



**o\_synce**

GERMAN ENGINEERING





**MIXfree**

QUICK START GUIDE

## TABLE OF CONTENTS

Scope of delivery.....	2
Important Notes .....	3
General Information for Training .....	6
Overview of the functions.....	7
Transmission of signal and methods of Devices Measurement .....	7
Getting started .....	8
General operation of the HR monitor.....	9
Basic settings .....	11
Training recording.....	15
Technical specifications and batteries.....	19

## SCOPE OF DELIVERY

Heart rate monitor with wrist band	
Chest strap	

In addition: Operating instructions

## IMPORTANT NOTES

Please carefully read through these operating instructions, keep it for future reference and also make it available to others.

### Training

- This product is not a therapeutic device. It is a training instrument, which was developed for the measurement and representation of the human heart rate.
- With high-risk sports, please note that the use of the heart rate monitor can represent an additional source of injury.
- If in doubt or for illnesses, please consult your doctor concerning the values of your upper and lower target heart rate as well as the duration and frequency of training. In such a way, you can achieve optimal results when training.
- **WARNING:** People suffering from heart and circulatory illnesses or those with pacemakers should only use this heart rate monitor after having consulted their doctor.

## **Application**

- The device is only intended for private use.
- This device may only be used for the purpose it was designed for and in the manner outlined in this operating instructions. Any form of improper use can be dangerous. The manufacturer is not liable for damages that are caused by improper or incorrect use.
- The heart rate monitor is waterproof. (see chapter „Technical specifications and batteries“)
- Electromagnetic disturbances may occur. (see chapter „Technical specifications and batteries“)

## **Cleaning and care**

- From time to time, carefully clean your chest strap, elastic chest strap and heart rate monitor with a soap and water solution. Then rinse off all components with clean water. Carefully dry them with a soft towel. You can hand wash the elastic chest strap at 30° without fabric softener. The chest strap is not made for the dryer!
- Store the chest strap in a clean and dry place. Dirt impairs the elasticity and functioning of the transmitter. Sweat and moisture can keep the electrodes wet and consequently activate the transmitter, which shortens battery life.

## **Repair, Accessories and Disposal**

- Prior to use, it should be ensured that the device and accessories are free of damage. If in doubt, do not use the device and consult your sales representative or the customer service address provided.

- Repairs may only be conducted by customer service or authorized dealers. Please do not in any case attempt to repair the device!
- Use the device only in combination with the accessories provided with it.
- Avoid contact with sunscreen or the like since these can cause damage to the imprint or plastic components.
- Please dispose of the device in accordance with Waste Electric and Electronic Equipment 2002/96/EC - WEEE. For inquiries, please contact the municipal authority responsible for disposal in your area.



## GENERAL INFORMATION FOR TRAINING

This heart rate monitor serves to measure the human pulse. By means of various settings, you can support your individual training program and monitor your pulse. You should monitor your pulse during exercise because you should prevent your heart from excessive strain on the one hand and on the other in order to achieve the optimal training results. The table provides you with some information on the selection of your training zone. The maximum heart rate reduces with advancing age. Information on the training heart rate must therefore always be in relation to the maximum heart rate. The following rule of thumb helps to identify the maximum heart rate:

### 220 - age = maximum heart rate

The following example applies to a 40-year-old person:  $220 - 40 = 180$

	Heart/health programme	Fat burning zone	Fitness programme	Endurance training programme	Anaerobic training
Max. heart rate range	50 - 60%	60 - 70%	70 - 80%	80 - 90%	90 - 100%
Effect	Strengthens the heart and the circulatory system	The body burns the highest percentage of calories from fat. Strengthens the heart and the circulatory system, enhances fitness	Improves the respiratory and circulatory system. Ideal to promote the basic endurance	Improves speed maintenance and increases basic speed	Overloads specific muscles. High injury risk for athletes at amateur level, risk related to the heart in case of disease
Suitable for	Ideal for beginners	Weight control and loss	Athletes at amateur level	Ambitious athletes at amateur level, professional athletes	Only professional athletes
Training	Regenerative training		Fitness training	Endurance training	Fitness training addressing specific zones

See the chapter "Basic settings" on how to individually set your training zone.

## OVERVIEW OF THE FUNCTIONS

### HR functions

- Exact ECG heart rate measurement
- Transmission: analogue
- Individual training zone adjustable
- Acoustic alarm for exit from the training zone
- Maximum training heart rate
- Average training heart rate (AVG)
- Calorie consumption in [Kcal] (basis: jogging)
- Fat burning in [g]

### Time functions

- Time of day
- Stop watch

### Settings

- Age
- Gender
- Weight in [kg]

### Features

- Display illumination

## TRANSMISSION OF SIGNAL AND METHODS OF DEVICES MEASUREMENT

### Receiving range of the heart rate monitor

Your heart rate monitor picks up the heart rate signals sent by the chest strap transmitter within a range of 70 centimeters.

### Sensors on the chest strap

The entire chest strap consists of two components: the actual chest strap and an elastic tension belt. On the inside of the chest strap contacting the body, there are two rectangular, corrugated sensors. Both sensors determine your heart rate ECG exactly and transmit this to the heart rate monitor.

## GETTING STARTED

### Putting on the heart rate monitor

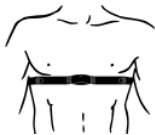
You can wear your heart rate monitor like a wrist watch.

### Activating the HR watch from transport mode

Press the buttons **SET/MENU** and **START/STOP** simultaneously to activate the HR monitor from the transport mode.

### Putting on the chest strap

- Tighten the chest strap with the elastic tension belt. Adjust the length of the belt such that the belt is snug, but neither too loose nor too tight. Position the belt around the chest such that the logo is facing outwards and in the correct position directly over the breast bone. For men, the chest belt should be located directly below the pectoral muscles, for women, directly below the breast.
- Since optimal contact between the skin and the heart rate sensors can not be created immediately, it may take some time until the heart rate is measured and displayed. If necessary, alter the position of the transmitter in order to achieve optimal contact. Most of the time, sufficient contact is achieved through the accumulation of sweat beneath the chest strap. You can, however, also wet the contact points on the inside of the chest strap. For this, lift the chest strap up from the skin slightly and wet the two sensors with saliva, water or ECG gel (available at the chemistry). The contact between the skin and chest strap may not be interrupted also with greater movements of the thorax





such as during deep breathing. Significant chest chair can interfere with and even prevent contact.

- Put on the chest strap a few minutes before starting in order to warm it up to body temperature and establish optimal contact.

## GENERAL OPERATION OF THE HR MONITOR

### Buttons on the HR watch



1 SET/MENU

- Switches into the basic settings and between the different setting displays.
- Switches between training time and time of day in the training menu.

2 START/STOP

- Adjusts values. Press and holding accelerates the entry.
- Starts and stops functions.
- The display is illuminated for 5 seconds by pressing both buttons simultaneously.

## Display



- 1 Top line
- 2 Bottom line
- 3 **Symbols**



Heart rate is being received (flashing).



The pulse indicator shows you in the semicircle at the bottom in which area of the training zone you are currently training (LOW, OPTIMAL, HIGH).

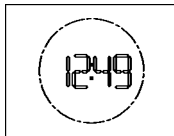
LOW indicates the lower training limit, HIGH the upper training limit.



Acoustic alarm for leaving the training zone and for pressing a button is activated.

## Power saving mode

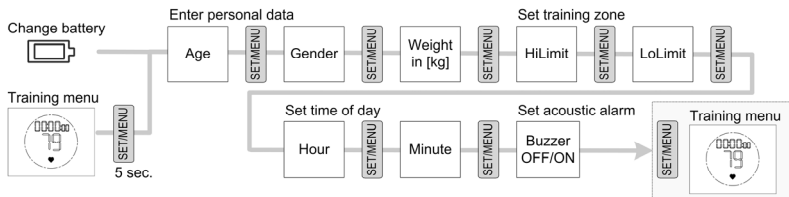
If your heart rate monitor has not received any signal for approx. 2 minutes, it switches to the power saving mode. Only the current time will then be displayed. Press the **START/STOP** button to reactivate the HR monitor.



## BASIC SETTINGS

### Overview

Adjust values with START/STOP. Short press = single entry, press and hold = accelerates the entry.



In the setting menu you can:




- Enter your personal data. Based on this data, your HR monitor determines your calorie consumption and your fat burning during training!
- Set your training zone. Your HR monitor calculates your ideal training zone automatically. If required, you can change it manually in the setting menu. During training, your HR monitor will emit a acoustic signal when it leaves the training zone if the acoustic alarm is activated.
- Set the time of day.

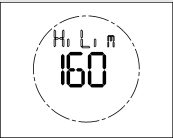
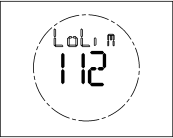
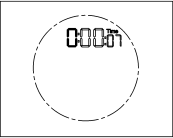
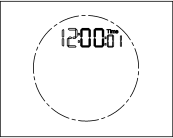

- Switch the acoustic alarm on or off when leaving the training zone and when pressing a button.

To change the settings in the setting menu proceed as follows: You are in the training menu. Your training time displays **00:00:00**. Press the **SET/MENU** button for 5 seconds. Your HR monitor switches into the setting menu.



When you change the battery you will automatically get into the setting menu. Your previously stored settings will be lost during this process. Enter your data once more.

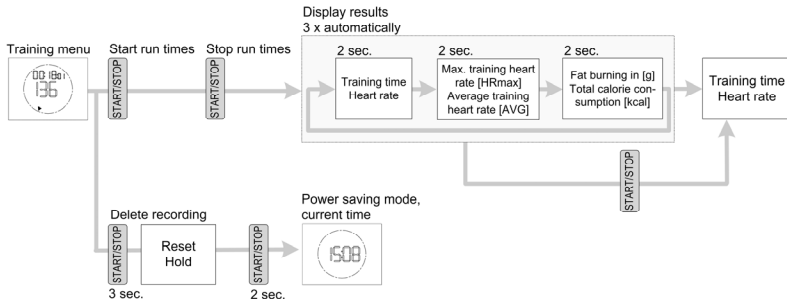
	<p><b>Enter personal data</b>  <b>AGE</b> is displayed.  <b>START/STOP</b> Set your age (10-99).</p>	
<p><b>SET/MENU</b></p>	<p><b>Gender</b> is displayed.  <b>START/STOP</b> Select <b>M</b>, if you are male. Select <b>F</b>, if you are female.</p>	
<p><b>SET/MENU</b></p>	<p><b>Weight</b> is displayed.  <b>START/STOP</b> Please select your weight (20-227 kg).</p>	

<p>SET/MENU</p>	<p><b>Set training zone</b> Hi Lim (High Limit) is displayed. You can change the upper pulse limit (41-239) of the automatically calculated training zone with <b>START/STOP</b>.</p>	 A circular cycling computer display with a dashed border. The text "Hi Lim" is at the top, and the number "160" is in the center.
<p>SET/MENU</p>	<p><b>Lo Lim (Low Limit) is displayed.</b> You can change the lower pulse lime (40-238) of the automatically calculated training zone with <b>START/STOP</b>.</p>	 A circular cycling computer display with a dashed border. The text "Lo Lim" is at the top, and the number "112" is in the center.
<p>SET/MENU</p>	<p><b>Set time of day</b> The hour setting blinks. <b>START/STOP</b> Set the hour (0-24).</p>	 A circular cycling computer display with a dashed border. The text "00:00" is in the center, with the first two zeros appearing to blink.
<p>SET/MENU</p>	<p>The minute setting blinks. <b>START/STOP</b> Set the minute (0-59).</p>	 A circular cycling computer display with a dashed border. The text "12:00" is in the center, with the last two zeros appearing to blink.
<p>SET/MENU</p>	<p><b>Set acoustic alarm</b> <b>Buzzer OFF</b> is displayed. <b>START/STOP</b> Turns the acoustic alarm on (ON) and off (OFF) when leaving the training zone and when pressing a button.</p>	 A circular cycling computer display with a dashed border. The text "BUZZER" is at the top and "OFF" is in the center.

SET/MENU

Back to the training menu.  
Information on the functions in the training menu can be found in chapter "Training recording".

## Overview





In the training menu you can:

- Stop your run times.
- Display your training data.
- Delete all recordings.

As soon as you are in the training menu, the training time already recorded will be displayed in the top line (after deletion: 00:00:00) and your current pulse in the bottom line.

In the top line you can switch between training time and time of day with **SET/MENU**.



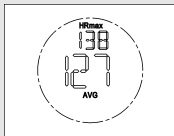
	<p><b>Start and stop run times</b></p> <p>If you have already stopped a run time, the recorded training time is displayed in the top line.</p>	
<p>START/STOP</p>	<p>Start the recording.</p> <p>Your current pulse is displayed in the bottom line.</p>	
<p>START/STOP</p>	<p>Stop the recording.</p>	
	<p><b>Display results</b></p> <p>Your different training values will automatically be displayed alternately every 2 seconds. This display repeats itself three times.</p> <p><b>Display 1:</b></p> <p>Top line = Recorded training time; Bottom line = Current heart rate</p> <ul style="list-style-type: none"> <li>♥ Your heart rate is being received.</li> <li>▶ The pulse indicator shows you in the semicircle at the bottom in which area of the training zone you are currently training.</li> </ul>	



**Display 2:**

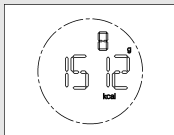
Top line = Maximum training heart rate **HRmax**;

Bottom line = Average training heart rate **AVG**

**Display 3:**

Top line = Fat burning [g];

Bottom line = Total calorie consumption [kcal]






The calculation of the total calorie consumption is conducted based on moderately fast jogging. The basis for the display of the calorie consumption and fat burning are personal data (basic settings) and the time and heart rate measured during the training session.

Afterwards the display returns automatically to the running time which can be started and stopped once again.

**Please note:** By pressing **START/STOP** you can return to the display to start and stop the running time once again



	even during the alternating display.	
	<p><b>Delete recording</b></p> <p>You are now in the training recording. Your last recorded training time is displayed in the top line.</p>	
<p><b>START/STOP</b></p> <p>3 sec.</p>	<p>Delete the recording.</p> <p><b>Reset Hold</b> is displayed.</p>	
<p><b>START/STOP</b></p> <p>2 sec.</p>	<p>Press the <b>START/STOP</b> button until the monitor switches to the power saving mode. The current time is displayed.</p>	

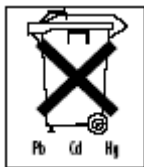
## TECHNICAL SPECIFICATIONS AND BATTERIES

HR monitor	Waterproof to 30 m (suitable for swimming)
Chest strap	Waterproof (suitable for swimming)
Transmission frequency	5,3 KHz
Battery HR monitor	3V lithium battery, type CR2032 (Recommendation: SONY batteries) Service life: approx. 1 year (approx. 1 hour usage daily)
Battery chest strap	3V Lithium-Batterie, Typ CR2032 (Recommendation: SONY batteries). Service life: approx. 28 months (approx. 1 hour usage daily)

## Replacing the batteries

The battery of the HR monitor may only be replaced by a specialized dealer (any lock-maker's shop) and at the service address provided. You can replace the battery in the chest strap on your own. The battery compartment is located on the inner side. Use a coin or the battery to be used to open the compartment. The positive pole of the battery inserted must face upwards. Carefully close the battery compartment again.

Used batteries do not belong in the household garbage. Dispose of these through your electronics dealer or your local collecting point for recoverables. You are legally required to do this. We will find this symbol on batteries containing toxic chemicals: Pb = battery contains lead, Cd = battery contains cadmium, Hg = battery contains mercury



## Distortion and interference

In the HR monitor, a receiver for signals from the chest strap transmitter is integrated. During use, it may arise that the HR monitor receives signals other than those transmitted by the chest strap.

### How can I recognize interference?

Interference can be recognized in that the values displayed are unrealistic. If your normal heart rate amounts to 130 bpm and it is suddenly shown to be 200, then a short-term disturbance is present. Once you have removed yourself from the vicinity of the source causing the disturbance, the values will automatically resume being accurate. Please note that distorted values can mildly influence the training result displays and overall values.

## **What kind of causes for interference are there?**

In some situations, short-range electromagnetic interference can occur. In order to avoid these, keep well away from these sources.

- Nearby power lines
- Walking through security gates in airports.
- Nearby overhead lines (tram)
- Nearby traffic lights, television sets, car motors, bike computers
- Nearby exercise equipment
- Nearby mobile phones

## **Interference from other devices for measuring heart rates**

The HR monitor as a receiver can react to interfering stray signals such as other heart rate monitors within a vicinity of one metre. This can result in incorrect measurements particularly when training in groups. If you e.g. jog next to one another, it can be beneficial to wear the HR monitor on the other wrist or to increase the distance to one's training partner.