hour

```
House 1          Day: 364        Batch: Now

Nest eggs                             5328
Floor eggs                             119
Double yolks                            37

Batch        -Day         +Day          Back
```

Batch/Entry/History/Total

```
House 1          Day: 364        Batch: Now

Nest eggs                           116211
Florr eggs                            3192
Double yolks                           809

Batch        -Day         +Day          Back
```

24-hour report and end of batch report:

The three entered production data are printed out in both the 24-hour and the batch report.

Notes

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