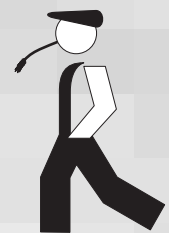


Viper Climate and Production Computer User's Manual • Basic-Step



Program Version

The product described in this manual holds software. This manual corresponds to:

- Software Version CPU 5.5

It was released in December, 2006

Product and Documentation Changes

Big Dutchman reserve the right to change this document and the product herein described without further notice. In case of doubt, please contact Big Dutchman.

Latest date of change appears from the back page.

IMPORTANT

NOTES CONCERNING THE ALARM SYSTEM

Where climatic control is used in livestock buildings, breakdowns, malfunctions or faulty settings may cause substantial damage and financial losses. It is therefore most important to install a separate, independent alarm system, which monitors the house concurrently with the climate computer. According to EU-directive No. 91/629/EEC and 91/630/EEC an alarm system must be installed in any house that is mechanically ventilated.

Please note that the product liability clause of Big Dutchman's general terms and conditions of sale and delivery specifies that an alarm system must be installed.












In case of misoperation or improper use, ventilation systems can result in production loss or cause loss of lives among animals.

Big Dutchman recommend that ventilation systems should be mounted, operated and serviced only by trained staff and that a separate emergency opening unit and an alarm system be installed as well as maintained and tested at regular intervals, according to Big Dutchman's terms and conditions of sale and delivery.

Note

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1 INTRODUCTION

This user's manual deals with the operation of the Viper Climate and Production Computer. The user's manual provides the user with the fundamental knowledge about the functions of the computer that is required to ensure optimum use of Viper.

The manual contains a complete description of all the functions of the climate and production computer. Furthermore, the structure of the manual follows the menu structure of the computer. As the Viper software is modular software, this manual will contain sections that are irrelevant to the setup of your computer. If in doubt, please contact Big Dutchman service or your Big Dutchman dealer.

The Viper climate and production computer controls the climate according to the control principle Basic-Step.

With Basic-Step, the climate is regulated on the basis of P-band regulation. This type of climate regulation is very flexible for you as a user if you want to be able to influence the setting and adjustment of several climate functions on a daily basis; however, this also means that you will have to adjust the climate settings on a daily basis. Temperature and minimum ventilation curves have been entered. No humidity control is available in Basic-Step.

Viper is a climate and production computer which is capable both of regulating and monitoring the climate and production in poultry houses.

Big Dutchman would like to congratulate you on your choice of a new
Viper Climate and Production Computer

2 USER'S GUIDE

2.1 Get started

2.1.1 Keyboard

Outline menu key

- read the outline screen
- gain direct access to setting values

Numeric keyboard

- used to enter values
- the keys 1-4 are used as shortcut keys when the outline screen is displayed

Main menu key

- read the values and settings in the function menu
- set function menus

Information key

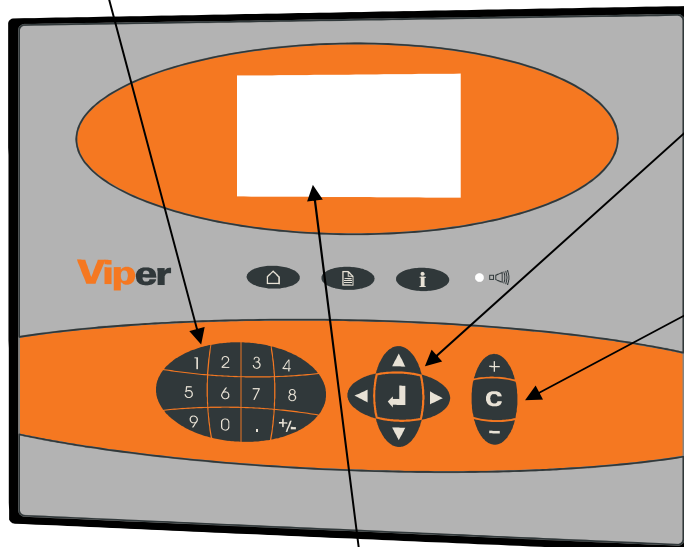
- gain access to the help menu

Alarm lamp

Quick flashing → alarm

Slow flashing → acknowledged alarm

Constant light → non-acknowledged alarm where the error has disappeared



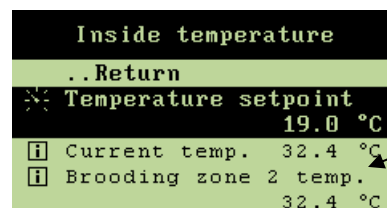
Arrow keys and enter key

- with the arrow keys, you can move around in the menus
- with the enter key, you can connect or disconnect functions and accept changes

+, - and C key

- used to change/delete settings – e.g. when changing the house name

Display




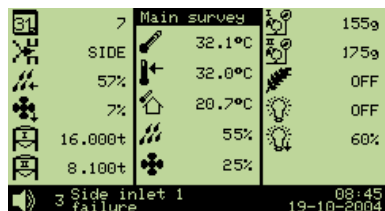
A scroll panel on the right side of the display shows you how long the menu is and where you are in the menu.

Values, which are readings or calculations, are in normal type. The values and functions, which you can change, are highlighted in **bold type**.

2.1.2 Display and Menus

2.1.2.1 Outline Screen

To gain access to the outline screen that provides you with an overview of the current conditions in the house, press the outline key  once. Here, you can read the values which you will be needing most often in your work.



- The icons indicate which menu item is involved
- The settings can be changed directly from the outline screen when the setting is selected

























Icon	Menu text	Icon	Menu text
	Temperature setpoint		Auxiliary sensor
	Indoor temperature		Negative pressure
	Outside temperature		Effective temperature
	Ventilation		Wind speed
	Minimum ventilation		Day no.
	Alarm		Feed
	Zone		Light
	Side mode		Light dimmer
	Tunnel		Silo
	Humidity		Animal weigher
	Cooling		Number of animals
	Heating		Water

Table 1: Icons in the Outline Screen

2.1.2.1.1 Message line

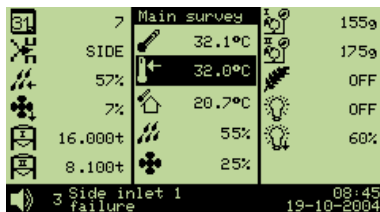
At the bottom, the display shows a message line, which for instance informs about acknowledged alarms and the fact that the computer is set to in-between function in connection with cleaning.

The current time and date are indicated farthest to the right.

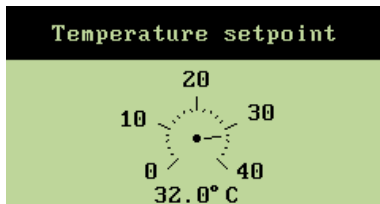
When, in connection with setup or service, the computer is set to manual regulation of the system, Viper will indicate the manual control in the message line.

The display reading returns to the outline screen when the computer has not been operated for ten minutes.

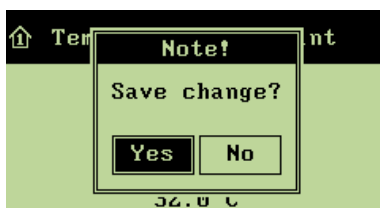
2.1.2.1.2 Changing a Setting via the Outline Screen,



→ select the required setting (e.g. **Temperature setpoint**), and press the enter key



→ change the setting



→ when **Yes** is highlighted, press to approve and save the change

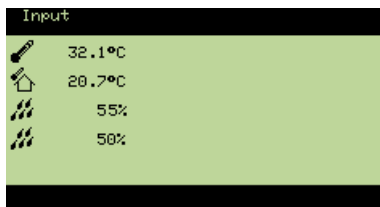
or

→ when **No** is highlighted, press to undo

2.1.2.1.3 Installation Overview via Outline View

The numeric keyboard can help you to get an overview of what has been installed on inputs and outputs as well as which climate and production functions have been installed.

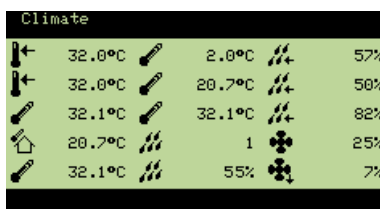
2.1.2.1.3.1 Outline of Inputs



→ press **1** on the numeric keyboard

From this menu, you can read the values of the individual inputs.

2.1.2.1.3.2 Outline of Climate Functions



→ press **2** on the numeric keyboard

From this menu, you have direct access to change the values set. (e.g. **Temperature setpoint**)

2.1.2.1.3.3 Outline of Production Functions

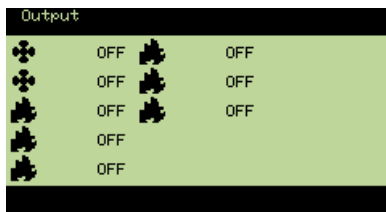


→ press **3** on the numeric keyboard

From this menu, you can read the values of the installed production functions.

In the right corner of the display an arrow indicates if more functions are available than shown in the display.


2.1.2.1.3.4 Outline of Outputs

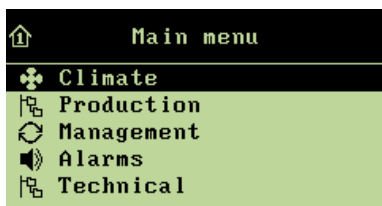


→ press **4** on the numeric keyboard

From this menu, you can read which functions are active/inactive.

2.1.2.2 Function Menus

To gain access to reading and setting the menus, press the  main menu key. The Climate, Production, Management and Alarms menus are for the everyday user while the menus under Technical have to be changed only if changes are made to the actual installation (if necessary, see the *Technical Manual*).



All the Viper functions can be accessed via these menus by selecting the required function (e.g. **Climate**), and pressing the enter key.

(an outline of the functions of the individual menus is provided at the start of each menu section).









Icon	Function	Icon	Function
	Setting		Options
	Reading		More submenus
	Connect		Curve setting
	Disconnect		Entering of code/name

Table 2: Operating icons

2.2 Climate Functions

























	 Control	
	 Temperature	 Inside temperature  Outside temperature  Cooling
	 Humidity	 Current humidity  Trend humidity  Lowest humidity 24h  Highest humidity 24h
	 Ventilation	 CO2 min. ventilation  Ventilation status
	 Tunnel	 Pad cooling  Tunnel status
	 Pressure control	 Pressure demand  Pressure setpoint  Pressure regulator actual value
	 Aux. sensors	
	 Stir fans	 Stir fan 1-6

Table 3: Outline of the climate menu

2.2.1 Control












	
See section 2.2.1.1 concerning setting of matrix	 Target temp. (temp.setpoint) 19 °C
	 Side control
	 Room heat 17.5 °C
	 Room control
	 Brooding heat 17.5 °C
	 Brooding control
	 Start tunnel 27 °C
	 Stop tunnel 23 °C
See section 2.2.1.3.2	 Tunnel control
	 Timer setup

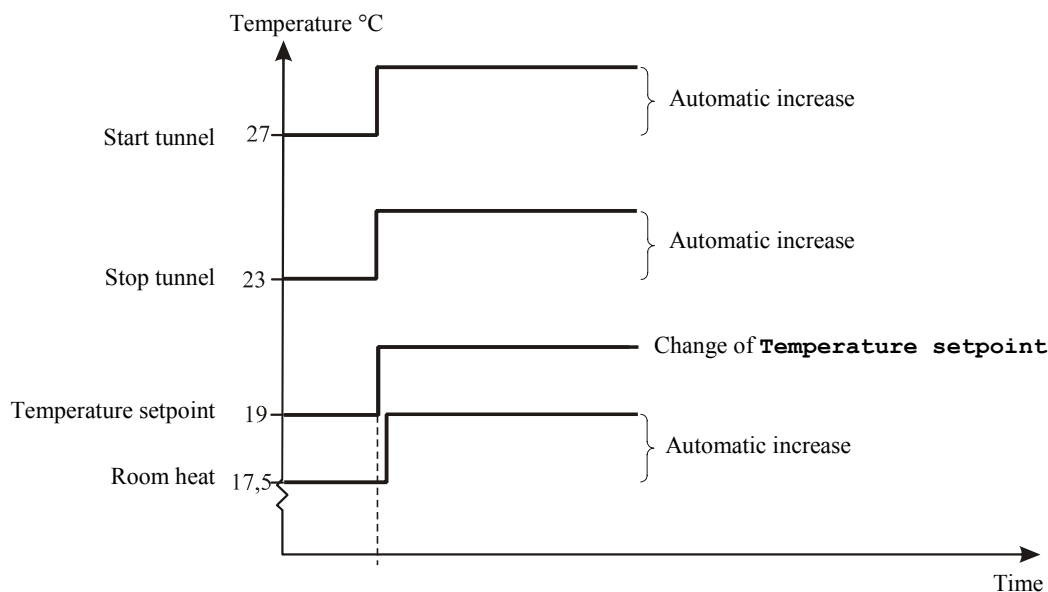
Table 4: Outline of the control menu

The **Control** menu gives you access to setting of each side and tunnel fan and each room and brooding heater by means of matrix menus.

The menu item **Target temp.** corresponds to **Temperature setpoint** in the **Temperature** menu (see section 2.2.2.1.1).

The settings of **Room heat**, **Start tunnel** and **Stop tunnel** and **Tunnel control** depend on **Target temp.** Thus, if you change **Target temp.** by 2 °C, Viper will automatically change these settings by a corresponding number of degrees.

Example 1: Dependent temperature settings



*If you wish to increase **Temperature setpoint** without increasing the dependent temperature settings, you must, after having regulated **Temperature setpoint**, reduce the settings by the corresponding number of degrees.*

2.2.1.1 Room Control

This section is relevant only to houses with heating systems.

In houses with heating systems, the Viper computer adjusts the inside temperature according to the set temperature and a lower temperature limit.

2.2.1.1.1 House Heaters

Viper controls the heating level of the house according to the climate conditions in the active grow zone of the house. When only 1/3 and 2/3 of the house are used as grow zone (**Grow zone 1** or **2**), Viper can control both the heaters in the active zones and ensure that they run at minimum in the inactive grow zones. This way, you avoid condensate on the curtains, and the inactive zones are heated faster when they are to be used as grow zones again. You can use up to six **Heaters**.

2.2.1.2 Brooding Control

2.2.1.2.1 Brooding Heaters

Viper controls the heating in the brooding zones of the house, independently of the heating level in the rest of the house. As heating is concentrated around the brooding zones, the house temperature outside the zones can be kept down to reduce heating consumption. Viper controls the temperature in the brooding zones and heats them by means of heaters located in each zone. Each heater belongs to a specific brooding zone, and when you activate a brooding zone, you also activate the heater of the zone. You can use up to four **Brooding heaters**.

2.2.1.3 Control-Matrix

Temp Current temperature.
If more than one temperature sensors are installed, the value is shown as an average.

For each fan/heater you can specify the following:

ON Temperature setpoint that activates fan or heater

OFF Temperature setpoint that stops fan or heater

Timer Select type of timer function for fan or heater. See section 0.

1-8 Select according to which temperature sensors the individual fan or heater is to be regulated

Side control														
	Temp	ON	OFF	Timer	1	2	3	2	3	4	5	6	7	8
Side fan 1	20.3	19.0	18.0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Side fan 2	20.3	19.0	18.0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Side fan 3	20.3	20.0	19.0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Side fan 4	20.3	21.0	20.0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Side fan 7	20.3	24.0	23.0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Side fan 8	20.3	25.0	24.0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spray cool 1	20.3	23.0	22.0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I **Side control** you can also set **Spray cooling**.

I **Tunnel control** you can also set **PAD cooling**.

2.2.1.3.1 Select Timer Function

In each control matrix you can choose between five timer functions (see Table 5).

The graphs in Table 5 corresponds to these settings:

ON-time 60 sec.

Cykle time 300 sec.

ON-temperature 30 °C

OFF-temperature 29 °C

- Temperature decreases
- _____ Temperature increases

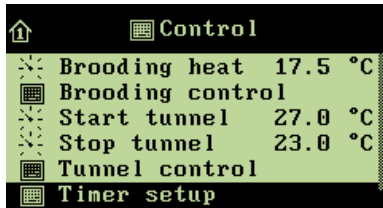
Name	No.	At	Type
(blank line)	1	Side fans Tunnel fans Spray cooling PAD cooling Heat	Always ON
Minimum timer	2	Side fans Tunnel fans	ON/OFF
Cooling timer	2	Spray cooling PAD cooling	ON/OFF
		Ramp	
Turn on	1	Side fans Tunnel fans Spray cooling PAD cooling House heaters Brooding heaters	ON/OFF
Stir fan timer	2	Side fans Tunnel fans	ON/OFF
		Ramp	

Table 5: Setting options for timer functions

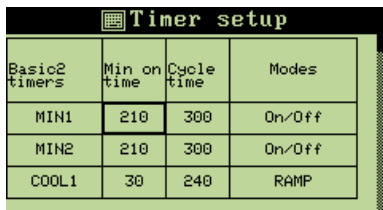
2.2.1.3.2 Set Timer Function

For each timer you must indicate an ON-time and a cycle time and in which mode (ON/OFF, Ramp) the timer is to run.

When you want to... set a timer, open the **Control** menu, and



→ select **Timer setup**, and press



→ select the required field, and press



→ set a number of seconds



and

→ set a mode

2.2.2 Temperature


















			
Inside temperature		Temperature setpoint	22.0 °C
		Current temp.	21.8 °C
		Heat zone 1-6 temp.	18.0 °C
		Brooding zone 1-4 temp.	18.0 °C
		Trend temperature	
		Lowest temp. 24 h	21.2 °C
		Time for lowest temperature	05:38:00
		Highest temp. 24 h	22.2 °C
		Time for highest temperature	15:43:00
	Outside temperature		Outside temperature
		Trend outside temp.	
		Lowest outside temp. 24 h	14.2 °C
		Time for lowest outside temp.	05:38:00
		Highest outside temp. 24 h	25.2 °C
		Time for highest outside temp.	15:43:00
Cooling		Stop cooling	85 %

Table 6: Outline of the temperature menu (changeable values are highlighted in bold types)

2.2.2.1 Inside Temperature

Viper controls the inside temperature according to the set temperature. The house is heated by the heat generated by the animals and possibly by a heating system.

When the inside temperature is too high, the Viper computer increases ventilation by supplying more fresh air, and when the temperature is too low, the computer limits ventilation in order to maintain the heat in the house.

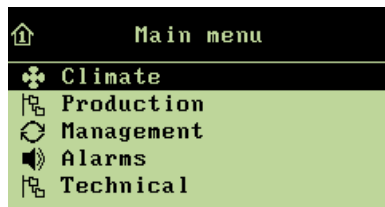
With Viper the house can be divided into three **Grow zones**. Each grow zone is assigned a number of temperature sensors to register the temperature in each zone. According to the age and the size of the animals Viper activates the zones (see the menu **Technical / Setup / Adjustment / Climate / Configuration** in the *Technical manual* regarding setting of number of grow zones).



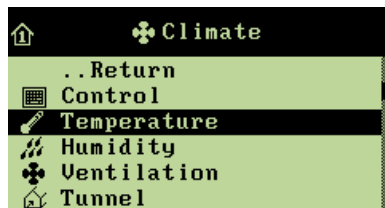
When the individual temperature sensor has been assigned to a zone, it will be active only when the associated zone is active. Thus, the sensors in **Grow zone 2** and **3** are inactive when **Grow zone 2** and **3** are inactive. Viper's temperature indication therefore depends on which grow zone is active.

All menu items ... in the temperature menu **Inside temperature** can be set by

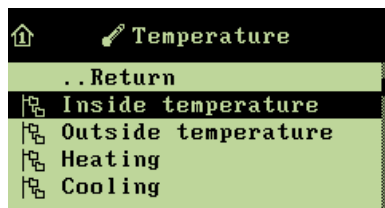
→ pressing the  menu key



→ select **Climate**, and press



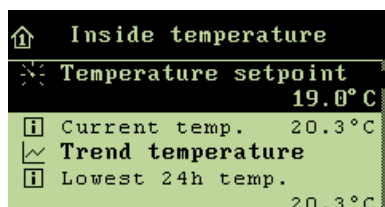
→ select **Temperature**, and press



→ select **Inside temperature**, and press

2.2.2.1.1 Setting the Temperature Setpoint

When you want to ... set the temperature, open the **Climate/Temperature/Inside temperature** menu, and

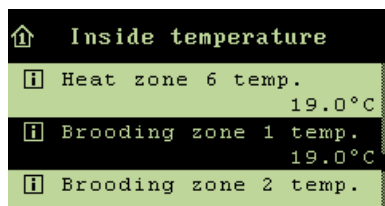


→ select **Temperature setpoint**, and press

→ set the temperature, and press

2.2.2.1.2 Brooding Zone Temperature

The **Climate/Temperature/Inside temperature** menu

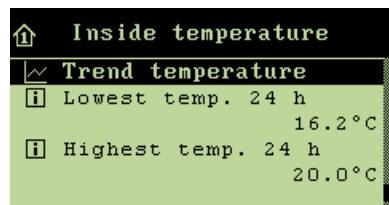


With Viper the house can be divided into three grow zones. **Grow zone 1** can be divided into several smaller zones, brooding zones, where the heat is concentrated around a smaller area in the grow zone.

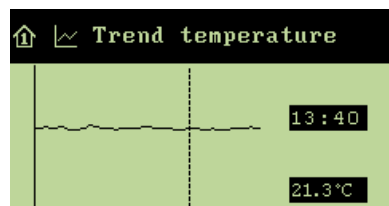
Viper controls the temperature in the brooding zones and heats them by means of heaters.

2.2.2.1.3 Temperature Curve

The **Climate/temperature/Inside temperature** menu.



The **Trend temperature** curve provides you with a clear picture of the temperature development in the house during the last 24 hours.



→ Press the arrow keys to read the exact time and figure values.

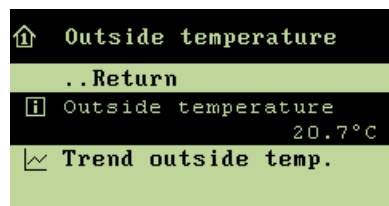
→ Press the enter key to return to the inside temperature menu.

2.2.2.1.4 Lowest and Highest 24-hour Temperatures

The 24h temperatures indicate the lowest and highest measured temperatures within the last 24 hours and the time when they occurred.

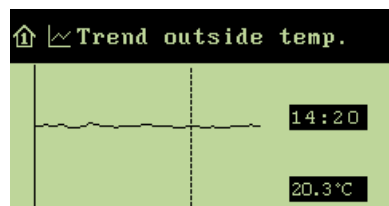
2.2.2.2 Outside Temperature and Outside Temperature Curve

The **Climate/temperature/Outside temperature** menu.



Outside temperature indicates the current temperature outside the house.

In addition, the Viper indicates the lowest and highest outside temperature measured within the last 24 hours and the time when they occurred.



The **Trend outside temp.** curve indicates the temperature development outside the house during the last 24 hours.

→ Press the arrow keys to read the exact time and figure values.

→ Press the enter key to return to the outside temperature menu.

2.2.2.3 Cooling

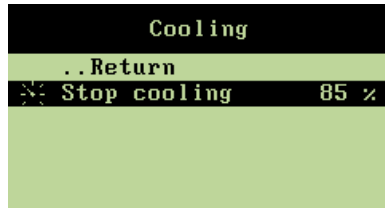
This section is relevant only to houses with cooling systems.

Cooling is used in houses where ventilation cannot reduce the inside temperature sufficiently. Cooling has the advantage over ventilation in that it can bring the inside temperature down below the outside temperature. On the other hand, cooling will also increase air humidity in the house.

Viper activates cooling when the inside temperature rises above the **Temperature setpoint**.

2.2.2.3.1 Setting the Humidity Limit for Cooling

When you want to ... set a humidity limit for cooling, open the **Climate/Temperature/Cooling** menu, and



- select **Stop cooling**, and press
- set a percentage, and press



The combination of a high inside temperature and high air humidity can be life threatening to the animals.

As cooling makes the house humidity increase, Viper will automatically disconnect cooling when the house humidity exceeds **Stop cooling** (normally 75-85 %).

2.2.3 Humidity

	Current humidity 74 % RH
	Trend humidity
	Lowest humidity 24 h 72 %
	Highest humidity 24 h 76 %

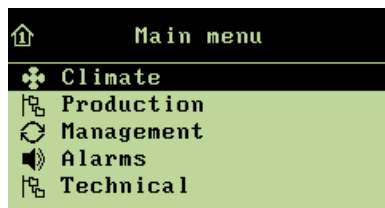
Table 7: Outline of the humidity menu

This section is relevant only to houses with humidity sensors.

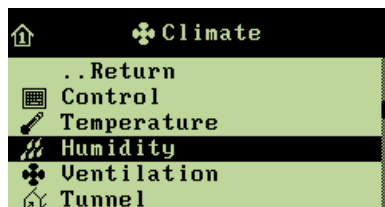
The Viper computer can show you the humidity content of the house air. Humidity is supplied to the house air partly from animals, feed, drinking water and litter, and partly from the cooling function.

All menu items ... under the **Humidity** menu can be read by

- pressing the menu key



- select **Climate**, and press



- select **Humidity**, and press

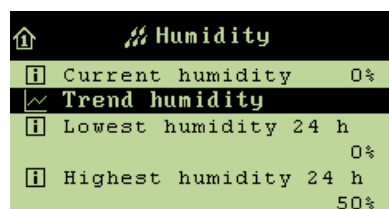
The **Climate/Humidity** menu



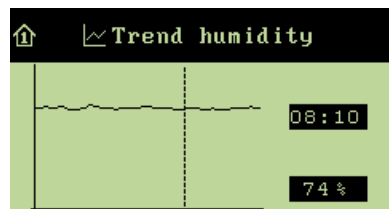
Viper shows the current humidity level of the house air in the **Current humidity** menu on the basis of the registrations made by the house humidity sensor.

2.2.3.1 Humidity Curve

The **Climate/Humidity** menu



The **Trend humidity** curve indicates the humidity level in the house during the last 24 hours.



- Press the arrow keys to read the exact time and figure values
- Press the enter key to return to the humidity menu

2.2.4 Ventilation

	CO2 min. ventilation		CO2 3000 ppm
	Ventilation status		Side inlet 1-6 49 %
			Side stage 1-16 OFF
			MultiStep 1-8 OFF

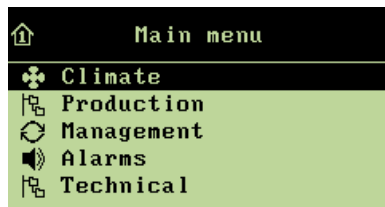
Table 8: Outline of ventilation menu

The house ventilation consists of an air inlet and an air outlet. Apart from supplying fresh air to the house, ventilation is to remove any humidity and excess heat.

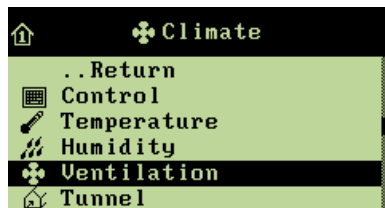
Viper continuously adjusts the ventilation according to a calculation of the current ventilation requirement. Thus, the computer will increase or limit ventilation according to whether the inside temperature and air humidity are too high or too low.

All menu items ... in the **ventilation** menu can be read by

→ pressing the  menu key



→ select **Climate**, and press



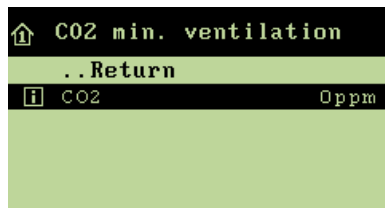
→ select **Ventilation**, and press

2.2.4.1 CO₂ Minimum Ventilation

2.2.4.1.1 CO₂

This section is relevant only to houses with CO₂ sensor.

The **Climate/Ventilation/CO₂ min. ventilation** menu

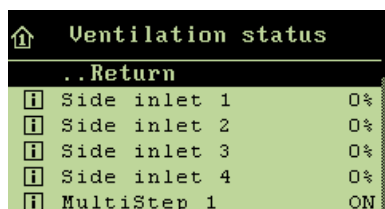


In the CO₂ menu, you can see the content of CO₂ in the house air.

2.2.4.2 Ventilation Status

2.2.4.2.1 Flap Opening

The **Climate/Ventilation/Ventilation status** menu



The flap opening is a percentage indication of how much the flaps of both the air inlet and the air outlet are open.

If you are in doubt about the actual ventilation output, you can compare the reading of the ventilation status in the ventilation menu with the output that you can actually observe in the house. Thus, the percentage indications are particularly relevant in connection with fault finding.

2.2.5 Tunnel









		
	<input type="checkbox"/> Heat allowed in tunnel  Pad cooling  Tunnel status	 Humidity limit 85 %  Pad temperature 22.0 °C  Tunnel inlet 1-2 0 %  Tunnel stage 1-16 OFF  Tunnel MultiStep 1-8 OFF

Table 9: Outline of the tunnel menu (changeable values are highlighted in bold types)

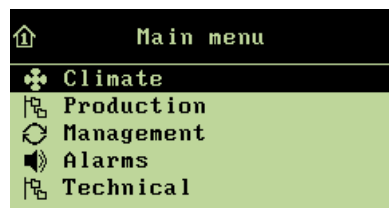
This section is relevant only to houses with tunnel ventilation.

Tunnel ventilation is used at high temperatures and when the air intake through wall inlets and curtains is insufficient to keep the animals chilled. For tunnel ventilation, air is taken in through a pad cooling system located at one end of the house. Air is vented out through several gable fans at the other end of the house, which makes the air move in a lengthwise direction in the house. The high air speed in the house provided by the gable fans and the effect of the pad cooling reduce the temperature in the house. Pads are kept moist through recirculation of water, and the gable fans automatically draw fresh air through the moist pads and absorb water vapour from them.

The high air speed at tunnel ventilation makes the measured temperature feel colder, making it more comfortable for the animals.

All menu items ... in the **Tunnel1** menu can be read and set by

→ pressing the  menu key



→ select **Climate**, and press

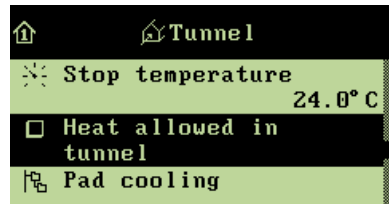


→ select **Tunnel1**, and press

2.2.5.1 Heat Allowed in Tunnel

When heating is required in houses ventilated by means of tunnel ventilation only, you can connect the **Heat allowed in tunnel** function.

When you want to ... connect or disconnect **Heat allowed in tunnel**, open the **Climate/Tunnel** menu, and



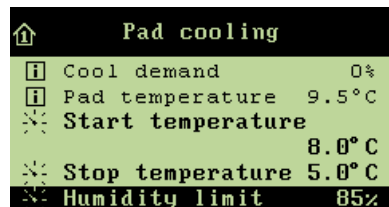
→ select **Heat allowed in tunnel**, and press

2.2.5.2 Pad Cooling

2.2.5.2.1 Setting Stop Cooling - Humidity Limit

When the house humidity is equal to or higher than the setting for **Humidity limit**, Viper stops pad cooling.

When you want to ... set a humidity limit for pad cooling, open the **Climate/Temperature/Pad cooling** menu, and



→ select **Humidity limit**, and press

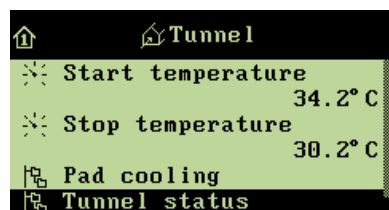
→ set a value, and press



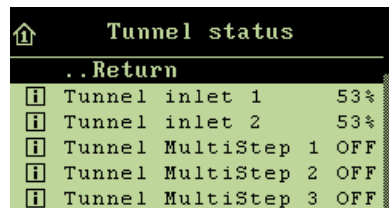
The combination of a high house temperature and high air humidity can be life threatening to the animals. Pad cooling should, therefore, be disconnected when air humidity is very high since cooling will increase air humidity further.

2.2.5.3 Tunnel Status

The **Climate/Tunnel** menu



Tunnel ventilation consists partly of one or two stepless air inlets, and partly of a number of ON/OFF exhaust units.



The flap opening is a percentage indication of how much the tunnel air inlet is open (**Tunnel inlet 1 / 2**). At **Tunnel stage fan**, the exhaust units are either on or off (**ON/OFF**).

2.2.6 U Pressure Control











										
	<table border="0"> <tr> <td></td> <td>Pressure requirement</td> <td style="text-align: right;">0 %</td> </tr> <tr> <td></td> <td>Pressure setpoint</td> <td style="text-align: right;">20 Pa</td> </tr> <tr> <td></td> <td>Pressure regulator actual value</td> <td style="text-align: right;">20 Pa</td> </tr> </table>		Pressure requirement	0 %		Pressure setpoint	20 Pa		Pressure regulator actual value	20 Pa
	Pressure requirement	0 %								
	Pressure setpoint	20 Pa								
	Pressure regulator actual value	20 Pa								

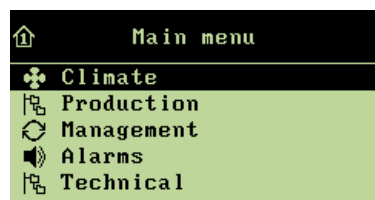
Table 10: Outline of the pressure control menu (changeable values are highlighted in bold types)

This section is relevant only to houses with pressure sensors.

By means of a pressure sensor, the Viper computer can control the pressure level in the house. On the basis of the sensor measurements, Viper controls the opening of the flaps; in this way, it maintains the required pressure level in the house (**Pressure setpoint**).

All menu items ... in the **Pressure control** menu can be set and read by

→ pressing the  menu key

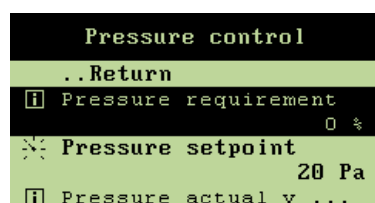


→ select **Climate**, and press



→ select **Pressure control**, and press

The **Climate/Pressure control** menu

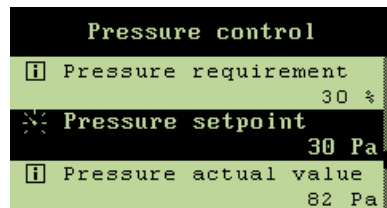


The **Pressure requirement** menu item is a percentage indication of how much the flaps in the active grow zone are to be open to maintain the **Pressure setpoint**.

2.2.6.1 Setting and Reading the Pressure Level

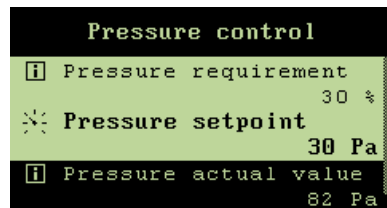
In the **Pressure setpoint** menu, indicate the pressure level which Viper is to maintain.

When you want to ... set or read the pressure level, open the **Climate/Pressure control** menu, and



→ select **Pressure setpoint**, and press

→ set a value, and press



You can read the current pressure level in the house under the menu item **Pressure actual value**.

2.2.7 Auxiliary Sensors



















			
	 Aux. sensor 1-4	 CO2 sensor	3000 ppm
		 Trend CO2-sensor	
		 Press. sensor	20 pa
		 Trend pressure sensor	
		 NH3 sensor	0 ppm
		 Trend NH3-sensor	
		 O2 sensor	0 ppm
		 Trend O2 sensor	
		 Temperature sensor	22.0 °C
		 Trend temperature sensor	
		 Humidity sensor	74.0 %
		 Trend humidity sensor	
		 Air velocity sensor	1.5 m/s
		 Trend air velocity sensor	
		 Wind direction sensor	0
		 Trend wind direction sensor	

Table 11: Outline of the auxiliary sensors menu

This section is relevant only to houses with auxiliary sensors.

In the **Aux. sensors** menu, you can read Viper's registrations from the auxiliary sensors installed.

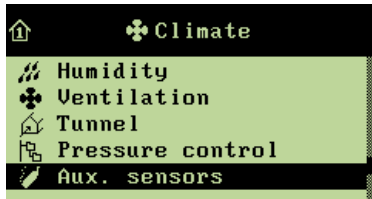
CO₂, pressure, NH₃, O₂, temperature, humidity, air speed and wind direction sensors can be connected. Viper can be connected to up to four auxiliary sensors; the **Aux. sensors** menu display depends on which types of auxiliary sensors you install.

All menu items ... in the **Aux. sensors** menu can be read by

→ pressing the  menu key

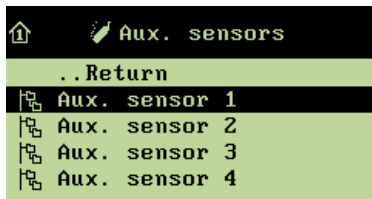


→ select **Climate**, and press

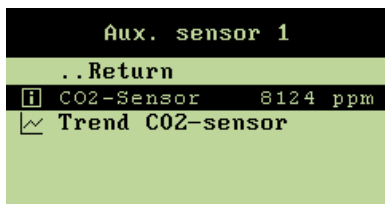


→ select **Aux. sensors**, and press

When you want to ... read the current value of an auxiliary sensor; open the **Climate/Aux. sensors** menu, and



→ select **Aux. sensor 1**, and press



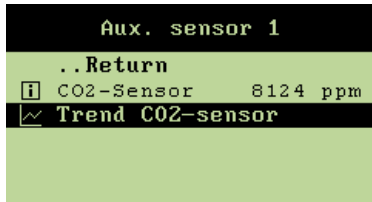
→ read the sensor registration

Repeat the reading for the installed number of sensors.

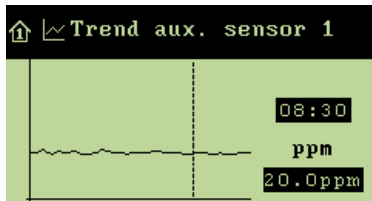
2.2.7.1 Auxiliary Sensor Curve

The auxiliary sensor trend curve indicates the registrations from the auxiliary sensor during the last 24 hours.

When you want to ... read the trend curve, open the **Climate/Aux. sensors/Aux. sensor 1**, and



→ select **Trend xxx. sensor**, and press



→ Press the arrow keys to read the exact time and figure values

→ Press the enter key to return to the **Aux. sensor 1** menu

Repeat the reading for the installed number of sensors.

2.2.8 Stir Fan

	Stir fan 1-6	Mode Heater Temperature 24-hour clock	Control	Together Separate
	Together Seperate One sensor Two sensors	Heater Temperature 24-hour clock	Start delay Stop delay Runtime Control Sensors installed Sensor no. High temp. sensor no. Low temp. sensor no. Stir fan temp. ON-time OFF-time Start time Stop time ON-time OFF-time	One sensor Two sensors

Table 12: Survey of the menu for stir fans (changeable values are highlighted in bold types).

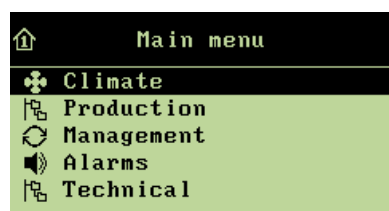
A stir fan improves circulation of the air and thus provides a more uniform temperature in the livestock house.

The Viper can regulate up to six stir fans at a time. Each stir fan can be regulated in connection with a heat source, a temperature sensor or a 24-hour clock.

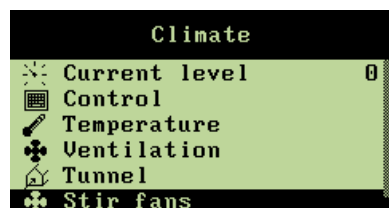
Controller	Stir fan – method of operation
Heat source (up to 6)	1) Together : The stir fan runs <i>while</i> the heat source supplies heat, but starts and stops with a set time delay (Start delay/Stop delay). 2) Separate : The stir fan runs <i>after</i> the heat source has supplied heat. It starts with a time delay (Start delay) and runs for a set period of time (Runtime).
Temperature sensor (up to 2)	1) One temperature sensor: The stir fan runs for a set ON-time, when the temperature deviates more than set in Temperature setpoint . 2) Two temperature sensors: The stir fan runs for a set ON-time at a set temperature difference between the two sensors.
24-hour clock	1) The stir fan runs for a set ON/OFF-time at set times.

All menu items ... in the menu **Stir fan** can be observed and set by

→ pressing the  menu key



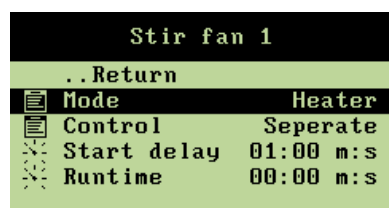
→ select **Climate**, and press



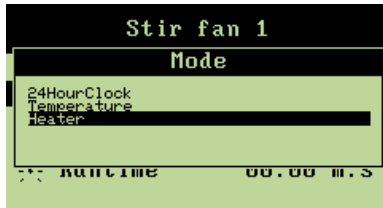
→ select **Stir fan**, and press

2.2.8.1 Setting the Regulation Mode

When you want to... opt for a regulation mode for a stir fan, open the **Climate/Stir fan** menu, and



→ select **Mode**, and press

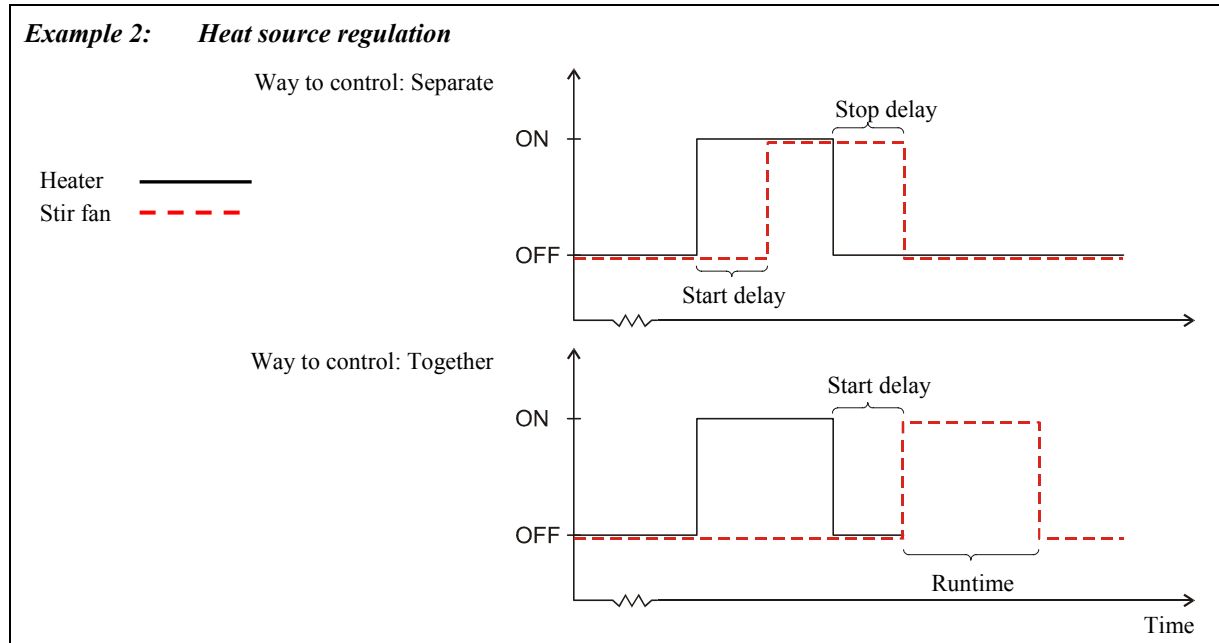


→ select the required mode

2.2.8.1.1 Regulation of the Heat Source

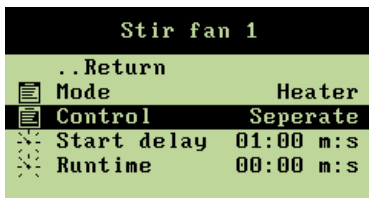
When the stir fan is to operate in connection with heat sources, you must opt for a way to control and set the start and stop time of the fan.

Example 2: Heat source regulation

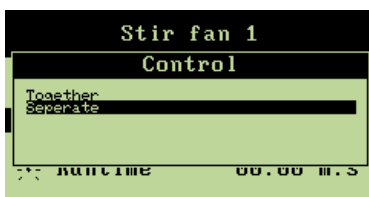


2.2.8.1.1.1 Setting the Way to Control

When you want to... opt for a way to control in connection with heat source, open the Climate/Stir fan/Stir fan x menu, and



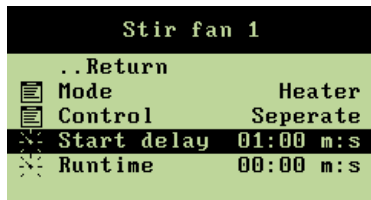
→ select **Control**, and press



→ select the required way of control

2.2.8.1.1.2 Setting Runtime for Stir Fan

When you want to... set a runtime for the stir fan, open the **Climate/Stir fan** menu and



- select **Start delay**, and press
- set an interval

The **Stop delay** (Together) or **Runtime** (Separate) should be set in the same way.

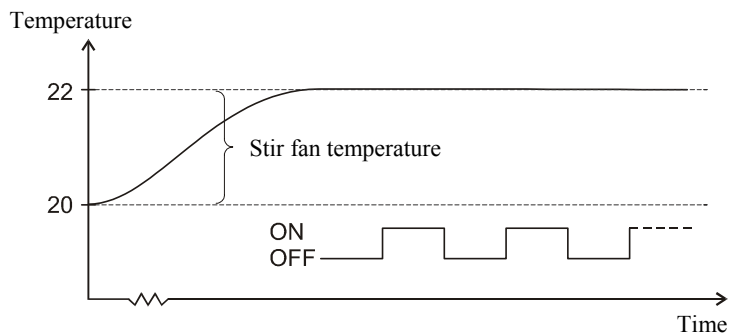
2.2.8.1.2 Temperature Sensor Regulation of the Stir Fan

When a stir fan should operate in connection with temperature sensors, you have to set how many (one or two) and according to which sensors the computer should control and the temperature activating the stir fan.

Example 3: Temperature sensor regulation

Stir fan temp.
ON-time
OFF-time

2 °C
5 min.
5 min.

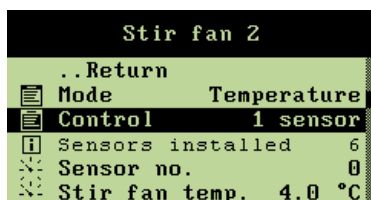


One sensor: Stir fan temp. is a deviation from **Temperature setpoint**.

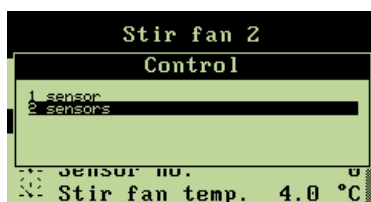
Two sensors: Stir fan temp. is a temperature difference between the two sensors.

2.2.8.1.2.1 Setting the Way of Control

When you want to... opt for a way to control, open the **Climate/Stir fan** menu, and



- select **Control**, and press



- set the number of temperature sensors

2.2.8.1.2.2 Selecting Temperature Sensor

You have to select according to which of the installed temperature sensors Viper should regulate the stir fan.



When you want to... select temperature sensor, open the **Climate/Stir fan** menu, and

```

Stir fan 2
..Return
Mode      Temperature
Control   1 sensor
Sensors installed 6
Sensor no. 3
Stir fan temp. 4.0 °C
  
```

→ select **Sensor no.**, and press

→ select temperature sensor

The **High/low temp. sensor no.** should be set in the same way, when the Viper regulates according to two temperature sensors.

NB If you select a sensor number higher than the number of sensors actually installed, Viper will not accept the setting.

2.2.8.1.2.3 Setting the Temperature for Stir Fan

One temperature sensor The computer activates the stir fan when the inside temperature deviates from **Temperature setpoint** with the number of degrees set in the **Stir fan temperature** menu.

Two temperature sens. The computer activates the stir fan when the temperature difference between the two sensors exceeds the number of degrees set in the **Stir fan temperature** menu.

When you want to... set a temperature for the stir fan, open the **Climate/Stir fan** menu, and

```

Stir fan 2
Mode      Temperature
Control   1 sensor
Sensors installed 6
Sensor no. 3
Stir fan temp. 4.0 °C
ON-time   00:00 m:s
  
```

→ select **Stir fan temperature**, and press

→ set a number of degrees/a temperature

2.2.8.1.2.4 Setting of ON and OFF-Time for Stir Fan

When you want to... set a runtime for the stir fan, open the **Climate/Stir fan** menu, and

```

Stir fan 2
Control   1 sensor
Sensors installed 6
Sensor no. 3
Stir fan temp. 4.0 °C
ON-time   00:00 m:s
OFF-time  00:00 m:s
  
```

→ select **ON-time**, and press

→ set an interval

The **OFF-time** should be set in the same way.

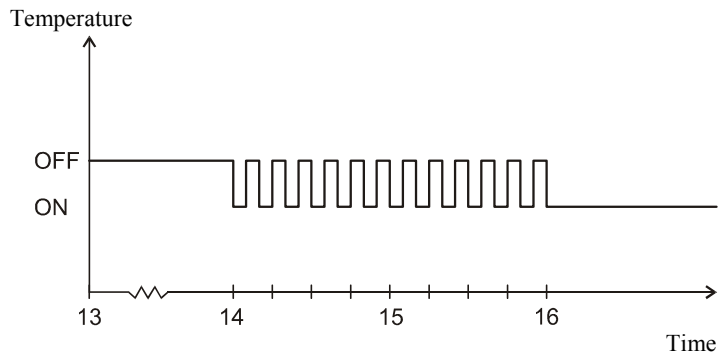
2.2.8.1.3 24-Hour Regulation of the Stir Fan

When the stir fan is to operate in connection with a 24-hour clock, you have to make the time setting as to when it should start and stop within the ON/OFF-time.



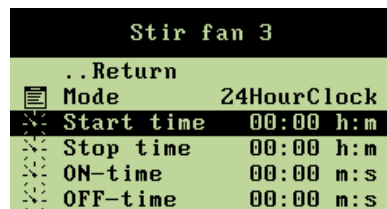
Example 4: 24-hour clock regulation

Start time 14:00 h:m
 Stop time 16:00 h:m
 ON-time 5 min.
 OFF-time 5 min.



2.2.8.1.3.1 Setting an Active Interval for the Stir Fan

When you want to... set an interval for the stir fan, open the **Climate/Stir fan** menu, and



→ select **Start time**, and press
 → set an interval

The **Stop time** should be set in the same way.

2.2.8.1.3.2 Setting of ON and OFF-Time for Stir fan

The setting is carried out in the same way as for temperature regulation. See section 2.2.8.1.2.4.

