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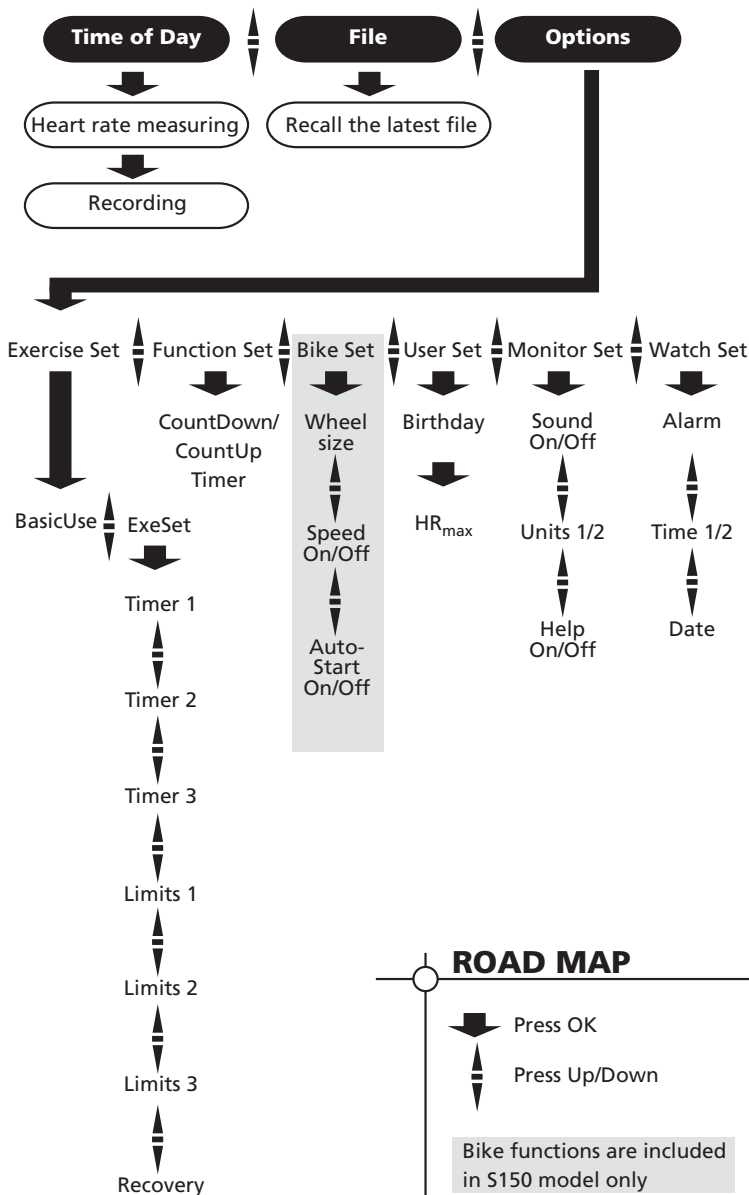


USER'S MANUAL

S120™ S150™


HEART RATE MONITOR

POLAR®



CONTENTS

This manual contains user information for both Polar S120™ and Polar S150™ heart rate monitor owners.

 The information specific only for the S150 is marked with a grey background and a bike symbol.

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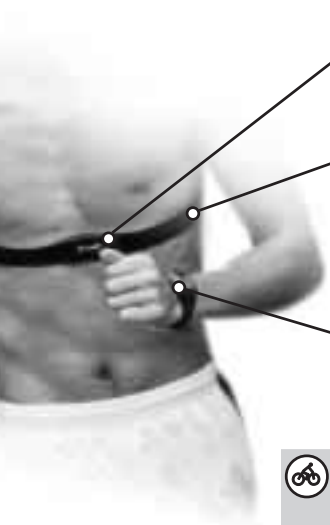
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a

This section describes the most essential issues of monitoring your heart rate with Polar S120/S150. To fully benefit from your heart rate monitor, after reading this section, please read Settings, Exercise, and Recalling Training Information sections.

POLAR HEART RATE MONITOR PARTS



The transmitter detects your heart rate and transmits it to the wrist receiver.

The elastic strap holds the transmitter comfortably, yet firmly, in the correct position.

The wrist receiver displays your heart rate and other data during exercise. Enter your personal settings into the receiver and analyze the exercise file after exercising.



The **S150** set also contains **Polar Bike Mount™**, which allows you to attach the wrist receiver to the bike's handlebar

A speed sensor™, which measures speed and distance when cycling

An adapter, which transfers data from the speed sensor to the wrist receiver

FUNCTIONS OF BUTTONS

Signal

- Turns heart rate zone alarm on or off during exercise.

Reset

- Resets the heart rate monitor.

Stop

- Stops measuring heart rate.
- Exits the displayed mode level and returns to the previous mode level.
- **Pressing and holding the button brings you to the Time of Day display, wherever you are in the File or Options mode.**

OK

- Starts measuring heart rate.
- Records laps.
- Locks in your selection in the File and Options modes.

Up

- Moves to the following mode.
- Moves onward in the menus.
- Increases the selected value.
- Pressing and holding the button swaps heart rate limits in the Recording mode.

Down

- Moves to the previous mode.
- Moves backward in the menus.
- Decreases the selected value.



HOW TO WEAR THE HEART RATE MONITOR



1. Attach the transmitter to the elastic strap.
2. Adjust the strap length to fit snugly and comfortably. Secure the strap around your chest, just below the chest muscles, and buckle it.
3. Lift the transmitter off your chest and moisten the two grooved electrode areas on the back.
4. Check that the wet electrode areas are firmly against your skin and the Polar logo is in a central, upright position.
5. Keep the wrist receiver within 3 feet/ 1 meter of your transmitter.

HOW TO MEASURE HEART RATE

The display is blank when the receiver leaves the factory. When using the receiver for the very first time, activate the blank display by pressing OK twice. Time of day will appear.

1. Starting with the display showing the time of day, press OK. Your heart rate appears in a few seconds.
2. Press OK again. The stopwatch starts running. Your exercise data is now being recorded.
3. Press Stop twice to stop heart rate monitoring.

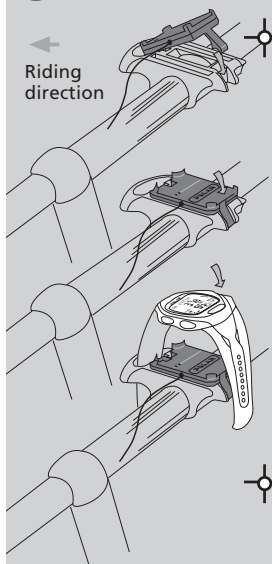
IF PROBLEMS OCCUR: SOURCES OF DISTURBANCE

If the heart rate reading is irregular or abnormal, or if there is no heart rate reading at all, check that

- the two grooved electrode areas on the back of the transmitter are moistened
- there is no one else using a heart rate monitor within 3 feet/ 1 meter
- you are not near high voltage power lines, televisions, mobile phones or other sources of electromagnetic interference.



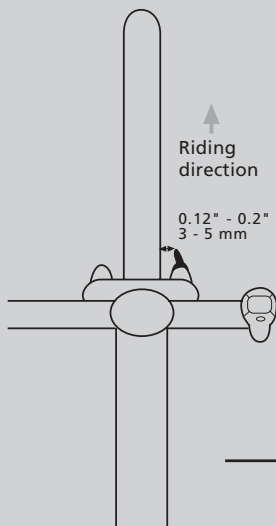
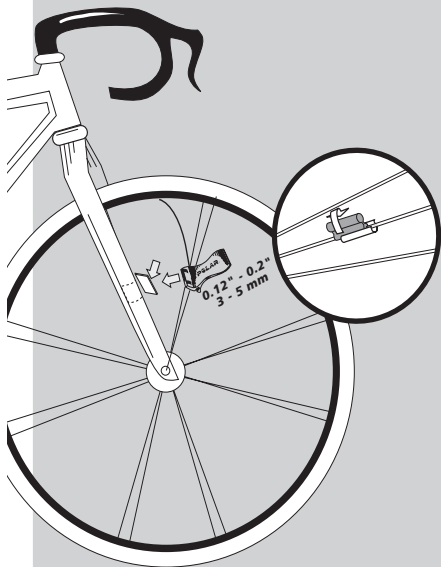
S150: INSTALLING THE POLAR BIKE MOUNT AND THE SPEED SENSOR ADAPTER




Check that the Bike Mount fits snugly on the handlebar. If necessary, attach the rubber pad on the inner surface of the Bike Mount. Use cable ties to secure the Bike Mount snugly on the handlebar. The correct place is on the right side of the handlebar. Attach the adapter to the Bike Mount so that the wire is pointing to the left. Press the adapter so that it stays firmly in its place. Attach the receiver snugly by securing the wrist strap.

S150: INSTALLING THE SPEED SENSOR

1. Check the front side of the right front fork to find a suitable place for the speed sensor. Clean and dry the area.



2. Pass the adapter wire from the Bike Mount to the chosen area so that the wire is not hanging loosely. If necessary, wind the wire around the front fork and brake or gear cables.
3. Place the rubber pad on the fork and the speed sensor on the rubber pad.
4. Adjust the angle of the sensor as shown in the illustrations.
5. Pass the cable ties through the sensor and loosely adjust the ties.
6. Install the spoke magnet so that it faces the sensor. Rotate the magnet around the spoke before putting the metal cover on.
7. Check that the sensor does not touch the spokes. The distance between the sensor and the magnet should be 0.12" - 0.2" / 3 - 5 mm.
8. Tighten the cable ties securely and cut off the excess cable tie ends.
9. Secure the adapter wire with cable ties.

 Check that you can turn the handlebar normally, that cable wires for the brakes or gearing do not catch on the sensor and that the sensor does not disturb the use of the brakes or gearing.

AFTER EXERCISING: HOW TO TAKE CARE OF YOUR HEART RATE MONITOR

1. Carefully wash the transmitter with a mild soap and water solution.
2. Rinse it with pure water.
3. Dry the transmitter carefully with a soft towel.
4. Keep the wrist receiver clean and wipe off any moisture.
5. Store the heart rate monitor in a clean dry place; dirt impairs the conductivity and functioning of the transmitter and, sweat and moisture can keep the electrodes wet and the transmitter activated, shortening the battery life.

MODES AND THEIR FUNCTIONS

This section gives you an overview of the functions of your heart rate monitor.

Time of Day

Press
OK

Press
Up

FILE

Press
Up

OPTIONS

**Heart Rate
Measuring Mode**

Press
OK

Recording Mode



Time of Day Mode

Your Polar wrist receiver is a watch with two time zones, date and weekday indicators, and alarm function.



Heart Rate Measuring Mode

Displays your heart rate. In this mode you can select whether you want to exercise with BasicUse or an Exercise Set. This choice will be activated when you start the Recording mode.



Recording Mode

Displays your heart rate and other exercise information according to your choice in Heart rate measuring mode, and records the information to the file.

1. BasicUse: you can measure and record exercise information without entering any settings
2. Exercise Set: program three timers with different target heart rate zones to guide your exercise; you can also program a recovery calculation



File Mode

Recalls the information of your latest exercise:

- total duration of the exercise
- average and maximum heart rate
- recovery value
- heart rate limits of the target heart rate zones
- times spent in, above and below the target heart rate zones
- lap information
- cumulative exercise time
- distance cycled during the exercise **(S150)**
- average and maximum speed **(S150)**
- cumulative riding time **(S150)**
- cumulative distance **(S150)**



Options Mode

Enter the following settings:

- *Exercise settings:*
select BasicUse with no settings, or set your own Exercise Set with timers and target heart rate zones
- *Function settings:*
set independent Countdown or CountUp Timer
- *User-specific information:*
set your age and maximum heart rate
- *Monitor settings:*
sound On/Off, select measurement units, Help On/Off
- *Watch settings:*
set alarm, time and date
- *Bike settings (S150):*
set wheel size, speed measurement On/Off, AutoStart On/Off



SETTINGS

Options mode

b

Time of Day

Press Down

OPTIONS

Press OK

EXE. SET

Press Up

FUNCTION SET

Press Up

BIKE SET



Press Up

USER SET

Press Up

MONITOR SET

Press Up

WATCH SET

To customize your Polar heart rate monitor to optimally serve you, please read this section prior to using your heart rate monitor as a training tool.

! You can always return to the previous mode level by pressing the Stop button. Press and hold Stop to return to the Time of Day mode.

EXERCISE SETTINGS

OPTIONS

Press OK

EXE. SET

Press OK

BasicUse (0) ExeSet (1)

Press Up

Press OK

Timer1

Press Up

Timer2

Press Up

Timer3

Press Up

Limits1

Press Up

Limits2

Press Up

Limits3

Press Up

Recovery

Press Up

In this mode, you select whether to exercise with BasicUse option or your own Exercise Set. If you select an Exercise Set, you can set three timers, three target heart rate zones and a recovery function.

You can also make the exercise type selection in Heart rate measuring mode, before entering the Recording mode.

1. BasicUse

BasicUse is a simple exercise type. No settings are selected prior to exercising with BasicUse. There are no heart rate limits in use in this mode. While exercising, the following optional values can be seen in the display:

- current heart rate and average heart rate of the exercise
- heart rate as a % of your maximum heart rate
- stopwatch
- time of day
- split and lap times
- Countdown or CountUp Timer
- current, maximum and average speed **(S150)**
- trip distance **(S150)**



Setting BasicUse

1. In the Time of Day display, scroll up or down until OPTIONS is displayed.
2. Press OK. EXE. SET is displayed.
3. Press OK. Scroll up or down until "BasicUse" is displayed.
4. Press OK. The receiver returns to EXE. SET.

Press and hold Stop to return to the Time of Day display or scroll up or down to continue your settings.

You have selected the BasicUse option and you can start exercising. However, remember to set your age and HR_{max} (see User information settings) so that your heart rate in % of HR_{max} is correctly displayed.

2. Exercise Set

To fully utilize the functions of your heart rate monitor, set your personal exercise set. While using an exercise set, you can see all the same information as in the BasicUse mode. Additionally, you can use timers, target heart rate zones and recovery calculation.

Exercise Set

- Timers 1, 2 and 3 On/Off
- Heart rate limits 1, 2 and 3 On/Off
- Recovery calculation On/Off

The timers follow each other sequentially. At the end of each timer, the receiver will alarm you with a sound to swap the heart rate limits. You can swap them by pressing and holding the upper right button.

The heart rate limits are independent from the timers. You can also set only heart rate limits and swap them during exercise, without using the timers.

Setting an Exercise Set

1. In the Time of Day display, scroll up or down until OPTIONS is displayed.
2. Press OK. EXE. SET is displayed.
3. Press OK. Scroll up or down until "ExeSet" is displayed.
4. Press OK. "Timer1" is displayed.
5. Press OK. Scroll up or down to set Timer 1 on or off. Press OK.
If you set Timer 1 off, press Up and continue from step 9.
If you set Timer 1 on, continue from step 6.
6. Minutes start to blink. Scroll up or down to adjust minutes of Timer 1. Press OK.
7. Seconds start to blink. Scroll up or down to adjust seconds of Timer 1. Press OK and Up.
8. Repeat steps 5 - 7 to adjust timers 2 and 3.

! If Timer 1 is set off, timers 2 and 3 will not be displayed.
• If Timer 2 is set off, Timer 3 will not be displayed.

9. "Limits1" is displayed. Press OK.
10. "Lim1High" is displayed. Scroll up or down to set the upper heart rate limit.
11. Press OK. "Lim1Low" is displayed. Scroll up or down to set the lower heart rate limit. If you want to turn Limits 1 off, press and hold Signal button.

12. Press OK and Up.

13. Repeat steps 9 -12 to set limits 2 and 3.

! If limits are turned off and you want to reactivate them, press OK in the particular Limits display. OFF starts to blink. Press and hold Signal. The limits will reappear.

14. After setting the limits, scroll up. "Recovery" is displayed.

15. Press OK. Scroll up or down to set recovery calculation on or off. Press OK.

If you set recovery calculation off, skip the rest of exercise settings. Press and hold Stop to exit exercise settings.

If you set recovery calculation on, continue from step 16.

16. "TIMER" or "Hr" starts to blink. Scroll up or down to select

A. Time-based recovery calculation (TIMER): recovery ends when the preset time is reached

or

B. Heart-rate-based recovery calculation (Hr): recovery ends when your heart rate drops to the preset heart rate.

Confirm by pressing OK.

17.

A. If you selected time-based recovery calculation, scroll up or down to set the recovery timer (minutes and seconds). Confirm your selections by pressing OK.

B. If you selected heart-rate-based recovery calculation, scroll up or down to set the heart rate value that will end your recovery. Press OK.

Press and hold Stop to return to the Time of Day display.

You have set an Exercise Set and you can start exercising.

However, remember to set your age and HR_{max} (see User information settings) so that your heart rate in % of HR_{max} is correctly displayed.

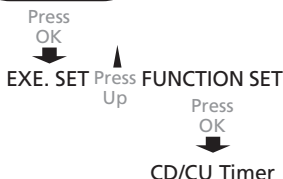
HOW TO DETERMINE YOUR TARGET HEART RATE ZONE

Your target heart rate zone is a range between the lower and upper heart rate limits expressed as a percentage of your current maximum heart rate (HR_{max}).

(See User information settings about determining your HR_{max} .)

- Heart rate between 50% and 60% of your HR_{max} : **Light intensity zone**. This zone is good for warm-up and recovery.
- Heart rate between 60% and 70% of your HR_{max} : **Light to moderate intensity zone**. This zone is good for losing and controlling weight. Staying in this target zone accustoms the body to exercise. If you are aiming for competition, you will start building your endurance base in this zone.
- Heart rate between 70% and 85% of your HR_{max} : **Moderate to heavy intensity zone**. Especially effective for improving aerobic fitness.
- Heart rate between 85% and 100% of your HR_{max} : **Heavy to maximal intensity zone**. Training occasionally in this zone increases your maximum performance capacity. It increases muscles' tolerance to lactic acid (shifts up anaerobic threshold) and improves sprinting and hard, short-effort ability.

OPTIONS



In this mode you can set an independent timer as a CountDown Timer (running down to zero) or a CountUp Timer (running up from zero). For example, you can use this timer to assist you in interval training, or to prevent dehydration so that the timer reminds you to drink regularly.

1. In the Time of Day display, scroll up or down until OPTIONS is displayed.
2. Press OK. EXE. SET is displayed.
3. Press Up. FUNCTION SET is displayed.

Setting Independent CountDown/CountUp Timer

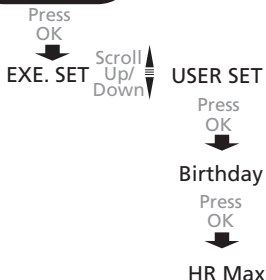
(If you start from Time of Day display, repeat steps 1 - 3.)

4. FUNCTION SET is displayed.
5. Press OK. "CDTimer" (CountDown Timer) or "CUTimer" (CountUp Timer) is displayed.
6. The text starts to blink. Scroll up or down to select CountDown or CountUp Timer.
7. Press OK. Minutes start to blink. Scroll up or down to set the minutes.
8. Press OK. Seconds start to blink. Scroll up or down to set the seconds. Press OK.

Press and hold Stop to return to the Time of Day display.

USER INFORMATION SETTINGS

OPTIONS



In this mode, you set your birthday and your personal maximum heart rate (HR_{max}), which are used when displaying your heart rate as a % of your maximum heart rate.

1. In the Time of Day display, scroll up or down until OPTIONS is displayed.
2. Press OK. EXE. SET is displayed.
3. Scroll up until USER SET is displayed.

Setting Your Birthday

(If you start from Time of Day display, repeat steps 1 - 3.)

4. USER SET is displayed.
5. Press OK. "Birthday" and "Month"/ "Day" blink in the display.
6. Scroll up or down to adjust your month/ day of birth.
7. Press OK. "Birthday" and "Day"/ "Month" blink in the display.
8. Scroll up or down to adjust your day/ month of birth.
9. Press OK. "Birthday" and "Year" blink in the display. Scroll up or down to select the correct year. Press OK.

Units 1: setting order is day - month - year.
Units 2: setting order is month - day - year.

! The setting range for the year of birth is 1921 - 2020.

Setting the Maximum Heart Rate (HR_{max})

(If you start from the Time of Day display, repeat steps 1 - 9.)

10. After setting your birthday, "HR Max" and a blinking number are displayed. This is your age-based maximum heart rate (HR_{max}) calculated according to your birthday ($HR_{max} = 220 - \text{age}$).

11.

A. Accept the age-based HR_{max} by pressing OK.

or

B. If you know your exact clinically tested current HR_{max} , scroll up or down to set the correct value and press OK.

The receiver returns to USER SET display.

! The receiver calculates your age-based HR_{max} according to your birthday and date settings. Check the date settings so that the age-based HR_{max} is correctly displayed (see section Watch settings).

! If the receiver battery is replaced, your HR_{max} value will be lost from the memory. Write down your clinically tested HR_{max} so you can recall it: _____

Press and hold Stop to return to the Time of Day display.

MONITOR SETTINGS

OPTIONS



In this mode you can

- turn the activity/button sound on or off
- select measuring units
- select whether you want to use the help function

1. In the Time of Day display, scroll up or down until OPTIONS is displayed.
2. Press OK. EXE. SET is displayed.
3. Scroll up or down until MONITOR SET is displayed.

Turning Activity/button Sound On/Off

(If you start from Time of Day display, repeat steps 1 - 3.)

4. MONITOR SET is displayed.
5. Press OK. "Sound" is displayed.
6. Press OK. On or OFF starts to blink.
7. Scroll up or down to set sound on or off. Press OK.

Press Stop to return to MONITOR SET. Press and hold Stop to return to Time of Day display.

Activity/button sound consists of *the button sound* and, in the HR measuring and Recording modes, the following activity sounds: *start, stop, lap recording, independent Countdown/CountUp Timer alarms, and the recovery calculation end sound.*

It does not consist of heart rate zone alarms, timer sounds (1, 2 and 3), or the watch alarm.

Selecting Measuring Units

(If you start from Time of Day display, repeat steps 1 - 3.)

4. MONITOR SET is displayed.
5. Press OK and scroll up or down until "Units" is displayed.
6. Press OK. Scroll up or down to select units 1 or 2. Press OK.

Press Stop to return to MONITOR SET. Press and hold Stop to return to Time of Day display.

	Units 1	Units 2
Birthday setting:	day-month-year	month-day-year
Speed	km/h	mph
Distance	km	miles
Trip	km	miles



Turning Help On/Off

(If you start from Time of Day display, repeat steps 1 - 3.)

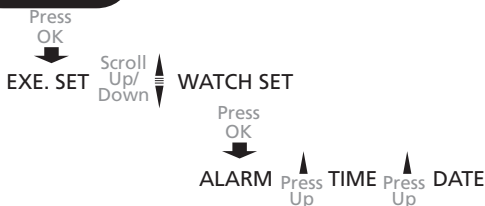
4. MONITOR SET is displayed.
5. Press OK and scroll up or down until "Help" is displayed.
6. Press OK. Scroll up or down to set Help function on or off.
Press OK.

Press Stop to return to MONITOR SET. Press and hold Stop to return to Time of Day display.

In the Heart rate measuring and Recording modes, if you change the information in the middle row, Help displays the name of the new function for a few seconds.

WATCH SETTINGS

OPTIONS



In this mode you can set time of day, date and alarm. You can set the time for two different time zones (TIME 1 and TIME 2).

1. In the Time of Day display, scroll up or down until OPTIONS is displayed.
2. Press OK. EXE. SET is displayed.
3. Scroll up or down until WATCH SET is displayed.

Setting Alarm

(If you start from Time of Day display, repeat steps 1 - 3.)

4. WATCH SET is displayed.
5. Press OK. ALARM is displayed.
6. Press OK. On or OFF starts to blink.
7. Scroll up or down to set alarm on or off. Press OK.
If you set the alarm off, skip the rest of the alarm settings.

- In 12 h time mode: Scroll up or down to select AM/ PM. Press OK.
In 24 h time mode: Skip this step.

! If you want to activate the 12h time mode, see “Setting Time of Day”, below.

- Hours start to blink. Scroll up or down to set the correct hour. Press OK.
- Minutes start to blink. Scroll up or down to set the correct minute. Press OK.

Press Stop to return to WATCH SET. Press and hold Stop to return to the Time of Day display.

Setting Time of Day

(If you start from Time of Day display, repeat steps 1 - 3.)

- WATCH SET is displayed.
- Press OK. Scroll up or down until TIME1/ TIME2 is displayed.
- Press OK. TIME1 or TIME2 starts to blink. Scroll up or down to select time 1 or 2.
- Press OK. 12h/ 24h starts to blink. Scroll up or down to select 12h or 24h time mode. Press OK.
- In 12 h time mode: Scroll up or down to select AM/ PM. Press OK.
In 24 h time mode: Skip this step.
- Hours start to blink. Scroll up or down to set the correct hour. Press OK.
- Minutes start to blink. Scroll up or down to set the correct minute. Press OK.

! Number 2 in the lower right corner of the Time of Day display indicates that Time 2 is in use.

Press Stop to return to WATCH SET. Press and hold Stop to return to the Time of Day display.

Setting Date

(If you start from Time of Day display, repeat steps 1 - 3.)

4. WATCH SET is displayed.
5. Press OK. Scroll up or down until DATE is displayed.
6. Press OK. "Month"/ "Day" appears in the display and the number starts to blink.
7. Scroll up or down to select the correct month/ day.
8. Press OK. "Day"/ "Month" appears in the display and the number starts to blink.
9. Scroll up or down to select the correct day/ month.
10. Press OK. "Year" appears in the display and the number starts to blink.
11. Scroll up or down to select the correct year. Press OK.



12h Time mode:
month - day - year.
24h Time mode:
day - month - year.

Press Stop to return to WATCH SET. Press and hold Stop to return to the Time of Day display.



Watch Setting Tips

These shortcuts allow you to set alarm and time quicker:

Shortcut to alarm and time setting

Time of Day display  press and hold Signal  Alarm and time can now be set

Swap Time 1 / Time 2

Time of Day display  press and hold Down  swap between Time 1 and Time 2



BIKE SETTINGS (S150)

OPTIONS



In this mode you can

- set wheel size
- select whether you want to measure your speed
- select whether you want the recording to start automatically when you move your bicycle

1. In the Time of Day display, scroll up or down until OPTIONS is displayed.
2. Press OK. EXE. SET is displayed.
3. Scroll up or down until BIKE SET is displayed.

Setting Wheel Size

(If you start from Time of Day display, repeat steps 1 - 3.)

4. BIKE SET is displayed.
5. Press OK. "Wheel" and a number are displayed.
6. Press OK. Scroll up or down to set wheel circumference (mm). Press OK.

! The wheel size is always given in mm, whether units 1 or 2 are in use.

Press Stop to return to BIKE SET. Press and hold Stop to return to Time of Day display.

! If the receiver battery is changed, the wheel size will be lost from the memory. Write down the circumference so that you can recall it: _____mm

Look at the wheel of your bike and find the wheel diameter printed on it.

On the chart below, find your wheel diameter in inches or in ERTRO reading and match it to the wheel size in millimeters on the right.

ERTRO	Wheel size diameter (inches)	Wheel size setting (mm)
30-559	26x1.25	1953
35-559	26x1.5	1985
44-559	26x1.75	2030
47-559	26x1.95	2050
	26x1 1/8 Tubular	1970
	650-20C	1952
622-20	700x20C	2086
622-23	700x23C	2096
622-25	700x25C	2105
	700C Tubular	2130
	28 (700 B)	2237

Turning Speed Measurement On/Off

(If you start from Time of Day display, repeat steps 1 - 3.)

4. BIKE SET is displayed.
5. Press OK. Scroll up or down until "Speed" is displayed.
6. Press OK. Scroll up or down to set Speed on or off. Press OK.

Press Stop to return to BIKE SET. Press and hold Stop to return to Time of Day display.

Turning AutoStart On/Off

(If you start from Time of Day display, repeat steps 1 - 3.)

4. BIKE SET is displayed.
5. Press OK. Scroll up or down until "AutoStrt" is displayed.
6. Press OK. Scroll up or down to set AutoStart on or off. Press OK.

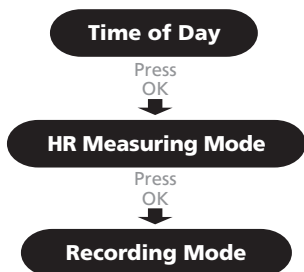
Press Stop to return to BIKE SET. Press and hold Stop to return to Time of Day display.

If you turn AutoStart on, the recording starts automatically when you move your bicycle, and stops when you stop moving your bicycle.

AutoStart and Stop provides accurate speed and distance averages.

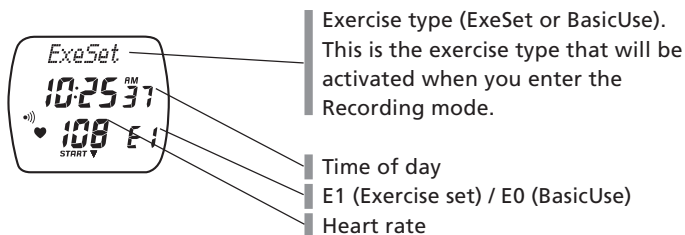
You can use two modes in your exercise: Heart rate (HR) measuring mode or Recording mode.


- in the HR measuring mode your heart rate is displayed but exercise data is not recorded
- in the Recording mode the stopwatch and other calculations start and your exercise is recorded

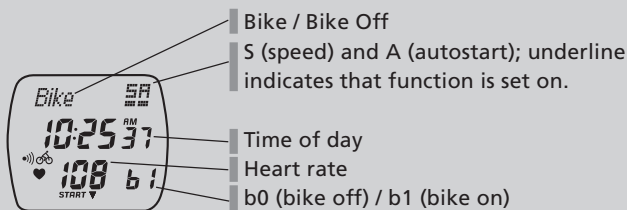


1. HEART RATE MEASURING MODE

1. Start from the Time of Day display.
2. Press OK. Your heart rate appears in a few seconds.
The following information will be displayed:



 **S150:** the following display will alternate with the previous display:



Selecting BasicUse or Exercise Set

In the Heart rate measuring mode you can select between two exercise types. This choice will be activated when you enter the Recording mode.

- BasicUse (no settings)
- Exercise Set (ExeSet) with timers, heart rate target zones and recovery calculation. Do the ExeSet settings in the Options mode (see section Exercise settings).

You can select whether to exercise with BasicUse or ExeSet in the HR measuring mode or in the Options mode.

Selecting the exercise type in the HR measuring mode

BasicUse or ExeSet is displayed in the top row. Press and hold Up button until the desired choice is displayed.

Press OK to start Recording mode.

S150: Setting Bike Functions On/Off

In the HR measuring mode you can set the bike functions on or off by pressing and holding Down button.

The choice is displayed in the lower right corner:

b0 = bike off

b1 = bike on

2. RECORDING MODE

In the HR measuring mode, press OK to enter Recording mode.

In the Time of Day mode, press and hold OK to enter Recording mode.

The stopwatch and exercise recording start when you enter the Recording mode. Recording is indicated by running bars on the right side of the display. The new exercise file is recorded over the previous one.

FUNCTIONS DURING EXERCISE

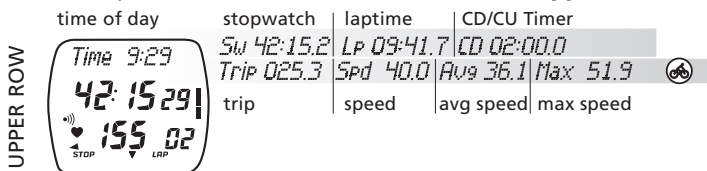
The following functions can be used both in the BasicUse and the Exercise Set.

Swapping the Displayed Exercise Information:

Briefly press the Down button to select the information in the **middle row**. When you change information in the middle row, the upper and lower rows also change.

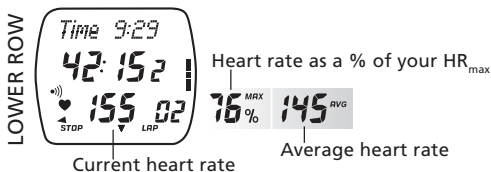


Press Up button to select the information in the **upper row**.



! The same information cannot be displayed in the middle and upper rows at the same time.

Press and hold Down button to select heart rate information in the **lower row**.



! Heart rate as a % of your HR_{max} is displayed only if you have set your birthday and HR_{max} (see section User Information Settings).

CountDown/CountUp Timer

You can use an independent timer during your exercise. The use of this timer is not recorded in the file.

Set the timer as described in section Function Settings.

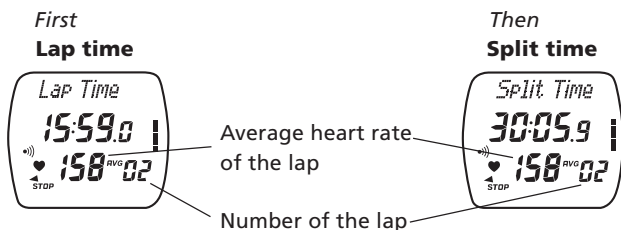
Press Signal button to start CountDown or CountUp Timer. While the timer is running, it can be restarted by pressing the Signal button again.

The timer will sound five beeps before it stops, if the activity sounds are On (see section Monitor settings).

The timer can be restarted at any time in the HR measuring and Recording modes.

Storing Lap and Split Time

Press OK to record a lap. Lap and split time will be displayed.



You can record a maximum of 60 laps (S120) or 50 laps (S150).

Pausing the Exercise

Press Stop. Stopwatch and exercise recording are paused; five bars on the right side of the display stop running. Countdown and CountUp Timers are not paused.

Press OK to continue exercising.

Or, press Stop again to return to Time of Day display.

! The receiver automatically returns to the Time of Day display within 5 minutes if you forget to quit the heart rate measuring after having stopped the stopwatch and taken the transmitter off your chest.



S150: If speed measurement is on, the timeout will be 30 minutes.

Stopping the Exercise

1. Press Stop to pause the exercise.
2. Press Stop again. Time of day is displayed.

Your lap and split times are automatically recorded, when you end the exercise.

Resetting the Trip Distance (S150)




1. Scroll up until Trip is displayed in the upper row.
2. Press and hold Signal until the trip reading is zero, release.
3. To continue your exercise press OK.

FUNCTIONS ONLY FOR EXERCISE SET (EXESET)

The following functions can be used only in Exercise Set. All the functions described in the section "Functions during exercise" are available also in this exercise type.

You can use three timers and three heart rate zones when exercising with Exercise Set. Heart rate zones are independent from the timers: the heart rate zone limits are not swapped automatically but at the end of each timer, you will hear a sound signal which alarms you to swap the limits manually.


Make sure that you have turned the sound function on () is displayed) in order to hear the beeps!


If timers are set on, they automatically start running once you start the stopwatch. Timers alternate in the following order: 1, 2, 3, 1, 2, 3 etc. You will hear 1 beep at the end of Timer 1, 2 beeps at the end of Timer 2, and 3 beeps at the end of Timer 3. These beeps alarm you to switch the limits.

Timers stop running when you stop the stopwatch.

Turning Audible Heart Rate Zone Alarm On/Off

Press and hold Signal button.

When your heart rate is outside the target zone limits, and  is displayed, the receiver will beep with each heartbeat.

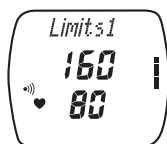
 **S150:** Trip distance is reset by pressing and holding Signal button. Therefore trip should not be displayed in the upper row when turning zone alarm On/Off.

Swapping Heart Rate Target Zones

Swap the heart rate target zones by pressing and holding Up button. The limits are shown for a few seconds when they are activated.

Checking Current Heart Rate Limits with Heart Touch Function

Bring the receiver near the transmitter's Polar logo.



1. The current heart rate limits of the exercise are displayed.



2. Time spent in the selected target zone is displayed.

Recovery Calculation

Press and hold OK to start recovery calculation. During the recovery, you will see the following information:

Continue according to your settings: A. time-based or B. heart-rate-based recovery calculation.



A. Time-based recovery

- Recovery timer
- Current heart rate



B. Heart-rate-based recovery

- Difference between preset and current heart rate
- Current heart rate



At the end of recovery

- Recovery duration
- Drop in your heart rate

You can interrupt the recovery calculation by pressing Stop.

After the recovery calculation the exercise is paused. Continue the exercise by pressing OK or stop the exercise by pressing Stop.

RECALLING TRAINING INFORMATION

d

File mode

You can recall the information of your latest exercise in the File mode.

Time of Day

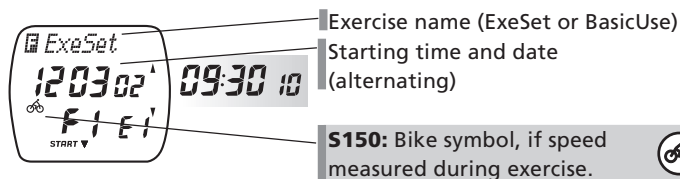
Press
Up

FILE

Press
OK

Recall the latest file

1. Start with the display showing time of day.
2. Press Up. FILE is displayed.
3. Press OK. The main information of the file is displayed:



4. Press OK. Exe. Time is displayed. Scroll up to recall the values stored in the file in the following order:

S120:


Exe. Time → RecoHR/RecoTime → Tot. Time → Limits1 →
InZone/Above/Below 1 → Limits2 → InZone/Above/Below 2 →
Limits3 → InZone/Above/Below 3 → LAPS

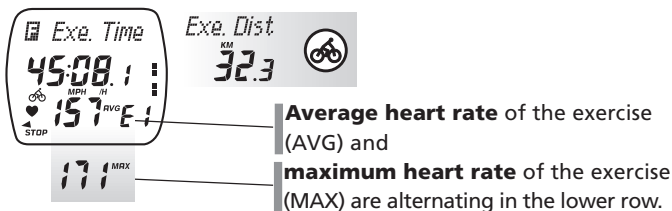
S150:

Exe. Time/Exe. Dist → RecoHR/RecoTime → Spd. Avg/Spd. Max →
Tot. Time → Limits1 → InZone/Above/Below 1 → Limits2 →
InZone/Above/Below 2 → Limits3 → InZone/Above/Below 3 →
Rid. Time → Odometer → LAPS

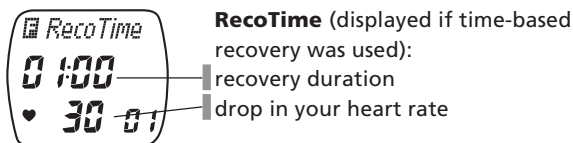
! You can always return to Time of Day display by pressing and holding Stop.

1 Exe. Time: The amount of time that you exercised with stopwatch running.

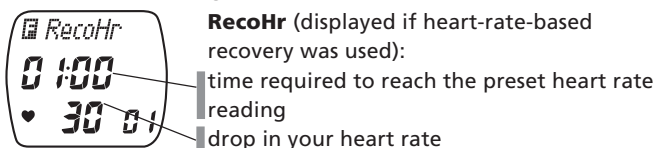
 **Exe. Dist (S150):** Distance cycled during exercise. Alternating with Exe. Time.



2 Recovery Information (displayed only if recovery calculation was used during the exercise):




Or



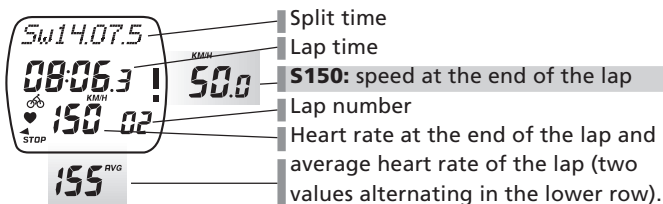
3 Spd. Avg/Spd. Max (S150): Average and maximum speed of the exercise (values alternate in the display).



4 Tot. Time: Cumulative exercise time during several exercise sessions, starting from the previous resetting. The time is displayed in hours and minutes until 99 hours 59 minutes is reached. After this the time is displayed in hours until 9999 hours is reached.

- 5 Limits 1/ 2/ 3:** Target zone limits 1, 2 or 3 are displayed if you exercised with an Exercise Set and the limits were on during exercise.
- 6 InZone 1/ Above 1/ Below 1, InZone 2/ Above 2/ Below 2, InZone 3/ Above 3/ Below 3:** Times spent in, above and below target zone 1, 2 or 3 (the values alternate in the display). These were calculated when the particular limits were used.
- 7 Rid. Time (S150):** Cumulative riding time during several exercise sessions starting from the previous resetting. 
- 8 Odometer (S150):** Cumulative cycled distance of several exercise sessions starting from the previous resetting.
- 9 LAPS:** Lap information, displayed if laps were recorded during the exercise.

Start with the display showing LAPS and number of recorded laps. Press OK. Scroll up or down to recall the recorded laps:



Press Stop to exit laps recall.

! Resetting the wrist receiver and battery replacement reset the cumulative counts (Tot. Time, Rid. Time, Odometer). Therefore, we recommend keeping a training diary.



ADDITIONAL FEATURE: **CONNECTION TO COMPUTER**

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Your Polar S120/S150 offers you the option of downloading one exercise set and monitor icons via Polar UpLink from our web site:

- USA and Canada: www.polarusa.com
- other countries: www.polar.fi

To be able to use the UpLink, you need a PC with a sound card (compatible with SoundBlaster™) and dynamic loudspeakers or earphones. See further instructions at our web site.

You can see the monitor icon by pressing and holding Up button in the Time of Day display. The default logo is the model name.

CARE AND MAINTENANCE



Your Polar heart rate monitor is a high-tech instrument of superior design and workmanship and should be treated with care. The suggestions below will help you fulfill the warranty obligations and enjoy this product for many years to come.

Taking Care of Your Polar Heart Rate Monitor

- Wash the transmitter regularly after use with a mild soap and water solution. Dry it carefully after washing with soft towel.
- Never store the transmitter wet. Sweat and moisture can keep its electrodes wet and the transmitter activated, which shortens the battery life.
- Store your Polar heart rate monitor in a cool and dry place. Do not store it in any kind of non-breathing material, such as a plastic bag or a sports bag if it is wet.
- Do not bend or stretch the transmitter. This may damage the electrodes.
- Do not dry the transmitter in any other way than with a towel. Hard-handed handling may damage the electrodes.
- Keep your Polar heart rate monitor out of extreme cold and heat. The operating temperature is 14 °F to 122 °F/ -10 °C to 50 °C.
- Do not expose the Polar heart rate monitor to direct sunlight for extended periods, such as by leaving it in a car.
- Do not immerse the speed sensor in water.
- Avoid hard hits to the speed sensor as these may cause damage.

Batteries

Transmitter


The estimated average battery life of the transmitter is 2500 hours of use. Contact your authorized Polar service center for a replacement transmitter. Polar recycles used transmitters. See your Customer Care Charter for detailed instructions.

Wrist Receiver

The estimated average battery life of the wrist receiver is 1,5 years in normal use (1h/ day, 7 days a week). Note also that excessive use of the alarm signals will use the battery more rapidly. Do not open the Polar wrist receiver yourself. To ensure the water resistance properties and the use of qualified components, the wrist receiver battery should be replaced only by an authorized Polar Service Center. At the same time a full periodic check of the Polar heart rate monitor will be done.

Service

Should your Polar heart rate monitor need service, see Customer Care Charter to contact an authorized Polar Service Center.

 Water resistance cannot be guaranteed after unauthorized service.

PRECAUTIONS

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Using Heart Rate Monitor while Cycling

While riding a bike, please keep your eyes on the road to prevent possible accidents and injury.



When using the speed sensor, check that you can turn your handlebar normally and that cable wires for the brakes or gearing do not catch on the sensor. Check also that the sensor does not disturb pedaling or the use of the brakes or gearing.

Using the Polar Heart in a Water Environment

Your Polar S120 is water resistant to 160 feet/ 50 meters.



Your Polar S150 is water resistant to 100 feet/ 30 meters.

Heart rate measurement in a water environment is technically demanding for the following reasons:

- Pool water with a high chlorine content and seawater may be very conductive and the electrodes of Polar transmitter may get short circuited and EKG signals cannot be detected by the transmitter unit.
- Jumping into the water or strenuous muscle movement during competitive swimming may cause water resistance that shifts the transmitter on the body to a location where it is not possible to pick up EKG signal.
- The EKG signal strength varies depending on the individual's tissue composition and the percentage of people who have problems in heart rate measuring is considerably higher in a water environment than in other use.

Polar Heart Rate Monitor and Interference

Electromagnetic Interference

Disturbances may occur near high voltage power lines, traffic lights, overhead lines of electric railways, electric bus lines or trams, televisions, car motors, bike computers, some motor driven exercise equipment, cellular phones or when you walk through electric security gates.

Exercise Equipment

Several pieces of exercise equipment with electronic or electrical components such as LED displays, motors and electrical brakes may cause interfering stray signals. To try to tackle these problems, relocate the Polar wrist receiver as follows:

1. Remove the transmitter from your chest and use the exercise equipment as you would normally.
2. Move the wrist receiver around until you find an area in which it displays no stray reading or flashing of the heart symbol. Interference is often worst right in front of the display panel of the equipment, while the left or right side of the display is relatively free of disturbance.

3. Put the transmitter back on the chest and keep the wrist receiver in this interference-free area as far as it is possible.
4. If the Polar heart rate monitor still does not work with the exercise equipment, this piece of equipment may be electrically too noisy for wireless heart rate measurement.

Minimizing Possible Risks in Exercising with a Heart Rate Monitor

Exercise may include some risk, especially for those who have been sedentary.

Before starting a regular exercise program an individual is recommended to answer to the following questions for health status checking. If the answer is yes to any of the questions, we recommend to consult a doctor before starting an exercise program.

1. Have you not exercised for the past 5 years?
2. Do you have high blood pressure?
3. Do you have high blood cholesterol?
4. Do you have symptoms of any disease?
5. Are you taking any blood pressure or heart medication?
6. Do you have a history of breathing problems?
7. Are you recovering from a serious illness or medical treatment?
8. Do you use a pacemaker or another implanted electronic device?
9. Do you smoke?
10. Are you pregnant?

In addition to exercise intensity, medications for heart, blood pressure, psyche, asthma, breathing, etc. as well as some energy drinks, alcohol and nicotine, can affect heart rate.

It is important to be sensitive to your body's reactions during the exercise. If you feel unexpected pain or excessive fatigue when exercising, it is recommended to stop the exercise or continue at a lighter intensity.

If you are allergic to any substance that comes into contact with the skin, check the Polar Heart Rate Monitor materials from the "Technical specifications" chapter. It is recommended that you wear the transmitter against your bare skin to ensure flawless operation. However, if you wish to wear the transmitter over a shirt, moisten the shirt well under the electrodes.

Notice to persons with pacemakers, defibrillator or other implanted electronic device.

Persons who have an implanted electronic device use the Polar Heart Rate Monitor at their own risk. Before starting use, an exercise test under doctor's supervision should be taken. The test is to ensure the safety and reliability of the simultaneous use of the implanted device and the heart rate monitor.

! The combined impact of moisture and intense abrasion may cause a black color, which might stain light-colored clothes especially, to come off the transmitter's surface.

FREQUENTLY ASKED QUESTIONS

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What should I do if...

...I don't know where I am in the Options or File cycle?

Press and hold the stop button until time of day is displayed.

...I cannot find the previous exercise's file?

You may have used the Heart rate measuring mode during your exercise, which means that your exercise was not stored. To record the exercise you have to turn the stopwatch on by pressing the OK button in the Measure mode.

...there is no heart rate reading (- -)?

1. Bring the wrist receiver up to your chest near the transmitter's Polar logo. The receiver starts looking for the heart rate signal again.
2. Check that the electrodes of the transmitter are moistened and that you are wearing it as instructed.
3. Check that you have kept the transmitter clean.
4. Check that you are not near other people that have heart rate monitors, high voltage power lines, televisions, mobile phones or other sources of electromagnetic disturbance.
5. Have you had a cardiac event which may have altered your EKG waveform? In this case consult your physician.

...heart symbol flashes irregularly?

1. Check that the wrist receiver is not further than 3 feet/ 1 meter from the transmitter.
2. Check that the elastic strap has not become loose during exercise.
3. Make sure that the electrodes of the transmitter are moistened.
4. Make sure that there is no other heart rate transmitter within 3 feet/ 1 meter.
5. Cardiac arrhythmia may cause irregular readings. In this case consult your physician.

...heart rate reading becomes erratic or extremely high?

You may have come within range of strong electromagnetic signals which cause erratic readings. Check your surroundings and move further away from the source of disturbance.

...the display is blank or fading?

If the display is blank, activate the wrist receiver by pressing the OK button twice, after which the Time of Day display appears. If the display is fading, have the batteries checked.

...there are no reactions to any buttons?

Reset the Polar heart rate monitor. Resetting clears watch settings which will return to the default settings.

1. Press the RESET button with a pen tip. Display becomes full of digits. If you don't press any button after reset within one minute the wrist receiver returns to the Time of Day display.
2. Press any of the buttons once. Time of day is displayed.

...the battery of the wrist receiver must be replaced?

We recommend having all service done by an authorized Polar Service Center. This is especially necessary to ensure the warranty remains valid and is not affected by incorrect repair procedures done by an unauthorized agent. Polar Service will test your wrist receiver for water resistance after battery replacement and make a full periodic check of the complete Polar heart rate monitor.

...the speed reading is 00 or there is no speed reading on the display while cycling?

1. Check the correct position and distance of the speed sensor with the spoke magnet.
2. Check that you have set bike functions on.



...the S150 wrist receiver displays speed and distance readings when I am using it in my wrist?

Turn the speed measurement off. This prevents the receiver from recording incorrect speed signals which may occur due to moisture in your skin.

TECHNICAL SPECIFICATION

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Polar Heart Rate Monitors are designed to indicate the level of physiological strain and intensity in sports and exercise. No other use is intended or implied. Heart rate is displayed as number of heartbeats per minute (bpm).

Transmitter

Battery type:	Built-in Lithium Cell
Battery life:	Average 2500 hours of use
Operating temperature:	14 °F to 122 °F / -10 °C to +50 °C
Material:	Polyurethane
Completely waterproof	

Elastic Strap

Buckle material:	Polyurethane
Fabric material:	Nylon, polyester and natural rubber including a small amount of latex

Wrist Receiver

Battery type:	CR 2032
Battery life:	Average 1,5 years (1 hour/day, 7 days/ week)
Operating temperature:	14 °F to 122 °F / -10 °C to +50 °C
Water resistance:	S120: to 160 feet/ 50 meters S150: to 100 feet/ 30 meters


Wrist strap material:	Polyurethane
Back cover and wrist strap buckle material:	Stainless steel complying with EU Directive 94/27/EU and its amendment 1999/C 205/05 on the release of nickel from products intended to come into direct and prolonged contact with the skin.




Watch accuracy better than 2,0 seconds/ day at 77 °F/ 25 °C temperature.

Accuracy of heart rate measurement: $\pm 1\%$ or ± 1 bpm, whichever larger, definition applies to steady state conditions.

Speed Sensor and Adapter


	Operating temperature	14 °F to 122 °F/ -10 °C to +50 °C
	Accuracy of speed and distance measurement:	± 1%, wheel size being 2000 mm
	Splash-proof	

Default Settings

Time of day	24h
Alarm	OFF
Date of Birth	0 (adjustable range for year is 1921 - 2020)
Activity sound	On
Units	1
Help	On
CountDown/	
CountUp Timer	CountDown Timer/ 01.00
Timer 1, 2, 3	OFF/ 2 minutes
Limits 1, 2, 3	80/ 160
Recovery function	OFF/ recovery timer
Recovery heart rate	80
Recovery timer	1 minute
Speed (S150)	On
 Wheel size for bike (S150)	2000
AutoStart (S150)	OFF

Limit Values

Exercise time	99 h 59 min 59 s
Heart rate limits	30 - 240
Target zone time	99 h 59 min 59 s
Recovery time	99 min 59 s
Cumulative exercise time	9999 h
Laps recorded to memory	
S120:	60
S150:	50

	Odometer (S150)	999 999 miles/km
	Riding time (S150)	9999 h
	Speed measurement (S150)	0-62 mph/ 0-100 km/h, wheel size being 2000 mm

LIMITED POLAR WARRANTY

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- This limited Polar warranty is issued by Polar Electro Inc. for the consumers who have purchased this heart rate monitor in the USA or Canada. This limited Polar warranty is issued by Polar Electro Oy for the consumers who have purchased this heart rate monitor in other countries.
- Polar Electro Oy/ Polar Electro Inc. warrants to the original consumer/ purchaser of this heart rate monitor that the product will be free from defects in material or workmanship for one year from the date of purchase.
- In the USA and Canada the Polar transmitter is covered by a two-year maintenance free warranty. In the other countries the Polar transmitter is covered by a one-year maintenance free warranty.
- Please keep the receipt which is your proof of purchase!
- Warranty does not cover receiver battery, damage due to misuse, abuse, accidents or non-compliance with the precautions; improper maintenance, commercial use, cracked or broken cases.
- Warranty does not cover any damage, direct or incidental, consequential or special damage, caused by service not authorized by Polar Electro Oy/ Polar Electro Inc.
- During the warranty period the product will be either repaired or replaced at an authorized service center free of charge.
- This warranty does not affect the consumer's statutory rights under applicable national or state laws in force, or the consumer's rights against the dealer arising from their sales/ purchase contract.
- Please check the packaging material for possible country-specific additional warranty.

 This CE marking shows compliance of this product with Directive 93/42/EEC.

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DISCLAIMER

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- The material in this manual is for informational purposes only. The products it describes are subject to change without prior notice, due to the manufacturer's continuous development program.
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This product is protected by one or several of the following patents: FI 88223, DE 4215549, FR 92.06120, GB 2257523, HK 113/1996, SG 9591671-4, US 5491474, FI 88972, DE 9219139.8, FR 92.09150, GB 2258587, HK 306/1996, SG 9592117-7, US 5486818, FI 96380, US 5611346, EP 665947, DE 69414362, FI 68734, DE 3439238, GB 2149514, HK 812/1989, US 4625733, FI 100924, FI 100452, US 5840039, FI 4150, DE 20008882.3, FR 0006504, FI 4069, US 6272365, FR 9907823, GB 2339833, DE 29910633, FI 104463, US 6183422, FI 4157, DE 20008883.1, FR 0006778, WO 97/33512, GB 2326240. Other patents pending.

DISPLAY SYMBOLS

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- ♥ Indicates an ongoing heart rate measurement and flashes to the beat of your heart.
- ∞∞ Indicates there has not been heart rate reception for at least 5 seconds.
- Indicates there is no heart rate reception.
-)) Time of Day mode: the alarm is on.
Recording mode: beeps if you are exercising outside your target heart rate zone.
- ▲ Recording mode: Indicates the heart rate above the target heart rate zone.
- ▼ Recording mode: Indicates the heart rate below the target heart rate zone.
- The graphic bar consists of five blocks. A flashing block indicates the current level in the Options settings or File recalling menus.
Continuously running bars indicate that exercise is being recorded.



Options mode: Indicates that you are setting the bike functions.
HR measurement and Recording modes: Indicates that speed measurement is on. File mode: Indicates cycling information.

- MAX** Indicates the highest heart rate during the exercise.
- AVG** Indicates average heart rate during the exercise.
- MAX %** Indicates that the heart rate is displayed as a percentage of your maximum heart rate.
- CD** Indicates that the independent timer is set as a CountDown Timer.
- CU** Indicates that the independent timer is set as a CountUp Timer.
- Lp** In the upper row: lap time.
- Sw** In the upper row: stopwatch.
- Avg** In the upper row: average speed of the exercise.
- Max** In the upper row: maximum speed of the exercise.
- Spd** In the upper row: current speed.



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