USER MANUAL

KL-6500 (-i) CENTRAL COMPUTER

KL-6500

Shut down power before opening the central computer!

The central 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 ensure that an adequate alarm system and/or emergency provisions is/are in place to prevent any technical failure of the equipment and peripheral facilities leading to danger to people, animals or property.***

IN THE EVENT OF AN EMERGENCY, NOTE DOWN THE FOLLOWING

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

If you have any questions, please contact our Customer Service Department. 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.

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CHANGING LANGUAGES

Languages present: ENG NLD DEU FRA RUS POL HUN SPA CES TUR ZHO JAP

← Back Next →

: select next language (see also "System", page 27).

: select previous language.

LOGIN

Tap : open login screen.

Tap : open numeric keypad.

Enter the access code and touch .

CONTROL KEYS

: return to the overview screen (HOME).

: select next/previous screen.

: select input position.

: select an option.

: next/previous screen.

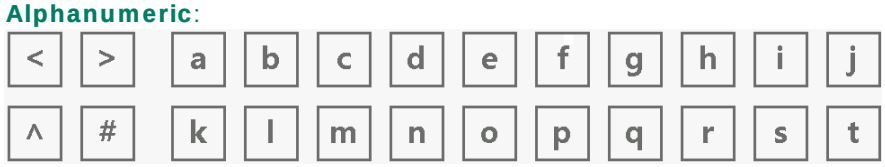
: scroll down/up (scroll bar on the right).

If this symbol is lit, tap it to display one the following virtual keyboards.

Set numeric value:

+ and - : change the symbol of a value.

Alphanumeric:



< and > : choose other characters.

^ : toggle between lowercase and uppercase letters.

: switch to digits and alternative characters.

: decrease/increase value.

English : select an option from an option box.

: undo an option/selection in *edit mode.*

: confirm an option/selection in *edit mode.*

: add a breakpoint to or remove it from a list (curve, timer).

: if a setting is followed by the “Link” symbol, use this link to access another screen. The upper right-hand corner of the “follow-up screen” will then show the “Link back” symbol.

CONFIRM CHANGE

Some important settings can only be changed if the change has been confirmed. A pop-up window will show to confirm your change.

LED BAR

Blue	permanently lit:	**device not in use**	
Green	permanently lit:	no alarm	
Yellow	permanently lit:	alarm, alarm delay time has not elapsed	
Red	permanently lit:	alarm	
	flashing at a regular frequency:	main alarm switched off.	
	flashing irregularly:	alarm switched off temporarily.	

ROOM BAR

Room status: Room in operation, no alarm. | Alarm, alarm delay active. | Alarm, alarm relay in. | Room out of operation.

Room heating status: Heating off | Heating on

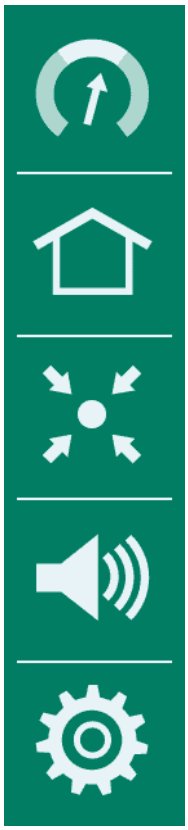
Room address | Room name | Room temperature

Room ventilation | Number of animals in the room | Growth curve day number

I/O TERMINAL NUMBERS

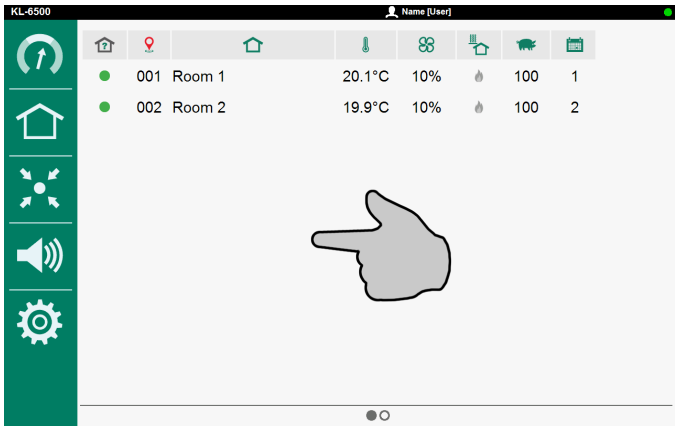
I/O type	Letter	Serial number	Explanation
0-10V output	A	1-99	Analogue output with a range of 0-10V or 10-0V.
Relay output	B	1-99	Relay contact output (***this does not include:*** alarm relay, digital outputs etc.)
Temperature sensor	K	1-99	This includes all types of temperature sensor fitted with 10K NTC resistors (N10B, BV10B etc.)
0-10V inputs	L	1-99	Analogue input with a measuring range of 0-10V. To connect components such as measuring sensors (RH, pressure, CO_2 etc.)
Digital input	M	1-99	This includes measuring fans, counter contacts etc.

MAIN MENU



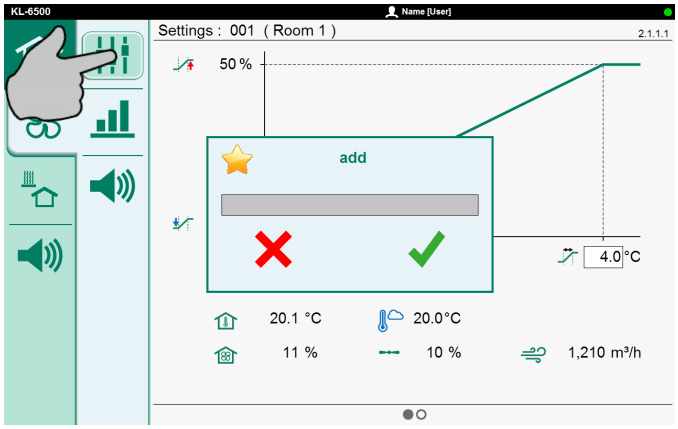
	KL-6500	KLD-100	KLC-100
Management		House temperature summary Outside temperature summary Room heating operating hours Room heating operating hours Reset min./max. table	Summary of outside temperature Air scrubber pressure summary NH3 summary Reset min./max. table
Room		Ventilation Inlet flap Room heating Inlet heating Room heating Cooling Alarm	
Central			Central exhaust Central heating Central inlet flap Pressure Ammonia Alarm
Alarm	Alarm Status Latest 5 alarms Communication alarm		
System	Device		

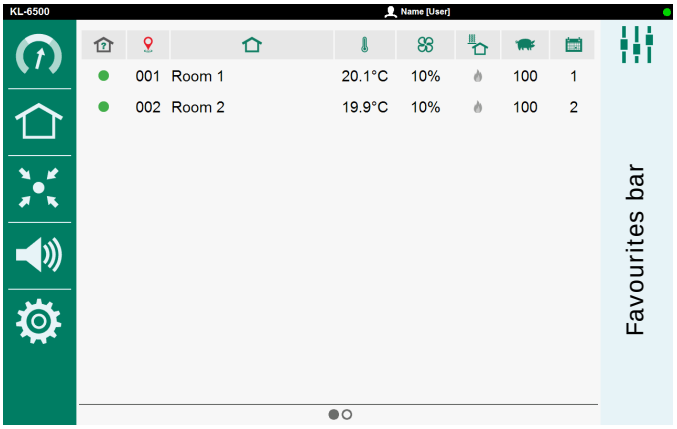
OVERVIEW SCREEN



Tap the “Screen” or tap the “Home” key: this brings up the main menu.

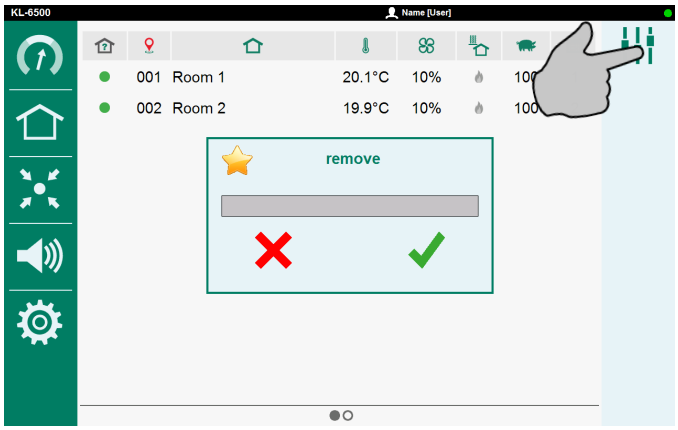
ADD MENU ITEM TO FAVOURITES BAR

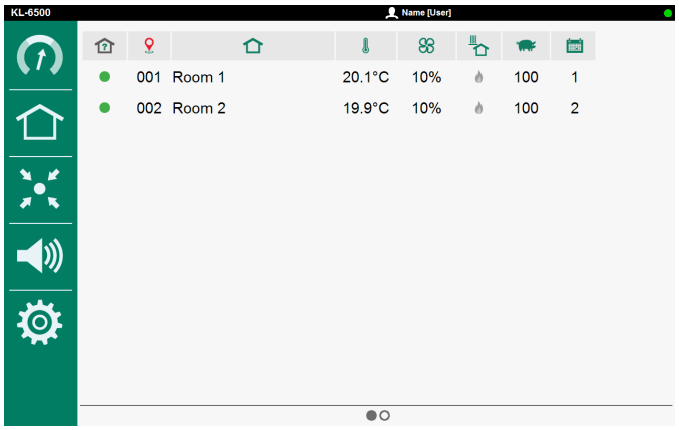




- Select the screen that should be added to the favourites bar.
- Touch the menu item icon until the “add” window is displayed.
- Tap ✓ (OK) to add the menu item to the favourites bar.

REMOVE MENU ITEM FROM FAVOURITES BAR





- Touch the icon of the menu item that you would like to remove until you see the “delete” window.
- Tap ✓ (OK) in order to remove the menu item from your favourites bar.

MANAGEMENT

ROOM

Animal data:

- Curve day number.
- Current number of animals in the house

MIN./MAX. TABLE

Min./Max. house temperature table.

Min./Max. outside temperature table.

Reset min./max. value today (of all tables).

HOURS COUNTER

Room heating operating hours*.

Inlet heating operating hours*.

Floor heating operating hours*.

CENTRAL

HEATING

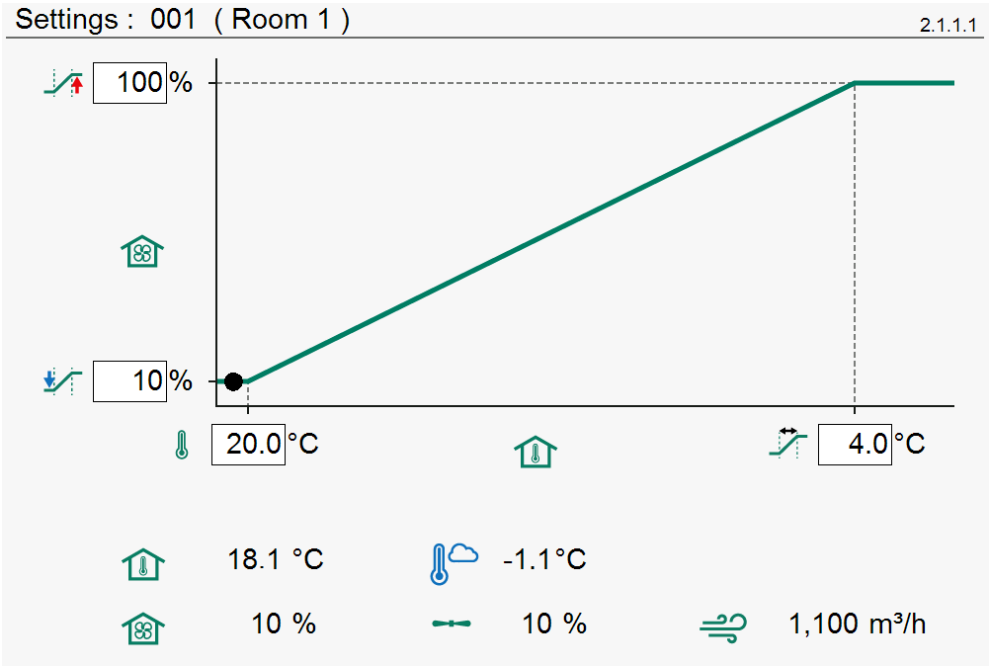
Min./Max. outside temperature table.

Central heating operating hours*.

Reset min./max. value today (of all tables).

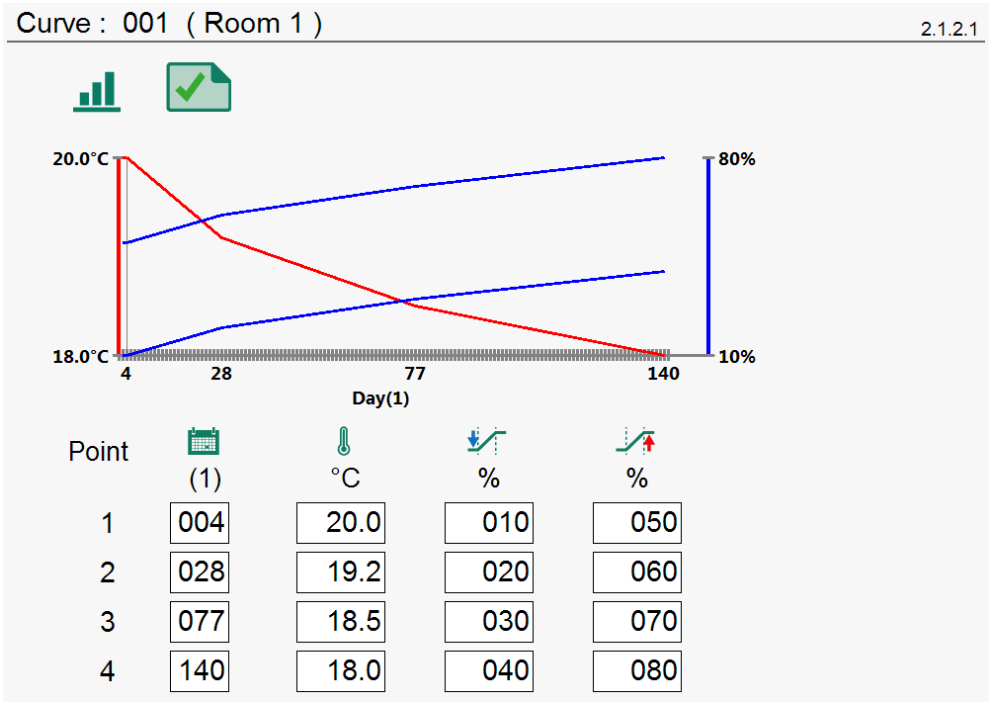
* The operating hours can be cleared by setting the slider behind “Clear operating hours” to “1”.

ROOM VENTILATION



100 %	Maximum ventilation (with the room temperature + bandwidth settings chosen)
10 %	Minimum ventilation (with the room temperature setting chosen)
20.0 °C	Room temperature setting
4.0 °C	Bandwidth
18.1 °C	Current room temperature
10 %	Calculated ventilation
10 %	Current ventilation
-1.1 °C	Current outside temperature
1,100 m³/h	Current ventilation capacity

ROOM CURVE (TEMPERATURE, MINIMUM VENTILATION, MAXIMUM VENTILATION)



Room temperature curve “On”

Room temperature curve “Off”

Point

Breakpoint number

(1)

Breakpoint day number (the value under is the current day number)

°C

Room temperature for the preset day number.

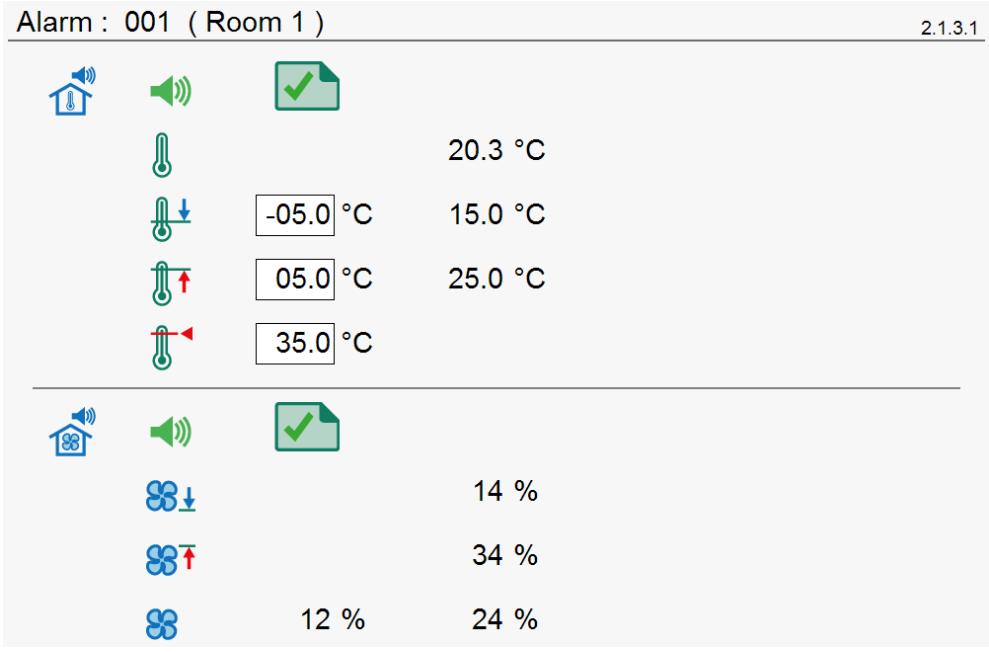
%

Minimum ventilation for the preset day number.

%

Maximum ventilation for the preset day number.

ROOM ALARM (TEMPERATURE, VENTILATION)

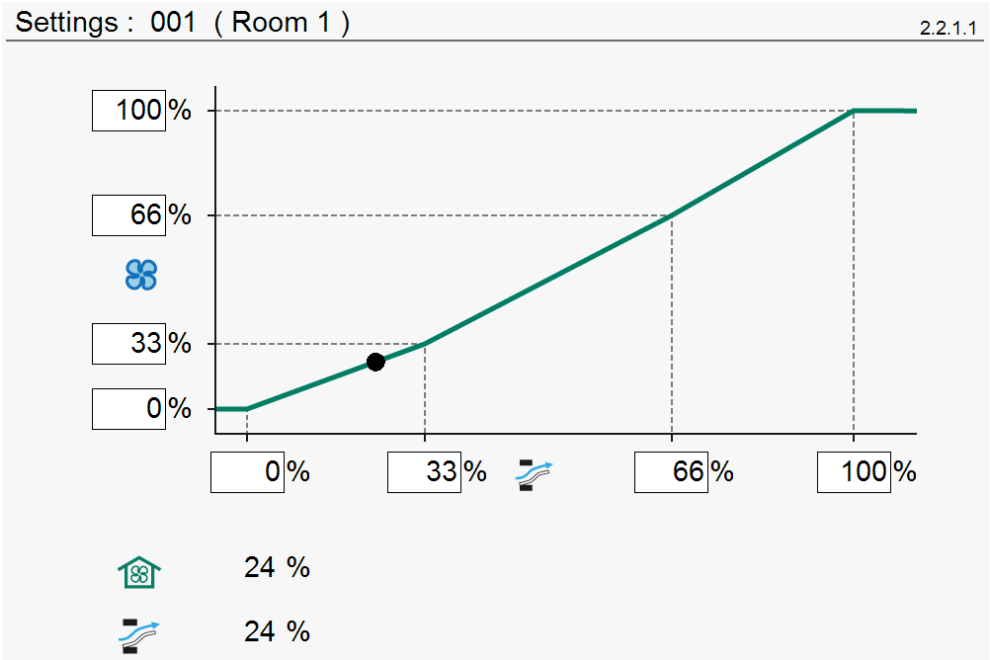


		Room temperature alarm “On”
		Room temperature alarm “Off”
	20.3 °C	Current room temperature alarm
-05.0 °C	15.0 °C	Minimum room temperature alarm limit
05.0 °C	25.0 °C	Maximum room temperature alarm limit
35.0 °C		Absolute room temperature alarm limit

		Ventilation alarm “On”
		Ventilation alarm “Off”
	14 %	Minimum ventilation limit
	34 %	Maximum ventilation limit
12 %	24 %	Calculated and measured ventilation

The ventilation alarm only shows if a measuring fan has been installed.

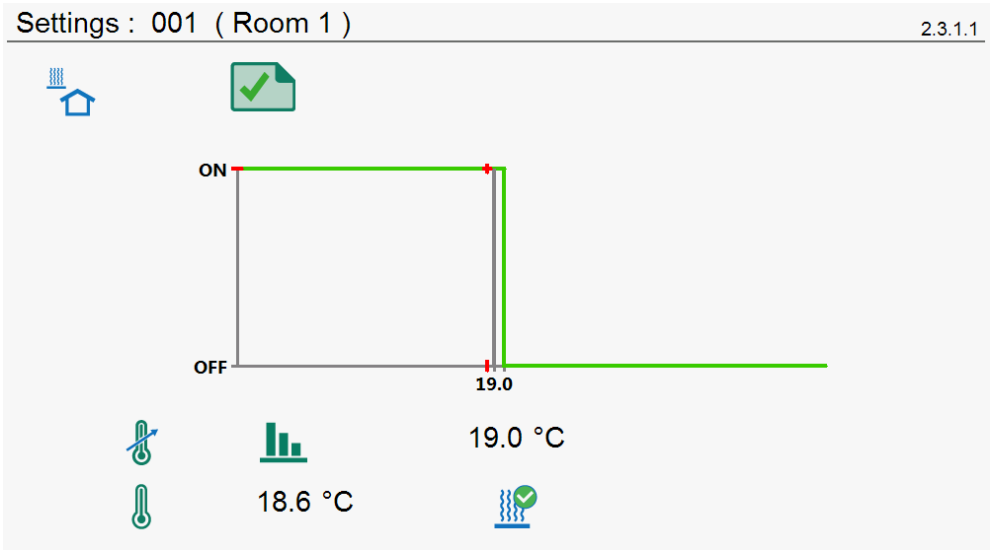
INLET FLAP



24 %	Current ventilation
24 %	Current valve position

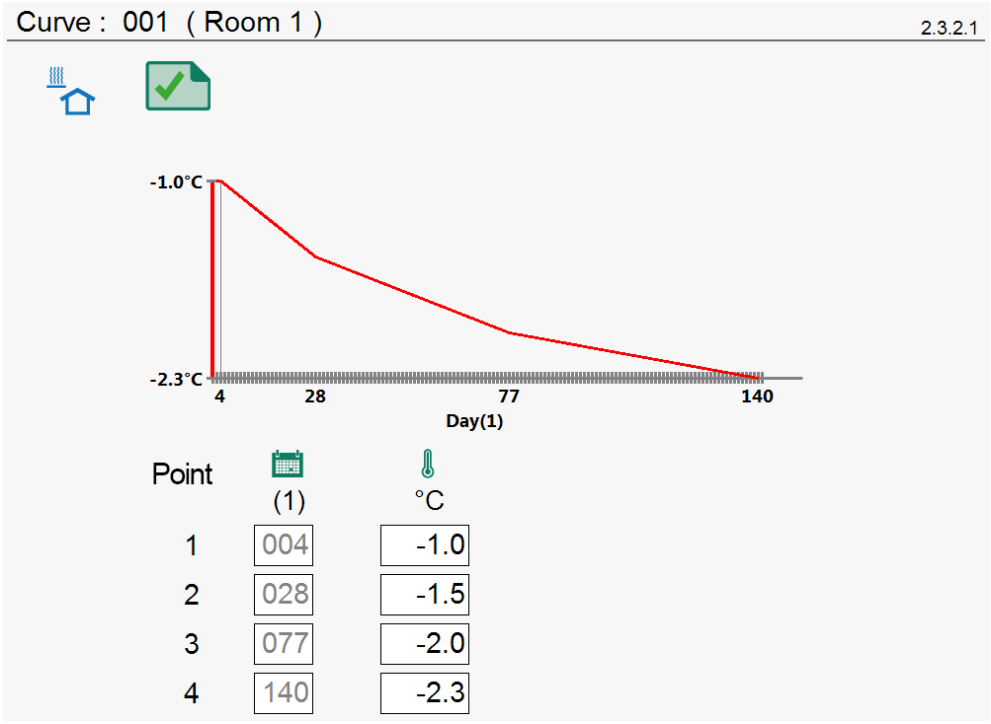
The flap controls on the basis of ventilation. Normally, the opening of the flap is directly proportional to the flap position as a %. The air displacement caused by this flap, however, is not directly proportional to the flap position. The characteristic can be used to obtain a better flap position/air displacement ratio.

ROOM HEATING



-1.0 °C 19.0 °C	• Room heating temperature setting (temperature difference relative to room temperature setting, see screen 2.1.1.x page 9). • Calculated room heating temperature.
19.0 °C	• Calculated room heating temperature from curve.
18.6 °C	• Current room temperature. • The room heating status is On ("On/Off heating").
19.2 °C 0 %	• Current room temperature. • Room heating status (heating is: "Off"). • Current heating capacity of room heating ("controlled heating")
18.6 °C 20 %	• Current room temperature. • Room heating status (heating is: "On"). • Current heating capacity of room heating ("controlled heating")

ROOM HEATING CURVE

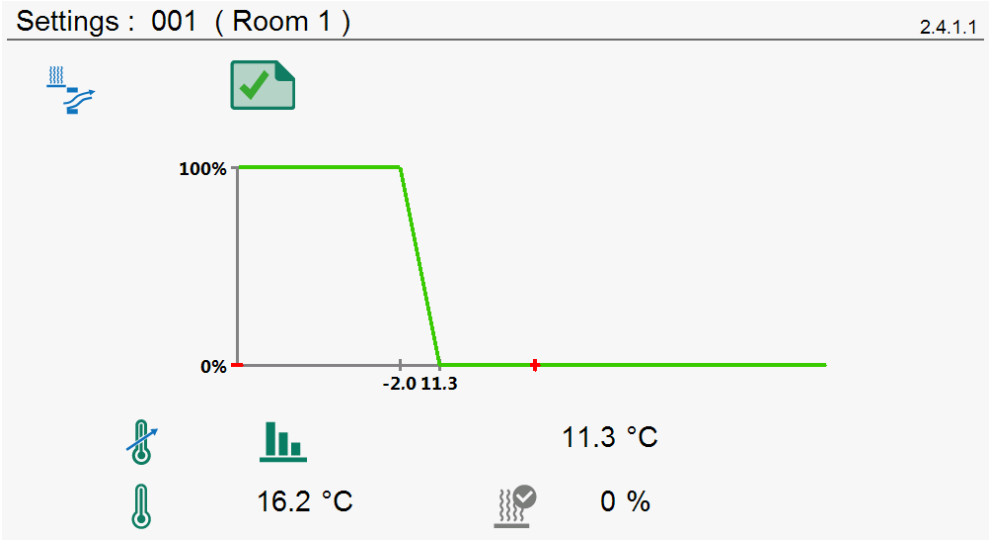


Room heating curve "On"

	Room heating curve “Off”
Point	Breakpoint number
 (1)	Breakpoint day number (the value under  is the current day number)
 °C	Room heating temperature for the preset day number.

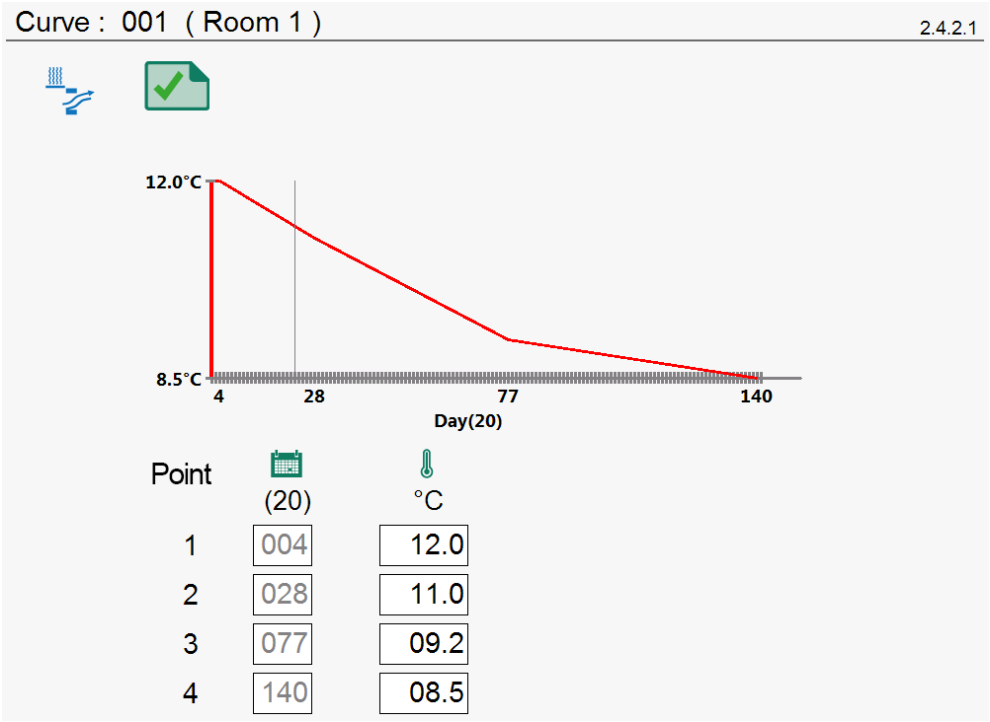
The day numbers can only be set in the “Room curve”.

INLET HEATING



12.0 °C	12.0 °C		• Inlet temperature setting • Calculated inlet temperature
	11.3 °C		• Inlet temperature setting from curve
9.9 °C			• Current inlet temperature • Inlet heating status (“On/Off heating”)
15.0 °C	0 %		• Current inlet temperature • Inlet heating status (heating is: “Off”) • Current heating capacity (“controlled heating”)
9.9 °C	62 %		• Current inlet temperature • Inlet heating status (heating is: “On”) • Current heating capacity (“controlled heating”)

INLET HEATING CURVE



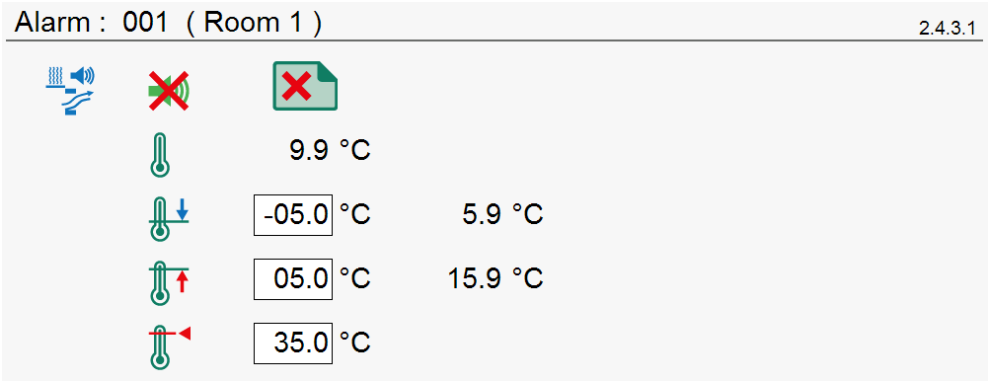
Inlet temperature curve “On”

Inlet temperature curve “Off”

Point	Breakpoint number
(20)	Breakpoint day number (the value under is the current day number)
°C	Inlet temperature for the preset day number.

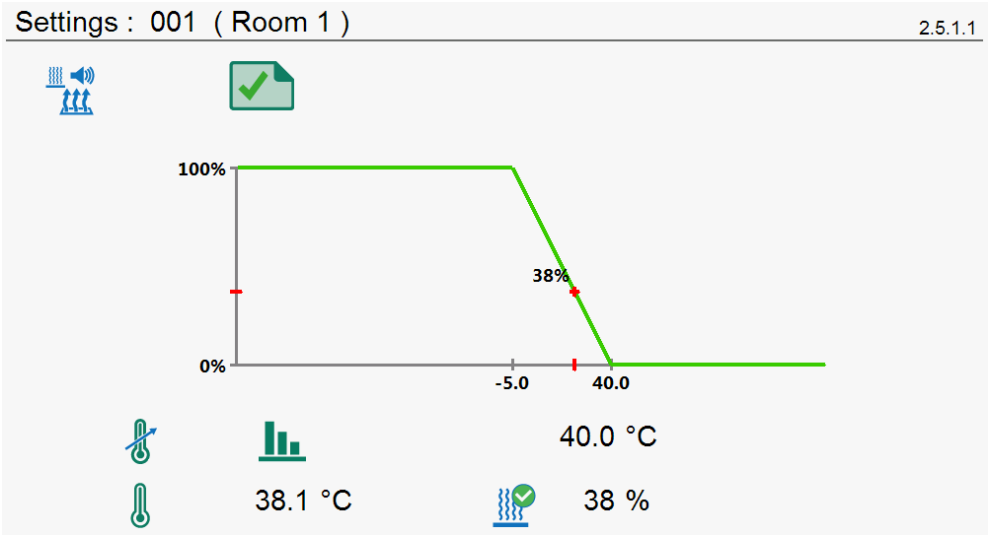
The day numbers can only be set in the “Room curve”.

INLET HEATING ALARM

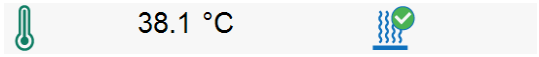


	Inlet temperature alarm “On”
	Inlet temperature alarm “Off”
9.9 °C	Current inlet temperature alarm
-05.0 °C 5.9 °C	Minimum inlet temperature alarm limit
05.0 °C 15.9 °C	Maximum inlet temperature alarm limit
35.0 °C	Absolute inlet temperature alarm limit

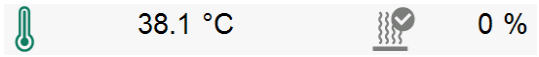
FLOOR HEATING



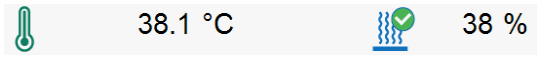
40.0 °C	40.0 °C	• Floor temperature setting • Calculated floor temperature
	40.0 °C	• Floor temperature setting from curve



- Current floor temperature
- Floor heating status (“On/Off heating”)

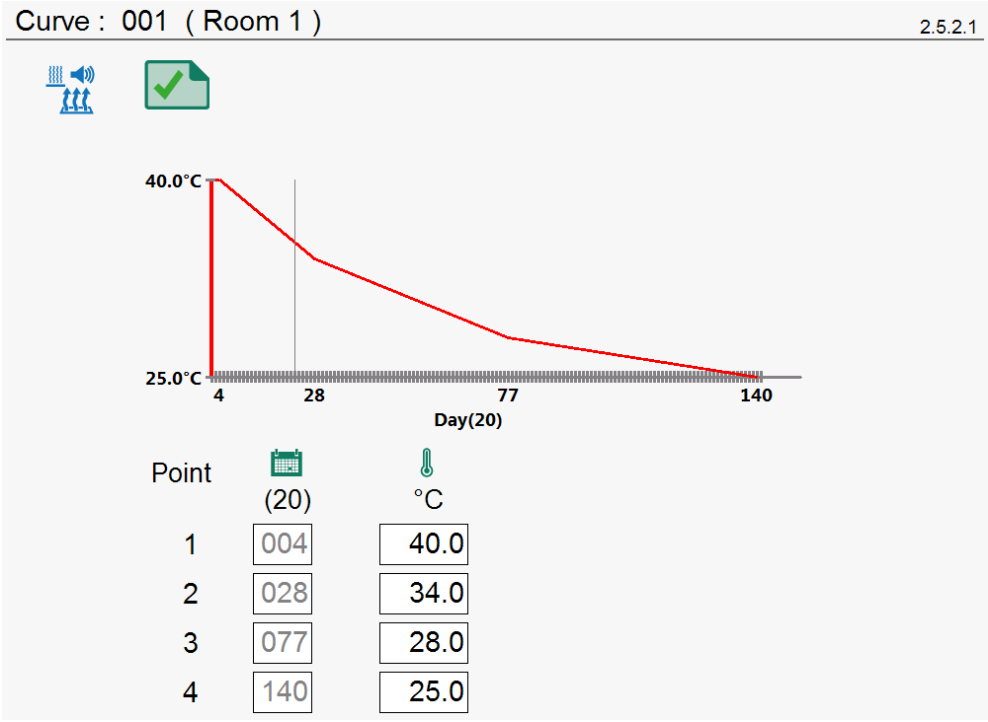


- Current floor temperature
- Floor heating status (heating is: “Off”)
- Current heating capacity (“controlled heating”)



- Current floor temperature
- Floor heating status (heating is: “On”)
- Current heating capacity (“controlled heating”)

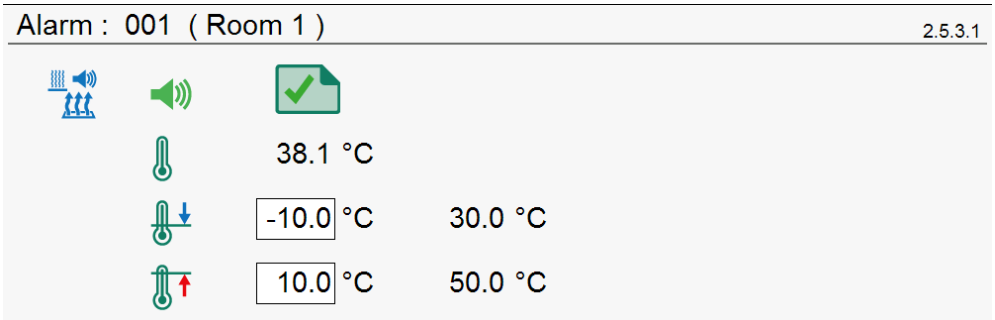
FLOOR HEATING CURVE



Point	Breakpoint number
(20)	Breakpoint day number (the value under is the current day number)
°C	Room temperature for the preset day number.

The day numbers can only be set in the “Room curve”.

FLOOR HEATING ALARM

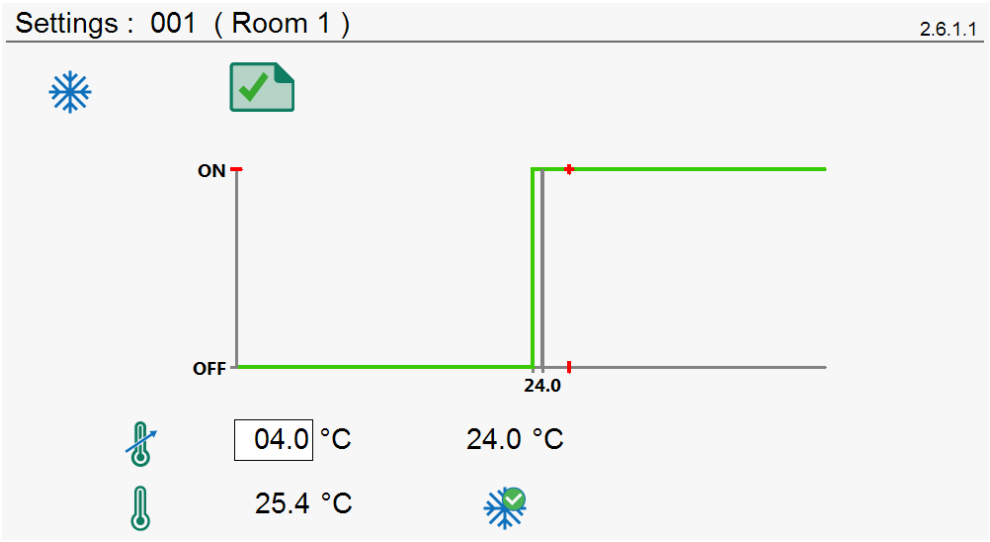


Floor heating alarm “On”

Floor heating alarm “Off”

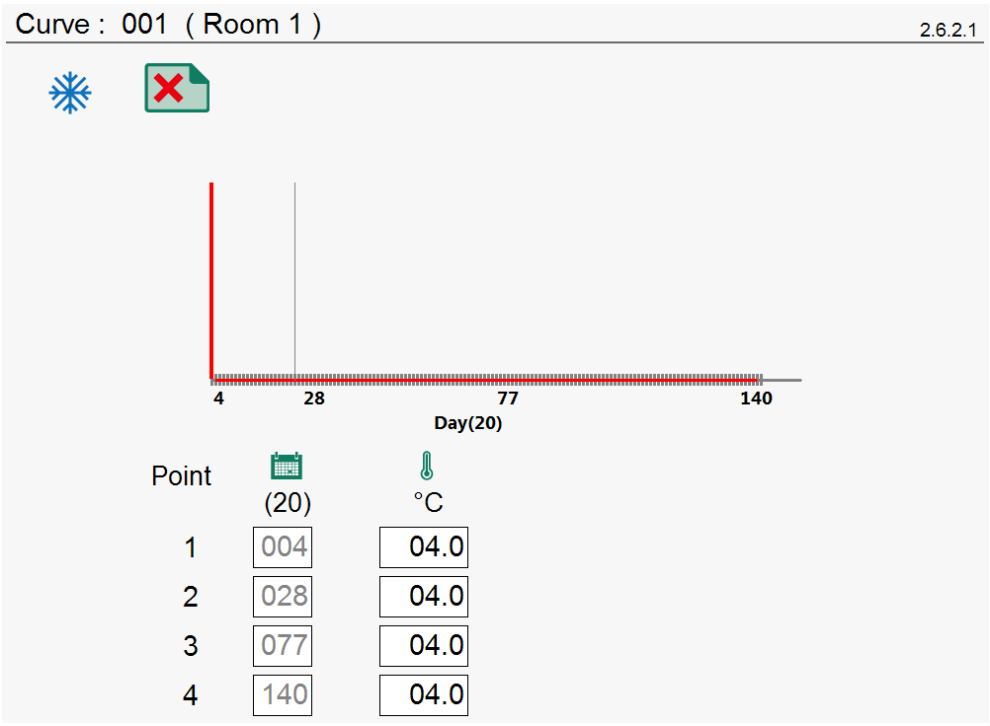
	38.1 °C		Current floor heating temperature
	-10.0 °C	30.0 °C	Minimum floor heating alarm limit
	10.0 °C	50.0 °C	Maximum floor heating alarm limit

COOLING

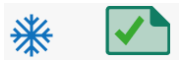


			Cooling “On”
			Cooling “Off”
	04.0 °C	24.0 °C	• Cooling temperature setting • Calculated cooling temperature
		25.0 °C	• Cooling temperature setting from curve
	25.4 °C		• Current cooling temperature • Cooling status “On”
	20.3 °C		• Current cooling temperature • Cooling status “Off”

COOLING CURVE



Cooling curve “On”



Cooling curve “Off”

Point

Breakpoint number

(20)

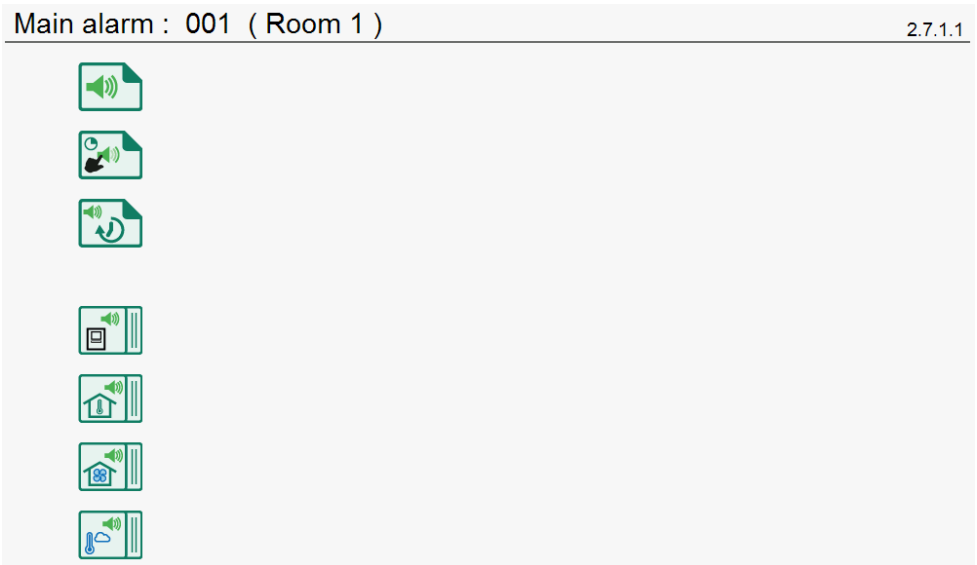
Breakpoint day number (the value under is the current day number)

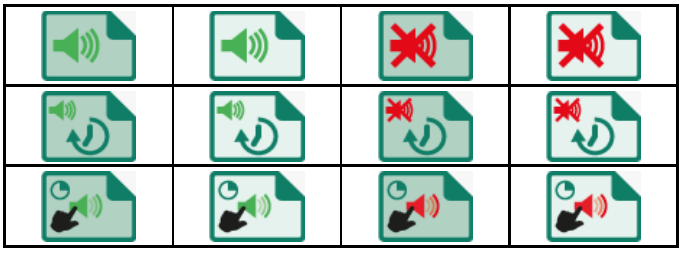
°C

Cooling temperature for the preset day number.

The day numbers can only be set in the “Room curve”.

ALARM





Main alarm on/off

Alarm temporarily off

Siren test

MAIN ALARM

If the main alarm is off, the LED bar will flash red, at a regular frequency. No alarms will be generated then. See also LED bar page 5.

ALARM TEMPORARILY OFF

Temporarily disabling the main alarm (siren). Hardware alarms cannot be switched off temporarily. The main alarm is switched off for 30 minutes (the LED bar will flash irregularly). The main alarm is switched on automatically again after 30 minutes. The alarm relay will de-energize again, causing an alarm, if the cause of the alarm has not been removed.

SIREN TEST

Test the alarm relay (siren). The alarm relay (siren) is switched on for 120 seconds.

ALARM STATUS

Alarm on			Alarm off (alarm relay is NOT switched on)			
No alarm	Alarm in the making	Alarm (alarm relay in)	No alarm	Alarm in the making	Alarm	
						Device
						Room temperature
						Ventilation
						Outside temperature
						Inlet heating
						Room heating
						Central ventilation
						Central ventilation pressure control
						Central inlet flap
						Central heating
						Pressure measurement

ALARM CODES

Module not found

Jumper A on RTCPU is in its lower position, set jumper A to its upper position or else the changes will not be saved.

Communication error between devices.

Communication error with WEB-485 (FramConnect)

No data from climate controllers

No ventilation (measurement = 0%).

Ventilation too low

Ventilation too high

No outside temperature sensor

Temperature sensor faulty

Pressure sensor faulty

Temperature too low

Temperature too high

Pressure too low

Pressure too high

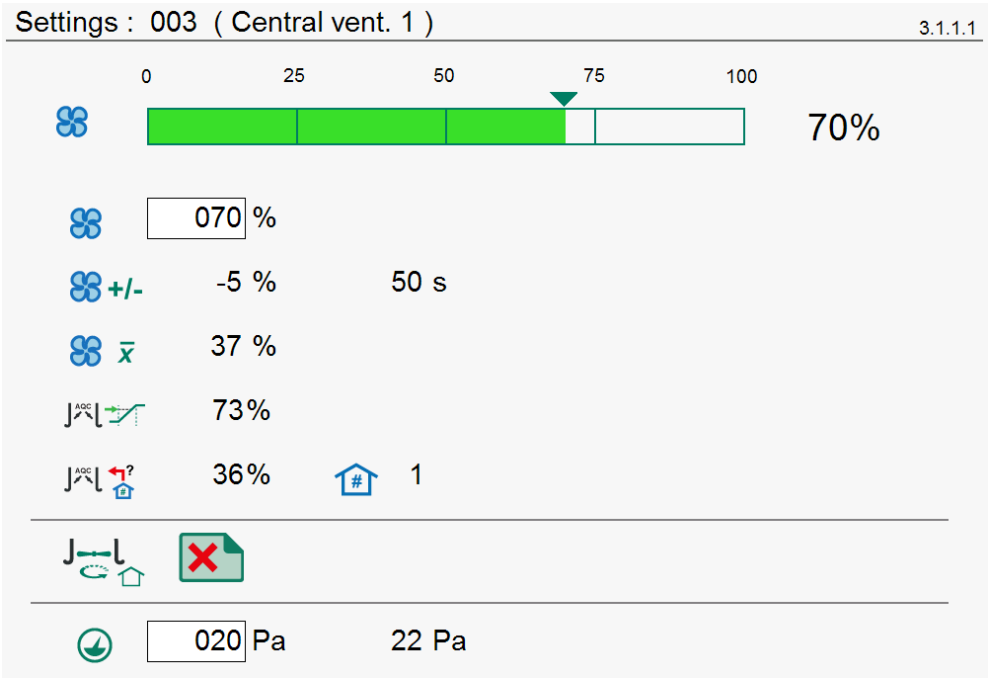
1

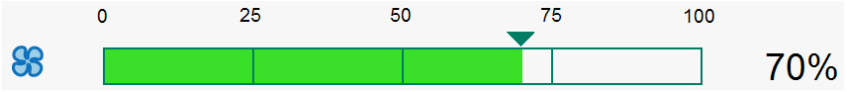
If no icon is linked to the alarm code, the alarm code will be shown in a red box (please contact your supplier to report this alarm situation in order to make sure that this alarm code will be displayed correctly in the future).

Note **NEVER FORGET TO SWITCH AN ALARM "ON" AGAIN AFTER IT WAS SWITCHED OFF (e.g. in order to remedy a malfunction)**. Failing to switch the alarm back on may have adverse effects for people, animals, equipment or property.

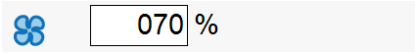
Preferably use the *alarm temporarily off* function to remedy a malfunction.

CENTRAL VENTILATION

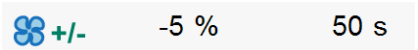




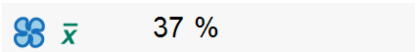
Graphic view of the current ventilation.



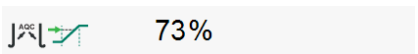
Current central ventilation.



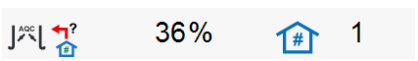
Ventilation correction by xxx% in xxx seconds.



Average ventilation in the rooms

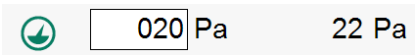


Optimum valve position in the room



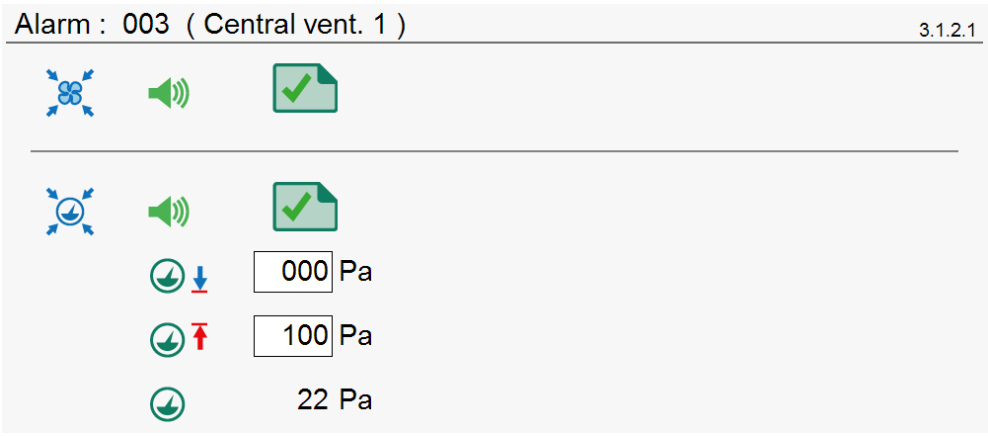
Highest valve position xxx% in room xx

Restart measuring fans in the rooms.



Pressure in central duct.

CENTRAL ALARM



Central ventilation control alarm on/off

No data from climate controllers.

No ventilation (measurement = 0%).

Central ventilation pressure control alarm on/off (input R1)

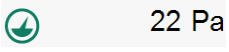
Pressure sensor faulty.

Pressure too low.

Pressure too high.

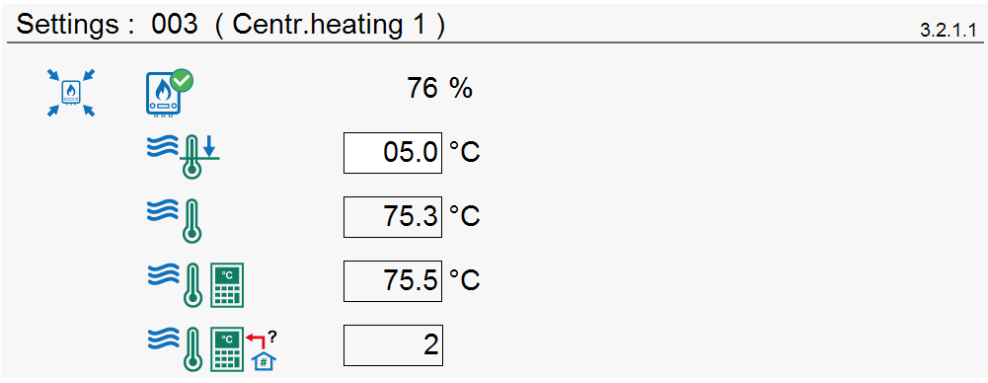
Minimum central ventilation pressure control alarm limit.

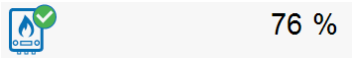
Maximum central ventilation pressure control alarm limit.



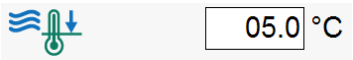
Current pressure.

CENTRAL HEATING

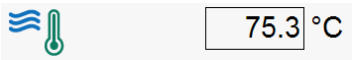




- Central heating status (heating is: “On”).
- Current heating capacity of central heating (“controlled heating”)

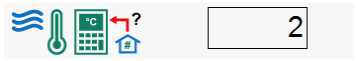


Minimum heat request (frost protection). If the temperature in the rooms (which pass on their heat request to this central heating boiler) falls to below the minimum heat request setting, the central heating boiler will switch on.



Current water temperature

Calculated water temperature



Room with the highest heat request.

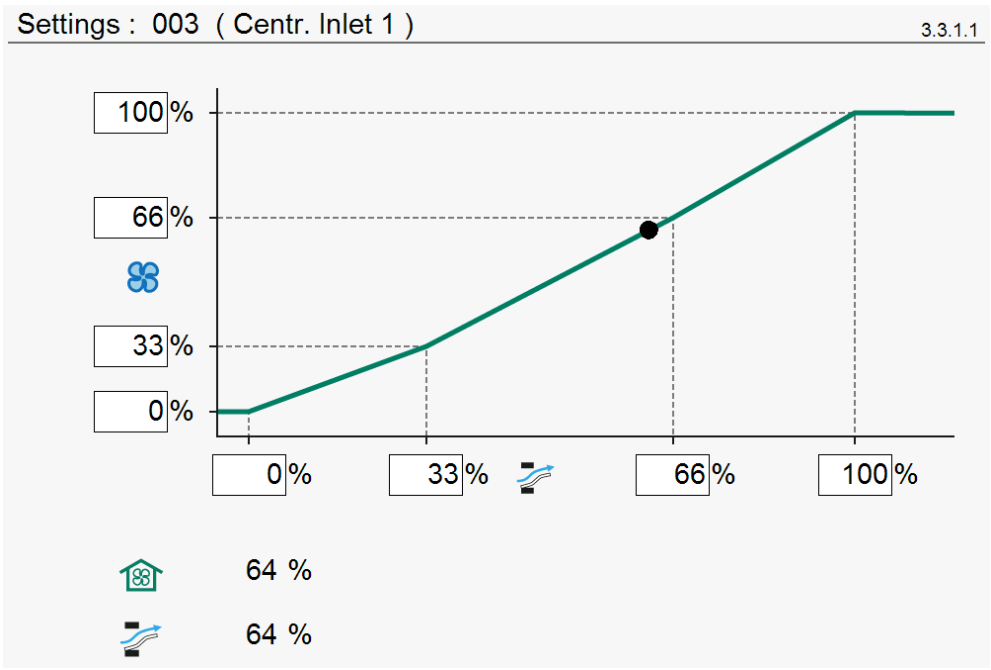
Central heating alarm on.

No data from KLD-100 controllers.

Water temperature sensor faulty.

Central heating alarm off.

CENTRAL INLET FLAP



The flap controls on the basis of ventilation. Normally, the opening of the flap is directly proportional to the flap position as a %. The air displacement caused by this flap, however, is not directly proportional to the flap position. The characteristic can be used to obtain a better flap position/air displacement ratio.

Current ventilation

Current valve position

ALARM

Central flap control alarm on.

No data from KLD-100 controllers.

Central flap control alarm off.

PRESSURE MEASUREMENT

Settings : 003 (Air wascher 1) 3.4.1.1

25 Pa

25 Pa Current pressure (R2)

ALARM

Alarm : 003 (Air wascher 1) 3.4.2.1

010 Pa

100 Pa

25 Pa

Pressure measurement alarm on.

Pressure sensor faulty.

Pressure too low.

Pressure too high.

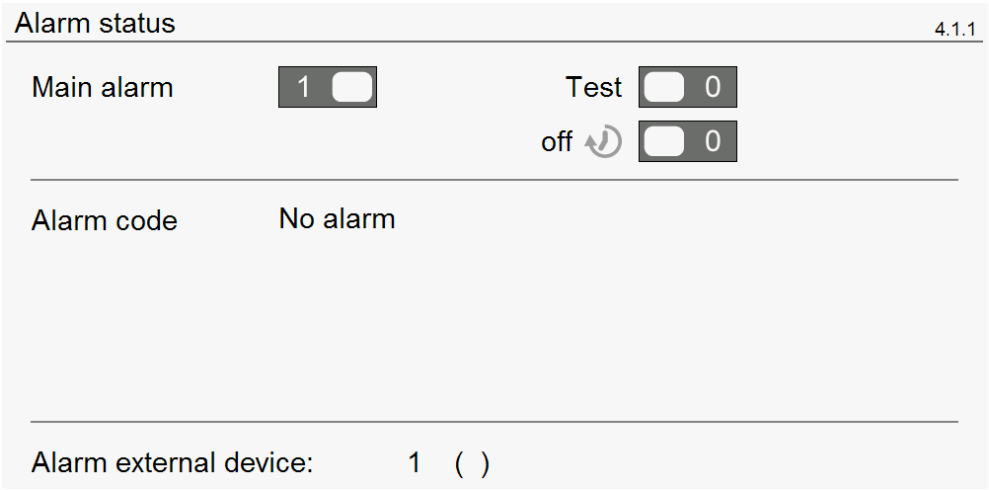
Pressure measurement alarm off.

010 Pa Minimum central ventilation pressure control alarm limit.

100 Pa Maximum central ventilation pressure control alarm limit.

25 Pa Current pressure.

ALARM STATUS



Main alarm 1 — Main alarm 1 0 (on/off).

off 0 — 1 Set the "off" slider to the 1 position in order to temporarily switch off the main alarm (siren). All the alarms will be blocked temporarily. This does not apply to the hardware alarms; they cannot be switched off temporarily. The main alarm is switched off for 30 minutes (the LED bar is flashing red irregularly). The main alarm is switched on automatically again after 30 minutes. The alarm relay will de-energize again, causing an alarm, if the cause of the alarm has not been removed.

0 Clear delay time: set the "off" slider to the 0 position.

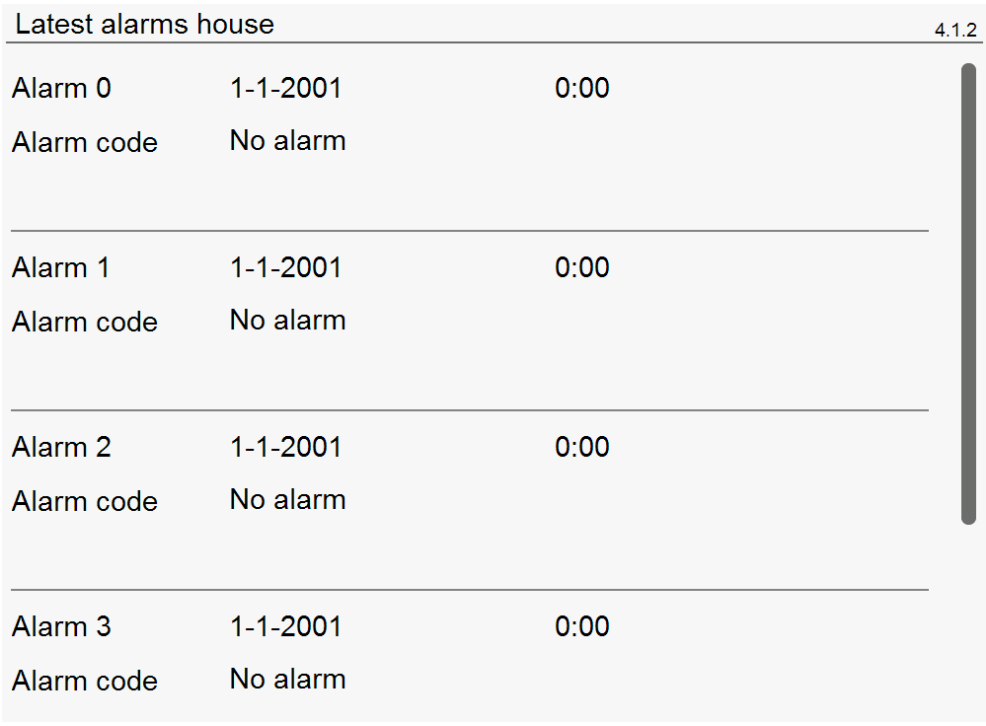
Test 0 — Test the operation of the alarm relay (siren). Set the "Test" slider to the 1 position to activate the alarm relay (siren) for 120 seconds. Clearing the alarm test time: Set the "Test" slider to the 0 position.

Alarm code — Display of alarm cause and alarm control (and possibly the terminal number or address).

Alarm external device: — An alarm has occurred for an external device (KLD-100 or KLC-100); the text is followed by the device address.

NEVER FORGET TO SWITCH AN ALARM "ON" AGAIN AFTER IT WAS SWITCHED OFF (e.g. in order to remedy a malfunction). Failing to switch the alarm back on may have adverse effects for people, animals, equipment or property.
Preferably use the Off function to remedy a malfunction.

ALARM HISTORY

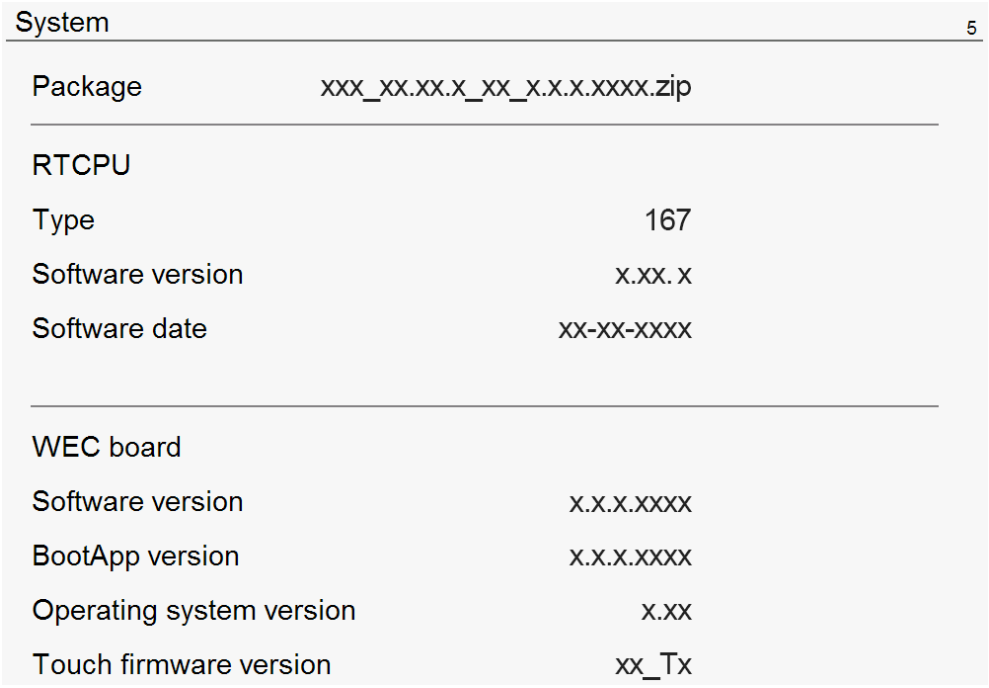


The latest 5 alarm causes which caused the alarm relay to de-energize are shown. The dates and times of the alarms are listed in addition to their causes.

Alarm 0: Shows the cause of the *most recent alarm*. The time until which the last alarm was (is) active is also indicated.

COMMUNICATION ALARM

SYSTEM



Package : This shows the package number of the compressed software files.

RTCPU

Type : Device type number (167 = KL-6500).

Program version : Program version number of the embedded software (RTCPU processor PCB).

Program date : Program date of the embedded software

WEC board

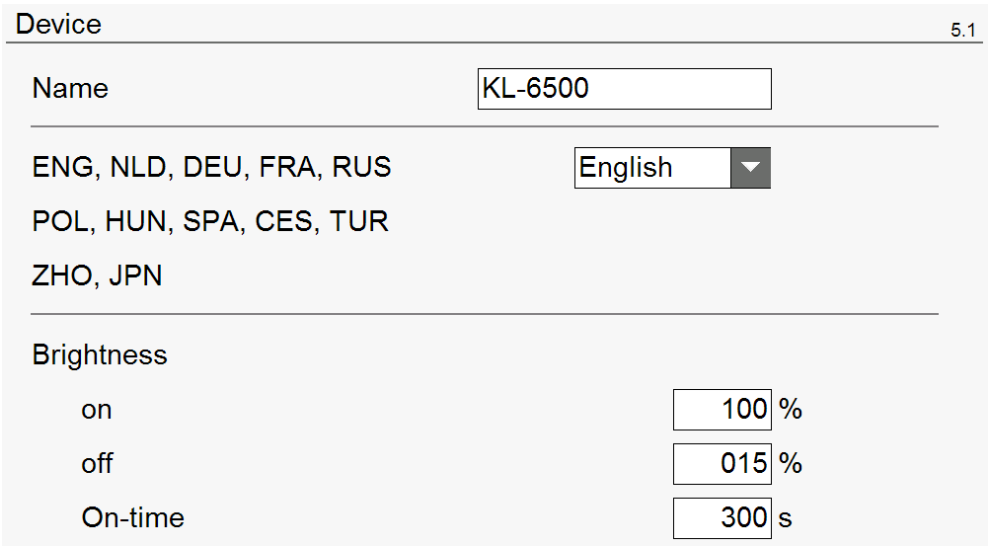
Program version : Program version number of the WEC board software (GuiApp).

BootApp version : Program version number of the BootApp software.

Control system version : Program version number of the GuiApp operating software.

Touch firmware version : Program version number of the touch firmware software.

DEVICE



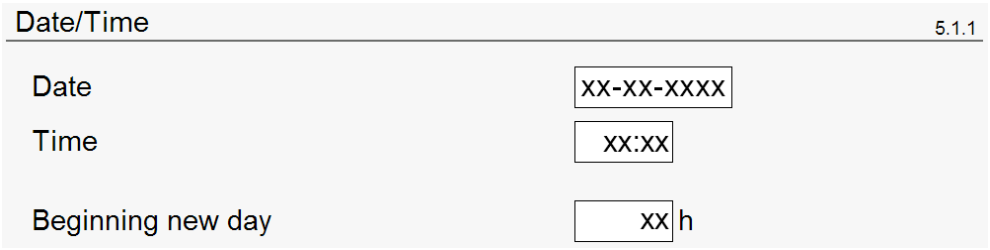
Change the device name, the language shown and other features.

BRIGHTNESS

on : Background lighting brightness as a percentage during the “On time”.
Off : Background lighting brightness as a percentage after the “On time” has elapsed.
On-time : Number of seconds during which the screen is lit with the “Brightness” “On” percentage after the last time a key was pressed.

Set 0 seconds: the light does not switch off, the “On time” for the “Remote control” is set to 300 seconds.

DATE AND TIME

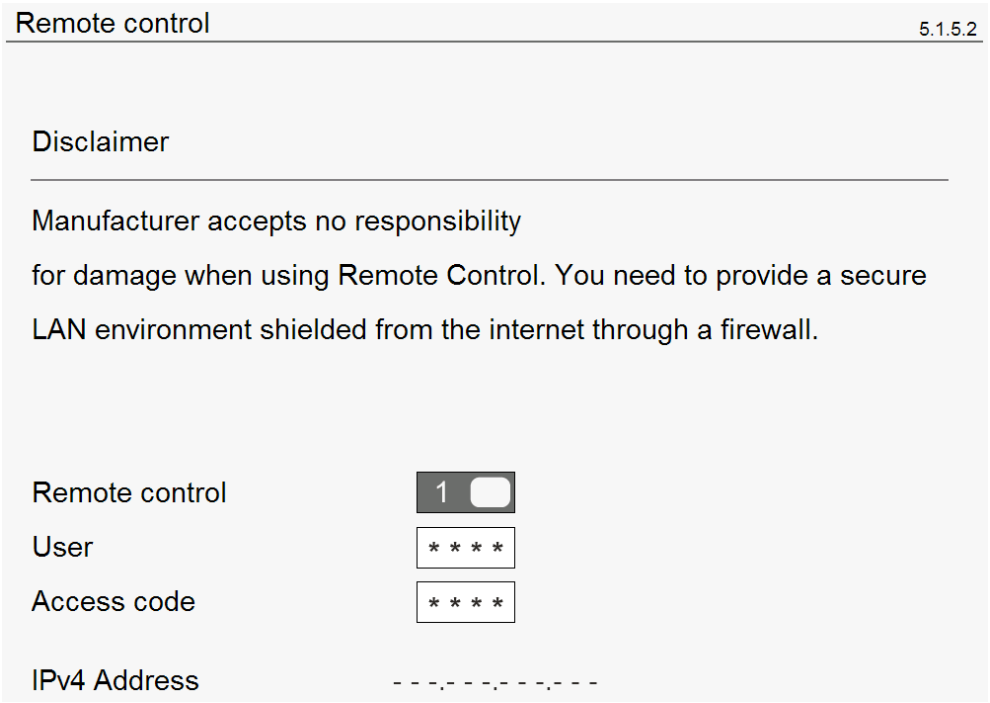


Set the date and time, and “Beginning new day”.

REMOTE CONTROL

Stienen BE does not accept any responsibility for any damage or loss when the “Remote control” is used. You have to ensure that there is a secure LAN environment, protected by a firewall.

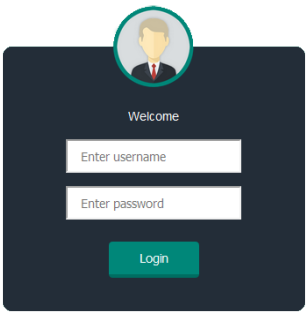
If the installer has activated “Remote control”, the menu will feature the option.



If the KL-6500 is connected to a network, an IP address (IPv4 address) will automatically be assigned to the controller after you have entered the codes. You need this IP address in order to connect to the device through the browser.

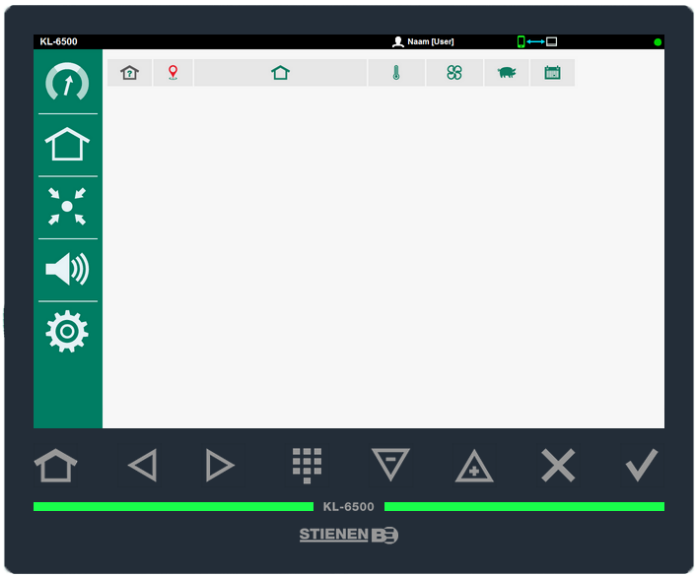
1. Set the “Remote control” slider to the 1 position.
2. Enter a user code (the code must not be 0000).
3. Enter an access code (the code must not be 0000).
4. Write down the IP address.

LOGIN



- Open the Internet browser.
- Enter the IP address in the address bar and press ENTER.

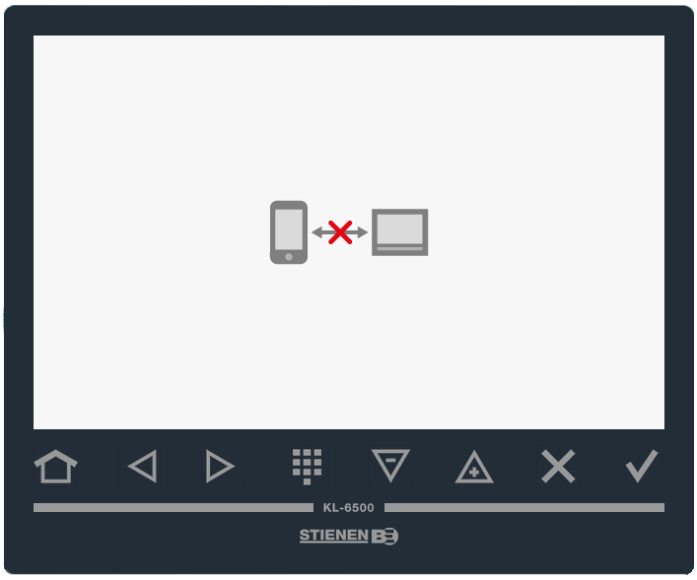
- Press the TAB key.
- Enter the username and press the TAB key.
- Enter the password and press the TAB key.
- Press the ENTER key (“Login“).



- The symbol is shown at the top of the status bar to indicate that the device is operated remotely.
- If the device is operated locally, the remote connection is deactivated and you can only remotely see what is being changed, the coloured symbol will change to a grey symbol.
- If the device is operated locally (grey symbol) and you mouse-click on one of the fields (keys), the system will log out automatically; you will have to log in again then.

The input fields and symbols can only be accessed by using your mouse (not by means of the keyboard).

AUTOMATIC LOGOUT



If there is no action during the “On time” (5 minutes by default), the device will automatically log off when the “On time” has elapsed.

Whenever an action takes place, the timer is filled with the “On time” again.

MAINTENANCE AND INSPECTION

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

- **Do not forget to clean the ventilation system when cleaning the animal house.**
  To minimise the energy consumption, it is important that the fans are clean. This also applies to the flaps, measuring fans and the ventilation pipe Dust and dirt may affect the operation of the equipment. You can use a brush to clean the fans and tubes. Use a moist cloth to clean the climate control, the measuring fan impeller and the flaps. Never use a pressure cleaner to clean the climate control, the measuring fan impeller, flaps and other electrical equipment.

- **Check the underpressure in the house at regular intervals.**
  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 rising temperatures. This will result in the fans having to work much harder than is usually required. When opening or closing the doors to the house, be alert to any resistance which you may feel. If you can feel the underpressure, you should check that the filters and flaps work properly.

- **Check the house for air leakage.**
  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 pre-set 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 good time.

- **Check the measured values and settings**
  Since the climate control does what the sensors indicate, you should check the values measured by the sensors at regular intervals (e.g. whenever you have cleaned the animal house). We recommend having an expert check all settings and measured values at least once a year.

- **Fan**
  Switch on all fans briefly, at least once a week, even in winter, to prevent the fans 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 the ventilation tubes at least once a year.

Good climate control is crucial for good business operations. Disease prevention starts with an optimum climate in the house. **Regular inspection of the fans and the climate controls is necessary.**