

USER MANUAL

PL-9400(-i) POULTRY COMPUTER



PL-9400



STIENEN B

PL-9400-i

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The quiet power behind your company

Shut down power before opening the poultry computer! This poultry computer 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 persons, animals or property.

NOTE DOWN THE FOLLOWING IN CASE OF AN EMERGENCY

- Possible causes
- Circumstances in which the emergency occurred
- Date and software version number
- Installer settings

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 (www.stienenbe.com).

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DEVICE CONTROL	5
Window	5
Keyboard	5
Programming hot keys Terminal number in-/outputs	8
	0
MAIN MENU	9
Access code	9
CLIMATE CONTROLS	10
House status	10
House temperature	10
Relative or absolute temperature setting	10
Ventilation groups Main ventilation using growth curves	11
Left/Right/Front/Middle/Rear/Recirculation/Top and Bottom	12
Heatings	14
Cooling	15
Miscellaneous controls	16
Temperature controls	10
Compensations climate control	17
Temperature overview	25
Alarm	25
Thermo-differential alarm	26
HOUSE STATUS	27
In use:	27
Not in use:	27
FEED SYSTEM	28
Feed system with feed counter(s)	28
COUNTERS	29
Clear all counters	29
Miscellaneous counters	29
Alarm	30
TIMERS	31
Light timers	31
Dosage timer	32
Dosage curves	33
Timers	33
Time schedules	34
Date / Time	35
Overview timers	35
Alarm	35
INFO	36
Animal data	36
ALARM	38
Latest alarms house	.38
External alarms	38
Communication alarm	38

MAINTENANCE AND CHECK UP	41
Display	40
SYSTEM	40
Alarm codes installation	39

Appication notes

Animal weighing	PL9XIAW-N-ENxxxxx	
Central exhaust	PL9XICE-N-ENxxxxx	
Data communication b	PL9XIDC-N-ENxxxxx	
Feed system		PL9XIFS-N-ENxxxxx
General description (v	ventilation controls, temperature control, heating coling, humidity)	g, PL9XIGD-N-ENxxxxx
Heat exchanger		PL9XIHE-N-ENxxxxx
Heating controls		PL9XIHC-N-ENxxxxx
Manure belt		PL9XIMB-N-ENxxxxx
Meteo control		PL9XIMC-N-ENxxxxx
Remote control		PL9XIRC-N-ENxxxxx
Timers		PL9XITC-N-ENxxxxx
Tunnel ventilation		PL9XITV-N-ENxxxxx
Ventilation control (cas	scade, interval, auxiliary etc.)	PL9XIVC-N-ENxxxxx

xxxxx = version number application note

If the software version of a module or peripheral device does not comply with the requirements of the operating software, you have to perform a software update for the module and/or peripheral device.

CLEANING HR-SENSOR, CO₂ SENSOR OR MEASURING FAN WITH A HIGH-PRESSURE SPRAY GUN IS NOT ALLOWED



Remove the RH-sensor and CO₂ sensor from the room and store them somewhere safe before cleaning the room. Also screw the protection cap onto the plug of the extension cables to prevent water from penetrating into the plug. When connecting the sensor via a fixed socket outlet (FSO), push on the flap of the fixed socket outlet until you hear it click (lock).



+ function key F
 Dot (•) in graphic:
 Press F3 again:

the settings are displayed graphically the dot is showing the calculated value

in: switch off the graphic display

Whenever a key is pressed, the display will be lit for a couple of seconds so that you can also see the settings and measurements in a dark animal house.

SCROLL-WINDOW

KEYBOARD

\$

▲

- : scroll option if a screen contains more lines than can be displayed on the screen
- **v** : retrieve the remaining settings and / or measurements using the cursor "up" and "down" keys.



Caution:

Only press the keys with the tip of your finger. Sharp objects such as a pen, pencil or screwdriver may damage the keys!

The keyboard can be divided into four basic groups:

- 1. Menu keys
- 2. Function keys
- 3. Numerical keys
- 4. Navigation keys

1 MENU KEYS (INFO, TIMERS, COUNTERS ETC.)

The poultry computer has 6 fast menu keys. These fast menu keys can be used to quickly select a data category.



information on animal welfare, the number of animals, the mortality, the feed intake etc., see page 36.



Timers (standard timers, light controls etc.), see page 31



Counters (water, feed water/feed ratio etc.), see page 30



Climate poultry house, see page 10



Feed weighing system, see page 28 (see also "Application note PL94IFS-N-ENxxxxx").



Animal weighing system, see also "Application note PL94IAW-N-ENxxxxx".

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

Function key F1 (language)



Function key F2 (house status)



Hold down F1 and press on the left or right cursor key.

Changing language:

Function key F3 (graphic) Place graph: F3

The "graph" function is active when the LED in the function key lights. 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 window on the basis of which the graph was drawn up. The graph is updated automatically when you change the details in the window. f the details in the window are displayed in graph form, the 🛃 symbol will be displayed in the top right corner of the menu line.

Select previous / next control



Use these buttons to select the previous or the next control, if there are any controls of the same type, such as ventilation groups (left, right, recirculation, etc.).

Alarm key (switching the main alarm on and off)



Hot key for alarm screen. The LED in the alarm key lights if there is an alarm on one of the controls. When the main alarm is switch off, the LED in the alarm key will flash. No alarm is generated anymore.

Alarm status		
Main alarm on 🕚 off 🛛 yes	Test no ┥ 30m00s ┥	-
Alarm code Control		
Alarm external house	Ø	
1 Latest alarms house		
2 External alarms		

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

Test (alarm test)

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

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

• off (alarm temporary off)

Off "yes": This enables you to temporarily switch off the alarm (siren). This does not apply to the hardware alarms which cannot be switched off temporarily. The main alarm is switched off for 30 minutes (the lamp will blink irregularly). The main alarm is switched on automatically again after 30 minutes. The alarm relay will then deenergize 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 line 0 off.

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 humans, animals, equipment or property.

Preferably use the 🕑 off (alarm retard) function to solve a problem.

3 NUMERICAL KEYS (0..9)



The numerical keys can be used to enter a screen number, a value or text. You can select menu choice 10 by pressing key 0.

Entering text

Numerical keys 2..9 can be used to change the name of a control group (left, right, front, rear etc.), a timer or a counter. 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 required character is shown. You can enter a punctuation mark by repeatedly pressing numerical key 1 until the required punctuation mark is shown. You can enter a space using the 0 key.

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

4 NAVIGATION KEYS (MENU, CURSOR, MODE)

X (Cancel)

This key cancels changes or menu option selections.

Press and hold this key to select the main menu.

◀ ▶ (Move cursor)



Move cursor

Holding down: move cursor to first/last setting on the screen.

Move cursor or change value

← (Confirm)



Menu option selection Start change Confirm change

- The cursor is displayed as a black rectangle, e.g. **19,5**°C.
- While a change is being made, the cursor is displayed as a black border, e.g. **19,5°C**.

Add/remove breakpoint or period

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

The number of breakpoints/periods is adjusted automatically.

PROGRAMMING HOT KEYS



You can program the above menu keys as follows.

- Select the screen which you would like to assign to the key, from the group of screens
- Press and hold the F1 key and press "Enter". The function key has now been programmed. When you press the relevant function key the selected screen is displayed.

You can program all the above function keys with screens from the relevant group.

House temperature 20 1°C							
nouse comper-	acure						
Day	Min.°C	Time	Max.°C	Time			
Today	19.2	6:26	20.1	15:09			
Saturday	18.7	6:23	19.8	15:28			
Friday	19.0	6:43	19.7	15:21			
Thursday	19.2	6:39	20.1	15:17			
Wednesday	18.8	6:32	20.0	15:01			
Tuesday	18.6	6:24	20.2	15:06			
Monday	18.9	6:19	19.7	15:11			
Sunday	18.6	6:14	20.3	15:26			

Example:

In this example, we will program screen "611 Overview house temperature" under the info function key. Go to the main menu and then press key 6, followed by 1 and then 1 again. Press and hold F1 and press "Enter". The function key has now been programmed.



If you then press the i key screen 611 will be displayed.

Restoring default setting hot keys: Press and hold the F1 key and press "function key". We can clear the programmed $\begin{bmatrix} i \\ i \end{bmatrix}$ key from the example by pressing the key combination $\boxed{r_1} + \boxed{i}$.

TERMINAL NUMBER IN-/OUTPUTS

The terminal number of an input/output consists of the module address, the type of input/output and a 2-digit serial number. The module address is between 00 and 31. The type of input/output is indicated by a letter in accordance with the table below. The serial number must be between 01 and 99 (00 means that the input/output is not used).

Type in-/output	Letter	Serial number	Description
0-10V output	А	1-99	Analogue output with a range of 0-10V or 10-0V.
Relays output	в	1-99	Relay contact output (<i>this does not include:</i> alarm relay, pulse outputs etc.)
Digital output	С	1-99	Opto coupler output (Max. 35Vdc 30mA).
Open-/close control	D	1-99	Open-/close control with position feedback signal. This includes e.g. flaps with position feedback signal.
30-230Vac output	F	1-99	Analogue output with a range of 30-230Vac or 230-30Vac.
2-10V output	G	1-99	Analogue output with a range of 2-10V with position feedback signal. Among these are modules for controlling an EGM-100CA or EGM-250CA
Air inlet flap	н	1-99	MCA flap, a wind compensated air inlet flap
Temperature sensor	к	1-99	This includes all types of temperature sensor fitted with 10K NTC resistor (N10B, BV10B etc.)
0-10V input	L	1-99	Analogue input with a measuring range of 0-10V. To connect measuring sensors such as RH, CO2, pressure etc.
Digital input	М	1-99	This includes measuring fans, counter contacts etc.
Meteo station	N	1-99	Module on which a wind speed meter, wind direction and a rain sensor can be connected to.



If you use access codes, 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 "Overview" window. After selecting this window you will have to enter the access code again to be able to change a setting.

ACCESS CODE

You can use an access code to protect your computer against unauthorized access. If you want to prevent nonauthorized users from changing settings on your poultry computer, you can have an access code set. An access code consists of a combination of 4 figures. You can have an maximum of 2 access codes set by your installer.

For the status screen (see page 27), it is possible to set a separate access code.

1 Climate controls 1 Ventilation 2 Heatings 2 Scaling		HOUSE STATU You can put the ho	IS buse in use or not in use, using the house status.
3 Gooling 4 Miscellaneous 5 Compensations 6 Growth curves		In use	The poultry computer carries out its control operation in accordance with the settings.
9 House status i	n use	Not in use	All control, alarm and temperature monitoring functions are switched off (all flaps are closed, all timers are switched off).
nouse cemperature 2	:0.00 20.0°C	Use the left / right	cursor keys (

HOUSE TEMPERATURE

House temperature: the temperature at which the ventilation groups and heaters are controlled on (relative temperature setting).

If the cursor is placed on <u>Growth curve temperature</u> and you push the confirmation key the curve for the settings concerned will be displayed. You may change the curve settings or switch off the curve. Press the cancel key to return to the previous window. If you have switched off the curve, the text 'growth curve' will be replaced by the standard text and you can no longer access the relevant curve settings from this window (the curve is off).

Control	Relative setting	Absolute setting	
Main ventilation group	Always relative to temperature in the house	n.a.	
Aux. ventilation group	Always relative to temperature in the house	n.a.	
Manure belt: Intake fan	If the setting is between -9.9°C and +9.9°C, the setting is relative to the house temperature	If a value equal to or higher than 10.0°C is set, this will be an absolute temperature setting.	
Manure belt: Heater block	Always relative to temperature in the house	n.a.	
Ventilation groups	Always relative to temperature in the house	n.a.	
Heating 16	If the setting is between -9.9°C and +9.9°C, the setting is relative to the house temperature	If a value equal to or higher than 10.0°C is set, this will be an absolute temperature setting.	
Central heating 1 and 2	n.a.	These are always absolute temperature settings.	
Cooling	If the setting is between -9.9°C and +9.9°C, the setting is relative to the house temperature.	If a value equal to or higher than 10.0°C is set, this will be an absolute temperature setting.	
Temperature 14	You can indicate to your installer whether you want the temperature control to use relative or absolute temperature settings.		

RELATIVE OR ABSOLUTE TEMPERATURE SETTING

- **Relative** : The temperature control works with a differential temperature compared to the preset house temperature. The temperature control is based on the preset house temperature. E.g. if you set a differential temperature of 5.0°C and the preset house temperature is 20.0°C, the temperature control will work as follows: 20.0°C+5.0°C = 25.0°C. If you now change the house temperature to 18.0°C, the temperature control will change the temperature as follows: 18.0°C+5.0°C = 23.0°C.
- Absolute : The temperature control works with absolute temperature settings. E.g. if you set the temperature to 5.0°C, the output control operation will also be based on 5.0°C. The temperature control works independently of the preset house temperature.

VENTILATION GROUPS

The number of menu options in the "Ventilation groups" menu varies, depending on the type and the number of ventilation groups.

Please note that the text displayed for the ventilation groups can differ from the text shown in this manual (the text can be changed by the installer, except the texts for the main ventilation group).

CURRENT VENTILATION CAPACITY

The total calculated ventilation capacity and the ventilation capacity per animal are expressed here in m³/h. The total ventilation capacity of the house consists of the capacity of the auxiliary ventilation group and the total capacity of the main ventilation group (capacity of the 1st, 2nd, 3rd fan and the step control).

MAIN VENTILATION

The group which controls the "main ventilation" in the house. Compensations can cause the calculated value to differ from the value setting.

TEMPERATURE SETTING

The temperature on which the main ventilation group controls; this setting is relative to the house temperature. The calculated temperature on the basis of which the ventilation group controls is shown behind the temperature setting.

BANDWIDTH

Determines the 'sensitivity' of the fan to react on a temperature change. A short bandwidth will cause the fan to react to temperature change very quickly. This is not good for the climate in the house (also see 'Automatic bandwidth compensation' on page 18).

MINIMUM AND MAXIMUM VENTILATION

If compensation depending on the fill ratio has been installed, the minimum and/or maximum ventilation will be adjusted to the number of animals in the house. In addition, the minimum and maximum ventilation can be affected by the RH, CO₂, meteo, night settings and outside temperature.

CURRENT TEMPERATURE

The current house temperature is displayed.

CURRENT VENTILATION

If house ventilation is controlled using a measuring fan, the measured and calculated ventilation values will be shown in this line. If the fans do not have measuring fans or if a measuring fan is defective, the calculated ventilation will be equal to the "measured" ventilation.

The current ventilation is calculated on the basis of the bandwidth and the minimum and maximum ventilation settings.

CAPACITY

The calculated ventilation is expressed here (total and per animal).

MAIN VENTILATION USING GROWTH CURVES



Climate settings, which are calculated in accordance with a curve, are preceded by the text "Growth curve".

The behavior of the animals shows the quality of the climate. To avoid having to continuously adjust the curve settings to the animal's behavior, you can increase or decrease the calculated curve settings of the first column $(+0.0^{\circ}C/+0.0\%)$.

Growth curve temperature: Growth curve minimum: Growth curve maximum: to increase or decrease the calculated house temperature. to increase or decrease the minimum ventilation. to increase or decrease the maximum ventilation. If the cursor is placed on <u>Growth curve temperature</u>, <u>Growth curve minimum</u> or <u>Growth curve</u> <u>maximum</u> and you push the confirmation key the curve for the settings concerned will be displayed. You may change the curve settings or switch off the curve. Press the cancel key to return to the previous window. If you have switched off the curve, the text 'growth curve' will be replaced by the standard text and you can no longer access the relevant curve settings from this window (the curve is off).

START FAN 2 / FAN 3

If the main ventilation consists of more ventilation controls, you have to set the percentage at which the 2nd / 3rd ventilation control have to be switched on (switch-on percentage relative to the total capacity of the controlled ventilation group) behind "Start fan 2" and/or "Start fan 3".

The entry behind "Proportional" "Step" shows the number of the ventilation control which is currently switched on $(\mathbf{1} = 1^{st} \text{ ventilation control}, \mathbf{2} = 1^{st} \text{ and } 2^{nd} \text{ ventilation control}, \mathbf{3} = 1^{st}, 2^{nd} \text{ and } 3^{rd} \text{ ventilation control})$

"Step": step of the step control which is currently switched on.

If the capacity of the controlled ventilation group (compared to the total capacity) is less than the percentage entered behind "Minimum ventilation", the controlled group is always fully on.

AQC FLAP

Adjusting the control characteristic is only possible for an AQC flap *without* a measuring fan. If there is a measuring fan in the controlled ventilation group, menu option "2 AQC flap" will **not** be displayed.



The AQC flap without a measuring fan controls on the basis of the *calculated* main ventilation (main fan output).

LEFT/RIGHT/FRONT/MIDDLE/REAR/RECIRCULATION/TOP AND BOTTOM



The ventilation groups "Left/Right/Front/Middle/Rear/ Recirculation/Top and Bottom" are identical as regards their settings and they are all set in a similar manner. A ventilation group can consist of a maximum of 3 separate controls (flaps). The temperature setting, bandwidth and minimum and maximum ventilation then apply to all three the controls (1, 2 and 3).

TEMPERATURE SETTING

The temperature on the basis of which the ventilation group controls; this setting is always relative to the house temperature. The calculated temperature on the basis of which the ventilation group controls is shown behind the temperature setting.

BANDWIDTH

The bandwidth determines the 'sensitivity' of the control. A short bandwidth will cause the control to react to a rise in temperature very quickly. This is not good for the climate in the house, since it will result in too many ventilation variations. That is why a bandwidth of 4 to 7°C, depending on the outside temperature, is to be advised (also see 'Automatic bandwidth compensation' on page 18).

MINIMUM AND MAXIMUM VENTILATION

The minimum and maximum flap opening can be set here.

CURRENT TEMPERATURE

This line shows the current temperature on the basis of which the ventilation group is controlling.

CALCULATED FLAP OPENING

- **Control on the basis of temperature:** The flap opening requirement is calculated on the basis of the temperature measured, the bandwidth, the minimum and maximum flap opening.
- Control on the basis of ventilation: The flap opening requirement is calculated on the basis of the current main ventilation, the minimum and maximum flap opening.
- Control on the basis of pressure difference: If the ventilation group controls on the basis of the preset pressure difference and pressure control has been switched on (see page 16), the control will try to keep the pressure difference in the house as constant as possible.

Characteristics:

- The pressure setting is automatically adjusted to the outside temperature.
- Any temperature differences in the house are considered when determining the flap positions.
- The pressure control will be instantaneously switched-off if a ventilation alarm occurs at the main ventilation control.
- If a pressure alarm occurs the pressure control will be delayed switch-off (delay time = 5x pressure integration time).

CURRENT FLAP OPENING

The current flap opening of the ventilation group is shown in this line.



FLAP CONTROL ON THE BASIS OF VENTILATION

Minimum at The flap will stay at the preset minimum if the main ventilation is less than this percentage. If this percentage is exceeded, the flap will open further.

Maximum at ventilation The flap will be opened at its preset maximum if the main ventilation is more than this percentage.

HEATINGS

12 Heatings	121 Heating 1	2
1 Heating 1 19.5°C 25% 2 Heating 2 19.3°C 35% 3 Heating 3 19.6°C 20% 4 Heating 4 19.5°C on 5 Heating 5 19.6°C on 6 Heating 6 19.7°C on 7 8 9	Heating 1 ON Temperature setting -01.0°C Bandwidth 2.0°C Minimum heating 000% Maximum heating 100% Current temperature 19.5°C Current heating on	20.0°C 25%
		44 ÞÞ

CONTROLLED HEATING



Heating

You can switch the heating on or off.

Temperature setting

The temperature on the basis of which the heating controls is relative to the house temperature, see page 10, if a temperature of below 10.0°C is set. If a temperature equal to or higher than 10.0°C is set, this will be an absolute setting.

Growth curve

If the cursor is on <u>Growth curve temperature</u> and you press the confirmation key the curve of the heating will be displayed. You may 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 text 'growth curve' will be replaced by the standard text and you can no longer access the curve from this screen (the curve is off).

Bandwidth

The bandwidth determines the 'sensitivity' of the heating for temperature changes. The heating is controlled from minimum to maximum within the bandwidth. If the bandwidth is too small, the heating very quickly reacts to temperature changes. The switched heating has a fixed, installer-adjusted, switching hysteresis.

Minimum/maximum heating

Limiting the minimum/maximum force (heating capacity) of a controlled heating.

Current temperature

The current average temperature of the assigned sensors is displayed. Up to 4 temperature sensors can be assigned to a heating control.

Current heating

Display of the current status of the heating and the calculated current flap position and/or heating capacity. If -0% is calculated for the current heating (or the heating is switch off), the stop voltage will be sent out instead of the minimum voltage setting (if house status = in use). If "Minimum heating" is activated, the "minimum" voltage is applied to the output when the current temperature exceeds the temperature setting.

The current flap position or the current heating capacity is only displayed with controlled heating.

ON/OFF HEATING

124 Heating 4		봗	1241 Running hours Hea	ating 4
Heating 4 Temperature setting	on -01.0°C	20.0°C	Today Saturday Eridau	0:22 0:00 0:00
Current temperature Current heating	19.5°C on		Thursday Wednesday Tuesday Monday Sunday	0:00 0:00 0:00 0:00 0:00
1 Running hours			Total Clear running hours	0 hours no

If the heating consists of on/off (non-modulating) heating, you can call up:

Today's operating hours.

•

- Operating hours of the past 7 days.
- The total number of operating hours.

Erasing operating hours: Enter "yes" behind "Clear running hours".

COOLING

13	3 Cooling		131 Cooling 1			132 Cooling 2		
1 2 3 4	Cooling 1 Cooling 2 Cooling 3 Cooling 4	19.5°C off 19.3°C -0% 19.6°C -0% 19.5°C off	Cooling 1 Temperature setting	on +30.0°C	30.0°C	Cooling 2 Temperature setting Bandwidth Minimum cooling Maximum cooling	on +30.0°C 4.0°C 000% 100%	30.0°C 0% 100%
			Haximum RH Current RH Current temperature Current cooling 1 Soaking 3 Running hours	100% 75% 19.5°C off 2 Reduction		Haximum RH Current RH Current temperature Current cooling 1	100% 75% 19.3°C off 2 Reduction	-0%
					{{ }			44 >>

ON/OFF COOLING

If the cooling consists of on/off (non-modulating) cooling, you can call up the operating hours.

SOAKING		REDUCTION			RUNNING HOURS		
SOAKING 1311 Soaking Cooling 1 Soaking Begin End Cycle time on Cycle time off Current status	0ff 08:00 20:00 00:00 00:00 00:00	REDUCTION 1312 Reduction Cooling Start reduction Reduce until Outside temperature Reduction	1 -02.0°C -06.0°C max.	28.0°C 24.0°C 22.0°C 100%	RUNNING HOURS 1313 Running hours Coo Today Saturday Friday Thursday Wednesday Tuesday Monday Sunday Tuesal	ling 1 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:	
					Clear running hours		
				44 PP			

Soaking

If the house is **not in use**, you can use the "Soaking" function (this option is only available on cooling 1). As soon as the house status changes, "Soaking" will be switched "off" to prevent the soaking starting immediately after you switch the house to "not in use".

Reduction

Limiting the current cooling and to prevent that too much cold air being drawn into the house when the outside tem1perature is low and the current house temperature is higher than the house temperature setting:

- You can set a temperature range within which the reduction is to be active by setting a temperate difference (relative to the "Temperature setting" cooling) at "Start reduction" and at "Reduce until".
- The current outside temperature is shown.
- Setting the maximum (relative) reduction at "Reduction max."

Running hours

If the cooling consists of on/off (non-modulating) cooling, you can call up:

- Today's operating hours.
- Operating hours of the past 7 days.
- The total number of operating hours.

Erasing operating hours: Enter "yes" behind "Clear running hours".

MISCELLANEOUS CONTROLS

2	Humidificat	ion
3	Temperature	1
4	Temperature	2
5	Temperature	3
5	Temperature	4
7		
R	Temperature	monitoring

PRESSURE CONTROL

141 Pressure control		
Pressure control Pressure setting	on 015Pa	14P
Current pressure External input Current status	15Pa off off	
Calculated flap opening	000%	

Controlling the flaps on the basis of a preset under pressure guarantees an optimum flow pattern for the incoming air.

The pressure setting and the current pressure measured are used to determine the "Calc. ventilation press.". The pressure controlled flaps are readjusted every 2 minutes (gradual control). At large deviations between setting and current pressure it can

take some time before the flaps have reached the calculated position. By changing the "calculated ventilation pressure" value you can speed up the settling time for the flaps.

External input

Items such as the status of the hatches that provide access to an open-air run can be connected to the external input. The openings of these hatches enable a lot of cold air to enter the house which causes a significant drop in the house temperature, specifically at the bottom of the house. If the pressure control was not switched off, the air speed and the temperature difference in the house would increase enormously. As this may easily cause a draught which would affect the animals the pressure control is switched off as soon as the hatches are open. The inlet flaps, which were being controlled on the basis of pressure, are now temperature-controlled.

HUMIDIFICATION

142 Humidification			142 Humidification		
Humidification RH setting	on 080%	80%	Humidification RH setting Bandwidth Minimum position Maximum position	0n 080% 20% 005% 100%	80%
Current RH Current status	75% on		Current RH Current status	75% on	29%
On/off Humidification control			Modulating humidification	n control	

If "Cooling 1" and "Humidification" are connected to the same (controlled) output, the output will be energized based on the highest calculated value of both controls.

Modulating humidification contro

This window enables you to switch the humidification control on or off and to set the relative humidity percentage. Below this percentage the humidification control is active.

TEMPERATURE CONTROLS

143 Temperature 1			144 Temperature 2	
Heating	<mark>0n</mark>	+20.0°C	Cooling	on
Temperature setting	+20.0°C		Temperature setting	+20.0°C +20.0°C
Current temperature	19.5°C		Current temperature	19.3°C
Current heating	on		Current cooling	off
		44 >>		

The temperature control can be adjusted as a "heating" or as a "cooling" control. This can be a controlled or a switched control, depending on the type of output.

TEMPERATURE CONTROL AS HEATING

If temperature control has been set as heating, the temperature control is set identically to a heating, see page 14, with the exception of the minimum heating. The minimum heating can be set separately.

TEMPERATURE CONTROL AS COOLING

If temperature control has been set as cooling, the temperature control is set identically to the cooling on page 15.

Temperature setting: see page 10, Relative or absolute temperature setting.

TEMPERATURE MONITORING



The temperature monitoring function is activated by your installer (max. 8 sensors). The current measurement of each sensor is compared with the measurement of one minute ago. If the measurement is within the limits, the previous measurement is made equal to the current measurement and a new measurement is started.

An alarm is given if:

- The temperature increase in that minute greater or equal than the relative limits.
- Increases the temperature of the sensor above the absolute limit, then there is also alarm.

The temperature monitor alarm occurs only when a positive difference is detected (not when the temperature drops down).

COMPENSATIONS CLIMATE CONTROL



Compensations ensure that the setting is increased and/or decreased depending on:

- with or without night settings;
- the current outside temperature;
- the current RH;
- The current CO₂ level.
- Wind speed and wind direction.

For RH and CO₂ correction, the largest value of both corrections is decisive for the eventual adjustment of the ventilation/flap position.

NIGHT SETTING

Creating natural temperature behaviour between day and night by reducing the temperature setting by a couple of degrees during the night.

- Setting the active period for the night settings.
- Setting the number of degrees by which the house temperature has to be increased/decreased during this period.
- Setting the percentage by which the minimum ventilation is to be increased/decreased during the night.

Note! The compensation of the minimum ventilation is a percentage of the minimum ventilation.

111 Main ventilation			151 Night setting		Night setting house temperature:
Temperature setting Bandwidth Minimum ventilation Maximum ventilation	<mark>+00.0</mark> °C 03.5°C 010.0% 100.0%	20.0°C 3.5°C 9.6% 100.0%	Night setting from <mark>20:00</mark> House temperature Minimum ventilation	till 07:00 -1.0°C -010%	21,0°C -1,0 = 20,0°C Night setting minimum ventilation: -10% of 10.7% = -1.1% => 10.7%-1.1% = 9,6%

TEMPERATURE

Activate the temperature compensation to prevent rapid temperature drops in the house (which usually occur in the spring and autumn).

"Reduce temp. compensation":

Determines the speed at which the corrected house temperature is controlled down to the preset house temperature in the event of a drop in temperature.

Set a maximum temperature compensation of 0.0°C. Switch off temperature compensation:

Example:	House temperature setting	20.0°C
	Maximum temperature compensation	3.0°C
	Reduce temperature compensation	0.2°C/h
	Bandwidth	4.0°C
	Current house temperature	28.1°C
	Corrected setting house temperature	23.0°C

Temperature exceeded

= Current house temperature - (House temperature setting + bandwidth) $28.1 \degree C - (20 \degree C + 4.0 \degree C) = 4.1 \degree C$



However, the temperature correction can never be more than the maximum temperature compensation. This means that in the above example it can never be more than 3.0°C (maximum setting) instead of 4.1 °C (calculated excess value). The corrected temperature setting becomes equal to: house temperature setting + temperature correction = 20.0 °C + 3.0 °C = 23.0 °C.

In this example, the time in which the house temperature is controlled back to the temperature setting is: (House temperature correction / max. temperature compensation) x 1 hour => $(3.0^{\circ}C / 0.2^{\circ}C) \times 1$ hour = 15 hours.

VENTILATION

Control of optimal ventilation based on the fill ratio. The fill ratio is calculated on the basis of the maximum number of animals in the house and the current number of animals in the house (animal group 1 + animal group 2).

BANDWIDTH COMPENSATION

If the outside temperature is part of the installation, the bandwidth of the main ventilation and/or air inlet flaps can automatically be adjusted to changes in outside temperature.

Setting bandwidth compensation to obtain:

- A larger bandwidth at low outside temperature.
- A smaller bandwidth at high outside temperature

Current temperature outside = 10°C





This setting is used to adjust the bandwidth to the current outside temperature.

Corrected bandwidth [%]

8°C

7°C

6°C

5°C

4°C

3°C

2°C

1°C

0°C

0°C

10°C

20°C

Example bandwidth compensation: Bandwidth

4.0 °C

Bandwidth compensation -2.5 %/°C

Bandwidth compensation starts at outside temperature: $20 \degree C$ At an outside temperature of $20\degree C$ the bandwidth is $4.0\degree C$. If the outside temperature drops to $10.0\degree C$ the bandwidth is increased by $1.0\degree C$.

 ΔT = Current outside temperature-bandwidth compensation starts at outside temp. = 10.0°C-20.0°C= -10.0°C Correction bandwidth = ((ΔT * Bandwidth compensation) * Bandwidth) / 100% Correction bandwidth = (-10.0°C * -2.5%/°C) * (4.0°C / 100%) = 1.0°C The corrected bandwidth is: 4.0°C + 1.0°C = 5.0°C But if the outside temperature increase to 30.0°C the bandwidth will be diminished with 1.0°C to 3.0°C (4.0°C - 1.0°C = 3.0°C).

The bandwidth is limited: the upper limit is 20.0°C; the lower limit is 1.0°C.

COMPENSATION MINIMUM VENTILATION

Automatically adjusted the minimum ventilation to the actual outside temperature.

"Start outside temperature": The outside temperature at which the calculated minimum ventilation should be equal to the set minimum. "Compens. minimum ventilation": The percentage at which the minimum ventilation should be corrected per °C of change in outside temperature. Example: 30 Minimum ventilation 20.0 % Compensation minimum ventilation 1,0 %/°C 25 15.0 °C Start outside temperature -10.0 °C till 20 5.0 °C Current outside temperature



The calculated compensation of the minimum ventilation will be valid for all ventilation groups.

COMPENSATION REDUCTION

If a heat exchanger is used, the reduction percentage can be adjusted (compensated) automatically to the current outside temperature. The smaller the difference between the outside temperature and the preset house temperature, the greater the reduction compensation.

		Example
Main ventilation:	Temperature setting	20.0°C
	Bandwidth	4.0°C
	Current house temperature	21.6°C
Outside temperature:	Current temperature outside	18.3°C
Heat exchanger:	Compensation reduction	-10.0%/°C
	ΔT (fix value)	-5.0°C
	Start reduction	75.0%

Correction "reduction"	= (start reduction x ((current temperature outside - (temperature setting + Δ T)) x compensation reduction)
Corrected "Start reduction"	= Start reduction + correction reduction
Start	= (Bandwidth * corrected "Start reduction")/100%

Example

Correction "reduction"	(75% x ((18.3°C – (20.0°C-5.0°C)) x -10%/°C) / 100%= -24.75%			
Corrected "Start reduction"	75% + (-24.75)% = 50.25 %	50.3%		
Start	(4.0°C * 50.25 %)/100% = 2.01°C	2.0°C		

PRESSURE CONTROL

154 Compensation pressure cont	rol	154 Compensation pressure c	ontrol	
Compensation pressure Start outside temperature Minimum pressure Maximum pressure	<mark>-0.2</mark> Pa/°C 20.0°C 005Pa 030Pa	Compensation pressure Start outside temperature Minimum pressure Maximum pressure	<mark>-0.2</mark> Pa/°C -05.0°C 005Pa 030Pa	 The under pressure can automatically be adjusted to the current outside temperature: Outside temperature is low => higher under pressure. Outside temperature is high => lower under pressure (cold air is heavier than warm air)

Start outside temperature Absolute

Start outside temperature Relative

Absolute

The setting from where the pressure is compensated is a fixed temperature setting.

Relative

The setting from which pressure is compensated increases/decreases "run along" with the house temperature. "From outside temperature" = temperature difference relative to the house temperature.



The compensated pressure is limited by the set *minimum* and *maximum pressure*.

RH

The ventilation / flap position and set house temperature can be controlled based on relative humidity.

Absolute RH = the water vapour content per cubic metre.

Cold air can contain less water vapour than hot air. If the air temperature is 10°C, the air can hold approx. 9.8g of water vapour per m³ and at a temperature of 20°C this can be approx. 18.6g/m³.

Example

If the relative humidity is 70% Air of a temperature of 10 °C can contain approx. 6.9 g/m³ (0.7*9.8)

Air of a temperature of 20 °C can contain approx. 13.0 g/m³ (0.7*18.6).

RH compensation without RH outside air

RH compensation only influences ventilation. This means that the ventilation effort will be greater if the value measured is higher than the value set for "RH compensation".

155 RH-compensation			1551 RH-compensation fac	ctor		
RH-compensation Gurrent RH	065 <mark>%</mark> 70%	65% 13.0g/m²	RH-compensation factor Main ventilation Left Right Front Middle	Max. 1.0 1.0 1.0 1.0 1.0	100.0% 5.0% 5.0% 5.0% 5.0%	The corrected ventilation is limited by the pre-set maximum (Max.). Compensation = ((current RH – RH
1 Ventilation groups			Rear Recirculation Top Bottom	1.0 1.0 1.0 1.0	5.0% 5.0% 5.0%	compensation) * factor. Compensation ventilation

Factor 0.0 = RH compensation does not affect the ventilation.

Factor 9.9 = RH compensation has a maximum effect on the ventilation.

Compensation	Compensation ventilation/flap position
Absolute:	Compensation = (current RH – RH compensation start) * RH compensation factor
Relative	Compensation = (((current RH – RH compensation start) * RH-compensation factor) / 100%) * calculated ventilation

Example:	Absolute	Relative
Outside temperature:	10.0°C	
House temperature:	20.0°C	
Temperature compensation:	(75%-70%)*0,2°C/% = 1.0°C	
Corrected house temperature:	20.0°C+1.0°C=21.0°C	
RH compensation start:	65%	65%
Current RH:	70%	70%
RH compensation factor:	1.0	1,0
Calculated compensation:	(70-65)*1.0 = 5.0%	(70-65)*1,0 = 5.0%
Calculated ventilation:	55%	55%
Corrected ventilation:	55% + 5% = 60.0 %	55% + (5*55)/100 = 57.75% (55.8 on display)

RH compensation with RH outside air

- "RH compensation" will now work differently, taking the absolute relative humidity into account.
- If the relative humidity in the house exceeds a certain threshold, the house temperature will be corrected upwards. This will also automatically increase the heating settings, as a result of which the heaters can switch on.

Absolute RH outside air lower than the absolute RH house

If the RH of the outside air is low, the humidity in the house can be removed by increasing the ventilation rate.

155 RH-compensation			1551 RH-compensation fac	ctor		
RH-compensation Temperature compensation Factor Maximum Current RH RH outside air Temperature compensation	005 +05% 0.2°C/ 1.0°C 75% 80% 1.0°C	65% 70% % 15.7g/m³ 7.8g/m³	RH-compensation factor Main ventilation Left Right Front Middle Rear Recirculation Top Bottom	Nax. 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	100.0% 7.9% 7.9% 7.9% 7.9% 7.9% 7.9% 7.9% 7.9	The corrected ventilation is limited by the pre-set maximum (Max.).
1 Ventilation groups					•	Componentian ventilation
						compensation ventilation

Compensation = ((current RH – RH compensation start) * factor *(current absolute air humidity house air – current absolute air humidity outside air).

RH-compensation factor

Factor 0.0 = RH compensation does not affect the ventilation. Factor 9.9 = RH compensation has a maximum effect on the ventilation.

Compensation	Compensation ventilation/flap position
Absolute:	Compensation = (current RH – RH compensation start) * factor *(current absolute air humidity house air - current absolute air humidity outside air).
Relative:	Compensation = (((current RH – RH compensation start) * factor *(current absolute air humidity house air - current absolute air humidity outside air)) / 100%) * calculated ventilation.

Example:

Outside temperature:	10,0°C	
Current house temperature (Temperature setting house.=20°C):	22.0°C	
RH compensation start:	65%	
Temperature compensation:	+05%	70%
Current RH:	75%	15.7g/m³
RH outside air:	80%	7.8g/m ³
RH compensation factor:	1.0	

Temperature compensation:(75%-70%)*0.2°C/% = 1.0°CCorrected house temperature:20.0°C+1.0°C=21.0°CCalculated ventilation (Min. vent.=10%, Max. vent.=100%, band width =4°C):**55%**Calculated ventilation based on the corrected house temperature:**32.5%**

Compensation:	Absolute	Relative
Calculated compensation:	(75-65)*1.0*((15.7-7.8)/10)= 7.9%	(75-65)*1.0*((15.7-7.8)/10) = 7.9%
Corrected ventilation:	32.5% + 7.9% = 40.4 %	32.5%+ (7.9*32.5) / 100 = 35.1 %

"Temperature compensation" leads to lower ventilation, whereas the relative humidity leads to higher ventilation.

Absolute RH outside air higher than or equal to RH house

the absolute RH of the outside air is higher than the absolute RH of the air in the house:

Increasing the ventilation will only have a negative effect: it will increase the humidity content in the house.

Solution: To increase the house temperature using "Temperature compensation". This compensation corrects the house temperature setting upwards if the RH in the house becomes too high (this also automatically increases the heating settings).

155 RH-compensation		1551 RH-compensation fac	tor		
RH-compensation 005% Temperature compensation +05% Factor 0.2°C/% Maximum 2.0°C Current RH 75% 15. RH outside air 80% 16. Temperature compensation 1.0°C	65% 70% 7g/m³ 8g/m³	RH-compensation factor Main ventilation Left Right Front Middle Rear Recirculation Top Bottom	Max. 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0	The corrected ventilation is limited by the pre-set maximum (Max.).
1 Ventilation groups				t	Compensation ventilation

In this event, ventilation is NO LONGER corrected by the relative humidity but ONLY by the temperature compensation.

Example:

Outside temperature:			
Current house temperature (House temperature setting = 20°C):			
RH compensation start:			
Temperature compensation:			70%
Current RV:		75%	15.7g/m³
RH outside air:		80%	16.8g/m³
RH compensation factor:		1.0	
Temperature compensation:		(75%-7	0%)*0.2°C/% = 1.0°C
Corrected house temperature:			+1.0°C=21.0°C
Calculated ventilation (Min. vent	.=10%, Max. vent.=100%, band width =4°C):	55%	
Calculated ventilation based of	n the corrected house temperature:	32.5%	
Compensation:	Absolute	Relativ	ve
Calculated compensation:	0%	0%	
Corrected ventilation:	32.5% + 0% = 32.5 %	32.5%	+ 0% = 32.5 %

The "Temperature compensation" reduces the ventilation: since the RH of the outside air is too high, the ventilation will NOT increase as a result of the relative humidity.

If both RH compensation and CO_2 compensation are active, the highest compensation value is used for ventilation correction.

CO₂

In addition to the ventilation control which controls on the basis of temperature, the further functionality of the poultry computer includes the possibility of controlling the ventilation/flap position on the basis of CO_2 . This means that the ventilation effort will be increased if the result measured is higher than the "compensation start" setting. 100ppm equals 1.0% increase in ventilation.

156 CO2 compensation		1561 CO2 compensation fac	ctor		
CO2 compensation start Current CO2	1500 ppm 2100ppm	CO2 compensation factor Main ventilation Left	Max. 1.0 1.0	<mark>100.0</mark> % 6.0% 6.0%	The corrected ventilation is limited by the pre-set maximum (Max.).
1 Ventilation groups		Right Front Middle Rear Recirculation Top Bottom	1.0 1.0 1.0 1.0 1.0 1.0 1.0	6.0% 6.0% 6.0% 6.0% 6.0% 6.0% 6.0%	
				t_	-Correction ventilation

Compensation = ((current CO2 – CO2 compensation start) / 100ppm) * factor * 1%.

Factor

If 0.0 is set, this means that RH compensation does not affect the ventilation and/or the flap position. If 9.9 is set, CO2 compensation has a maximum effect on the ventilation and/or the flap position.

If both RH compensation and CO_2 compensation are active, the highest compensation value is used for ventilation correction.



GROWTH CURVES

16 Growth curves climate controlsGrowth curvesoffDay21 House temperature2 Ventilation3 Heatings4 Cooling5 RH-compensation6 Humidification7 Animal weight

Several growth curves are available for gradual automatic adjustment of the climate in the house. A growth curve can consist of a maximum of 7 breakpoints.

The current setting is determined on the basis of the growth curve, depending on the current day number. The poultry computer uses this calculated setting to control the climate in the house (provided that the growth curves are *on*).

Growth curves on/off You can use this setting to switch **all curves** on or off simultaneously.

Attention! • Relative or absolute temperature setting, see page 10

- The day numbers in the curve have to be consecutive numbers.
- 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.
- If the temperature compensation is active, the calculated house temperature will immediately be adjusted to the curve setting.
- The settings obtained from a growth curve are recalculated *every hour* to achieve a more gradual development of the setting.
- Press function key F3 to display the graph displaying the curve; press function key F3 again to return to the numerical screen.

161 Grow	th curve house	temperature	🛛 🔄 161 Growth curve house temperature 🛛 🖳
Growth c Number o	urve temperatur f points	re on 7	Growth curve temperature on Number of points 7
Point 1 2 3 4 5 6 7	Day (2) 000 007 014 021 028 035 042	Temp. 33.0°C 29.0°C 27.0°C 24.0°C 21.0°C 19.0°C 18.0°C	35°C 30°C 25°C 20°C 15°C 7 14 21 28 35 Day

Day (1) : The current curve day number is displayed between brackets behind "Day".

HOUSE TEMPERATURE

When changing the growth curves of the *house temperature* you should be aware that there may be controls which control relative to this temperature, see page 10.

VENTILATION

The temperature setting of the ventilation groups is relative to the house temperature setting.

HEATING / COOLING ETC.

Temperature setting is below 10.0°C:	Temperature setting is relative with respect to the house
	temperature setting
Temperature setting is higher than 10.0°C:	Temperature setting is an absolute temperature setting.

RH-COMPENSATION

Setting growth curve of RH-compensation

HUMIDIFICATION

Setting growth curve of the humidification.

ANIMAL WEIGHT

Setting growth curve of the animal weight.

TEMPERATURE OVERVIEW

17 Overviews	An overview of the temperature control or growth curve selected is shown.
1 House temperature 2 Heatings 3 Cooling 4 Outside temperature	Animal weights equal to or greater than 10,000 grams are displayed in kilograms. I.e. 10,000 (grams) is shown as 10.0 (kg).
5 Sensors	Use the < or ▶ key to select the next/previous control.
6 Growth curves	Clearing running hours of all heatings: "Overview heatings" (screen 172) => "Clear running hours"
Reset min/max temp. no	Clearing the min/max measurements: "Reset min/max temp." ("Today" will fill with the current value).

ALARM

18 Alarm climate controls
1 House temperature
2 Groups temperature
3 Groups ventilation
4 Heatings
5 Cooling
6 Miscellaneous

HOUSE TEMPERATURE LIMITS

The temperature limits apply to **all** ventilation groups.

Outside temperature compensation on behalf of alarm



If the outside temperature rises to above the temperature that has been set, the maximum temperature alarm limit will be corrected upwards until the absolute alarm limit is reached. This compensation prevents the alarm from being activated unnecessarily when outside temperatures are high. However, the corrected alarm limit can never be higher than the absolute temperature limit setting. An alarm is generated if the current temperature rises to above the absolute value.

The absolute alarm limit warns you that the temperature in the house has become far too high and that you may have to take additional measures to lower the temperature in the house.

Example:	T _{outside} <	THOUSE.	$T_{OUTSIDE} \ge T_{HOUSE}$	$(\mathbf{T}_{\text{OUTSIDE}} + \mathbf{T}_{\text{A}})$	$LARM$) > T_{ABS}
Absolute temperature limit setting: Temperature setting: Maximum alarm limit setting. Current outside temperature:		35.0°C 22.0°C 5.0°C 18.0°C	35.0°C 22.0°C 5.0°C 25.0°C		35.0°C 22.0°C 5.0°C 31.0°C
Calculated maximum alarm limit	22.0+5.0 =	27.0°C 1	25.0+5.0= 30.0°C 2		35.0°C 3

1. Outside temperature is lower than the house temperature setting: The calculated alarm limit will be

The calculated alarm limit will be increased to the maximum alarm limit setting in keeping with the house temperature.



2. Outside temperature is higher than the house temperature setting: The calculated alarm limit will be made equal to the outside temperature and the calculated alarm limit is shifted



3. Maximum alarm limit exceeds the absolute alarm limit:

The maximum alarm limit will be made equal to the absolute alarm limit.



GROUPS TEMPERATURE

Switch the alarm on/off. The alarm limits shown are the calculated alarm limits and depend on such factors as the preset house temperature limits and the preset temperature of the control itself.

GROUPS VENTILATION

If the measuring fan is switched off it no longer influences the control and alarm functions of the main ventilation group. You can only switch the ventilation alarm on/off for flaps connected to a DMS or PL-9200-POT module.

HEATING / COOLING / MISCELLANEOUS

The alarm limits can be set separately for every individual control.

THERMO-DIFFERENTIAL ALARM (alarm temperature monitoring)

1868 Alarm tempera	ture monitoring
Alarm temperature	on
Relative alarm lim	it +4.0°C/m
Absolute alarm lim	it 58.0°C
Alarm status No	alarm

If you deactivate the temperature monitoring alarm, the current temperature measurement result will be cleared and the alarm will be activated again automatically. See also temperature monitoring on page 17 Putting the house 'in use' or 'not in use'. F2 function key = call up the status of the house.

1 Climate controls			19 House status		
1 Ventilation			House status	in use	
2 Heatings			House temperature	20.0°C	21.0°C
3 Cooling					
4 Miscellaneous			Growth curves	off	
5 Compensations			Day	002	
6 Growth curves			-		
7 Overviews			Entry date	//	
8 Alarm			New entry	no	
9 House status	in use				
House temperature	20.0°C	21.0°C			

In use: The poultry computer carries out its control operation in accordance with the settings.

Not in use: All controls, alarms and temperature monitoring functions are switched off (all flaps are closed, all timers are switched off).

In addition, in this screen you can switch the growth curve on/off and change the day numbers of the curves.

New entry: Change the setting "no" to "yes" for "New entry". The entry date is then made equal to "today's" date and the number of animals is set at the "number of animals at entry" and the mortality table is erased. Attention! The day number is *NOT adjusted automatically*.

You can have a separate access code programmed for the status screen.

FEED SYSTEM WITH FEED COUNTER(S)

If no feed weigher has been installed but one or more feed counters have been installed, all these feed counters relate to one and the same silo, i.e. silo 1.



SILOS



The current silo contents (stock or Use keys 0... shortage) is displayed. You can enter (see page 7) the amount filled here. After these 2 have been added, the amount filled is automatically set to 0.

Use keys 0..9 to change the name (see page 7)

FILLED

.eu		
Com	ponent 1	
Time	Filled	
0:00	Økg	
		44 }>
	Com Time 0:00 0:00 0:00 0:00 0:00	Component 1 Time Filled 0:00 Økg 0:00 Økg 0:00 Økg 0:00 Økg 0:00 Økg

An overview of the last 5 times that you have entered the filling details in screen 211 "Silo contents" is shown for every individual silo. In addition to the amount, the date and time of filling are also shown. It is important that you enter these details immediately after filling (before the next feeding period).

For more information about the feed systems, see: "Application note Feed systems 94IFS-N-EN00000"

An overview of the counter readings is shown. A dosing alarm can be set for the water and/or feed counters

4 Counters		
1 Water counter		
2 Feed counter		
3 Counter 3		
4 Counter 4		
5 Counter 5		
6 Counter 6		
7 Miscellaneous counters		
8 Overview		
9 Alarm		
Clear all counters	no	

CLEAR ALL COUNTERS

All counter readings are erased, contrary to the setting "Clear counter" for the individual counters, where only the counter readings of the selected counter are erased.

Attention! Counter readings which are a copy of the counter readings on the PFA-9200 or PFV-9200 are not deleted; you can only delete them on the PFA-9200 or PFV-9200.



Caution! When the counter is cleared the data for today is also deleted. In addition, the overviews of the amounts fed and the feeding times of the selected counters or of all counters are deleted.

CLEAR COUNTER

41 Water counter		
Todau	1,000	1
Monday	992	1
Sunday	Ø	1
Saturday	Ø	1
Friday	Ø	1
Thursday	Ø	1
Wednesday	Ø	1
Tuesday	Ø	1
Week total	Ø	1
Total	1,992	1
Clear counter	no	

The counter readings of the selected counter can be deleted in this screen.

MISCELLANEOUS COUNTERS

47 Miscellaneous counters	471 Counter 7		
1 Counter 7 2 Counter 8 3 Counter 9 4 Counter 10 5 Counter 11 6 Counter 12 7 Hour counter	Today Monday Sunday Saturday Friday Thursday Wednesday Tuesday Week total Total	0,001,000 992 0 0 0 0 0 0 0 0 0 0 0 1,992	
	Clear counter	no	
		44Þ	Þ

The counter value of "Today" can be changed.

HOUR COUNTER

		_
Today	0:00 of	F
Tuesday	0:00	
Monday	0:00	
Sunday	0:00	
Saturday	0:00	
Friday	0:00	
Thursday	0:00	
Wednesday	0:00	
Week total	0:00	
Total	0 hours	
Clear Hour counter	no	

The input's status is displayed in addition to today's operating hours.

Total: Total number of operating hours since the last time the counter was cleared.

OVERVIEW COUNTERS

48 Overview counters	481 Overview	counters	total	
1 Total 2 Per animal 3 Per group per animal	Today Tuesday Monday Sunday Saturday Friday Thursday Wednesday Week total Total	Water 13 2.699 2.480 2.625 2.187 2.200 2.037 2.171 2.183 3.291 18.682	Feed [kg] 1.285 1.240 1.193 1.151 1.100 1.072 1.034 1.157 3.263 9.232	Misc. 248 386 236 244 268 226 226 226 226 226 226 226 226 226

If several water, feed and/or other counters have been installed, the counter readings of all identical counters (water, feed and/or other) are added together and shown in the corresponding column. For example, if two water counters have been installed, today's totals for water counter 1 and water counter 2 will be displayed after 'Today' in the 'Water' column, etc.

Day	Water counter 1	Water counter 2	Water [1]
Today	1.323	1.376	2.699
Tuesday	1.245	1.235	2.480
Monday	1.311	1.314	2.625
Sunday	1.047	1.140	2.187
Saturday	1.098	1.102	2.200
Friday	1.002	1.035	2.037
Thursday	1.049	1.122	2.171
Wednesday	1.053	1.130	2.183

The weekly total is the sum of the counter readings of the past week for every type of counter (from the first day of the week to 7 days later, see page 35). This means that the weekly total is not the sum of the readings shown on the screen.

PER ANIMAL

The counter readings shown are per animal. This screen also shows the water/feed ratio.

PER GROUP PER ANIMAL

The counter readings shown per group per animal.

ALARM

491 Alarm Water	counter		492 Alarm Feed	counter		Т
Alarm	off		Alarm	01	f	p
Maximum in	1000 60	l minutes	Maximum in	10	00 kg 60 minutes	a t
Minimum in Current status	0020 06 off	l minutes	Minimum in Current status	00: 0	20 kg 36 minutes =f	p I'
Alarm status	No alarm		Alarm status	No alarm	44}	ו S

To be able to signal possible broken bipes or leaks in time, this screen enables you to set the maximum amount of water that can flow through the pipes during the preset beriod before an alarm is generated.

f the counter is linked to a dosing imer, the dosing timer output is also switched off. A maximum of 24 periods can be set on a timer. All times have to be consecutive times. The difference between two times must be at least 1 minute. If you use a growth curve ("growth curve schedule") you can automatically activate another schedule, depending on the animals' age.

Linked light schedules are used with light timers whose settings are interrelated. In that case, the master timer is used to be able to quickly synchronize the timers. If, e.g. the feed and water times vary within a short span of time (i.e. a couple of days/weeks), different time schedules can be used. Pre-programming the different time schedules enables you to quickly switch schedules.

5 Timers	51 Timers
1 Timers 2 Time schedules	1 2 light timers
	3 Dosage timers
3 Date/Time	4
4 Overview	6 Timers
5 Alarm	

LIGHT TIMERS

Light timers enable a light regulation to be used, so that the lights are gradually switched on/off. A light regulation enables you to create ideal day and night conditions (dawn program).

Standard light timer



Time 05:00The lights are switched on and their intensity is driven to 20% in a time of 4 minutes.Time 05:04The intensity is driven to 80% in a time of 20 minutes.Time 19:50The lights are dimmed to 20% in a time of 20 minut, the light delay then startsTime 20:30The lights switch off.

INSPECTION LIGHT

512 Light timers	
1 Light timer 1 2 Light timer 2	
3 Light timer 3 4 Light timer 4 5 Light timer 5	
6 Light timer 6 7 Light timer 7	
8 Light timer 8 Inspection light	active
Cycle time on	29m22s

You can manually switch the light, using a pushbutton, in order to inspect the houses. The light is then switched on for a certain time (can be set by the installer). If the pushbutton is pressed again during the "Period on", the light will immediately be switched off again.

DOSAGE TIMER

The timer output of a dosing timer is linked to a counter input to enable the water and/or feed intake to be monitored. If significant variations occur, the control can generate a "dosing alarm" and stop the dosing of water or feed. If the installer has set the "Dosage curve" setting to *no*, the dosage timer will act as a "normal" timer.

- Water timer The water clock can be used to switch elements such as the water valves on or off. In addition, there is the possibility of feeding back information on the actually administered water amount to a counter input of the poultry computer (see Water dosing).
- Water dosage For water dosing, the water amount actually dosed is compared to the amount setting. Dosing stops when the pre-set amount is reached, even if the stop time has not been reached yet. A water dosing alarm is generated if the stop time is reached and the amount has not been reached yet.
- **Feed timer** The feed clock can be used to switch elements such as the discharge augers on or off. In addition, there is the possibility of feeding back information on the actually administered amount of feed to a counter input of the poultry computer (see Feed dosing).
- **Feed dosage** For feed dosing, the amount actually fed is compared to the amount setting. Feeding stops when the pre-set amount is reached, even if the stop time has not been reached yet. A feed dosing alarm is generated if the stop time is reached and the amount has not been reached yet.

Variable schedule (from curve)

Fixed dosage schedule

5132 Feed timer		<u>"-</u>	5132 Feed timer	2	5132 Feed timer	<u>"-</u>
Feed timer Dosage	on		Feed timer on Dosage		Feed timer on Dosage	
Dosage schedule	no no		Dosage schedule 3	3	Growth curve schedule	3
Number of periods	03		Number of periods 3		Number of periods 3	
Per. Begin End			Per.Begin End		Per.Begin End	
1 08:00 - 20:00			1 6:00 - 8:00		1 6:00 - 8:00	
2 00:00 - 00:00			2 12:00 - 14:00		2 12:00 - 14:00	
3 00:00 - 00:00			3 19:00 - 20:00		3 19:00 - 20:00	
		INN		ZZINN		
	<u> </u>					
51320 Docade Feed timer		Fa	F4000 Decese Fred bines	[2]	Ed000 Decade Food times	F3
STOZO DOSAGE FEED CIMEF		Ľ2	51320 Dosage Feed timer	Ľ	STAZØ DOSAYE FEED CIMEF	Ľ
Todav per animal	0100a 0		Todau per animal 0100g	22 Øg	Todau per animal Ø100g	22 00
Today per animal Active period Ø	<mark>0100</mark> g 0 1,000kg 0	ig ikg	Today per animal 0100g Active period 1 736kg	≌ Øg Økg	Today per animal 0100g Active period 1 736kg	e Øg Økg
Today per animal Active period Ø Dosage schedule	<mark>0100</mark> g 0 1,000kg 0 no no	ig Ikg	Today per animal 0100g Active period 1 736kg Dosage schedule 3	≌ Øg Økg 3	Today per animal 0100g Active period 1 736kg Growth curve schedule	Øg Økg 3
Today per animal Active period Ø Dosage schedule Number of periods	<mark>0100</mark> g 0 1,000kg 0 no no	ig Ikg	Stade Desage Feed Climer Today per animal Ø100g Active period 1 736kg Dosage schedule 3 Number of periods 3	©g Økg 3	S1320 Dosage Peeu Cimer Today per animal 0100g Active period 1 736kg Growth curve schedule 3	Øg Økg 3
Today per animal Active period Ø Dosage schedule Number of periods Per. Begin End I	0100g 0 1,000kg 0 no no 3 Part Readu 0	lg lkg ∕a	Today per animal 0100g Active period 1 736kg Dosage schedule 3 Number of periods 3 Per. Begin End Part Ready	©g Økg 3 u g∕a	S1320 Dosage Peeu Ciner Today per animal 0100g Active period 1 736kg Growth curve schedule Number of periods 3 Per, Begin End Part Readu	lg Økg 3 g∕a
Today per animal Active period Ø Dosage schedule Number of periods Per. Begin End I 1 6:00 - 8:00	0100g 0 1,000kg 0 no no 3 Part Ready g 30% 0:00	ig ikg /a Ø	Today per animal Ø100 g Active period 1 736kg Dosage schedule 3 Number of periods 3 Per. Begin End Part Ready 1 6:00 - 8:00 50% 0:06	0g Økg 3 , g∕a 3 Ø	S1320 Dosage Peeu Ciner Today per animal 0100g Active period 1 736kg Growth curve schedule	₽g Økg 3 g/a Ø
Today per animal Active period Ø Dosage schedule Number of periods Per. Begin End 1 1 6:00 - 8:00 2 12:00 - 14:00	0100g 0 1,000kg 0 no no 3 Part Ready g 30% 0:00 50% 0:00	ig ikg Za Ø	S1320 Dosage Feed timerToday per animalØ100Active period1736kg3Dosage schedule3Number of periods3Per. BeginEnd Part Ready16:00-8:0050%0:00212:00-14:0030%0:00	0g Økg 3 , g∕a ∂ Ø	Today per animal 0100g Active period 1 736kg Growth curve schedule 3 Number of periods 3 Per. Begin End Part Ready 1 6:00 - 8:00 30% 0:00 2 12:00 - 14:00 50% 0:00	Øg Økg 3 g∕a Ø
Today per animal Active period Ø Dosage schedule Number of periods Per. Begin End I 1 6:00 - 8:00 2 12:00 - 14:00 3 19:00 - 20:00	0100g 0 1,000kg 0 no no 3 Part Ready g 30% 0:00 50% 0:00 100% 0:00	ig ikg Za Ø	Today per animal Ø100 Active period 1 736kg Dosage schedule 3 Number of periods 3 Per. Begin End Part Ready 1 6:00 - 2 12:00 - 3 19:00 - 20:00	0g Økg 3) g∕a) Ø	Size Dosage Peed Cliner Today per animal 0100g Active period 1 736kg Growth curve schedule 3 Number of periods 3 Per. Begin End Part Ready 1 6:00 - 8:00 30% 0:00 2 12:00 - 14:00 50% 0:00 3 19:00 - 20:00 100% 0:00	₽ Økg 3 g/a Ø Ø
Today per animal Active period Ø Dosage schedule Number of periods Per. Begin End I 1 6:00 - 8:00 2 12:00 - 14:00 3 19:00 - 20:00	0100g 0 1,000kg 0 no no 3 Part Ready g 30% 0:00 50% 0:00 0:00	ig ikg Za Ø	ST320 Dosage Feed Cimer Today per animal Ø100g Active period 1 736kg Dosage schedule 3 Number of periods 3 Per. Begin End Part Ready 1 6:00 - 8:00 50% 0:06 2 12:00 - 14:00 30% 0:06 3 19:00 - 20:00 100% 0:06	0g Økg 3) g∕a ∂ Ø ∂ Ø	Size Dosage Peed Cliner Today per animal 0100g Active period 1 736kg Growth curve schedule Number of periods 3 Per. Begin End Part Ready 1 6:00 - 8:00 30% 0:00 2 12:00 - 14:00 50% 0:00 3 19:00 - 20:00 100% 0:00	Øg Økg 3 g∕a Ø Ø
Today per animal Active period Ø Dosage schedule Number of periods Per. Begin End I 1 6:00 - 8:00 2 12:00 - 14:00 3 19:00 - 20:00	0100g 0 1,000kg 0 no no 3 Part Ready g 30% 0:00 50% 0:00 100% 0:00	ig ikg Ø Ø Ø	Today per animal Ø100g Active period 1 736kg Dosage schedule 3 Number of periods 3 Per. Begin End Part Ready 1 6:00 - 8:00 50% 0:06 2 12:00 - 14:00 30% 0:06 3 19:00 - 20:00 100% 0:06	0g Økg 3) g∕a) Ø) Ø	Today per animal 0100g Active period 1 736kg Growth curve schedule 1 736kg Number of periods 3 3 Per. Begin End Part Ready 1 6:00 - 8:00 30% 0:00 2 12:00 - 14:00 50% 0:00 3 19:00 - 20:00 100% 0:00	₽ Økg 3 g∕a Ø Ø
Today per animal Active period Ø Dosage schedule Number of periods Per. Begin End I 1 6:00 - 8:00 2 12:00 - 14:00 3 19:00 - 20:00	0100g 0 1,000kg 0 no no 3 Part Ready g 30% 0:00 50% 0:00 100% 0:00	ig ikg Ø Ø	Today per animal Ø100g Active period 1 736kg Dosage schedule 3 Number of periods 3 Per. Begin End Part Ready 1 6:00 - 8:00 50% 0:00 2 12:00 - 14:00 30% 0:00 3 19:00 - 20:00 100% 0:00	0g 0kg 3 9 0 9 0 9 0	Today per animal 0100g Active period 1 736kg Growth curve schedule 1 736kg Number of periods 3 3 Per. Begin End Part Ready 1 6:00 - 8:00 30% 0:00 2 12:00 - 14:00 50% 0:00 3 19:00 - 20:00 100% 0:00	Øg Økg 3 Ø∕a Ø
Today per animal Active period Ø Dosage schedule Number of periods Per. Begin End I 1 6:00 - 8:00 2 12:00 - 14:00 3 19:00 - 20:00	0100g 0 1,000kg 0 no no 3 Part Ready g 30% 0:00 50% 0:00 0:00	ig ikg ∕a Ø	Today per animal Ø100g Active period 1 736kg Dosage schedule 3 Number of periods 3 Per. Begin End 1 6:00 - 8:00 50% 0:00 2 12:00 - 14:00 30% 0:00 3 19:00 - 20:00 100% 0:00	0g Økg 3 9 Ø 9 Ø 9 Ø	Today per animal 0100g Active period 1 736kg Growth curve schedule 1 736kg Number of periods 3 3 Per. Begin End Part Ready 1 6:00 - 8:00 30% 0:00 2 12:00 - 14:00 50% 0:00 3 19:00 - 20:00 100% 0:00	₽ Økg 3 g/a Ø Ø

If "Auto. partition period" has been **switched off** by your installer, you can manually divide the total daily amount of the feed etc. over the pre-set number of periods.

Water and feed dosing make use of the number of animals present in the house. The number of animals is determined at the start of the first actual dosing period, in order to calculate the total amount to be dosed. If the number of animals changes in the meantime (due to animals dying, being removed or added) this no longer affects the calculation.

Today per animal: 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". The last column shows the amount already dosed per animal today.

Active period: This line shows the active dosing period, followed by the total amount to be dosed and the amount already dosed in the active period.

Dosage schedule / Growth curve schedule: This line states the current time schedule (see also "Timers" on page 31).

Partition period

- The amount to be dosed is calculated between two periods.
- WITH "Auto. partition period"
- WITHOUT "Auto. partition period"
- The total daily amount is divided over the preset number of periods.
- An error message will be generated if the sum of the percentages set under "Part" is less than 100%. If you enter 100% for the last period under "Part", the shortage of the prior periods will be corrected in the last dosing period.
- The dosed amount per period is listed under the last column (ml/d or g/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.

DOSAGE CURVES

If no growth curves have been installed for the climate control, you can set the day number of the dosing curve here.

If the installer has activated the dosing curves, you can use **programmable curves** to have the amount of water and/or feed per animal increase automatically as the animals grow older. The total amount is calculated again every day using the curve settings, the current day number and the current number of animals in the house.



In the dosage curve the amount per animal per day can be set.

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 midnight.

NEST BOX TIMER

The PL-9400 has a timer with On/Off times to open or lock the nest boxes. The nest box can even be opened and closed at intervals (according to a pulse-pause principle). Your installer sets the pulse-pause times, so that the nest box will open and close at the speeds you require.

The nest box timer is switched on in accordance with a standard timer, see also "Timers", page 29.

TIMERS

These timers are "On/Off" timers, you can also use time schedules (or a growth curve consisting of time schedules).

516 Timers	🋂 5161 Timer 1	12
1 Timer 1 2 Timer 2 3 Timer 3 4 Timer 4 5 Timer 5 6 Timer 6 7 Timer 7	Timer 1 Current status Time schedule Number of periods Per. Begin End 1 08:00 - 10:00 2 12:00 - 14:00 3 19:00 - 20:00	on off no no Ø3
		44 PP

Standard timer

TIME SCHEDULES

52 Time schedules 😰	521 Time schedules 😰	5211 Time schedule 1	<u> </u>
1 Time schedules 2 Light schedules 3 Dosage schedules 4 Growth curves	1 Time schedule 1 2 Time schedule 2 3 Time schedule 3 4 Time schedule 4 5 Time schedule 5 6 Time schedule 6 7 Time schedule 7 8 Time schedule 8 9 Time schedule 9	Number of periods Per. Begin End 1 05:00 - 12:00 2 14:00 - 19:00 3 20:00 - 22:00	03
			44 PP

You can set a maximum of 9 different time schedules. Every time schedule can consist of a maximum of 24 periods.

LIGHT SCHEDULES

52 Time schedules	522 Light schedules	5221 Light schedule 1	2
1 Time schedules 2 Light schedules 3 Dosage schedules 4 Growth curves	1 Light schedule 1 2 Light schedule 2 3 Light schedule 3 4 Light schedule 4 5 Light schedule 5 6 Light schedule 6 7 Light schedule 7 8 Light schedule 8 9 Light schedule 9	Number of points 04 Point Begin ~ % 1 05:00 :00 020 2 05:20 :20 100 3 20:00 :60 020 4 21:05 :00 000	44 >>

You can set a maximum of 9 different light schedules. Every light schedule can consist of a maximum of 48 periods.

DOSAGE SCHEDULES



Attention! If the installer has set "Automatic cycle distribution" for a dosage timer, the amount of feed to be fed will be distributed over the number of periods **INSTEAD OF** taking the dose set in this time schedule, see page 32.

GROWTH CURVES 52 Time schedules 52432 Growth curve Feed timer 24 Growth curves time schedules 1 Time schedules Growth curves Growth curve Feed timer off Dau 8 2 Light schedules Number of points Ø3 Dosage schedules Light timers oint Schedule Dau(2) 4 Growth curves 3 Dosage timers 001 1 1 2 007 2 5 Nest box timer 3 014 no Timers

Time schedules can include in a growth curve. Another time schedule will be selected upon the day number being reached. If a breakpoint is set to "no", the times of the original timer will be used.

DATE / TIME

The "First day of the week" can be set here. The "First day of the week" is used to determine the weekly totals. If, for example, you set "First day of the week" to **Su** (*Sunday*) the week totals will be calculated on Sunday (a week total is the sum of Sunday, Saturday, Friday etc. to Monday)

If the PL-9400 poultry computer is linked to a feed weighing computer, you **CANNOT change** the setting "First day of the week" and the setting "Beginning new day" **on the PL-9400 poultry computer**; these settings are copied from the feed weighing computer.

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

OVERVIEW TIMERS

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. If a master timer has been installed, it will be displayed on every screen.

ALARM

552 Alarm Feed timer		
Alarm Minimum dosage Present dosage	on 100% 0%	
Dosage calculated Present dosage	33g/a Øg/a	
Alarm status No alarm		
		••

Dosing timer (water or feed): The minimum amount to be dosed can be set here (as a percentage of the amount to be dosed). If this percentage is not reached, a dosing alarm will be generated.

For the nest box timer the nest box status is displayed in addition to the alarm status.

o	10+0
1	Temperature
2	Counters
3	Timers
4	Animal data
5	Feed system
6	
7	
8	

61 Overviews	
1 House temperature 2 Heatings 3 Cooling 4 Outside temperature	
5 Sensors 6 Growth curves	
Reset min/max temp.	no

You can use the "*Reset min/max temp.*" setting to clear the min/max measurements in all temperature listings and to fill "*Today*" with the current value.

The Temperature, Counters and Timers, feed system and animal weighing screens are identical to menu option "Overviews".

ANIMAL DATA

64 Animal data	641 To mutate Ar	nimals	1	
1 To mutate 2 Overview mutations 3 Overview present animals 4 Entry data 5 Configuration lost	Lost Dead Selection Lost 3 Lost 4 Lost 5 Out In	000 000 000 000 000	Today 000,000 000,000 000,000 000,000 000,000 000,000	Total Ø Ø Ø Ø
	Animals present Number at entry			12,092 12,092

ΤΟ ΜUTATE

If there are more groups of animals, you can enter the following data per group of animals. Use the *d* and *b* keys to select the next/previous group of animals.

Lost	You can set up to 5 different categories of lost (see "Configuration lost")
Dead	Enter the number of animals which have lost at this moment (per group of animals). "Today's" mortality (or death rate) is increased automatically by the value entered after which the entry is erased.
Dead "Today"	Today's total mortality. If you have entered an incorrect value you can correct this by changing the value below "Today".
Dead "Total"	"Total" shows the total mortality calculated using the mortality of the previous days and of "Today"
Selection Lost 5	See "Dead".
Out	Enter the number of animals that has been removed.
Out "Total"	The "Total" number of animals removed.
In	Fill in the number of animals that were added.
In "Total"	The "Total" number of animals added.
Animals present	This is the sum of the number of animals at the time of entry – the total mortality - total out + total in.
Number at entry	This is the number of animals at the time of entry.

OVERVIEW MUTATIONS

An overview of the mortality, the number of animals unloaded (out) and the number of animals added (in) per day is shown.

OVERVIEW PRESENT ANIMALS

An overview of the daily remaining number of animals in the house (per group) is shown.

ENTRY DATE DATA

644 Entry data	
Entry date Year Month Day	/
Animals 1 Number at entry	012,092
Animals 2 Number at entry	010,216
New entry	no

This data in this screen has to be entered at the start of new entry (a new round). The poultry computer uses this data to calculate the remaining number of animals, the feed dosage etc.

If there are two or more groups of animals, the fill ratio depends on the sum of the total number of animals of all animal groups added together.

Entry date The poultry computer uses these "Entry date" to calculate the animal age. Beside that the "Entry date" is used to fill in the mutation table. The poultry computer can store the data of the past 7 days. Number at entry This is the number of animals at the time of entry.

If "yes":

- The mortality table is erased.
- The entry date is fill-in.
- The fill ratio is re-calculated (if the fill ratio depends on the entry data)
- Feed dosing is started (if a feeding cycle is active)

645 Configuration	lost
Animals 1	Animals 2
Number 5	Number 5
Dead	Dead
Selection	Selection
Lost 3	Lost 3
Lost 4	Lost 4
Lost 5	Lost 5

CONFIGURATION LOST

New entry

This screen allows you to set the number of lost classes (max. 5). These classes appearance into the mutation screen. By class, you can enter the lost (register).

Switching off the main alarm. The cause of the alarm and the control are displayed (and optionally the terminal number or address).



LATEST ALARMS HOUSE

The last 5 alarm causes which caused the alarm relay to de-energize will be stored. The date and time of the alarm are displayed in addition to its cause.

Alarm 0: The cause of the *alarm that occurred the last* is shown behind "Alarm 0". In addition, the time until which the alarm is/was active is shown.

You can call up the data of the previous alarms by pressing the Arrow down key.

EXTERNAL ALARMS

Your installer can change the names of the "External alarms" in to any name of your choice (max. 15 characters per name).

72 External alarms		721 Extern.al	larm 1
1 Extern.alarm 1	on	Alarm	on
2 Extern.alarm 2	on		
3 Extern.alarm 3	on		
4 Extern.alarm 4	on		
5 Extern.alarm 5	on	Toout	alacad
6 Extern.alarm 6	on	Tuhac	crosed
7 Extern.alarm 7	on		
8 Extern.alarm 8	on		
9 Extern.alarm 9	on		
10 Extern.alarm 10	on		
		Alarm status	No alarm

This screen allows you to switch the external alarms on or off (max. 10). In addition, the next screen shows the current status of the input (opened or closed) and the current alarm status.

COMMUNICATION ALARM



This screen allows you to switch the communication alarm on or off. This screen appears only at a main station.

Behind "Device Address" is the address displayed of which the main station has not received any data.

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 problem. Failing to switch it back on may have adverse effects for
humans, animals, equipment or property.Preferably use the ③ off (alarm retard) function to solve a problem.

ALARM CODES INSTALLATION

Alarm code	Description		
Module x not found	 The module number set for the terminal does not exist Poor or no connection between PL-9200-MODULE and module. The connection cable between the PL-9200-MODULE and the PL-9200 bottom PCB is missing or is loose. 		
Module x absent	Module address not found, check the settings on the module		
Module x reset alarm	Module continues to reset due to a fault, check the module		
No communication address	Missing device address PL-9400 and/or PFB-35/70.		
Communication	Main station has not received data from the displayed device address.		
Output already assigned	The output has been assigned to two or more controls.		
Input already assigned	The input has been assigned to two or more controls.		
Invalid output	The output number does not exist on the module.		
Invalid input	The input number does not exist on the module.		
No output assigned	No output terminal number entered		
No input assigned	No input terminal number entered		
Wrong output type	The type of output set does not comply with the type of output which the control can drive		
Wrong input type	The type of input set does not comply with the type of input which the control can use for its control operation		
Unknown terminal type	This type of terminal does not exist		
Wrong terminal setting	Faulty allocation. The function you have assigned to the terminal is not supported by the module.		
Counter already assigned	The counter has been assigned to two or more controls.		
No outside sensor	The control installed requires an outdoor sensor but no outdoor sensor has been installed		
No pressure control	The control installed requires a pressure control but no pressure control has been installed		
Invalid counter	The type of counter is different from the type of timer (e.g. feed counter selected for water dosing or the timer type is set to communication and no PFA-9200 has been installed).		
Invalid silo output	The output number does not exist on the module.		
Minimum supply alarm	The counter did not reached the minimum setting within the time set.		
Maximum supply alarm	The counter exceeds the maximum setting within the time set.		
Invalid combination	Both the dosing timer and the animal group have been set to "communication". This is not allowed. You can either set only dosing timers via communication (augers) or you can send the animal data via communication (values)		
Ventilation too low ¹	The ventilation measured is below the minimum alarm limit calculated		
Ventilation too high ¹	The ventilation measured is higher than the maximum alarm limit calculated		
Outside sensor faulty	Value measured by outside temperature sensor < -50.0°C or > +50.0°C		
Temperature sensor faulty	Value measured by temperature sensor < -50.0°C or > +100.0°C		
RH sensor faulty	The RH sensor value measured is outside the preset limits		
Pressure sensor faulty	The pressure sensor value measured is outside the preset limits.		
CO2 sensor faulty	The CO_2 sensor value measured is outside the preset limits		
Potentiometer faulty	The value measured by the potentiometer is outside the limits (EGM 100P, winch motors etc.)		
Sensor faulty	The values measured by the sensor (temperature, RH, CO ₂ , pressure etc.) are outside the preset limits		
Invalid period x	 The times set for a timer must be ascending and the difference between "Begin" and "End" must be at least 1 minute. The starting time (Begin) + the running time (Propagation time) of a light control must not be after the next starting time (the time can be simultaneous with the next starting time) 		
Beginning new day in period	The "Beginning new day" time is in a period; this is not allowed. The "Beginning new day" time MUST BE BEFORE the first period.		
Extern.alarm x	Your installer can change the names of the "External alarms" in to any name of your choice (max. 15 characters per name).		

Alarm code	Description
Conflicting periods ²	The 'Conflicting periods' error message occurs if 1 or more feed dosing timers have to be active at the same time.
Number	If Number x (x is a value of 1 to 6) is shown for "Control", there will be an overlap with a dosing timer of another PL-9400 poultry computer.
Temperature too low	The temperature measured is below the minimum alarm limit calculated
Temperature too high	The temperature measured is higher than the maximum alarm limit calculated
RH too low	The RH measured is below the minimum alarm limit calculated
RH too high	The RH measured is higher than the maximum alarm limit calculated
Pressure too low	The pressure measured is below the minimum alarm limit calculated
Pressure too high	The pressure measured is higher than the maximum alarm limit calculated
CO2 too low	The CO ₂ measured is below the minimum alarm limit calculated
CO2 too high	The CO_2 measured is higher than the maximum alarm limit calculated
Alarm unknown (xxx)	An unknown and non-documented alarm code has occurred. Note down the number that is displayed and contact your supplier.
Invalid mixture	The mixture is on -0.0% for all components, although a certain amount of feed has to be dosed.
Dosage too low	The amount of water and/or feed dosed is less than the preset minimum amount to be dosed, see page 35.
Feed detected by sensor	The feed sensor is covered by feed at the moment when the unloading valve opens.

¹ At a flap control; first check if the flap is not in manual operation mode.
 ² NOTE! If ALL feed dosing timers work with release contacts, the periods are allowed to overlap.

SYSTEM

8 System		81 Display		Language: You can set the language
Device Type Software version Software date ENG, NLD, DEU, FRA, RUS POL, HUN, SPA, CES, TUR CHN, JAP Fahrenheit 1 Display	PL-9400 // ENG NO	Brightness on off On-time Cursor left Extra pixs	100% 015% 300s yes 04	of the screen texts here. The language in this example is set to ENG (English). You can also change the language by pressing and holding functional key F1 while simultaneously pressing the cursor key pointing to the right.

This screen shows the device type as well as the software program version.

DI SPLAY

Brightness	Setting the brightness for backlighting.
on	Setting the brightness for the active mode (control mode).
off	Setting the brightness for sleep mode.
on time	Number of seconds that the backlight stays on after the last time a key was pressed. If you set the on-time to 0 seconds the backlight stays on forever.
Cursor left	"Yes": the cursor is placed, in edit mode, on the digit which is the furthest to the left. "No": the cursor is placed, in edit mode, on the digit which is the furthest to the right.

Remote control: See application note: "PL9XIRC-N-ENxxxxx".

Regular maintenance and checking of the equipment are essential for its proper operation.

• Don't forget to clean the ventilation system when cleaning the houses.

To minimize the energy consumption, it is important that the fans are clean. This also applies to the flaps, measuring fan and the ventilation tube. Dust and dirt may affect the operation of the equipment. The fans can be cleaned using a hand crank or brush. Clean the poultry computer, the measuring fan impeller and the flaps using a moist textile. The tube can be cleaned with the high pressure sprayer. Never use a high pressure sprayer for cleaning the poultry computer, the measuring fan impeller, flaps and other electrical equipment.

• Check the negative pressure in the house regularly.

Clogged up filters, air inlet flaps, which are still in "winter mode" etc., may cause an unnoticed increase in the counter-pressure in the ventilation system in combination with a rising temperature. This will result in the fans having to run much faster than is usually required. When opening or closing the house doors, be alert to any resistance, which you may feel. If you can feel the negative pressure, we advise you to check the operation of the filters and flaps.

• Check for air pressure leakage in the house.

Air leaks can lead to draughts and - in summer - they can result in unwanted heating due to hot air being drawn in from between the roof and the insulating materials for example. This will require the fans to work extra hard to enable the preset house temperature to be reached, causing the energy costs to increase unnecessarily.

• Check the measuring fans

The measuring fan operation will become less smooth due to wear. The result is that the ventilation rate will increase while the fan speed stays the same! Have the measuring fans checked by an expert in time.

Check the measured value and settings

Since the poultry computer reacts on what the sensors indicate, you should regularly (e.g. after cleaning the house) check the values measured by the sensors. We recommend having an expert check all settings and measured values at least once a year.

• Fan

Switch on the fans at least one time every week, even in winter, to prevent it from getting stuck.

- Alarm system Check the operation of the alarm system at regular intervals, e.g. once a month.
- Temperature sensors Clean the temperature sensors every month.
- Ventilation
 - Clean ventilation tubes at least once a year.