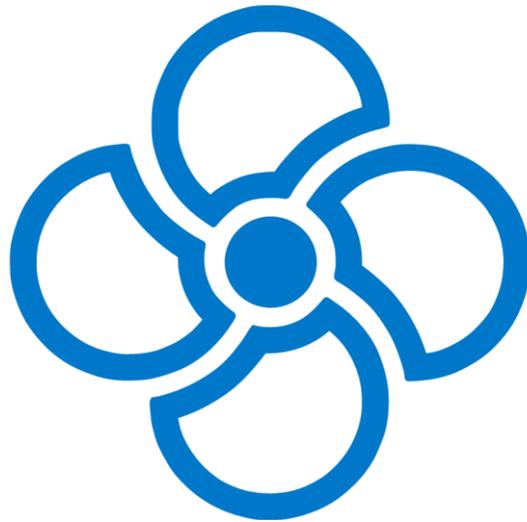


HRM Fan – User Manual



 **HRM Fan**

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1. History of changes of the document

The table below presents a list of changes done to this document (the User Manual).

Version no	Date	Change
1.0	18.10.2022	First version in English is released
1.1	19.10.2022	Added a note about BLE technology to the “Heart rate monitors” chapter
1.2	13.11.2022	Modified the power rating of compatible fans. Added compatible HRMs. Extended the safety notes.

2. HRM Fan ROM change log

The table below presents a list of released ROMs (software packages) for HRM Fan. Each ROM introduced some changes, which are described below. To upgrade the ROM of your HRM Fan device, please use the mobile application. The manual for the mobile apps, which includes the ROM update procedure is available for download at:

<https://www.hrmfan.dragilla.com/support>

Version no.	Date	Change
3.0.2	11.10.2022	First version of ROM introduced to general public
3.0.3	16.10.2022	Added white color support for external RGB LED driver

3. Short description of the product

HRM Fan is a device used to automatically control the speed of the fan based on heart rate. The heart rate is read by the device from the HR monitor worn by a person doing a workout and on this basis and according to the configuration, the speed of the connected fan is regulated. This allows to adjust the blowing force to the current effort.

An additional option of the device is to control a compatible RGB LED driver. When connected to the HRM Fan controller, it can smoothly change the LED colors in a given range (e.g. from green to red) with increasing heart rate.

4. Basic information

4.1. Physical device and connection method

HRM Fan is a one-piece device. It is a black case from which two cables come out: a power cable with a plug at the end and a cable with a socket to which the fan is connected. The power cable is 1 meter long, while the cable with the socket is 15 centimeters long. There is a LED in the housing that indicates the current status of the device (see the list of device states in the next chapter) and a control button to put the device to sleep / wake up.

The photo below shows the appearance of the HRM Fan device.



The HRM Fan device is available in various configurations. The basic device described above can be extended by adding:

1. Non-standard power and outlet cable lengths (the total sum of cables must not exceed 5 meters),
2. A compatible fan,
3. A compatible RGB LED set.

In the case of a set with a fan, the manual for the fan itself will be attached to the package when shipped.

In the case of extension with a RGB LED set, the user additionally gets:

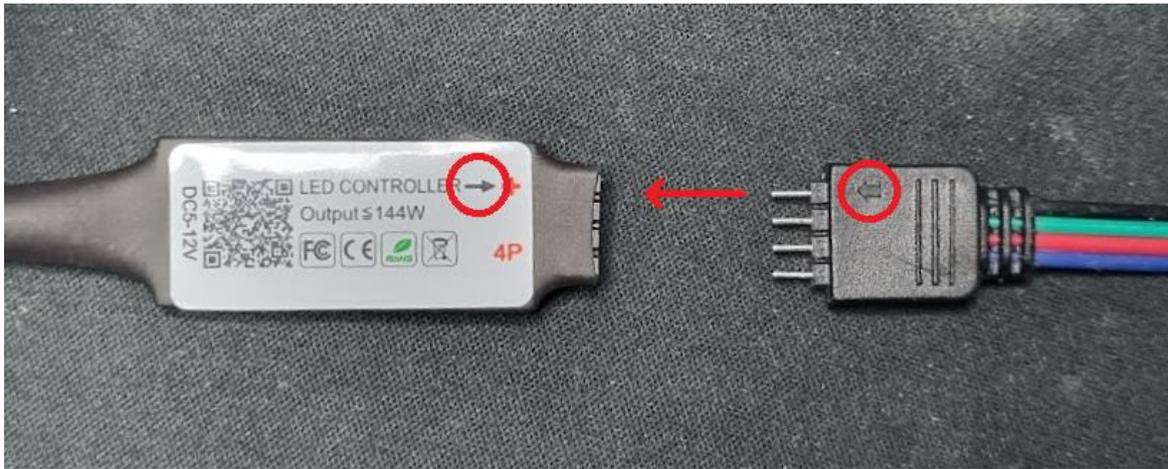
1. Bluetooth Low Energy RGB LED driver,
2. USB AC adapter,
3. RGB LED strip, 5 or 10 meters long.

The photo below shows a LED set with a 5m tape.



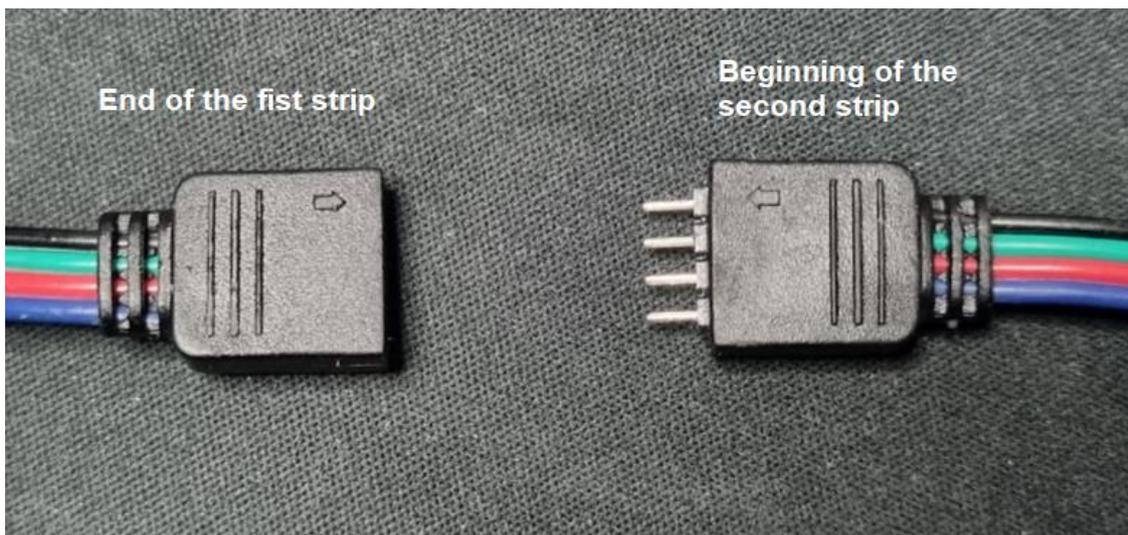
Elements of the RGB LED set should be connected together as follows:

1. The RGB LED strip should be connected to the controller - pay attention to the correct orientation of the plug and socket (see photo below),
2. The LED driver should be connected to the power supply,
3. Connect the power adapter to the mains (NOT to the HRM Fan).



The above photo shows how to connect the RGB LED strip with the controller.

In the case of a set with a 10m RGB LED strip, the user gets two 5m strips to be connected in series: the end of the first strip and the beginning of the second strip.



The photo above shows how to connect two RGB LED strips together.

NOTE: The components of the RGB LED kit do not require physical connection with the HRM Fan device. HRM Fan connects to the RGB LED driver wirelessly.

4.2. Device states and LED signaling

The HRM Fan can be in one of eight states when plugged into power. All states and the way they are signaled by the device are described in the table below:

STATE NAME	DESCRIPTION	LED SIGNALING
ON	The device is searching for available sensors after being powered on.	Continuous light of the led, green color
ON, RGB LED driver connected	The device has connected to an RGB LED driver and is searching for available sensors.	Continous light of the led, orange color
Manual mode of the fan control	The manual mode of the fan control is active. The user is controlling the fan using his phone. The input data from sensors does not influence the speed of the fan.	Single led flashes, red color
Manual mode of the RGB LED control	Manual RGB LED control mode has been activated. The user sets the selected colors using the mobile application. The input from any connected sensors has no effect on the color displayed on the RGB LED strip.	Double led flashes, red color
Manual mode: fan + RGB LEDs	Both manual modes are on (fan and RGB LEDs). Both the speed of the fan and the color of the connected RGB LED strip are controlled by the user in the mobile app.	Tripple led flashe, red color
Heart rate sensor connected	HRM Fan has connected to an external heart rate sensor and is receiving data from it.	The LED flashes green (no LED driver connected) or orange (connected to RGB LED driver). The flashing is at the rate of the heart rate being read (one short flash for each heartbeat).
Heart rate sensor connected, heart rate in the zone	The algorithm in the device has turned on the fan and controls its speed based on input data from the sensor. If an LED driver is connected, it is also driven by the device (HRM Fan changes the colors of the LED strip based on the input data from the sensor).	The led flashes green (no LED driver connected) or orange (connected to RGB LED driver) - double flashes. The flashing is at the rate of the heart rate being read (two short flashes for each heartbeat).
Sleeping	The device has entered the sleep state. It does not accept signals from external sensors. The user can connect to it from the mobile app to wake it up.	Continous light of the led, red color

5. How to use HRM Fan

Using HRM Fan is relatively simple.

The device is ready to work right out of the box and connected to the power supply. It is recommended to configure it using the mobile application in order to adjust the settings to the individual needs of the user. **The configuration process has been described in separate documents**, dedicated to mobile platforms for which the applications were built:

- HRM Fan - Android User Manual and
- HRM Fan – iPhone User Manual,

which can both be downloaded from the support page of our internet shop:

<https://www.hrmfan.dragilla.com/support>

NOTE: HRM FAN does not require a running mobile application to function. The communication between the HRM FAN, the heart rate monitor and the fan is direct. The app is for configuration and manual control only.

Assuming that the device is configured, its use is limited to the following steps:

- Connect the HRM Fan to the power outlet via the power cord,
- Connect the fan to the device using the attached cable with a socket (the fan should be turned on and set to the highest speed),
- (Optionally) Connected a compatible RGB LED driver to the power outlet (not to HRM Fan, to a power outlet in the wall),
- After detecting your heart rate monitor, the LED on the device will start flashing and the device will start controlling the fan and LEDs (optionally, if connected),
- After the training, you can put the device to sleep - from the mobile application (sleep button) or by pressing the button on the housing. If you leave the device turned on, it will go to sleep after a programmed period of inactivity (if the sleep is not turned off) - 15 minutes by default.

NOTE: Make sure there are no obstructions between the device and the heart rate monitor and that they are relatively close to each other. Otherwise, the heart rate transmission to the device, and thus the smooth operation of the device and the fan, may be impaired. It is best to place the HRM Fan in front of the fan and within 3m of the heart rate monitor. If you are using a compatible LED driver also make sure it is within range of the HRM Fan device - preferably within 3m of the device, with no physical obstacles between the driver and the HRM Fan device.

6. Supported devices

6.1. Mains / sockets standards

HRM Fan supports global power standards, i.e. it operates on alternating current (AC) in the voltage range from 110-240V at a frequency of 50-60Hz. Connection standards (plug for socket and socket for connecting the fan) are selected when purchasing the device in our online store: <https://www.hrmfan.dragilla.com/shop>

6.2. Fans

HRM Fan supports fans with an alternating current (AC) motor with a voltage of 110-240V 50-60Hz, i.e. fans that are connected to the mains.

The minimum supported power of the fan is 35W at 230-240V or 20W at 110V (see the rating plate on the fan).

The safe maximum power of the fan is 240W at 230-240V or 120W at 110V (see the rating plate on the fan).

If you are in doubt as to whether your fan will work with HRM Fan, please contact us.

The HRM Fan can be purchased together with a compatible fan. Information on available sets is available on the website of our online store at:

<https://www.hrmfan.dragilla.com/shop>

6.3. Heart rate monitors

The device supports heart rate sensors based on the following technologies:

1. ANT +, HR profile, for example straps from Garmin, Wahoo, Polar and similar, Garmin Smartwatches with HR broadcast function, like 735xt, etc.
2. BLE (Bluetooth Low Energy), HR profile (for example HRM Dual from Garmin, Wahoo, Polar H7, H9, H10).

NOTE: When using a Bluetooth LE heart rate sensor, please keep in mind that due to the technology used, such a sensor can only connect to one data recipient. In such a situation, if the sensor first connects to a watch, a bicycle computer or a computer on which Zwift is running - such a sensor will not be able to connect to the HRM Fan device anymore. The opposite situation may also occur - the sensor will first connect to HRM Fan and then it will no

longer be available to other recipients (i.e. it will not be detected in Zwift). This limitation does not concern ANT+ sensors - there is no limit for the number of data recipients in ANT+ . Most of popular heart rate sensors, for example from Wahoo or Garmin, transmit in both technologies (ANT+ and BLE). In such a situation, we recommend choosing the ANT+ technology in the HRM Fan mobile application. The process of selecting the heart rate sensor type is described in the manual of the mobile application, which can be downloaded from:

<https://www.hrmfan.dragilla.com/support>

6.4. RGB LED drivers and strips

HRM Fan works with dedicated RGB LED drivers, which can be purchased in a set with a power supply and a compatible RGB LED strip in our online store at:

<https://www.hrmfan.dragilla.com/shop>

NOTE: It is not recommended to use RGB LED strips that are not part of the HRM Fan RGB LED set sold in HRM Fan online store. The use of other RGB LED strips is not covered by the warranty and may damage the components of the set.

6.5. Mobile devices

Smartphones with the Android (5.0+ versions) and iOS (12+ versions) mobile platforms are supported. Smartphones must have Bluetooth LE (Low Energy) in order to communicate with the HRM Fan device. If you have doubts as to whether your smartphone will work with HRM Fan, please contact us.

7. Safety Notes

Do not connect devices other than supported, compatible fans to HRM Fan - this can damage both the HRM Fan and the device being connected. Due to variety of fans available on the market the producer of HRM Fan does not take responsibility for the damages caused by using fans other than the one sold with it.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Children shall not play with the appliance.

Cleaning and user maintenance shall not be made by children without supervision.

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

8. Trouble shooting

The table below lists known problems and suggests solutions. If you have any other problem with our device or the suggested solution does not solve your problem, please contact us for support. We are happy to help.

Problem	Solution
<p>The fan operation is interrupted during training. The fan stops spinning and restarts after a few seconds even though my heart rate was within the configured range.</p>	<p>This is usually due to one of two things:</p> <ol style="list-style-type: none"> 1. Low battery in heart rate monitor or 2. Obstacles between sensor and HRM Fan. <p>Make sure the sensor and HRM Fan remain within range (maximum 3 meters) throughout training and that there are no physical obstructions that could block the transmission. Otherwise, replace the battery in your heart rate monitor.</p>
<p>My fan does not spin when I set it its speed to low values.</p>	<p>Not all fans are the same. Because of that we designed our device to have a range of operation wider than most fans. Increase the percentage value to the level when the fan starts spinning and then configure the lower fan speed range at this or higher level. Most fans will start spinning above about 20%. If your fan does not spin at 25% and higher, there might be a problem with the HRM Fan device, your fan, or there might be a compatibility issue. In that case contact us as soon as possible.</p>
<p>My fan is humming / buzzes</p>	<p>A moderate humming / buzzing sound, especially at lower speed levels, is normal. It is caused by the fan's engine not getting the full power. If you think the sound is too loud or it is something else than buzzing or humming, please contact us.</p>
<p>After the heart rate monitor connects to HRM Fan, I cannot see my heart rate on my watch / cycle computer / in Zwift</p>	<p>When using a Bluetooth LE heart rate sensor, remember that due to the technology used, such a sensor can only connect to one data recipient. We recommend using ANT+ technology to connect the heart rate sensor to HRM Fan. More info can be found in the "Supported devices" chapter and in the mobile applications' manuals.</p>

9. Contact information

The creator and seller of the device is:

Dragilla Lukasz Sacha

Handlowa 9B,

05-120 Legionowo

VAT No: PL5252136664

Email: hrmfan@dragilla.com

The product page can be found at: <https://hrmfan.dragilla.com>