Heart Rate Monitor

(HRM-1000)

User's Manual

SYSTEM
HUMAN · HEALTH · HOME CARE COMPANY
H3 System Co., Ltd.

I. General Description

This device is to measure heart rate and being composed of main body (wrist watch), sensing part, gloves, a charging adapter and a software (Optional). Main body and the sensing part is connected to each other and can be mounted on the glove.
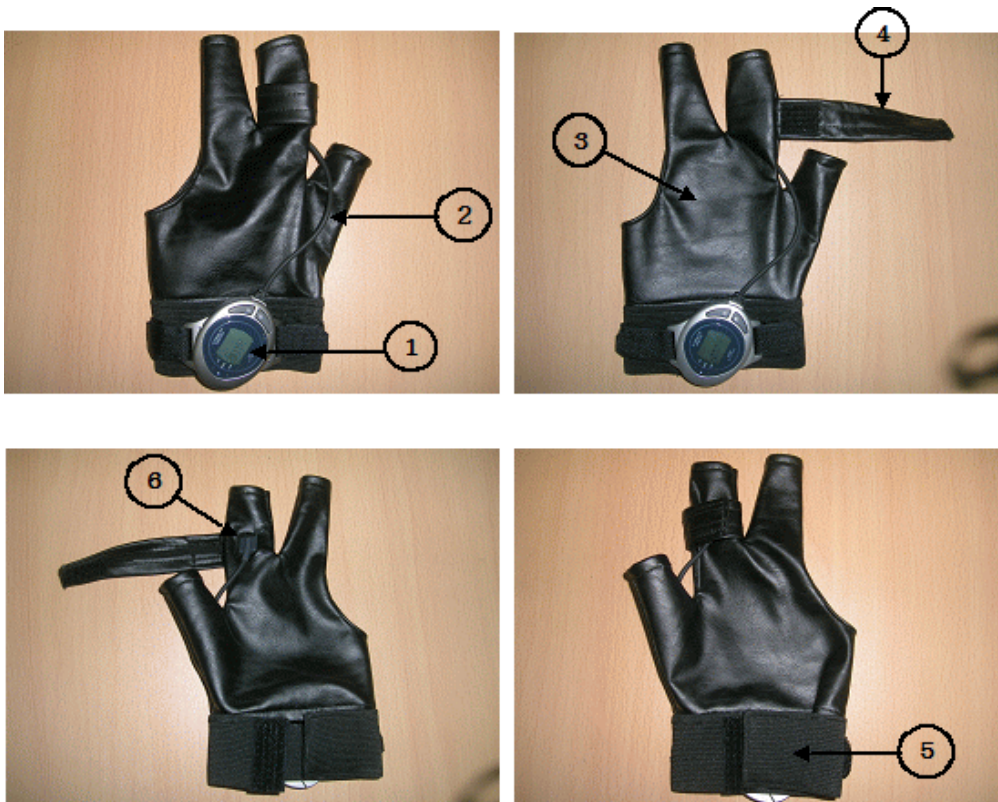
The measurement principle is based on the optics. The amount of the reflected light compared to the acting light is measured at the sensing part. The change of the light reflectance is thereafter analyzed to calculate heart rate at the main body(wrist watch).

Calculated pulses are displayed on the LCD screen of wrist watch, and can be wirelessly transmitted to other devices, PC or smart phone.
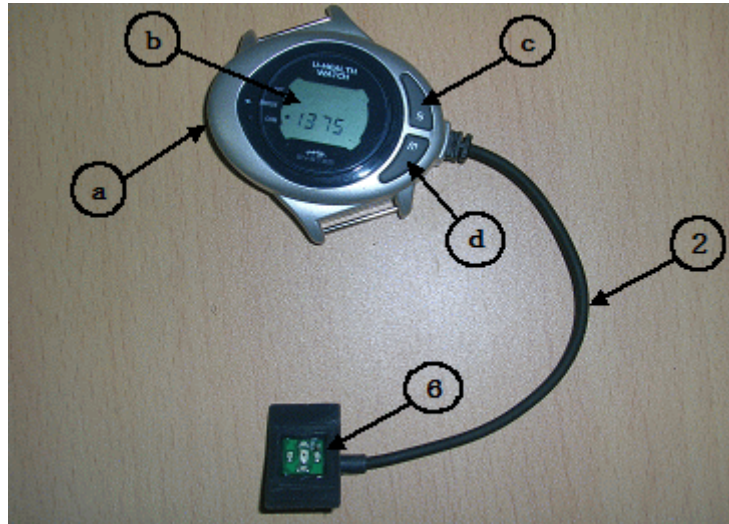
This device uses a rechargeable battery and can be charged through DC adapter.

II. Component Description

1. Heart rate monitor

① Main body (wrist watch): The main body is central processing part composed of LCD display, start-stop button, measurement button, communications terminals and a built-in communication module.

Ⓐ communication terminal: IN-OUT serial communication port

Ⓑ LCD display : LCD screen that displays various information.

Ⓒ "S" (Start / Stop) Button: power ON / OFF

Ⓓ "M" (Measurement) Button: Start measurement.

② Sensor cable: Connect the main body and the sensing part that makes it possible to transfer the information.

③ Gloves

④ Sensor mounts : a sensor fixation part

⑤ Wrist strap

⑥ Sensing part : optical parts which measures PPG(Photo plethysmography) signal. It measures the amount of the reflected light compared to the acting light at the finger

III. Using a heart rate monitor

1. Wearing and power-on the device

(1) Wearing heart rate monitor gloves
 * Caution :
   When you wear gloves, please fasten the finger strap not too loose after
   confirming that the sensing part is located on the root part of first joint of the index
   finger. The wrist strap (wrist fasteners) should be fasten tightly not to move around
   a wrist.
(2) Press the 'S(start)' button : LCD is ON and displays the device ID and the current
   settings.

 - The status of the monitor is marked as dot, '•', to the left of the display. The modes
   are 'Set', 'Mode' and 'Com'. By default, '•' should appear at 'Set' and 'Com' at the
   same time.

2. Heart rate measurement

(1) In order to start the heart rate measurement, press "M (Measure On)" button.
   * Measuring Notes
   The initial 10 seconds are needed to initialize the measurement, it is
   recommended during this first 10 seconds not to move your fingers and hands,
   and make your hands as if holding an egg lightly.

(2) If the 10 seconds initialization is successful, the heart rate monitor displays your current heart rate at the top of the LCD display.

 *. Notice

  In some cases (not usual), If it displays zero '0' for a while, It is recommended to press the 'M'(Measure Off) button to stop measuring and restart monitor after re-worn the device.

(3) During exercise, any of the buttons should not be pressed.

3. After using the heart rate monitor.

(1) In order to terminate the heart rate measurement, press 'S (Stop)' button.
   The heart rate monitor will turn off all display. After you wear off the gloves, please be kept charged by plugging in the adapter.

(2) Pressing 'S(stop)' button, If the monitor displays 'BUSY', you should not do any operation and let it terminate automatically.

4. How to store and maintenance

(1) Storage environment : Temperature -10~55 ℃, humidity is kept at less than 95%.
(2) The following points should be taken when storing.
   ① not exposed to corrosive gases.
   ② should be kept away from moisture and dust.
   ③ should be kept clean.

5. Precautions during use

(1) Ware the sensing part with care to avoid application of excessive force.
(2) Remain stop during 10 to 20 seconds after pressing the 'M(measure)' button
(3) Do not stare at the light of the sensing part since the LED light is harmful if you stare on.

(4) This device was developed for purposes described in this manual and the manufacturer is not responsible for side effects caused by an improper purpose or improper use.

(5) Before using the device and accessory, please check and confirm that there is no faulty. When in doubt, do not use and notify the manufacturer or service center immediately.

(6) This device should be repaired by an approved person and approved organizations.

(7) This device should not be repaired by user itself.

(8) Use only standardized accessories which is provided with this device.

IV. Electrical rating

(1) The type and degree of protection to protect against electrical shock :
The internal power-type equipment, BF-type mounting

(2) Electrical Rating: DC 3.7V Lithium polymer battery

V. Matters

(1) The product name, model name (model): heart rate monitor (HRM-1000)

(2) the manufacturer's name and address:

- Company Name : H3 System Co., Ltd.
- Address: 3rd floor, Daedeok Bldg., 397-27, Doryong-dong, Yuseong-gu, Daejeon city, Korea (republic of)
- Phone : +81-42-862-9313~4
- Homepage : http://www.h3system.co.kr

(3) manufacturer's authorization and manufacturing product license number

- Manufacturer's authorization: listed after approval
- Manufacturing product license number: listed after approval

(4) The manufacture's serial number, manufacturing date, weight, packaging unit

- manufacture's serial number: listed after manufacture
- Date of Manufacture: listed after manufacture

- Weight: 60g (excluding charging adapter)

- Packing: 1set

(5) How to use (including performance), and use precautions or warnings, Storage: written at a separate attachment

(6) Purpose: To measure and display heart rate during exercise.

(7) Other necessary matters

① The type and degree of protection to protect against electrical shock :

The internal power-type equipment, BF-type mounting

② Electrical Rating: DC 3.7V Lithium polymer battery

(8) This device is for medical equipment (in Korea).

※ The above information is listed on the back of the device, packaging and attachments.

Regulatory Statements to be included in the Users Guide for Sputnik

USA-Federal Communications Commission (FCC)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by tuning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna
-Increase the distance between the equipment and the receiver.
-Connect the equipment to outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.