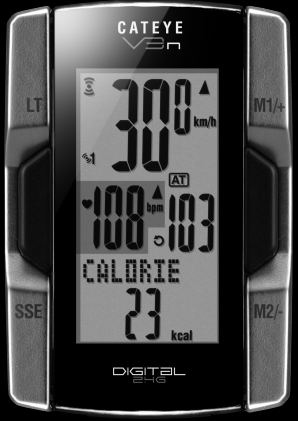


V3n

CYCLOCOMPUTER

CATEYE®

Introduction

Thank you for purchasing the CATEYE V3n.
The V3n is a high-performance computer for riders who wish to train extensively and analyze their data.
2.4GHz-frequency digital wireless technology, which is the same technology used for wireless LAN, is used for both the speed/cadence integrated speed sensor and the heart rate sensor. This technology practically eliminates interference from external noise and crosstalk with other wireless computer users, providing you with stress-free riding.

Read this instruction manual thoroughly and understand the functions of the computer before using it. Keep it in a safe place for future reference.

Important

- Always follow the sections that are marked with "⚠ Warning!!!".
- No part of this manual may be reproduced or transmitted without the prior written permission of CatEye Co., Ltd.
- The contents and illustrations in this manual are subject to change without notice.
- If you have any questions or concerns about this manual, please contact CatEye at www.cateye.com.

About the manuals

When purchasing CC-TR210DW

The product you purchased is not accompanied by the heart rate sensor and the HR strap. In combination with the optional heart rate sensor kit, all the functions described in this manual can be used, including the heart rate related data measurement, calorie consumption measurement, and HR target zone function.

Basic installation and operation

Please go here for installation of the unit on the bicycle, use of the heart rate measurement function, preparing the computer, and the basic operation of the product.

Measurement screen

Please go here to learn how to operate the computer functions.

Ride data review

Please go here to check and manage recorded data.

Changing computer configuration

Please go here for changing and checking each menu items.

Advanced use

Contents

Please visit our website, where detailed instructions with movies are available and the instruction manual can be downloaded.
http://www.cateye.com/en/products/detail/CC-TR310TW/

Proper use of the CatEye V3n

Observe the following instructions for safe usage.

The meaning of icons in this manual:

⚠ Warning!!! : Sections marked with these icons are critical for safe use of the device. Be sure to follow these instructions.

Caution : Important cautionary notes on the use and operation of the V3n.

* Helpful tips are highlighted with asteriks.

⚠ Warning!!! :

- Pace maker users should never use this device.
- Do not concentrate on the data while riding. Always be sure to ride safely.
- Do not leave any battery within the reach of children, and dispose of them correctly. If a battery is swallowed, consult a doctor immediately.

Caution:

- Regularly check the positions of the magnets and the speed/cadence sensors and make sure that they are securely mounted. Tighten it firmly if there is any looseness.
- Avoid leaving the main unit / wireless sensor in direct sunlight for extended periods of time.
- Do not disassemble the computer, heart rate sensor, or speed sensor.
- Do not subject the computer, heart rate sensor, or speed sensor to strong impact; take care also to prevent any of them from falling.
- Do not use paint thinner or rubbing alcohol to clean the unit.
- Stop using the unit if you have skin irritation with the HR strap or electrode pad.
- Do not twist or strongly pull the HR strap.
- The HR strap may deteriorate due to long-term use.
  Replace the HR strap if there are frequent measurement errors.
- As a nature of liquid crystal displays, sunglasses with polarized lens may block the visibility.

2.4GHz digital wireless system

2.4GHz-frequency digital wireless technology, which is the same technology used for wireless LAN, is used for the cadence-integrated speed sensor and the heart rate sensor. This technology practically eliminates interference from any external noise and cross-talk with other wireless computer users during measurement, and enables it to record and store highly reliable data. However, it suffers interference in the following places and/or environments, which may result in an incorrect measurement.

* Careful attention is required especially while checking the sensor ID.

- TV, PC, radios, motors/engines, or in cars and trains.
- Railroad crossings and near railway tracks, around television transmitting stations and radar bases.
- Other wireless computers or digitally controlled lights.
- In the Wi-Fi environment

Automatic recognition of the speed sensor ID

The speed sensor has its own ID, and the computer measures in synchronization with the ID.
Two speed-sensor IDs can be registered to one computer, which can automatically identify two speed sensors once their IDs are registered in advance.
As a tire circumference is set to the speed sensor ID, wheel selection by manual operation is no longer required, which was necessary with conventional units.

* The speed sensor currently recognized is indicated with a sensor icon (1 or 2) on the screen.

Procedure of automatic recognition

When the computer changes to the power saving screen, and then returns to the measurement screen, automatic recognition of the speed sensor ID is performed in the following procedure.

1. The computer searches the speed sensor ID signal, which had been synchronized immediately before.

2. Once the sensor signal is received, the sensor icon for the speed sensor lights up, and the computer starts the measurement.
When the speed sensor ID signal which had been synchronized immediately before, cannot be received another sensor signal is searched.

3. When the computer receives another sensor signal, the sensor icon for the other sensor lights up on the screen, and starts the measurement.
When another speed sensor ID signal cannot be received, the original sensor signal is searched again.

The computer repeats synchronization through the procedure described above even if it fails in synchronization for some reason, such as communication failure; in such cases however, it takes time for recognition.

* When any speed sensor signal cannot be received in 5 minutes, / is turned off, and the computer enters the transmission-off status and changes to the power saving screen after another 5 minutes.

Switching the ID by manual operation

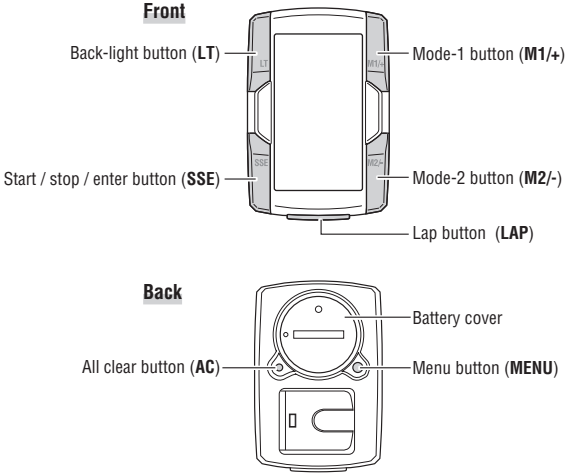
The speed sensor ID can be forced to change manually, according to the menu screen “Setting the tire circumference” (page 31). Use this operation in the following cases.

- When the computer cannot recognize the intended sensor signal, since the 2 registered speed sensors are nearby and both are sending a sensor signal.
- When you want to switch the speed sensor ID immediately.

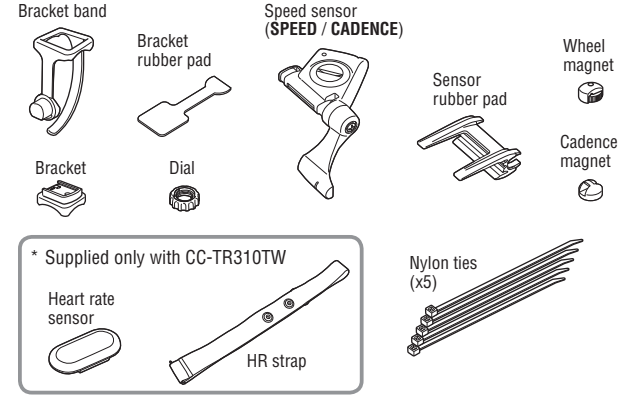
* Once you switch the speed sensor ID by manual operation, the computer continues to search only the speed sensor ID you switched when returning to the measurement screen. When the computer cannot receive any sensor signal in 10 minutes, the power-saving mode is activated, and the computer changes to the power saving screen. The computer searches through the procedure of automatic recognition when it returns to the measurement screen.

Description of computer and its parts

Computer



Accessories



Screen display

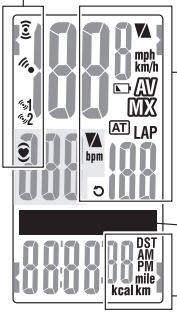
: Speed sensor signal
Indicate Speed sensor signal status. (page 19)

: Alarm
Lights up when the HR alarm sound feature is turned on.

: Sensor icon
Displays the speed sensor currently synchronized.

: Heart rate sensor signal
Indicate Heart Rate sensor signal status. (page 19)

: Target zone
Lights up when the target zone is on, and flashes when it is out of the zone.



: Speed pace arrow
The pace arrows show whether the current speed is faster (▲) or slower (▼) than the average speed.

km/h mph : Speed unit
Flashes while speed measurement is in progress.

: Computer battery icon
Lights up when the remaining capacity of the computer battery is low.

AV : Average display
Lighting up displays that the speed, heart rate, and cadence displays are average values.

MX : Maximum value display
Lighting up displays that the speed, heart rate, and cadence displays are maximum values.

: Heart rate pace arrow
The pace arrows show whether the current heart rate is faster (▲) or slower (▼) than the average heart rate.

bpm : Heart rate unit

AT : Auto-mode
Lights up when the auto-mode function is on.

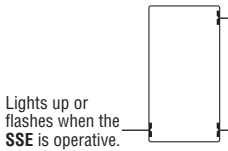
LAP : Lap icon
Lights up while the lap data is displayed.

: Cadence sensor signal
Indicate Cadence sensor signal status. (page 19)

Dot display
Mainly displays mode descriptions for the values displayed just below.

Selected data icon/unit
Displays together with the data currently displayed in the lower display.

Button navigation
Operative buttons at set-up of the computer, or on the menu screen, will flash.



How to install the unit on your bicycle

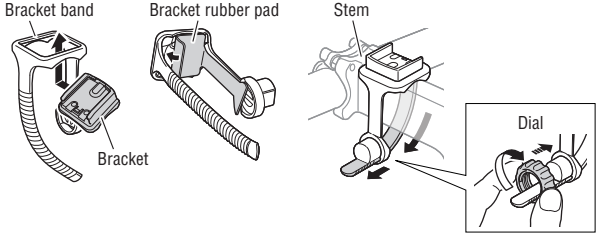
1 Attach the bracket to the stem or handlebar

The FlexTight™ bracket can be attached to either the stem or the handlebar, depending on how the bracket fits into the bracket band.

Caution:
Tighten the dial on the bracket band by hand only.
Over-tightening can damage the screw threads.

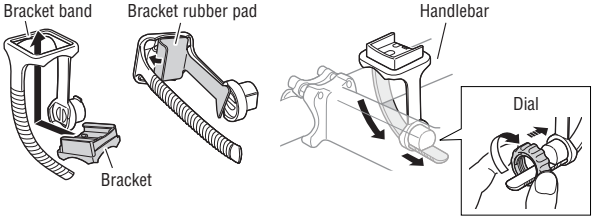
When attaching the FlexTight™ bracket to the stem

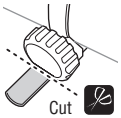
* Attach the bracket with its open end facing to the right.



When attaching the FlexTight™ bracket to the handlebar

* Attach the bracket with its open end facing to the right.

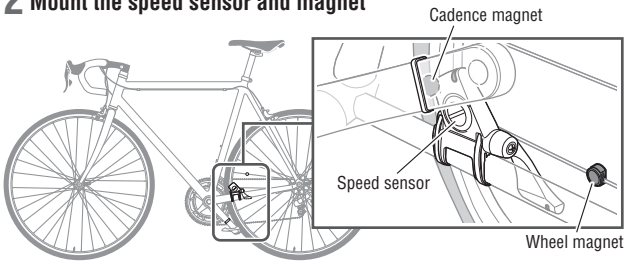




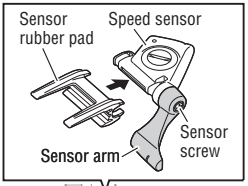
Cut the excess length of the band using scissors.

Caution:
Round off the cut edge of the bracket band to prevent injury.

2 Mount the speed sensor and magnet



2-1. Temporarily secure the speed sensor

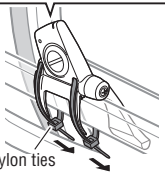


1. Loosen the sensor screw on the speed sensor using a Phillips screwdriver to check that the sensor arm moves.

* Do not completely remove the sensor screw.

2. Attach the sensor rubber pad to the speed sensor, locate the speed sensor on the left chain stay as shown in the figure above, and temporarily secure it with the nylon ties.

Caution:
Do not tighten the nylon ties completely at this stage. Once a nylon tie is tightened, it cannot be pulled out.

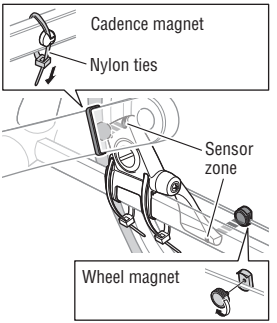


2-2. Temporarily secure the magnet

1. Temporarily secure the cadence magnet inside the crank with nylon ties, so that it faces the sensor zone on the **CADENCE** side.

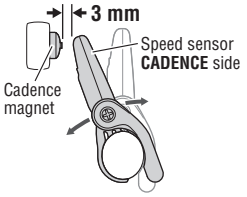
2. Turn the sensor arm, and temporarily secure the wheel magnet to the spoke that faces the sensor zone on the **SPEED** side.

* When the speed sensor is not positioned appropriately in respect to the two magnets (of **CADENCE** and **SPEED**), move the speed sensor back and forth so that it is positioned properly. After you move the speed sensor, adjust the position so that the two magnets face the relevant sensor zone.

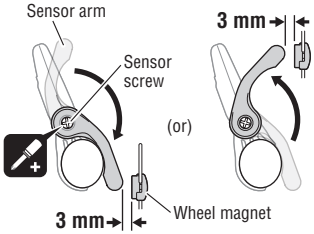


2-3. Adjust the distance to the magnet

1. Tilt the speed sensor so that the distance between the cadence magnet and the **CADENCE** side of the speed sensor is about 3 mm, and firmly secure it with the nylon ties.



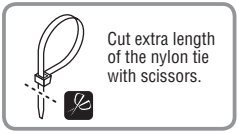
2. Turn and adjust the sensor arm so that the distance between the wheel magnet and the sensor arm is about 3 mm, and firmly tighten the sensor screw.



2-4. Securing various parts

Firmly tighten the nylon ties, sensor screw and magnet of the speed sensor, and check for any loosening.

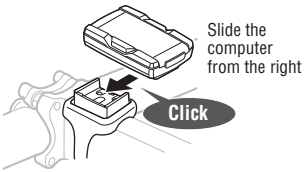
* For steel axle pedals, the cadence magnet can be magnetically secured on the pedal axle. Make sure to remove the double-sided tape from the magnet when doing this.



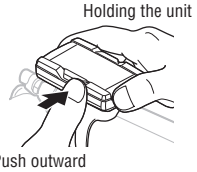
3 Remove/Install the computer

Caution: When removing, hold the unit to prevent it from falling.

Install

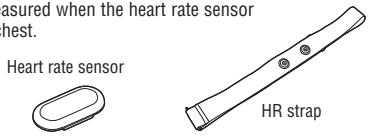


Remove



Heart rate sensor

Heart rate is measured when the heart rate sensor is worn on the chest.



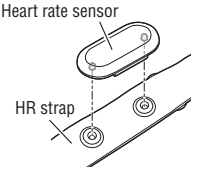
Before wearing the heart rate sensor

⚠ Warning!!! :
This product must NOT be used by those who have a pacemaker.

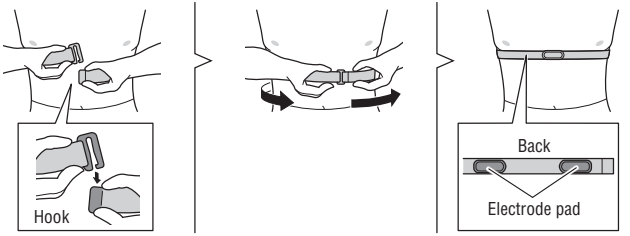
- To avoid measurement errors, it is recommended to moisten the electrode pads with water.
- If your skin is ultra-sensitive, the electrode pad may be moistened with water and worn on a thin undershirt.
- Chest hair may interfere with the measurement.

Wearing the heart rate sensor

1. Attach the heart rate sensor to the HR strap. Push it in until it clicks.



2. Insert the HR strap hook to the other end of the strap.
Wear the heart rate sensor with the HR strap, and adjust the length of the HR strap to fit your chest size (under bust). Fastening the strap too tightly may cause discomfort.



* Ensure that the electrode pad is in direct contact with the body.

* When your skin is dry, or wearing the heart rate sensor on top of your undershirt may produce measurement errors. To avoid errors, moisten the electrode pad.

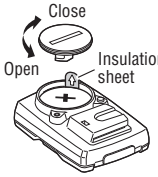
Preparing the computer

Computer's basic items must be set up before using it.

Removing the insulation sheet

When using the unit for the first time after purchasing, open the battery cover and remove the insulation sheet.

* After you remove the insulation sheet, replace the battery cover in place.



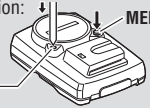
1 Formatting operation

The formatting operation is performed at initial purchase, or to reset all to default.

Caution: All data are reset to the default and deleted.

While pressing the **MENU** button on the back of the computer, press **AC** button.
Release the **MENU** button when a test pattern is displayed on the screen. The date/clock setting screen appears.
Continue with "Date/Clock setting".

Formatting operation:



After a test pattern is displayed, all screen items light up.

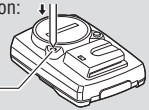
* When all screen items light up without any test pattern displayed on the screen, the formatting operation has not been completed properly. Perform the formatting operation again.

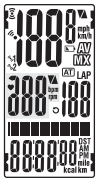
* The restarting operation is performed after you replace batteries, or when an error is displayed.

Restarting operation

Press the **AC** button on the back of the computer.
After all screen items light up for a second, the date/clock setting screen appears.
Continue with "Date/Clock setting".

Restarting operation:





All screen items light up (for a second).

* See "Formatting/Restarting operation" (page 16) for differences between the formatting and restarting operations.

2 Date/Clock setting

Set the current date and time.

1. Select the date display format.
Select the date display format from "**YY/MM/DD**", "**MM/DD/YY**", and "**DD/MM/YY**" using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

Switch the display: M1/+ / M2/- (or) Confirm: SSE

2. Enter the "Year", "Month" and "Day".
Enter the "Year", "Month" and "Day" in the display order selected in Step 1 using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button. Enter the last 2 digits of the year.

Setting range: 00.01.01 – 99.12.31

Increase/decrease: M1/+ / M2/- (or) Confirm: SSE

3. Select the clock display format.
Select "**24h** (24 hour)" or "**12h** (12 hour)" using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

24h ↔ 12h: M1/+ / M2/- (or) Confirm: SSE

4. Enter the "Hour" and "Minute".
Enter the "Hour" using the **M1/+** and **M2/-** buttons, confirm with the **SSE** button, and then enter the "Minute" in the same way.

Setting range: **24h** 0:00 – 23:59 [**12h** AM1:00 – PM12:59]

Increase/decrease: M1/+ / M2/- (or) Confirm: SSE

5. After you set the date/clock, press the **MENU** button to proceed to the "Tire circumference input".

To the "Tire circumference input" : MENU (Back)

* For the restarting operation, the computer completes the setup, and changes to the measurement screen.

3 Tire circumference input

Enter the tire circumference of the bicycle wheel in millimeter.

1. Enter the last 2 digits of the tire circumference.
Enter using the **M1/+** and **M2/-** buttons, and move digits using the **SSE** button. Then, enter the first 2 digits in the same way.

Setting range: 0100 – 3999 mm

Increase/decrease: M1/+ / M2/- (or) Move digits: SSE

2. After completed, press the **MENU** button to proceed to "Selecting speed unit" below.

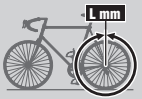
To "Selecting speed unit" : MENU (Back)

Tire circumference

You can find the tire circumference (L) of your tire size in the chart below, or actually measure the tire circumference (L) of your bicycle.

How to measure the tire circumference (L)

For the most accurate measurement, do a wheel roll out. With the tires under proper pressure, place the valve stem at the bottom. Mark the spot on the floor and with the rider's weight on the bike, roll exactly one wheel revolution in a straight line (until the valve comes around again to the bottom). Mark where the valve stem is and measure the distance in millimeter.



* For your reference, use the tire circumference chart below.

ETRTO	Tire size	L (mm)
47-203	12x1.75	935
54-203	12x1.95	940
40-254	14x1.50	1020
47-254	14x1.75	1055
40-305	16x1.50	1185
47-305	16x1.75	1195
54-305	16x2.00	1245
28-349	16x1-1/8	1290
37-349	16x1-3/8	1300
32-369	17x1-1/4 (369)	1340
40-355	18x1.50	1340
47-355	18x1.75	1350
32-406	20x1.25	1450
35-406	20x1.35	1460
40-406	20x1.50	1490
47-406	20x1.75	1515
50-406	20x1.95	1565
28-451	20x1-1/8	1545
37-451	20x1-3/8	1615
37-501	22x1-3/8	1770
40-501	22x1-1/2	1785
47-507	24x1.75	1890
50-507	24x2.00	1925
54-507	24x2.125	1965
25-520	24x1(520)	1753

ETRTO	Tire size	L (mm)
	24x3/4 Tubuler	1785
28-540	24x1-1/8	1795
32-540	24x1-1/4	1905
25-559	26x1(559)	1913
32-559	26x1.25	1950
37-559	26x1.40	2005
40-559	26x1.50	2010
47-559	26x1.75	2023
50-559	26x1.95	2050
54-559	26x2.10	2068
57-559	26x2.125	2070
58-559	26x2.35	2083
75-559	26x3.00	2170
28-590	26x1-1/8	1970
37-590	26x1-3/8	2068
37-584	26x1-1/2	2100
	650C Tubuler	1920
	26x7/8	
20-571	650x20C	1938
23-571	650x23C	1944
25-571	650x25C	1952
	26x1(571)	
40-590	650x38A	2125
40-584	650x38B	2105

ETRTO	Tire size	L (mm)
25-630	27x1(630)	2145
28-630	27x1-1/8	2155
32-630	27x1-1/4	2161
37-630	27x1-3/8	2169
18-622	700x18C	2070
19-622	700x19C	2080
20-622	700x20C	2086
23-622	700x23C	2096
25-622	700x25C	2105
28-622	700x28C	2136
30-622	700x30C	2146
32-622	700x32C	2155
	700C Tubuler	2130
35-622	700x35C	2168
38-622	700x38C	2180
40-622	700x40C	2200
42-622	700x42C	2224
44-622	700x44C	2235
45-622	700x45C	2242
47-622	700x47C	2268
54-622	29x2.1	2288
60-622	29x2.3	2326

4 Selecting speed unit

Select the speed unit from "**km**" and "**mile**".

1. Select the speed unit.

km ↔ mile: M1/+ M2/- (or)

2. After selecting, press the **MENU** button. The measurement screen appears and the computer set-up is completed.

To the measurement screen: MENU (Back)

5 Operation test

Test the functioning of the speed sensor (**SPEED**, **CADENCE**) and the heart rate sensor.

* After you change to the measurement screen, it may take up to more than a dozen seconds to display the measurement data since the computer checks the sensor ID.

* When or ♥ is turned off, press the **M1/+** or **M2/-** button to turn the icon on.

Speed sensor (SPEED)

1. Raise the rear wheel and spin the wheel.

2. When the speed is displayed on the screen, it is operating normally.

Speed sensor (CADENCE)

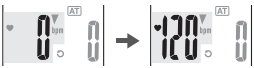
1. Turn the crank.

2. When the cadence is displayed on the screen, it is operating normally.

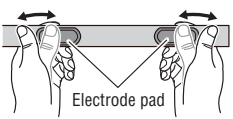
Heart rate sensor

1. Wear the heart rate sensor (page 10).

2. When the heart rate is displayed on the screen, it is operating normally.



* Even if the heart rate sensor is not worn, a heart rate signal is transmitted by rubbing the electrode pads on both sides with your thumbs. This method cannot be used to measure the heart rate accurately, but used as a simple method for testing the sensor/computer communication.



Important: When the speed, cadence, and/or heart rate are/is not displayed, possible causes are as follows.

Speed and cadence are not displayed

Check items	Remedy
Is the Speed and Cadence sensor icon on ?	If icon is off, the computer cannot receive any data. Press the **M1/+** or **M2/-** button to cancel the transmission sleep mode (page 19).
Check if the distance between each sensor zone of the speed sensor and the magnet is too large.	In reference to "How to install the unit on your bicycle" (page 7), appropriately adjust the positions of the corresponding magnet with the sensor zone.
Check if each sensor zone of the speed sensor is off the center of the magnet.	
Check if the computer is in the transmission-off status, or displays the power saving screen.	Press any button on the computer to return to the measurement screen.
The display may be delayed depending on the wireless transmission condition.	Check whether any speed signal is received by spinning the wheel for a while.

Heart rate is not displayed

Check items	Remedy
Is the Heart rate sensor icon on ♥ ?	If ♥ icon is off, the computer cannot receive any data. Press the **M1/+** or **M2/-** button to cancel the transmission sleep mode (page 19).
Has the power-saving function been activated, showing only date/clock on the screen?	Press any button other than the **AC** button to recover from the power saving status.
Is the heart rate sensor attached securely to your body?	Ensure that the electrode pad of the HR strap is in direct contact with the body.
Dry skin (particularly in winter)	Slightly moisten the electrode pad of the HR strap.
Check whether the HR strap is correctly worn on the body.	To wear the electrode pad correctly, follow the instructions for wearing the heart rate sensor (page 10).
Check whether the heart rate sensor is correctly secured to the HR strap.	Attach the heart rate sensor to the HR strap appropriately, according to "Wearing the heart rate sensor" (page 10).

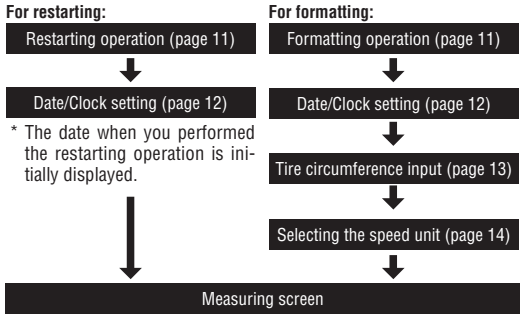
Formatting/Restarting operation

There are two different computer set-up operations; formatting and restarting operations. Follow the appropriate one depending on the situation.

Formatting	The formatting operation is performed at initial purchase, or to delete all measurement data and reset all to default. * The sensor ID is not deleted.
Restarting	The restarting operation is performed after you replace batteries, or when an error is displayed. * In the restarting operation, the following data are retained. • Sensor ID • Date/Clock • Selection sensor, Tire circumference • Speed unit • Total distance, Total time • Auto-mode • Countdown distance • Sound • HR target zone

Flow of the formatting and restarting operations

The formatting and restarting procedures are as follows.



Basic operation of the computer

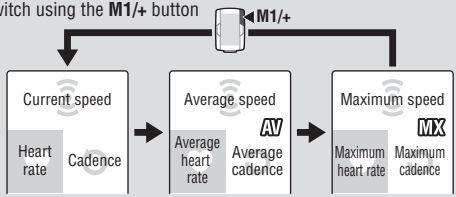
Functions on the measurement screen

The measurement screen displays 4 different types of data, which are switched by pressing the **M1/+** and **M2/-** buttons.
The display data are as follows.

Upper display data
Displays the data related to the speed.

Middle display data
Displays the data related to the heart rate.
Displays the data related to the cadence.

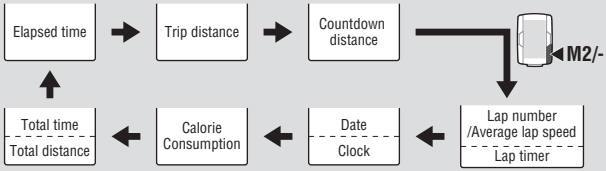
Switch using the **M1/+** button



* Upper and Middle display data are switched in sync together.

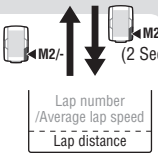
Lower display data
Displays the other data.

Switch using the **M2/-** button



Real time lap data (on-going lap data)

* Pressing and holding the **M2/-** button while displaying the lap timer switches the lap timer to the lap distance.
Pressing it again returns to the lap timer.



Starting/Stopping the measurement

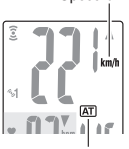
The speed unit (**km/h** or **mph**) flashes during measurement.
Initially, the auto-mode function which starts or stops measurement automatically in sync with the bicycle motion is ON. Auto measurement is switched to manual measurement and vice versa by ON/OFF operation in the auto-mode.

* For setting the auto-mode, refer to the menu screen "Setting the auto-mode" (page 35).
* The total distance, maximum speed, maximum heart rate and maximum cadence are updated independently of starting/stopping the measurement.

Auto-mode function (automatic measurement) AT

When the auto-mode is on (AT is turned on), the computer detects the wheel spinning, and starts/stops the measurement automatically.

* In the transmission-off status where or is turned off, the computer does not start the measurement even if you ride your bicycle. Pay attention when riding after a break. To recover from the transmission-off status, press the **M1/+** or **M2/-** button to turn on the sensor icon. For details, refer to the "Transmission sleep mode" (page 19).



Manual measurement

When the auto-mode is off (AT is turned off), use the **SSE** button to start/stop the measurement.

- **Stop reminder**
  The stop reminder function reminds the rider with an alarm incase the stopwatch is forgotten to be stopped after the ride.
  When any signal is not received from the speed sensor for 90 seconds while counting the elapsed time, an alarm sounds and "**STOP!**" appears on the screen. This alert display is repeated up to 3 times every 90 seconds. When any sensor signal is detected, the alarm is stopped.
  * Failure to stop the measurement tends to happen after you taking a break during riding, or after you finished a race. Ignore this when you start soon after a break at a traffic light.
  * This function cannot be disabled.

Starting/Stopping the manual measurement

Beep!

Backlight

Pressing the **LT** button illuminates the displays for about 3 seconds.

* Pressing any button while backlight is still on extends the illumination for another 3 seconds.

Resetting the measurement data

To reset the measurement data (excluding the total time, total distance, date, and clock) and the lap data, simultaneously press the **SSE** button and the **M1/+** or **M2/-** button on the measurement screen.

(Simultaneously press)

(or)

(Simultaneously press)

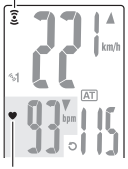
* Resetting the measurement data saves the data automatically on a file (page 26).
* The screen will freeze for about 2 seconds after resetting and button operation is disabled; however, all measurements are operating normally.
* The countdown distance (**C.D.DST**→) returns to the value you set.
* Cannot reset for 5 seconds after pressing the **LAP** button.

Power-saving function

Transmission sleep mode

When the computer does not receive any signals for 5 minutes from the speed sensor and the heart rate sensor, it will enter the transmission-off status for each sensor to save battery power. In the transmission-off status, any sensor signal cannot be received. To restart the measurement, press the **M1/+** or **M2/-** button to recover from the transmission-off status.
The signal transmission status of each sensor can be checked by the display of the relevant signal icon and the numeric value of "**---**".

Speed sensor signal icon



Heart rate sensor signal icon

(flashing)	Receiving sensor signal (under operation)
(constant)	Stand-by for sensor signal (searching for sensors)
off	Transmission sleep. Displays the symbol "---".

* Note that the computer does not start the measurement even if you ride your bicycle in the transmission-off status, when the auto-mode is on.

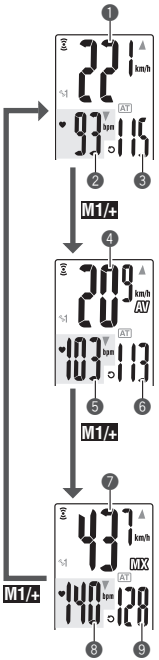
Power saving of the computer

When the computer does not receive any data for 10 minutes, it will enter the power-saving mode, in which only the date/clock is displayed.
By pressing any buttons except the **AC** recovers from the power-saving mode, and the measurement screen appears. You must press a button when the computer is in power saving mode before it will start to measure any data.

Power-saving mode

Measurement screen

Upper and middle display data



❶ **Current speed**
Displays the current speed.
Updated every second.

❷ **Heart rate**
Displays the heart rate in real time.
Updated every second.

❸ **Cadence**
Displays the number of pedal rotations per minute.
Updated every second.

❹ **Average speed** (*1)
Displays the average speed after the start of measurement.

❺ **Average heart rate** (*2)
Displays the average heart rate after the start of measurement.
The average will not be reflected when the heart rate is not measured.

❻ **Average cadence** (*3)
Displays the average cadence after the start of measurement.
The average will not be reflected when you stop pedaling.

❼ **Maximum speed**
Displays the maximum speed after the start of measurement.
Updated independently of starting/stopping measurement.

❽ **Maximum heart rate**
Displays the maximum heart rate after the start of measurement.
Updated independently of starting/stopping measurement.

❾ **Maximum cadence**
Displays the maximum cadence after the start of measurement.
Updated independently of starting/stopping measurement.

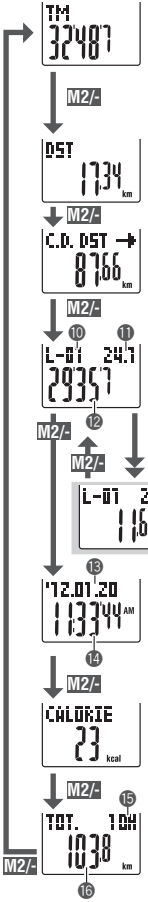
*1: When the trip distance (**DST**) exceeds 10000 km [mile], or the elapsed time (**TM**) exceeds 100 hours, [**E**] appears indicating further measurement is impossible. Perform the resetting operation (page 19).

*2: This device stops calculating the average when the heart rate sensor is detached, and resumes the calculation when the heart rate sensor is worn again. This feature produces actual averages while the heart rate sensor is worn.

*3: This device calculates the average excluding the time when you stop pedaling. This feature produces actual averages.

* When purchasing CC-TR210DW, the heart rate related data can be measured in combination with the optional heart rate sensor.

Lower display data



Elapsed time
Displays the elapsed time from the start of measurement to the 1/10 second.
When it exceeds 99:59'59", it repeats from 00'00"0.

* When the elapsed time reaches 1 hour, the 1/10 second is not displayed.

Trip distance
Displays the trip distance from the start of measurement.

Countdown distance (page 24)
Displays the countdown distance to the target distance.

⑩ **Lap number** (page 22)
Displays the number of current lap.

⑪ **Average lap speed in real time**
Displays the average lap speed of the current lap in real time.

⑫ **Lap timer (Real time lap)**
Displays the elapsed time of the current lap in real time.

Trip lap distance in real time
Displays the trip distance of the current lap in real time.

⑬ **Date**
Displays the day, month, and year (last 2 digits).

* Display format is different depending on display set up.

⑭ **Clock**
Displays the current time of day in the 24- or 12-hour system.

Calorie Consumption
Displays the estimated calorie consumption from the start of measurement based on the heart rate.

* The calorie consumption can be measured once you wear the heart rate sensor.

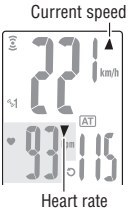
⑮ **Total time**
The total time is accumulated time since purchase. It can only be reset with Format (page 11).

⑯ **Total distance**
The total distance is accumulated distance. It is updated independently of starting/stopping measurement.
It can be edited to desired value.

Pace function

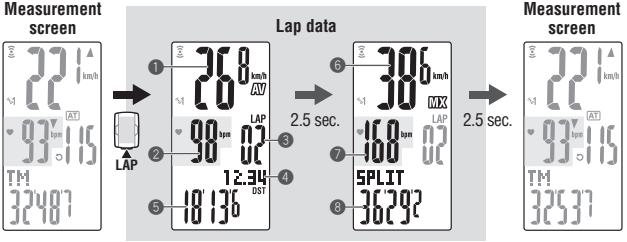
2 types of pace arrow icons for the current speed and the heart rate are displayed on the screen.
These arrow icons indicate whether the current speed (heart rate) is above or below the average speed (average heart rate).

▲	Appears when the current value is above the average.
▼	Appears when the current value is below the average.
No arrows	When the current value is equal to the average, or zero.



Lap function

Pressing the **LAP** button on the measurement screen during measurement records the measurement data between a given set of points (average lap speed/maximum lap speed, average lap heart rate/maximum lap heart rate, lap time/split time, and trip lap distance) up to 99 laps. Immediately after recording, the lap data are displayed in the order as shown below, and then return to the measurement screen.



❶ **Average lap speed**
❷ **Average lap heart rate**
Displays the average lap speed (average lap heart rate) from the previous point (for **L-01**: from the start of measurement).
❸ **Lap number**
Displays the lap number just recorded.
* When the total number of laps exceeds 99, "**--**" appears indicating further lap recording cannot be done.
❹ **Trip lap distance**
Displays the trip lap distance from the previous point (for **L-01**: from the start of measurement).
❺ **Lap time**
Displays the elapsed time from the previous point (for **L-01**: from the start of measurement).
❻ **Maximum lap speed**
❼ **Maximum lap heart rate**
Displays the maximum lap lap speed (maximum lap heart rate) from the previous point (for **L-01**: from the start of measurement).
❽ **Split time**
Displays the total elapsed time from the start of measurement.

Saving the lap

The recorded lap data is saved to a file when you perform the resetting operation (page 19), and can be viewed on the menu screen “File view” (page 26).

* Pressing the **LAP** button while the total number of laps reaches 99 displays the lap data, but “**--**” appears in place of the lap number indicating further recording is impossible.
* One lap per file is used even when there is no lap data. Therefore, the total number of laps is the sum of the total number of laps in all files and the number of files.

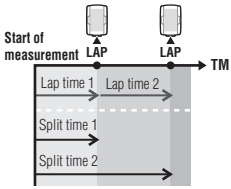
Example) When the following number of laps are recorded in the files:

Number of laps in a file	Number of files
F01 : 5 laps	3 files
F02 : 0 lap	
F03 : 10 laps	

The total number of laps is the sum of the total number of used laps in all the files “15” and the total number of files “3”, i.e., “18”.

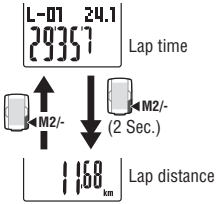
Lap time and split time

The lap time displays elapsed time from the last press of the **LAP** button.
The split time displays the elapsed time from the start of measurement to the point **LAP** button is pressed.



Advance use of the real time lap data

For the real time lap data indicated in the lower display, the computer starts/stops the measurement in sync with the regular measurement; however, it resets and restarts the data every time you press the **LAP** button.
This independent feature of lap time can be useful also for intervals and sectional trials such as hill climb section.



Countdown distance

The countdown distance feature displays the countdown distance to a predetermined target trip distance, and notifies when it reaches zero. When it reaches the target trip distance, the computer switches any measurement data display to the countdown display, and notifies it by flashing the dot display and an alarm sound.

In case of 20 km

When reached (displays for 5 seconds)

Example of how the countdown distance is used

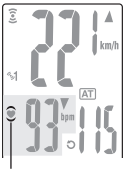
1. **Entering the race event distance**
   For distance system events such as a road race and century ride, enter the race event distance before the start, and develop your strategy and pace based on the countdown distance during the race.
2. **Entering the destination sign distance**
   For touring, enter the sign distance whenever you encounter a destination sign along the road, and develop your pace based on the countdown distance.
3. **Entering the periodical target distance**
   Enter the periodical target distance for a week, month, or year to check your progress.

* The countdown distance is set from the menu screen “Setting the countdown distance” (page 36).

Target heart rate zone

During measurement, ♥ on the screen displays the target heart rate status.

♥ (constant)	The target zone is set to any of **HR.ZONE:1 – 4**.
♥ (flashing)	The current heart rate is out of the selected zone.
♥ (off)	The target zone is set to off.



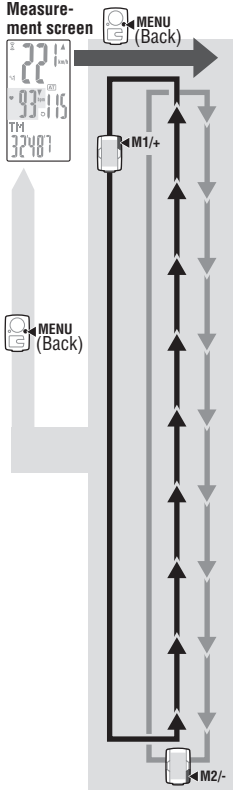
Target heart rate zone

* The target heart rate zone is set from the menu screen “Setting the target heart rate zone” (page 37).

Changing the computer configuration

Pressing the **MENU** button in the measurement screen switches to the menu screen. In the menu screen, you can view and delete the files saved, and view and change various configurations.

* Use the **M1/+** and **M2/-** to change menu items.
* After changes are made, be sure to review the setting(s) and confirm by pressing the **MENU** button.
* Leaving the menu screen without any operation for 1 minutes returns to the measurement screen, and changes are not saved.



Menu top screen

FILE VIEW File view	Viewing and deleting files	SSE (page 26)
CLOCK.DATE Setting the clock/date	Changing the clock/date	SSE (page 30)
TIRE = ID:1 Setting the tire circumference	Selecting the sensor 1 or 2, and changing the tire circumference	SSE (page 31)
SENSOR-ID Searching the sensor ID	Synchronizing the heart rate and speed/cadence sensor ID	SSE (page 32)
UNIT Setting the measurement unit	Changing the measurement unit	SSE (page 34)
ODO INPUT Total distance manual entry	Total distance input	SSE (page 34)
AUTO MODE Setting the auto-mode	On/off of the auto-mode	SSE (page 35)
C.D. DST → Setting the countdown distance	Countdown distance input	SSE (page 36)
SOUND Setting sound	On/off of the HR alarm, and button operation sound	SSE (page 37)
HR.ZONE Setting the target heart rate zone	Selecting HR target zone or Off, and changing upper/lower limit	SSE (page 37)

File view FILE VIEW

The lap and measurement data are saved into a file automatically each time a ride is reset (Resetting Operation page 19)
With the file view, you can view or delete the file saved.

Measurement data to be recorded in a file

The computer can record up to 14 files.
The latest file is recorded always as **F-01**, and the oldest one is deleted automatically when 14 files are saved.

Date of creation: New ⟵ ⟶ **Old**

The measurement data to be saved in a file are as follows.

- Trip distance
- Elapsed time
- Various average values (average speed, average heart rate, and average cadence)
- Various maximum values (maximum speed, maximum heart rate, and maximum cadence)
- Date and time of file creation (date/time when the measurement started)
- Number of laps used
- Calorie consumption
- Time distribution to the target zone (time in the zone, time above the zone, and time below the zone) and the percentage (%)
- Lap data (average lap speed, average lap heart rate, maximum lap speed, maximum lap heart rate, lap time, split time, trip lap distance)

Viewing the measurement data in a file

View the measurement data in a file saved in the computer.

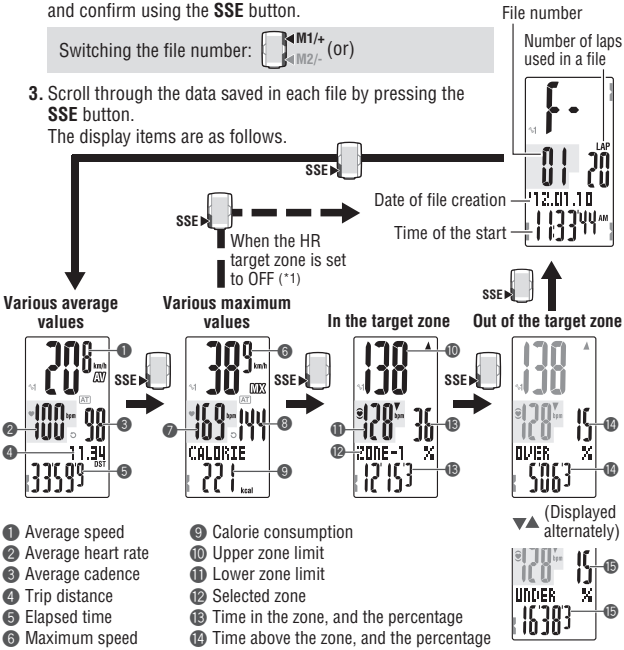
1. Press the **MENU** button in the measurement screen to switch to the menu top screen.
Press the **SSE** button on the **FILE VIEW** screen.

Menu top: MENU (Back) Confirm: SSE

2. Select the file number using the **M1/+** and **M2/-** buttons, and confirm using the **SSE** button.

Switching the file number: M1/+ M2/- (or)

3. Scroll through the data saved in each file by pressing the **SSE** button.
The display items are as follows.



❶ Average speed
❷ Average heart rate
❸ Average cadence
❹ Trip distance
❺ Elapsed time
❻ Maximum speed
❼ Maximum heart rate
❽ Maximum cadence
❾ Calorie consumption
❿ Upper zone limit
⓫ Lower zone limit
⓬ Selected zone
⓭ Time in the zone, and the percentage
⓮ Time above the zone, and the percentage
⓯ Time blow the zone, and the percentage

4. From any screen in the file, pressing the **MENU** button returns to the menu top screen (**FILE VIEW** screen). Pressing it again returns to the measurement screen.

To the menu top/measurement screen: MENU (Back)

---

*1: HR target zone is set to **OFF** during measurement, no data related to the target zone is displayed.

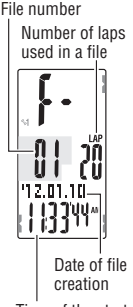
* Pressing the **LAP** button while viewing data switches to viewing the lap data. For details, refer to "Viewing the lap data" (page 28).

Viewing the lap data

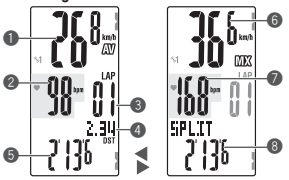
View the lap data in a file saved in the computer.

1. Select the file number you want to view from the menu screen “File view” (page 26).
2. Press the **LAP** button to view the lap data contained in the file selected. The average and maximum values are displayed alternately as follows.
   Press the **LAP** button again to return from the lap data.

Viewing/exiting lap data: LAP



Average values **Maximum values**



(Displayed alternately)

1. Average lap speed
2. Average lap heart rate
3. Lap number
4. Trip lap distance
5. Lap time
6. Maximum lap speed
7. Maximum lap heart rate
8. Split time

3. Switch the laps, if applicable, using the **M1/+** and **M2/-** buttons.

Switching the lap number: M1/+ M2/- (or)

4. Pressing the **MENU** button returns to the menu top screen (**FILE VIEW** screen). Pressing it again returns to the measurement screen.

To the menu top/measurement screen: MENU (Back)

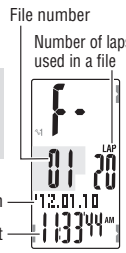
Deleting files

Delete the file saved in the computer.
The computer deletes and overwrites an old file automatically; however, you can also delete the specified file manually.

1. Switch to the menu screen "File view" (page 26).

2. Simultaneously press the **SSE** button and the **M1/+** or **M2/-** button to switch to the deleting screen.

Switching to the deleting screen:
SSE + M1/+ (Simultaneously press) (or) SSE + M2/- (Simultaneously press)



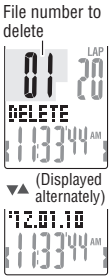
3. Select the file number you want to delete from the date/clock of file creation. To delete all files, select "**ALL**".

Switching the file number: M1/+ / M2/- (or)
01 ↔ **02** ↔ **03** ··· **ALL** ↔ **01**

4. Press the **SSE** button to delete the file.

Deleting files: SSE

Searching delete screen



5. Pressing the **MENU** button returns to the menu top screen (**FILE VIEW** screen). Pressing it again returns to the measurement screen.

To the menu top/measurement screen: MENU (Back)

* Pressing the **MENU** button on the deleting screen cancels deleting of files, and returns to the previous screen.
* When the computer has no files (**F-00**) the delete file operation is not operable.
* Once a file is deleted, all lap data associated with that file is also deleted.
* Once a file is deleted, it cannot be restored.

Setting the clock/date

CLOCK.DATE

Set the "Clock display format", "Hour", "Minute", "Date display format", "Year", "Month" and "Day".

* Press and hold the **M1/+** or **M2/-** button to increase/decrease the number quickly.

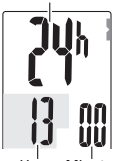
1. Press the **MENU** button in the measurement screen to switch to the menu top screen.
Switch to the **CLOCK.DATE** screen using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

Menu top: MENU (Back)

Changing the menu: M1/+ M2/- (or) Confirm: SSE

2. Select the clock display format.
Select "**24h** (24 hour)" or "**12h** (12 hour)" using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

Display format



24h ↔ **12h**: M1/+ M2/- (or) Confirm: SSE

3. Enter the "Hour" or "Minute".
Enter the "Hour" using the **M1/+** and **M2/-** buttons, confirm with the **SSE** button, and then enter the "Minute" in the same way.

Setting range: **24h** 0:00 – 23:59 [**12h** AM1:00 – PM12:59]

Increase/decrease: M1/+ M2/- (or) Confirm: SSE

4. Select the date display format.
Select the date display format from "**YY/MM/DD**", "**MM/DD/YY**", and "**DD/MM/YY**" using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

Switch the display: M1/+ M2/- (or) Confirm: SSE

5. Enter the "Year", "Month" and "Day".
Enter the "Year", "Month" and "Day" in the display order selected in Step 4 using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button. Enter the last 2 digits of the year.

Setting range: 00.01.01 – 99.12.31

Increase/decrease: M1/+ M2/- (or) Confirm: SSE

6. Pressing the **MENU** button returns to the menu top screen (**CLOCK.DATE** screen), and confirm the change(s). Pressing it again returns to the measurement screen.

To the menu top/measurement screen: MENU (Back)

Setting the tire circumference

TIRE = ID:1

Set the tire circumference to **SP1** (Speed sensor 1) and **SP2** (Speed sensor 2) synchronized according to "Searching the sensor ID" (page 32).

* For the tire circumference, see "Tire circumference" (page 13).

* Press and hold the **M1/+** or **M2/-** button to increase/decrease the number quickly.

1. Press the **MENU** button in the measurement screen to switch to the menu top screen.
Switch to the **TIRE** screen using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

Menu top: MENU (Back)

Changing the menu: M1/+ / M2/- (or) Confirm: SSE

Sensor icon being recognized

Current wheel size

2. Select "**ID:1**" (Sensor 1) or "**ID:2**" (Sensor 2) using the **M1/+** and **M2/-**buttons.

ID:1 ↔ **ID:2** : M1/+ / M2/- (or) Confirm: SSE

At this point if entry of tire circumference is not necessary, proceed to Step 4.

3. Enter the last 2 digits of the tire circumference for the sensor selected in Step 2 using the **M1/+** and **M2/-** buttons, and confirm using the **SSE** button.
Then, enter the first 2 digits in the same way.

Setting range: 0100 – 3999 mm

Increase/decrease: M1/+ / M2/- (or) Move digits: SSE

4. Pressing the **MENU** button returns to the menu top screen (**TIRE** screen), and confirm the change(s). Pressing it again returns to the measurement screen.

To the menu top/measurement screen: MENU (Back)

* When you use a computer for a single bicycle, set the tire circumference to **ID:1** (Sensor 1) only. When you use a computer commonly for two bicycles, set the tire circumference of the second bicycle to **ID:2** (Sensor 2).
* Changing to the measurement screen displays the sensor icon selected (**1** or **2**). Even when a computer is commonly used for two bicycles, the speed sensor is recognized automatically and the measurement can be started (it may take time to automatically recognize the sensor depending on the situation). For details, refer to "Automatic recognition of the speed sensor ID" (page 4).

Searching the sensor ID SENSOR-ID

When moving the computer from one sensor to another or to use a different HR chest strap, this operation must be performed.

* This unit requires the sensor ID. The computer cannot receive the sensor signal unless the sensor ID is synchronized properly.

> * When you use the unit for the first time (at factory default setting), each sensor ID has been synchronized to the computer in the package; accordingly, the following procedure is not required.

* To check the sensor ID, each sensor must be near the computer.

1. Press the **MENU** button on the measurement screen to switch to the menu top screen.
Switch to the **SENSOR-ID** screen using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

Menu top: MENU (Back)
Changing the menu: M1/+ M2/- (or) Confirm: SSE

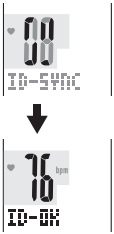
2. Select the sensor ID to be checked.
Select it from "**HR** (heart rate sensor)", "**SP1** (speed sensor 1)", and "**SP2** (speed sensor 2)" using the **M1/+** and **M2/-** buttons.

HR ↔ **SP1** ↔ **SP2**: M1/+ M2/- (or)

* **SP2** is used when a computer is commonly used for two bicycles. By checking the ID of the second speed sensor mounted to a second bicycle as **SP2**, the computer is capable of recognizing two bicycles automatically.

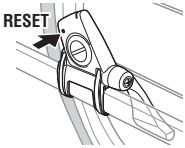
3. Press the **SSE** button to start checking the ID.

Start searching: SSE



While the value on the screen is changing, press the **RESET** button on the sensor to be checked.

Speed sensor



Heart rate sensor

When the heart rate or speed (cadence) is displayed with "**ID-OK**" on the screen, synchronization is completed.

* The computer enters the search mode for 5 minutes after starting the ID synch.
Press the **SSE** button in the search mode to cancel the ID synch, and "**ID-SKIP**" is displayed. Unless a sensor signal is received in 5 minutes, "**ID-ERROR**" is displayed.
When "**ID-SKIP**" or "**ID-ERROR**" is displayed, the sensor ID remains as it was before the ID synch.

4. Pressing the **MENU** button returns to the menu top screen (**SENSOR-ID** screen), and confirm the change(s). Pressing it again returns to the measurement screen.

To the menu top/measurement screen: MENU (Back)

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* When you use **SP2**, set the tire circumference of **ID:2** (Sensor 2) according to "Setting the tire circumference" (page 31).

Setting the measurement unit UNIT

Change the unit (**km** or **mile**).

1. Press the **MENU** button in the measurement screen to switch to the menu top screen.
Switch to the **UNIT** screen using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

Current speed unit

Menu top: MENU (Back)

Changing the menu: M1/+ M2/- (or) Confirm: SSE

2. Select the speed unit using the **M1/+** and **M2/-** buttons.

km ↔ **mile**: M1/+ M2/- (or)

3. Pressing the **MENU** button returns to the menu top screen (**UNIT** screen), and confirm the change(s).
Pressing it again returns to the measurement screen.

To the menu top/measurement screen: MENU (Back)

* After the unit is switched, the total distance measured in the past is automatically converted to the new unit.

Total distance manual entry ODO INPUT

Once you enter any value to the total distance, you can start the total distance from the value you entered. The total distance in the past can be input after formatting or to a new computer.

* Press and hold the **M1/+** or **M2/-** button to increase/decrease the number quickly.

1. Press the **MENU** button in the measurement screen to switch to the menu top screen.
Switch to the **ODO INPUT** screen using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

Current total value

Menu top: MENU (Back)

Changing the menu: M1/+ M2/- (or) Confirm: SSE

2. Enter the total distance using the **M1/+** and **M2/-** buttons, and move digits using the **SSE** button.

* The total distance is displayed in a 6-digit integer number, beginning with 4 digit display and including small letters sequentially shifting to the right.

Last 4 digits are displayed.

Setting range: 0 – 999999 km [mile]

Increase/decrease: M1/+ / M2/- (or) Move digits: SSE

3. Pressing the **MENU** button returns to the menu top screen (**ODO INPUT** screen), and confirm the change(s). Pressing it again returns to the measurement screen.

To the menu top/measurement screen: MENU (Back)

Setting the auto-mode

AUTO MODE

Switch on/off of the auto-mode (page 18).

1. Press the **MENU** button in the measurement screen to switch to the menu top screen.
Switch to the **AUTO MODE** screen using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

Current setting

Menu top: MENU (Back)

Changing the menu: M1/+ / M2/- (or) Confirm: SSE

2. Select **ON** or **OFF** using the **M1/+** and **M2/-** buttons.

ON ↔ **OFF**: M1/+ / M2/- (or)

3. Pressing the **MENU** button returns to the menu top screen (**AUTO MODE** screen), and confirm the change(s). Pressing it again returns to the measurement screen.

To the menu top/measurement screen: MENU (Back)

Setting the countdown distance C.D. DST →

Enter the target trip distance for the countdown distance (page 24).

* Press and hold the **M1/+** or **M2/-** button to increase/decrease the number quickly.

1. Press the **MENU** button in the measurement screen to switch to the menu top screen.
Switch to the **C.D.DST**→ screen using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

Current setting

Menu top: MENU (Back)

Changing the menu: M1/+ M2/- (or) Confirm: SSE

2. Enter the target distance using the **M1/+** and **M2/-** buttons, and move digits using the **SSE** button.

Target distance
In case of 100.0 km

Setting range: 0.0 – 9999.9

Increase/decrease: M1/+ M2/- (or) Move digits: SSE

* The target distance can be set to the 0.1 km.

3. Pressing the **MENU** button returns to the menu top screen (**C.D.DST**→ screen), and confirm the change(s). Pressing it again returns to the measurement screen.

To the menu top/measurement screen: MENU (Back)

Setting sound SOUND

Switch on/off of the target zone alarm sound and button operation sound.

1. Press the **MENU** button in the measurement screen to switch to the menu top screen.
Switch to the **SOUND** screen using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

Menu top: MENU (Back)

Changing the menu: M1/+ / M2/- (or) Confirm: SSE

2. Switch between the HR out of zone alarm and button operation using the **SSE** button.

HR zone alarm

HR.ALARM ↔ BUTTON: SSE

Button operation sound

3. Select **ON** or **OFF** using the **M1/+** and **M2/-** buttons.

ON ↔ OFF: M1/+ / M2/- (or)

4. Pressing the **MENU** button returns to the menu top screen (**SOUND** screen), and confirm the change(s).
Pressing it again returns to the measurement screen.

To the menu top/measurement screen: MENU (Back)

Setting the target heart rate zone HR.ZONE

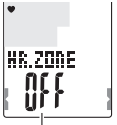
Select the HR target zone (1 to 4) or OFF, and change the upper/lower limit of each zone.

* Stop measurement and perform the resetting operation (page 19) before you can change the target heart rate zone. Unless you perform the resetting operation, "**DATA RESET**" appears on the screen, preventing from changing the target heart rate zones.
* For details of the target zone, see "3 Use of the target zone" (page 41).
* Press and hold the **M1/+** or **M2/-** button to increase/decrease the number quickly.

1. Press the **MENU** button in the measurement screen to switch to the menu top screen.
Switch to the **HR.ZONE** screen using the **M1/+** and **M2/-** buttons, and confirm with the **SSE** button.

Menu top: MENU (Back)

Changing the menu: M1/+ / M2/- (or) Confirm: SSE



Current setting

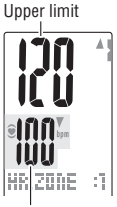
2. Select the HR target zone.
Select one from **OFF**, **1**, **2**, **3**, or **4** using the **M1/+** and **M2/-** buttons. When using the HR target zone, select from 1 to 4, confirm using the **SSE** button, and then proceed to Step 3.
When not using the target heart rate zone, select **OFF**, and then proceed to Step 4.

Select the zone:
(**OFF** ↔ **1** ↔ **2** ··· **4** ↔ **OFF**) M1/+ / M2/- (or) Confirm: SSE

3. Enter the lower limit for the selected zone using the **M1/+** and **M2/-** buttons, and confirm using the **SSE** button.
Then, enter the upper limit in the same way.

Setting range: 0 – 240 (*1)

Increase/decrease: M1/+ / M2/- (or) Confirm: SSE



4. Pressing the **MENU** button returns to the menu top screen (**HR.ZONE** screen), and confirm the change(s).
Pressing it again returns to the measurement screen.

To the menu top/measurement screen: MENU (Back)

*1: You can enter any upper/lower limit to each zone; however, the upper limit is adjusted automatically to the lower limit + 1 when the entered lower limit exceeds the upper limit. In case of the upper limit, vice versa, the lower limit is adjusted in the same way.

* The upper limit is displayed with the digit in a small numeric when it exceeds 199.

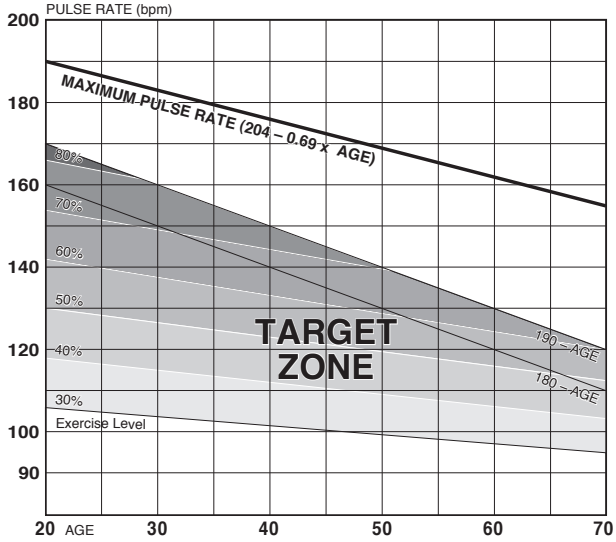
Heart rate training

This section is just a general overview of training with heart rate data. For more complete information, there are books and websites with more in-depth information. Generally, the heart rate increases during exercise, getting higher in conjunction with the intensity of the workout. Measurement the rate of your heart beat is a good indicator of the intensity of your workout. By setting target HR (heart rate) zones and sticking to pre-set exercises, you will be able to work out more efficiently. Before beginning a training program, be sure to first consult a medical specialist or sports trainer.

1 Improving general fitness

Bicycling is one of the best activities to improve your general fitness. To improve your overall fitness through bicycling, set a target heart rate zone from between 30% and 70% of your maximum HR, depending on your physical strength. For best results, exercise consistently in this zone for periods of at least 20-30 minutes, 3 or more times a week.

To obtain your target zone, see the table below, which illustrates the correlation between heart rate and training level. For beginners, it is recommended to start with the level of 30% of your max. From this point, gradually increase the level according to your fitness level and experience. Training at levels over 70% of your HR max will focus more on anaerobic exercise, and less on aerobic exercise. Weight loss usually occurs through longer rides (over 1 hour) at lower HR levels.



2 Training for competition

Measure your resting heart rate just after waking in the morning and your maximum heart rate (perhaps during competition). Then set your target zone according to your goal:

A) For recovery, endurance training, and weight loss :

60% - 70% (aerobic exercise)

B) For quality endurance and tempo training :

70% - 80% (aerobic exercise)

C) For increasing TT and race ability, and VO2 max :

85% + (anaerobic exercise)

D) For anaerobic capacity and sprinting :

92.5% + (anaerobic exercise)

- Training level (%) = $\frac{\text{(Target heart rate) - (Resting heart rate)}}{\text{(Maximum heart rate) - (Resting heart rate)}} \times 100$

- Target heart rate = (Maximum heart rate - Resting heart rate) x $\frac{\text{Training level (\%)}}{100}$ + Resting heart rate

Resting heart rate

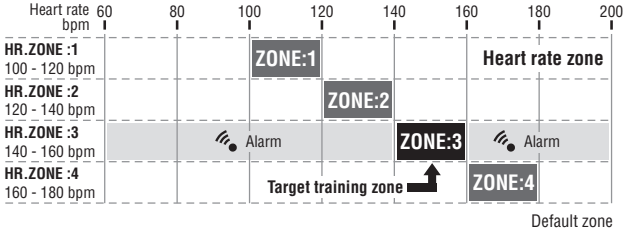
Your resting heart rate is usually the lowest recorded rate soon after waking up in the morning.

Maximum heart rate

The following calculations are generally used: (220 - age) or (204 - 0.69 x age). For more precise figure, consult a training specialist.

3 Use of the target zone

When the heart rate is out of the zone during the measurement, the computer sounds an alarm and notifies the rider by flashing .
The heart rate zone is selected from 4 predetermined zones.
For a training aiming at a heart rate of 140 to 160 bpm, select **HR.ZONE:3** as shown below.
Then, the computer sounds an alarm when the heart rate falls below 139 bpm, or rises above 161 bpm.
Once the target zone is set to **ON**, the relevant data are recorded and the time in the zone, time above the zone, and time below the zone and their percentages can be viewed in the file view (page 26).



* You can enter any upper/lower limit to each zone.

* You can select the HR target zone (1 to 4) or OFF, and change the upper/lower limit from the menu screen “Setting the target heart rate zone” (page 37).

* On/off of the alarm sound is selected from the menu screen “Setting sound” (page 37).

Trouble shooting

If a malfunction occurs, check the following before contacting CatEye or your retailer for repair or service.

Trouble on display

Trouble	Check Items	Remedy
Display motion becomes slower.	Is the surrounding temperature low (below zero degree Celsius or 32 degrees Fahrenheit)?	Temperatures below freezing may result in slower screen response. Data is not affected.
Flashes on the screen.	The remaining battery capacity for the computer is low.	Replace it with a new battery (CR2032) immediately. After replacement, be sure to perform the restarting operation (page 11).
"**STOP!**" lights up.	The stop reminder function (page 18) is activated.	It is cancelled, once you press the **SSE** button to stop the measurement. Ignore this during measurement.
No displays appear.	Is the battery for the computer empty?	Replace it with a new battery (CR2032). After replacement, be sure to perform the restarting operation (page 11).
Meaningless display appears.		Perform the restarting operation (page 11).
Cannot measure the trip speed (cadence)	Have you checked the sensor ID? Is the computer ID Synch'ed with somebody else's sensor?	Check the speed sensor ID (page 32) for **SP1** (speed sensor 1) or **SP2** (speed sensor 2).
	Is turned on?	The computer cannot receive any data when is turned off. Press the **M1/+** or **M2/-** button to recover from the transmission-off status (page 19).
	Check if the distance between each sensor zone of the speed sensor and the magnet is too large.	In reference to "How to install the unit on your bicycle" (page 7), appropriately adjust the positions of the corresponding magnet with the sensor zone.
	Check if each sensor zone of the speed sensor is off the center of the magnet.	
	Check if the computer is in the transmission-off status, or displays the power saving screen.	Press any button on the computer to return to the measurement screen.
	Is the battery for the speed sensor empty?	Replace it with a new battery (CR2032).

Trouble	Check Items	Remedy
Heart rate signals are not received.	Have you checked the sensor ID? Is the computer ID Synch'ed with somebody else's sensor?	Check the speed sensor ID (page 32) for **HR** (heart rate sensor).
	Is the Heart rate sensor icon off ♥ ?	If the Heart rate sensor icon is off ♥ , the computer cannot receive the Heart rate data. Press the **M1/+** or **M2/-** button once to turn on the icon.
	Has the power-saving function been activated, showing only date/clock on the screen?	Press any button on the computer to cancel the power-saving function.
	Is the electrode pad detached from your body?	Wear appropriately so that the electrode pad is in good contact with the body.
	Check whether the heart rate sensor is correctly secured to the HR strap.	Attach the heart rate sensor firmly.
	Dry skin (particularly in winter)	Slightly moisten the electrode pad of the heart rate sensor.
	Is the battery for the heart rate sensor used up?	Replace it with a new battery (CR2032).
	Check whether lights up on the computer screen. The remaining battery capacity for the computer is low.	Replace it with a new battery (CR2032). After replacement, be sure to perform the restarting operation (page 11).
	Is the electrode pad overly worn and damaged after long use?	Replace with a new HR strap.
The heart rate is sometimes zero and sometimes measured.	Check whether the HR strap is correctly worn on the body.	To wear the electrode pad correctly, follow the instructions for wearing the heart rate sensor (page 10).
Moving the main unit away from your body will prevent measurement of the heart rate.	Check whether lights up on the computer screen. The remaining battery capacity for the computer is low.	Replace it with a new battery (CR2032). After replacement, be sure to perform the restarting operation (page 11).
	Is the battery for the heart rate sensor used up?	Replace it with a new battery (CR2032).

Trouble on operation

Trouble	Check Items	Remedy
Pressing the **LT** button does not turn on a light.	Check whether [▭] lights up on the computer screen. The remaining battery capacity for the computer is low.	Replace it with a new battery (CR2032). After replacement, be sure to perform the restarting operation (page 11).
No measurement starts even while riding.	Check if the auto-mode is off ([AT] is turned off).	When the auto-mode is off ([AT] is turned off), press the relevant button to start/stop the measurement. For automatic measurement, turn on the auto-mode (page 35).
The heart rate sensor (speed sensor) ID check failed.		The battery for the heart rate sensor (speed sensor) is possibly depleted. After replacing the battery with a new one (CR2032), check the sensor ID again (page 32).
Lap data cannot be stored.	Have you already completed 99 laps?	Delete data files that contain several laps from the file view (page 29) in order to obtain free space for lap recording.
	Is the lap time over 100 hours (Or is the trip lap distance over 9999.99 km)?	With the recording range exceeded, the lap cannot be measured. Perform the resetting operation (page 19) for further measurements.
	Is it immediately after pressing the **LAP** button?	You cannot record the lap for 5 seconds immediately after pressing the **LAP** button.
Abnormal values appear.	Are there any objects emitting electromagnetic waves (railway tracks, transmitting stations for television, Wi-Fi environment, etc.) nearby?	Keep the unit away from any object that may be causing interference, and perform the resetting operation (page 19).
In menu mode, cannot change settings.	Is it currently measurement?	Only top menu can be viewed during measurement.
	When the auto-mode is turned on (with [AT] illuminating), it may enter the measurement mode due to electromagnetic waves.	Keep the unit away from any object that may be causing interference with electromagnetic waves.
	Check whether "**DATA RESET**" is displayed on the screen.	To change the HR target zone, the resetting operation is required. Stop the measurement, and perform the resetting operation (page 19).
Measurement data cannot be stored on the file view.	Has the total number of laps reached 99?	Delete data files that contain several laps from the file view (page 29) in order to obtain free space for lap recording.

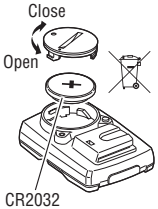
Replacing battery

The product comes with factory-installed batteries. When a battery is empty, replace it with a new one according to the following instructions.

⚠ Warning!!! :
Safely dispose of the old batteries, and do not place them within reach of children. If a battery is swallowed, consult a doctor immediately.

* When any battery for the computer, heart rate sensor, or speed sensor is depleted, we recommend replacing all batteries at the same time.
* The battery life shown in this manual is not definitive and it varies depending on the use environment.
* The battery cover sealing is critical to maintain the waterproof feature. Clean any contamination on the battery cover or the seal, and check whether it seals correctly.

Computer

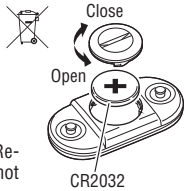


Battery life: Approx. 1 years when used for 1 hour per day.

* When the remaining battery capacity is low, lights up.

1. Remove the battery cover on the back of the computer using a coin, or the equivalent.
2. Insert new lithium batteries (CR2032) with the (+) sign upward, and close the battery cover firmly.
3. After replacement, be sure to perform the restarting operation (page 11), and set the date and time.

Heart rate sensor

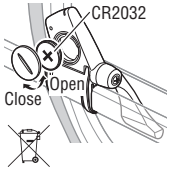


Battery life: Approx. 1 years when worn for 1 hour per day.

1. Remove the battery cover on the back of the heart rate sensor using a coin, or the equivalent.
2. Insert new lithium batteries (CR2032) with the (+) sign upward, and close the battery cover firmly.

* The heart rate sensor consumes power when worn. Remove the heart rate sensor whenever measurement is not required.

Speed sensor



Battery life: Approx. 1 years when used for 1 hour per day.

1. Remove the battery cover on the speed sensor using a coin, or the equivalent.
2. Insert new lithium batteries (CR2032) with the (+) sign upward, and close the battery cover firmly.
3. After battery replacement, be sure to check that the positions of the magnet and sensor are correct and they are secured firmly.

Maintenance

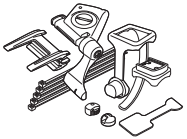
Perform the daily care according to the following instructions.

- Regularly check that the positions of the magnets and sensors are correct, and they are secured firmly.
- When the computer, heart rate sensor, and speed sensor are dirty, wash them with water or wipe them with a soft cloth dampened with diluted neutral detergent, then wipe with dry cloth. Do not use solvents such as benzine or rubbing alcohol as they may damage the surfaces.
- Since the HR strap directly touches your skin, keep it clean by washing off any dirt after use.

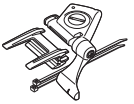
Spare accessories

Standard accessories

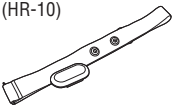
1603580
Parts kit (ISC-10)



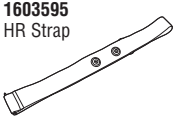
1603585
Speed sensor kit (ISC-10)



1603590
Heart rate sensor kit (HR-10)



1603595
HR Strap



1600280N
Bracket band

1602193
Bracket

1699691N
Wheel magnet

1699766
Cadence magnet

1665150
Lithium battery (CR2032)

Optional accessories

1602980
Nylon tie bracket

Specifications

Display functions	Upper display	Current speed	0.0 (4.0) – 150.0 km/h [0.0 (3.0) – 93.0 mph] For 27-inch tire size
		Average speed	0.0 – 150.0 km/h [0.0 – 93.0 mph]
		Maximum speed	0.0 (4.0) – 150.0 km/h [0.0 (3.0) – 93.0 mph]
	Middle display	Heart rate	0 (30) – 240 bpm
		Average heart rate	0 – 240 bpm
		Maximum heart rate	0 (30) – 240 bpm
		Cadence	0 (20) – 199 rpm
		Average cadence	0 – 199 rpm
		Maximum cadence	0 (20) – 199 rpm
	Lower display	Date	'00.01.01 – '99.12.31 (Display format can be switched)
		Clock	0:00'00" – 23:59'59" [AM 1:00'00" – PM 12:59'59"] (Both 12 and 24-hour modes can be selected)
		Calorie consumption	0 – 9999 / 10000 – 999999 kcal (Calculation-based estimation only)
		Total time	0 – 99999 hour
		Odometer	0.0 – 9999.9 / 10000 – 999999 km [mile]
		Elapsed time	00'00"0 – 59'59"9 / 1:00'00" – 99:59'59"
		Trip distance	0.00 – 9999.99 km [mile]
		Countdown distance	9999.90 – 0.00 km [mile]
		Lap number	L-01 – L-99
		Average lap speed in real time	0.0 – 150.0 km/h [0.0 – 93.0 mph]
		Lap timer	0'00"0 – 59'59"9 / 01:00'00" – 99:59'59"
		Trip lap distance in real time	0.00 – 9999.99 km [mile]
	Lap	Upper display (Average lap speed,maximum lap speed) Middle display (average lap heart rate,Lap number,maximum lap heart rate) Lower display (trip lap distance,lap time,split time)	
Control system		One-chip microcomputer, crystal oscillator	
Display system		Liquid crystal display (EL backlight)	
Speed/Cadence sensor signal detection system		Noncontact magnetic sensor	
Sensor signal transmission and reception		2.4 GHz ISM Band (With ID for each sensor. 2-IDs (**SP1**, **SP2**) can be set for the speed sensor.)	
Communication range		5 m (above 5 m, transmission distance may vary due to environmental conditions)	
Operating temperature range		32 °F – 104 °F [0 °C – 40 °C] (This product will not function appropriately when exceeding the Working Temperature range. Slow response or black LCD at lower or higher temperature may happen respectively.)	
Storage temperature range		-4 °F – 122 °F [-20 °C – 50 °C]	
Wheel circumference set range		0100 – 3999 mm 1 size for each speed sensor ID (Initial value: **SP1** = 2096, **SP2** = 2050)	
Power supply/ battery life	Computer	: CR2032 x 1 / Approx. 1 years (When using 1 hour/day)	
	Heart rate sensor	: CR2032 x 1 / Approx. 1 years (When worn about 1 hour per day)	
	Speed sensor	: CR2032 x 1 / Approx. 1 years (When using 1 hour/day)	
Dimensions/ Weight	Computer	: 2-7/32" x 1-1/2" x 43/64" (56.5 x 38 x 16.9 mm) / 1.06 oz (30 g) (With the batteries)	
	Heart rate sensor	: 1-7/32" x 2-29/64" x 33/64" (31 x 62.5 x 13.2 mm) / 0.54 oz (15.4 g) (With the batteries)	
	Speed sensor	: 1-55/64" x 2-29/64" x 33/64" (47.4 x 62.4 x 13.1 mm) (Excluding the arm) / 0.74 oz (21 g) (With the batteries)	

* When the elapsed time exceeds 100 hours, or the trip distance exceeds 9999.99 km/h, "**E**" appears in place of the average speed.

* Designs and specifications are subject to change without notice, due to modifications or improvements.

REGISTRATION CARD

ユーザー登録カード **Fiche d'enregistrement** **Registratiekaart**
Scheda di registrazione **Registrierungskarte** **Tarjeta de registro**

CAT EYE

Name
お名前(フリガナ) Naam
Nom Nombre
Name Nome

Serial No ❶ シリアルNo Serienummer
No. de série Nº de serie
Seriennr Numero di matricola

Address
ご住所 Adres
Adresse Dirección
Adresse Indirizzo

Phone
電話番号 Telefoon
Téléphone Teléfono
Telefon Numero di telefono

E-mail address
Eメールアドレス E-mailadres
Adresse e-mail Dirección de correo electrónico
E-mail-Adresse Indirizzo e-mail

Dealer or Shop name
ご購入店名 Dealer of Naam van winkel
Nom du magasin ou du revendeur Nombre del proveedor o de la tienda
Name des Händlers oder des Geschäfts Nome del punto vendita

Dealer or Shop address
所在地 Dealer of Adres van winkel
Adresse du magasin ou du revendeur Dirección del proveedor o de la tienda
Adresse des Händlers oder des Geschäfts Indirizzo del punto vendita

The date of purchase
ご購入日 Datum van aankoop
Date d'achat Fecha de compra
Kaufdatum Data di acquisto

/ /

Your name address or e-mail address will not be sold or shared with any other company.
ご送信いただいた情報や内容の管理には万全を期し、新製品情報やテクニカルサポート提供以外に使用することは一切ありません。
Votre adresse postale et votre adresse e-mail ne seront pas vendues ou transmises à d'autres entreprises.
Ihr Name oder Ihre E-Mail-Adresse wird weder weiterverkauft noch an eine andere Firma weitergegeben.
Uw naam, adres of e-mailadres zullen niet beschikbaar worden gesteld aan derden.
Su nombre, dirección o correo electrónico no serán vendidos o compartidos con otras empresas.
Il vostro nome, indirizzo o indirizzo e-mail non saranno venduti o condivisi con altre società.

INTERNATIONAL WARRANTY CERTIFICATE

保証書 **CERTIFICAT DE GARANTIE INTERNATIONALE** **INTERNATIONAAL GARANTIECERTIFICAAT**
CERTIFICATO DI GARANZIA INTERNAZIONALE **INTERNATIONALES GARANTIEZERTIFIKAT** **CERTIFICADO DE GARANTÍA INTERNACIONAL**

CAT EYE

PURCHASER'S NAME/ADDRESS
ご住所・お名前
NOM/ADRESSE DU CLIENT
NAME UND ANSCHRIFT DES KÄUFERS
NAAM/ADRES KOPER
NOMBRE/DIRECCIÓN DEL COMPRADOR
NOME/INDIRIZZO DEL COMPRATORE

Serial No ❶

DEALER'S NAME/ADDRESS
販売店名・住所
NOM/ADRESSE DU DISTRIBUTEUR
NAME UND ANSCHRIFT DES HÄNDLERS
NAAM/ADRES VERKOPER
NOMBRE/DIRECCIÓN DEL DISTRIBUIDOR
NOME/INDIRIZZO DEL VENDITORE

DATE OF PURCHASE
お買い求め年月日
DATE D'ACHAT
VERKAUFSDATUM
AANKOOPDATUM
FECHA DE COMPRA
DATA DELL' ACQUISTO

/ /

❶ Please fill with 7-digits numbers marked on the battery cover of main unit.
コンピューター裏面のバッテリーカバーに記載の7桁の数字をご記入ください。
Veuillez indiquer les numéros à 7 chiffres indiqués sur le couvercle de la pile de l'unité principale.
Geben Sie bitte die siebenstellige Nummer an, die auf der Batterieabdeckung der Haupteinheit steht.
Vul de 7-cijferige nummers in die op de batterijendeksel van de computer staan.
Por favor, complete el número de 7 dígitos mostrado en la tapa de las pilas de la unidad principal).
Inserire il codice di 7 cifre indicato sul coperchio del vano batterie dell'unità principale.

MSCTR31TW-111201

DIGITAL 2.4G

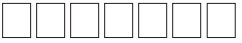
CATEYE CO., LTD 2-8-25 , KUWAZU, HIGASHI SUMIYOSHI-KU, OSAKA, JAPAN 546-0041
www.cateye.com

CE 2150

Registration

CATEYE Web Site (http://www.cateye.com)

For warranty service you must register your product. Please register your V3n as soon as possible. CATEYE provides you technical support and new product information as much as possible.
Please register on-line through our web site, or send the registration card below directly to our Customer Service. For registration, please fill in the product's serial number (the 7-digits number marked on on the battery cover of computer).



Limited warranty

2-Year CC-TR310TW : Computer, heart rate sensor and speed sensor
CC-TR210DW : Computer, speed sensor
(Not including depletion of batteries)

CatEye products are warranted to be free of defects from materials and workmanship for a period of two years from original purchase. If the product fails to work due to normal use, CatEye will repair or replace the defect at no charge. Service must be performed by CatEye or an authorized retailer.
To return the product, pack it carefully and enclose the warranty certificate (proof of purchase) with instruction for repair.
Please write or type your name and address clearly on the warranty certificate.
Insurance, handling and transportation charges to CatEye shall be borne by person desiring service.
For UK and REPUBLIC OF IRELAND consumers, please return to the place of purchase. This does not affect your statutory rights.

CATEYE CO., LTD.
2-8-25, Kuwazu, Higashi Sumiyoshi-ku, Osaka 546-0041 Japan
Attn: CATEYE Customer Service Section
Phone : (06)6719-6863 Fax : (06)6719-6033
E-mail : support@cateye.co.jp URL : http://www.cateye.com

[For US Customers]
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2825 Wilderness Place Suite 1200, Boulder CO80301-5494 USA
Phone : 303.443.4595 Toll Free : 800.5CATEYE
Fax : 303.473.0006
E-mail : service@cateye.com