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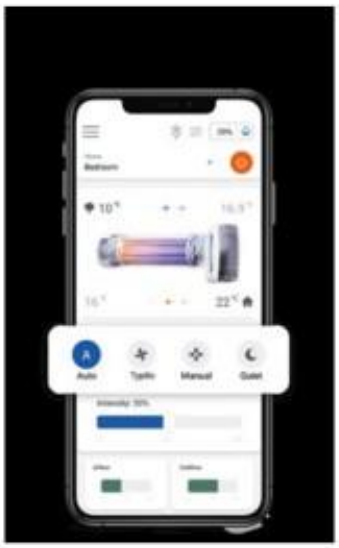
OPERATING INSTRUCTIONS FOR HEAT RECOVERY VENTILATION SYSTEM «KLIMATRONIK 160 PRO»



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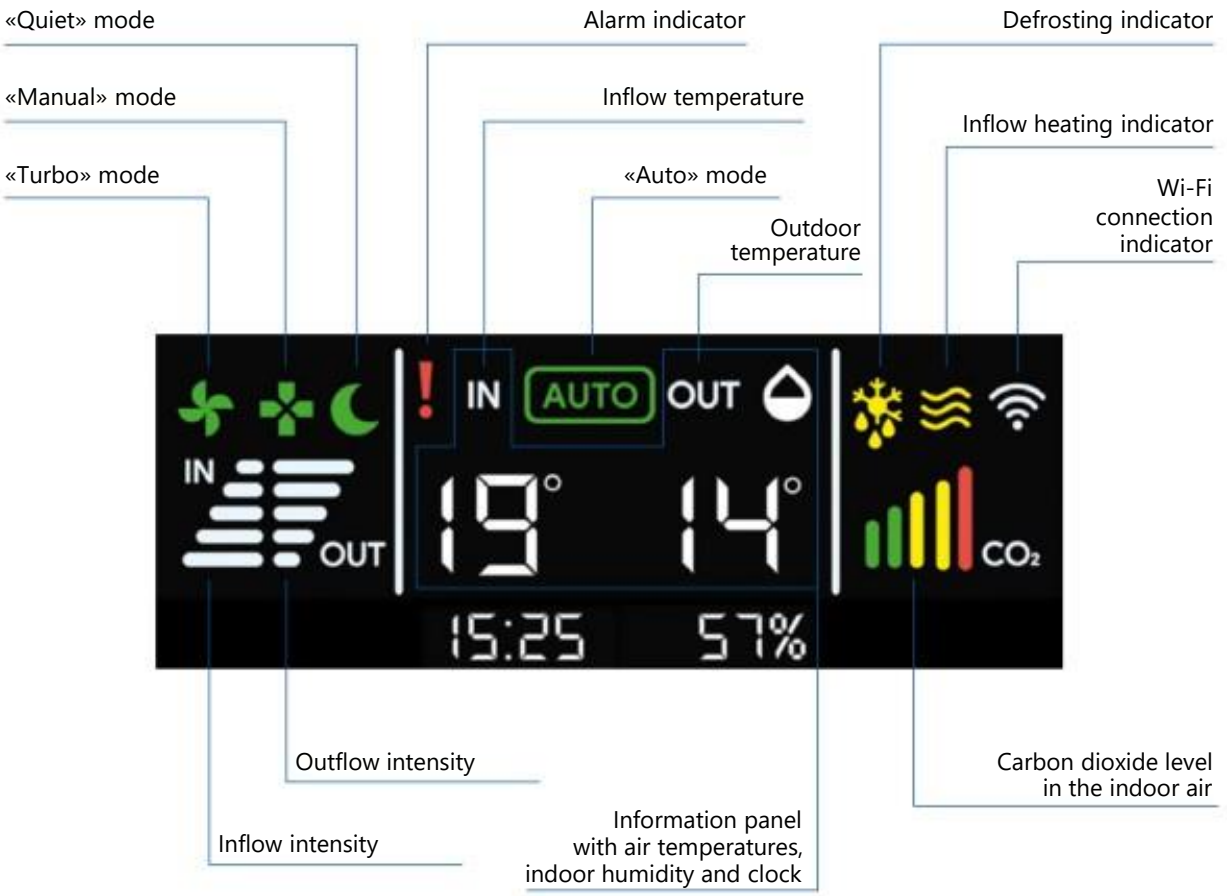
System features and capabilities

Remote control
Control using the mobile app for Android / iOS via Wi-Fi
Information LED-display
Automatic heating of supply air
Automatic defrosting of condensate
Automatic air quality control
5 indoor and outdoor air temperature sensors
Indoor humidity sensor
Indoor carbon dioxide (CO_2) sensor
Indoor volatile organic compounds (TVOC) sensor
2 EC fans (with microcontrollers)
4 operating modes: «Auto», «Turbo», «Manual», «Quiet»
Smart algorithm of the «Auto» mode
«Quiet» mode on schedule
Separate fan speed control in the «Manual» mode
Timer for the «Turbo» mode
Automatic electric shutter valve

Display indications

Indication symbols of the display show information in all operating modes of the recuperator



Recuperator control using the remote control

Functions of the remote control buttons

1. «On/Off» button to turn on/off the device

The button is used to enable the default «Auto» mode and to turn off the recuperator, as well as to connect the device to the mobile app (see the section «Connecting the recuperator to the mobile app»).

2. «Light» button to adjust the display brightness

By default, the device automatically adjusts the display brightness according to the light level in the room: the higher the level, the brighter the display, and vice versa. With the «Light» button you can adjust the desired brightness level of the display or return to its automatic adjustment.

3. «Auto» mode button

In the «Auto» mode, the operation of the device is based on air quality, temperatures and room conditions. The fan speeds are adjusted automatically by the recuperator, including using the air flow balancing algorithm.

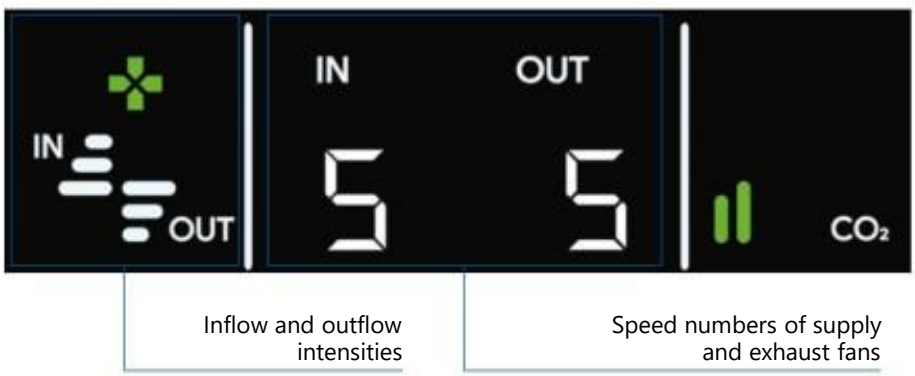
4. «Turbo» mode button («Fresh»)

In the «Turbo» mode, both fans are set to maximum speed. This mode operates on a timer (3 min. by default). After that, the recuperator automatically returns to the mode that preceded the «Turbo» mode. Setting the required timer is possible in the mobile app.

5. «Manual» mode button («Balance»)

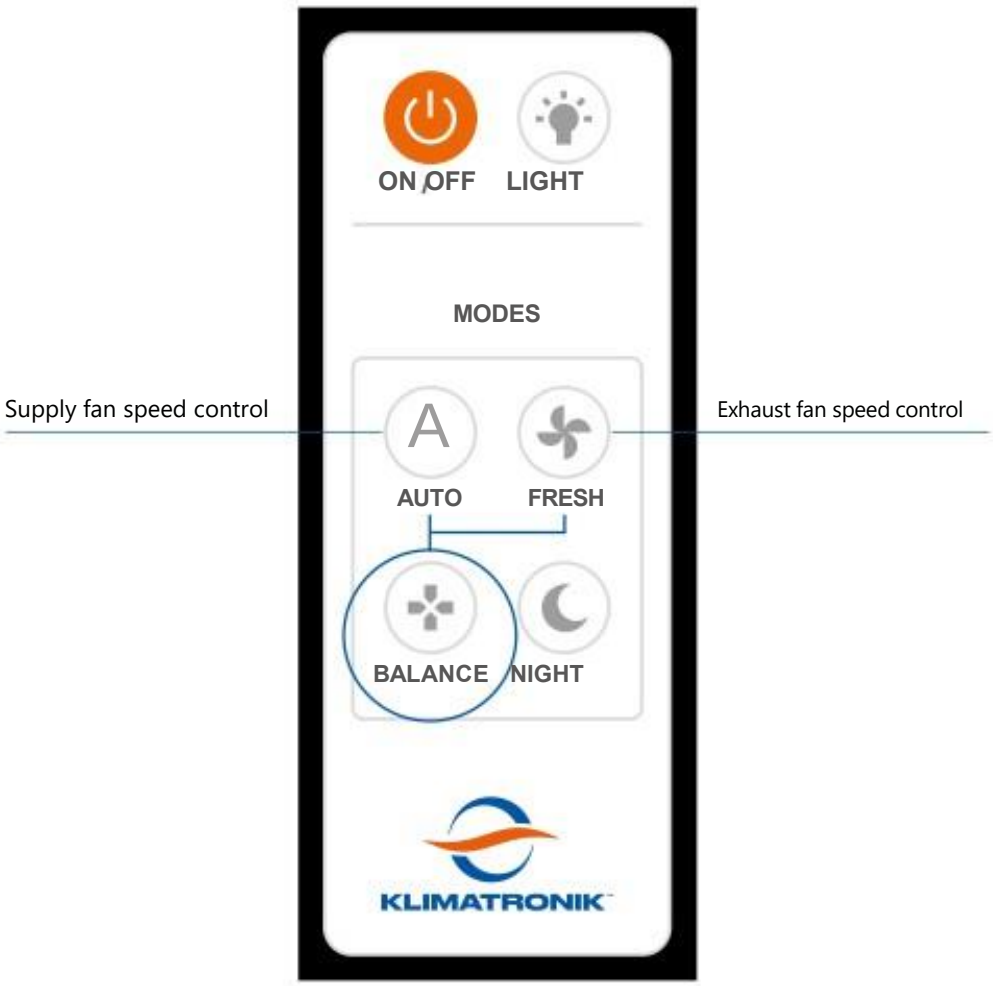
The «Manual» mode provides the ability to manually control the supply and exhaust fans separately according to your needs. Follow these steps to adjust the fan speeds:

• Hold the «Balance» button for 2 seconds. The indication of the inflow and outflow intensities on the display will begin to pulsate and the current speed numbers of both fans will appear.



• The supply fan is controlled by the «Auto» button

• The exhaust fan is controlled by the «Fresh» button



• By pressing the fan control button, you cycle through a set of 11 speed options (number «0» turns off the fan, number «10» sets the maximum speed). The set fan speed number will appear on the display. The speed change takes effect a few seconds after the button is pressed.
• Hold the «Balance» button for 2 seconds to exit the fan speed adjustment mode.

More convenient fan speed adjustment is possible in the mobile app.

6. «Quiet» mode button («Night»)

«Quiet» mode operates at low speeds to ensure a minimum of noise. To run the «Quiet» mode on a weekly schedule, install the mobile app and set a convenient time for each day of the week.

Initial start-up of the device

1. Connect the device to the 220 V mains. The display will show the following indication:

If this indication does not appear, it means that no power is supplied to the system.

2. Switch on the recuperator with the «On/Off» button on the remote control.

3. The display will show the «Auto» mode symbol and various information about the state of the environment and the state of the recuperator operation.

The Wi-Fi network symbol and clock will not be displayed until the device is connected to the home Wi-Fi network.

4. Wait until the recuperator performs initial measurements of the indoor and outdoor air temperatures in the «Auto» mode. The temperatures will be determined by blowing the supply and exhaust ducts at medium fan intensity. The duration of measurements is up to 40 seconds.

5. Now the recuperator has adapted to your temperature conditions and will be able to provide effective recuperation and ventilation.

6. If necessary, change the operating mode of the recuperator to the required one using the remote control.

7. Download and install the mobile app on your mobile device to access the rich functionality and all the advantages of Klimatronik recuperators.

Recuperator control using the mobile app for Android / iOS

Prerequisites for connecting and controlling the recuperator using the mobile app via Wi-Fi

1. **Version of the operating system of the mobile device (smartphone, tablet):**
   - Android 7 and above
   - iOS 13.1 and above

2. **Controlling devices using the mobile app is possible within the range of the Wi-Fi network signal and if you have access (password) to it.**

Several users can connect and control one recuperator. Also, one user has the ability to connect an unlimited number of devices to the mobile app. This is implemented for convenience when the user has several recuperators.

Controlling several devices in one location
Connect each device using the mobile app to the home Wi-Fi network (see the section «Connecting the recuperator to the mobile app»). Devices shall be in a zone of stable Wi-Fi signal strength. If the signal of the home Wi-Fi network is too weak, the data from the recuperator will not be received and it will be impossible to control the device using the app. To solve this problem, use the amplifier (repeater) of the Wi-Fi signal.

Controlling several devices in different locations
Recuperators in different locations only need to be connected once to the mobile app and home (local) Wi-Fi network. To control devices when changing locations, simply connect to the Wi-Fi network to which they were already connected. There is no need to re-connect recuperators to the mobile app and Wi-Fi network.

Connecting the recuperator to the mobile app

1. Go to the manufacturer's website klimatronik.co.uk, download the «Klimatronik» mobile app for your mobile platform from Google Play / App Store and install it.

2. Follow the link https:/klimatronik.co.uk/support, open or download the PDF file **«Klimatronik 160 - Connecting the device to the mobile app»** that corresponds your mobile platform. Follow the instructions to connect the recuperator to your home Wi-Fi network and your mobile device.

3. Everything is ready, now you can control the recuperator using the app.

Description of the functionality of the mobile app for recuperator control

Selecting the device

Connect the recuperator to the home Wi-Fi network (see the section «Connecting the recuperator to the mobile app»).

On the home screen of the app, select the required recuperator from the drop-down list by pressing on the device name.

You can see all the devices you've added and edit their names on the «My Devices» screen by pressing the menu button.

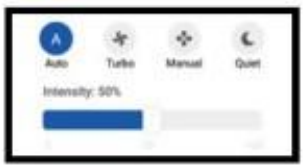
To edit the device name, press on the required recuperator name (e.g. «Work / Office»). Press «Edit» on the device information screen and enter a new name. Press «OK».

Main controls

The home screen of the app provides access to the main recuperator controls and monitoring of its operation:

- turn on/off the device
- indoor humidity level
- inflow heating is enabled
- inflow heating is disabled
- defrosting is enabled
- defrosting is disabled
- menu button

- section with real-time display of the indoor and outdoor air temperatures



- section for recuperator control using 4 operating modes:

- «Auto» mode
- «Manual» mode
– «Turbo» mode
- «Quiet» mode

– section with real-time display of the intensities of the supply and exhaust fans in each operating mode

Temperatures and heat recovery efficiency

On the home screen of the app, you can view 4 air temperatures, which are the basis for determining the heat recovery efficiency:

1 - air temperature at the inlet to the heat exchanger from the outdoor side;
2 - air temperature at the inlet to the heat exchanger from the indoor side;
3 - air temperature at the outlet of the heat exchanger from the outdoor side;
4 - air temperature at the outlet of the heat exchanger from the indoor side.

The value of heat recovery efficiency is displayed in the «Recuperation» section and is calculated by a special formula based on temperature data. The heat recovery efficiency will depend on the environmental conditions, fan speeds and operating mode of the recuperator.

Indoor air quality

Air quality indicators can be viewed in the «Air quality» section on the home screen of the app.

This section displays the real-time levels of air pollution with carbon dioxide (CO_2) and volatile organic compounds (TVOC).

Detailed statistics of CO_2 and TVOC levels are available in the form of graphs for different time periods.

Statistics of carbon dioxide (CO_2) levels in the air

To view the detailed statistics of indoor carbon dioxide levels, press the «CO_2» button.

1 - On the detailed statistics screen, you can view carbon dioxide levels in the form of graphs for the five time periods:
- 5 minutes;
- a hour;
- a day;
- a week;
- a month.

Press the required time period button to view the data.

2 - The average carbon dioxide level is displayed for each period.

3 - Graph for each period is displayed from right to left, in real time. Accordingly, the point «0» is the current time.

4 - The highest and lowest CO_2 levels for the selected period are displayed below the graph in the «Indicators» section.

Below the «Indicators» section, there is an information table of correspondences between carbon dioxide levels in the air and air quality.

It is recommended to compare the values from the table with the CO_2 levels in the room where the recuperator is operating, and in case of high carbon dioxide levels, increase the recuperator operation intensity in order to achieve a safe and favorable living environment.

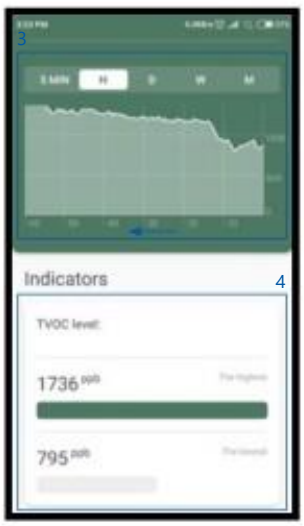
Statistics of volatile organic compounds (TVOC) levels in the air

To view the detailed statistics of indoor volatile organic compounds levels, press the «TVOC» button.

1 - On the detailed statistics screen, you can view the levels of volatile organic compounds in the form of graphs for the five time periods:
- 5 minutes;
- a hour;
- a day;
- a week;
- a month.

Press the required time period button to view the data.

2 - The average TVOC level is displayed for each period.



3 - Graph for each period is displayed from right to left, in real time. Accordingly, the point «0» is the current time.

4 - The highest and lowest TVOC levels for the selected period are displayed below the graph in the «Indicators» section.

Humidity and ambient temperatures

The app allows you to view the indoor humidity and indoor and outdoor temperatures.

Humidity and temperatures are displayed in the «General indicators» section on the home screen. The detailed statistics over different time periods are available for each indicator of the section.

Indoor humidity statistics

To view the detailed statistics, press the «Humidity» button.

1 - On the detailed statistics screen, you can view humidity levels in the form of graphs for the five time periods:
- 5 minutes;
- a hour;
- a day;
- a week;
- a month.

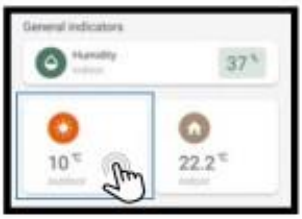
Press the required time period button to view the data.

2 - The average indoor humidity level is displayed for each period.

3 - Graph for each period is displayed from right to left, in real time. Accordingly, the point «0» is the current time.

4 - The highest and lowest humidity levels for the selected period are displayed below the graph in the «Indicators» section.

Outdoor temperature statistics



To view the detailed outdoor temperature statistics, press the corresponding button.

1 - On the detailed statistics screen, you can view the outdoor temperature values in the form of graphs for the five time periods:
- 5 minutes;
- a hour;
- a day;
- a week;
- a month.

Press the required time period button to view the data.

2 - The average outdoor temperature is displayed for each period.

3 - Graph for each period is displayed from right to left, in real time. Accordingly, the point «0» is the current time.

4 - The highest and lowest outdoor temperature values for the selected period are displayed below the graph in the «Indicators» section.

Indoor temperature statistics

To view the detailed statistics of the indoor temperature, press the corresponding button.

1 - On the detailed statistics screen, you can view the indoor temperature values in the form of graphs for the five time periods:
- 5 minutes;
- a hour;
- a day;
- a week;
- a month.

Press the required time period button to view the data.

2 - The average indoor temperature is displayed for each period.

3 - Graph for each period is displayed from right to left, in real time. Accordingly, the point «0» is the current time.

4 - The highest and lowest indoor temperature values for the selected period are displayed below the graph in the «Indicators» section.

Resetting the recuperator settings to factory defaults

The factory reset button is located at the bottom of the home screen of the app. It is provided for the correct setting of the device operation in the event of service.

To reset the device settings to factory defaults, press the button and enter the password: **1234**

After the factory reset, the device will reboot and calibrate both fans.

Please note that the Wi-Fi settings of the device will also be reset and the recuperator will need to be reconnected to the home Wi-Fi network.

Recuperator operating modes

The recuperator can operate in four active modes - «Auto», «Turbo», «Manual», «Quiet», - as well as in the passive mode «Off».

Features of the device that are common to all its operating modes

The Klimatronik ventilation system uses 5 sensors to constantly monitor the indoor and outdoor air temperatures and, in the cold period, automatically heats up the supply air to a comfortable room temperature if necessary and heats the condensate on the heat exchanger preventing it from freezing or defrosts it.

If the device detects a critically high level of air pollution, there will be an immediate automatic switch to the «Auto» mode and the activation of the maximum intensity of the inflow and outflow in order to eliminate the danger. In this case, all 5 divisions of the CO_2 level and the red exclamation mark will light up on the recuperator display.

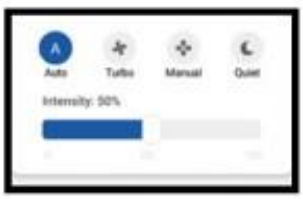
Outdoor and inlow temperatures, indoor CO_2 level, heating and defrosting indications, inflow and outflow intensities are shown on the device display and in the mobile app in all active operating modes.

«Auto» mode

To enable the «Auto» mode, press the corresponding button on the home screen of the app.

The «Auto» mode is the main recommended smart mode of the recuperator, in which ventilation and recuperation take place on the basis of the analysis of ambient temperatures and the level of indoor air pollution.

This mode is specially designed to automatically perform all work without human intervention and special knowledge.



«Intensity» parameter

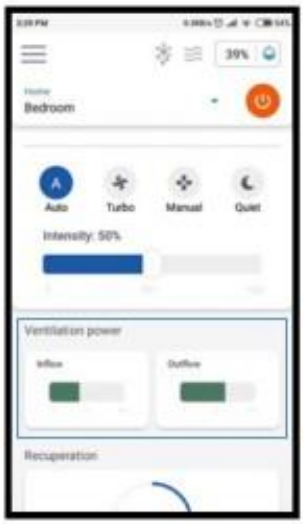
The «Auto» mode allows you to adjust the intensity of the device's response to indoor air pollution with carbon dioxide (CO_2) and volatile organic compounds (TVOC).

At 0% «Intensity», the device does not respond to air pollution. Accordingly, at 100% «Intensity», the device fully responds to the CO_2 and TVOC levels, setting the required speeds for the fans to clean the air in the room. You can choose the intensity of the response that will be comfortable and sufficient for you.

Functions and purpose of the «Auto» mode

The main purpose and features of the «Auto» mode

• Continuous automatic air quality control, which ensures safe conditions for human health and better performance.
• Algorithm for balancing air flows prevents the loss of heat in the cold season and coolness in the warm season due to drafts.



Automatic air purification

A special algorithm of the «Auto» mode monitors the levels of carbon dioxide (CO_2) and volatile organic compounds (TVOC), such as cigarette smoke, formaldehyde, phenols, natural and carbon monoxide, various odors and other harmful elements and allergens.

The recuperator independently smoothly adjusts the speeds of the supply and exhaust fans according to the CO_2 and TVOC levels in the indoor air.

You can monitor the current intensities of the fans in the «Ventilation power» section.

Dynamic balancing of air flows

The «Auto» mode includes an algorithm for balancing the supply and exhaust air flows. We took into account the need for such an important skill of the heat recovery system as overcoming drafts inward or outward, which can often occur in the channels of the recuperator due to various indoor conditions and weather factors. The device analyzes the direction and strength of the draft and automatically adjusts the speed of each fan separately to compensate for the draft power and balance the speeds of the exhaust and supply air flows. Thanks to this algorithm, the efficiency of thermal energy recovery is significantly increased.

«Turbo» mode

To enable the «Turbo» mode, press the corresponding button on the home screen of the app.

Functions and purpose of the «Turbo» mode

Rapid ventilation

The mode is intended to ventilate the room as quickly as possible. In this mode, the supply and exhaust of the recuperator operate simultaneously at maximum speed.

The «Turbo» mode is useful:
- before you go to sleep;
- when you need to quickly get rid of bad smells in the room;
- when there is a high levels of carbon dioxide or volatile organic compounds in the room;
- when intensive ventilation of the room is required.

During the operation of the «Turbo» mode, the maximum levels of «Inflow» and «Outflow» will be displayed in the «Ventilation power» section on the home screen of the app.

Ventilation on a timer

The «Turbo» mode operates on a timer. The default timer value is 3 minutes. To set the required duration of operation in «Turbo» mode, press the «Set timer» button.

In the «Timer» window, it is possible to set the duration from 1 to 30 minutes. Select the required duration and press the «Start» button.

The expiration time of the «Turbo» mode is displayed to the right of the «Set timer» button on the home screen of the app. When the timer expires, the device will automatically return to the operating mode prior to the «Turbo» mode.

Note that the device remembers the last set duration of operation in «Turbo» mode and will use this value in the future by default.

«Manual» mode

To enable the «Manual» mode, press the corresponding button on the home screen of the app.

A feature of the mode is the possibility of manual separate speed control of supply and exhaust fans according to your needs.

Functions and purpose of the «Manual» mode

The «Manual» mode is useful when:
- fine adjustment of the inflow and outflow speeds is necessary to ensure the required level of silence and comfort;
- only an air exhaust or only an air supply is needed;
- the operation of the recuperator at fixed speeds is needed.

To set the required fan speeds, press the «Configure» button.

There are 11 fan speeds available (0 to 10). Number «0» turns off the fan. Number «10» sets the maximum speed.

Select the required fan speeds in the «Settings» window and press «Save».

To set the device to operate only for air exhaust or only for air supply, set the speed «0» for the corresponding fan and a speed from 1 to 10 for the other and press «Save».

The current fan speeds will be displayed in the «Ventilation power» section on the home screen of the app.

«Quiet» mode

To enable the «Quiet» mode, press the corresponding button on the home screen of the app.

A feature of the «Quiet» mode is the operation of the supply and exhaust fans at low intensities to ensure a minimum noise level.

Functions and purpose of the «Quiet» mode

The use of the «Quiet» mode is relevant in situations where comfortable quiet conditions are needed for rest, concentration or sleep. The operation of the recuperator during sleep provides a constant air supply and exhaust, which improves the quality of sleep and recovery of the human body.

Dynamic balancing of air flows

Like the «Auto» mode, the «Quiet» mode includes an algorithm for balancing the supply and exhaust air flows.

«Quiet» mode on schedule

«Quiet» mode can be run on a weekly schedule. The app has the ability to set the periods of automatic turning the mode on and off by day of the week.

To activate and configure the scheduled operation, press the «Edit time» button below the mode buttons on the home screen.

In the «Time» window that appears, the default time for each day of the week is set to «00:00». This means that scheduled operation in the «Quiet» mode is disabled.

To activate the scheduled operation, you need to set the time to turn the «Quiet» mode on and off for each day of the week.

After setting the time for the desired days of the week, press the «Save period» button.

The set schedule for the start and end of operation in the «Quiet» mode for the current day will be displayed next to the «Edit time» button.

Note that the recuperator switches to the «Quiet» mode according to the set schedule only from the «Auto» mode. After completing the scheduled operation in the «Quiet» mode, the device will also switch to the «Auto» mode.

To disable the scheduled operation in the «Quiet» mode, open the «Time» window and press the «Reset» button. This action will set «00:00» as the start and end of operation for each day of the week. Then press the «Save period» button.

In order to improve the product, the manufacturer reserves the right to make changes to its functionality and operating instructions at any time without notice. For up-to-date information, please visit the manufacturer's website at https:/klimatronik.co.uk/support

Less viruses
Less dust
More oxygen

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