



- Heart Rate Monitor
- Hartslagmeter
- Pulsmätare
- Sykemittari

**Fusion** SYSTEM 122™



## ***Fusion 30***

Fashionable heart rate monitor ideal for counting calories during exercise.

- Heart rate
- Time of Day
- Calendar
- Daily alarm
- Single heart zone setting
- Hi and Lo heart zone alarm
- 10 hour stopwatch
- 10 hour single & repeat countdown timer
- Time in Zone timer
- Heart rate recovery
- Calorie counter
- Scan showing maximum, average and minimum heart rate



## ***Fusion 20***

Stylish heart rate monitor  
Ideal for general fitness training.

- Heart rate
- Time of Day
- Calendar
- Daily alarm
- Single heart zone setting
- Hi and Lo heart zone alarm
- 10 hour stopwatch
- 10 hour single & repeat countdown timer
- Scan showing maximum, average and minimum heart rate

Lightweight transmitter belt included.

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## Caution

Before you begin your exercise programme, get an assessment of your overall fitness level. You are advised to get clearance from your doctor that it is safe for you to exercise.

## Important Tips

1- You must make a long press of MODE in any main screen before you can get a heart rate reading.

2- If you get into a set up screen by mistake, a press and release of MODE takes you back to a main screen. Successive presses of MODE will scroll you through all main screens.

3- For proper heart rate readings, it is essential that there is sufficient moisture (water) between the electrodes on the transmitter and your skin. Insufficient moisture can cause no reading, frozen readings or erratic readings.

4- When using a wireless heart rate monitor near computers, electric motors, high voltage power lines, televisions, other heart rate monitors and mobile

phones, erratic readings may occur.

5- You can wear the Fusion monitor when swimming, but do not push any of the buttons while the receiver (watch) is underwater.

## Putting on the transmitter

- Attach one end of the adjustable elastic strap to the transmitter.
- Moisten the rubber electrodes of the belt with either water or saliva as shown.



- Position the transmitter on the chest just below the breastbone, with the Cardiosport logo the right way up.
- Pass the elastic strap around your chest and attach to the other end of the transmitter.
- Adjust the strap to give a close but comfortable fit.

About your Cardiosport System 122 Digital heart rate monitor

The Cardiosport digital telemetry technology utilises a safe 122kHz low frequency system designed to deliver reliable coded heart rate information, so all you have to concentrate on is getting the most from your exercise.

Each time you put on your chest transmitter and then press the MODE key until the Heart symbol appears, a code is randomly selected and transmitted to the watch receiver, thereafter the watch will lock on to this code plus the transmission interval to create an interlock. The code combined with the precise transmission interval results in the unique interlocking pairing between the chest transmitter and watch.

The interlock code can be displayed by pressing and holding down the scan/rev key until the word CODE and a number appears on the screen.

During the interlock process you should be at least 6 feet (1.8 metres) away from other

Cardiosport System 122 heart rate monitors. If the interlock is lost for any reason, the watch will beep once to alert you and the heart rate display will go to Zero, in this case you should repeat the interlock process.

Once the interlock is established, you can exercise in close proximity with other heart rate monitors safe in the knowledge that your monitor will display only your own heart rate only, not the heart rate of those around you.

#### Quick Start

Fusion 20/30 have a variety of features. To set these up you will need to read the instructions. However, if you just want to see how the heart rate feature works, follow these steps:

- 1 Put on the transmitter.
- 2 Attach the monitor to your wrist.
- 3 Press and hold the MODE key until the heart symbol appears.

4 After a few seconds the heart symbol will start flashing and your heart rate will appear.

Setting up your Fusion 20 and 30

Impulse has one setting loop, which is entered from the Time of Day (ToD) screen.

Once you enter this, each press and release of SELECT takes you to the next setting in the loop and returns to the Time of day screen.

The setting loop for Fusion 20 is seconds, hours, minutes, day of week, month, date, alarm mode, daily alarm hour, daily alarm minute, heart zone high limit, heart zone low limit, countdown timer single or auto-repeat, countdown timer hours, minutes, seconds, then back to time of day.

Fusion 30 has the following additions in the setting loop (after countdown timer seconds)–heart rate recovery high, heart rate recovery low, ambient heart rate, weight, age.

Entering the setting loop

In the ToD screen, press and hold SELECT until the seconds flash and the SELECT icon appears on the display.

*Note: A press of the **MODE** button at any stage in the setting loop takes you back to the main Screen for that setting.*

### **Setting Time and the calendar**

Press and release ST./FWD or SCAN to reset seconds to zero.

*Note: if seconds are over 30 when you reset, minutes will advance by 1.*

Press SELECT to move to hours.

Press and release ST./FWD to increase, or SCAN to decrease the hours.

*Note: A press and hold of **ST./FWD** will 'fast forward' or **SCAN** will 'fast reverse' the number.*

Press SELECT to move to minutes.

Press and release ST./FWD to increase, or SCAN to decrease the minutes.

Press SELECT to move to day of the week.

Press and release ST./FWD to advance, or SCAN to move back the day of the week.

Press SELECT to move to month.

Press and release ST./FWD to increase, or SCAN to decrease the month.

Press SELECT to move to date.

Press and release ST./FWD to increase, or SCAN to decrease the date.

### **Setting daily alarm**

Press SELECT to move to daily/hourly alarm.

Press and release ST./FWD to select the alarm from either hourly chime only; daily alarm only; both on; both off.

Press SELECT to move to daily alarm hours.

Press and release ST./FWD to increase, or SCAN to decrease the hours.

Press SELECT to move to daily alarm minutes.

Press and release ST./FWD to increase, or SCAN to decrease the minutes.

### **Setting the heart rate zone**

Fusion 20/30 has a programmable target zone, making it easier to control the intensity of your workout (see Training with your Fusion for suggested zone selection).

*Caution: The default heart zone settings are not intended as suggested or recommended upper and lower zone values. These values should be carefully adjusted according to your fitness level.*

Press SELECT to move to the heart zone high setting.

Press and release ST./FWD to increase or SCAN to decrease, to set the required number.

Press SELECT to move to the heart zone low setting.

Press and release ST./FWD to increase or SCAN to decrease, to set the required number.

*Note: There is always a 5 beat per minute difference between the high and low limit.*



### **Setting the count down timer**

Press SELECT to move to countdown timer. The repeat icon will be flashing around TMR. The countdown timer counts down from up to 10 hours.

You can now set it so that it automatically resets and continues counting down repeatedly, or times a single event.

Press ST./FWD or SCAN to select repeat (both the repeat and TMR icon will be displayed).

Press ST./FWD or SCAN to select single countdown (just the TMR icon will be displayed).

*Note: the actual time that can be set is 9 hours 59 minutes 59 seconds.*

Press SELECT to move to countdown timer hours.

Press and release ST./FWD to increase, or SCAN to decrease the hours.

Press SELECT to move to countdown timer minutes.

Press and release ST./FWD to increase, or SCAN to decrease the minutes.

Press SELECT to move to countdown timer seconds.

Press and release ST./FWD to increase, or SCAN to decrease seconds.

A further press of SELECT takes you back to Time of Day.

Fusion 30 has these additional settings.

### **Setting heart rate recovery (HRR)**

Fusion 30 automatically measures HRR. HRR refers to the time it takes for your heart rate to drop from the preset high to the preset low recovery limit after you have finished your workout. In general, as your recovery time decreases, your fitness level is improving. However, it is recommended that you experiment with values that will make the recovery time a useful number for your application. It is only a comparative value with your earlier efforts, and not a meaningful number in itself.

Press SELECT to move to HRR high.

Press and release ST./FWD to increase or SCAN to decrease, to set the required number.

*Note: it is suggested that this be set 5 bpm below the heart zone high limit.*

Press SELECT to move to HRR low.

Press and release ST./FWD to increase or SCAN to decrease, to set the required number.

*Note: as a guideline, note what your heart rate drops to at the end of your workout after 2 minutes (using the stopwatch), and use this value as your HRR low setting.*

### **Setting the calorie counter**

The calorie counter shows the number of calories burnt during exercise, using heart rate intensity. You need to enter

- your Ambient Heart Rate (AHR) value - this is your typical heart rate at rest before starting exercise
- your weight
- your age

*Note: You can also use the Quick Set feature in the main calorie screen to set AHR (see Operating the Calorie Counter).*

Press SELECT to move to ambient heart rate.

*Note: Once set, calorie expenditure will be calculated from 5 beats per minute above this figure.*

Press ST./FWD to increase (120bpm maximum) or SCAN to decrease the ambient heart rate (30 bpm minimum).

Press SELECT to move to set weight. The kilogram value will be flashing.

*Note: The weight range is from 20-150KG (44-330lbs).*

Press and release ST./FWD to increase or SCAN to decrease, to set your weight.

*Note: kgs and lbs are displayed and changed at the same time.*

Press SELECT to move to set age.

Press and release ST./FWD to increase or SCAN to decrease, to set your age.

A further press of SELECT takes you back to Time of Day.

Using your Fusion

### **Switching on heart rate**

Fusion 20 has three main screens: Time of Day, Stopwatch and Countdown Timer.

Fusion 30 has five main screens: Time of Day, Stopwatch, Countdown Timer, Time in Zone and Calorie Counter.

Press and hold MODE in any main screen to turn on and display your heart rate.

The heart icon and a zero heart rate value will appear in the lower row of the display.

After a few seconds (provided you are wearing the chest transmitter) the heart icon will begin to flash, followed by your current heart rate being displayed.

An up arrow (displayed to the left of the heart icon) means you are above your zone.

A down arrow means you are below your zone.

A double arrow means you are within your zone.

### **Switching off heart rate**

Press and hold the MODE button in any main screen.

Fusion 20 and 30 also feature an Auto-off after 2 minutes if a heart rate signal is not received.

Alarms

### **Hourly alarm**

This will give 2 beeps on the hour.

### **Daily alarm**

Press MODE to move to the time of day screen.

To view the current alarm setting (displayed for 2 seconds) press and release ST./FWD.

The alarm sounds for thirty seconds. To silence the alarm, press any button.

*Note: the button pressed will not perform its usual function.*

### **Out of Zone alarm**

The out of zone alarm will sound in rhythm with your heart rate when you go above or below the zone limits.

*Note: To turn on the alarm, heart rate must be on.*

Press and hold SELECT. An alarm icon will appear.

To turn off the alarm press and hold SELECT until the icon disappears.

### **Heart rate recovery alarm (Fusion 30 only)**

Fusion 30 automatically records the amount of time it takes your heart to drop from a pre-set upper limit to a pre-set lower limit. Timing begins automatically when your heart rate passes through the upper limit, and continues until your heart rate drops below the lower limit. When timing stops, the Heart Rate Recovery alarm gives four continuous beeps whenever a heart rate recovery is completed. The alarm cannot be switched off.

*Note: To view the HRR time, move to the TiZ main screen and press **ST./FWD**.*

### **Using the stopwatch**

Stopwatch can be used with or without heart rate activated, and is operated in the same way for either modes.

To start stopwatch, press and release **ST./FWD**.

To stop stopwatch, press and release **ST./FWD**.

To reset stopwatch, press and hold **ST./FWD** when the stopwatch is not running.

*Note: Maximum stopwatch time is 9 hours, 59 minutes, 59.9 seconds.*

### **Using countdown timer**

Countdown timer can be used with or without heart rate activated.

When the time has counted down to zero, an audible alarm sounds for 10 seconds.

To start countdown timer, press and release **ST./FWD**.

To stop countdown timer, press and release **ST./FWD**.

To reset countdown timer, press and hold **ST./FWD** when the countdown timer is not running.

*Note: Maximum countdown time is 9 hours, 59 minutes, 59.9 seconds.*

## **Using Scan**

### **Current session scan**

When heart rate is on, a press and release of SCAN in any main screen starts a scan through the maximum, average and minimum heart rates (3 seconds for each) since heart rate was switched on.

A press and release of SCAN during the scan takes you back to the main screen you were in.

### **Previous session scan**

In any main screen, a press and release of SCAN starts a single scan through maximum, average and minimum heart rate for the previous session. This is stored in memory, and cleared automatically when heart rate is next switched on.

The following functions are featured in Fusion 30.

### **Using Time in Zone (TiZ)**

Press MODE until the TiZ icon appears.

Time in Zone is a heart rate controlled feature that displays the amount of time you have spent in your heart zone.

Typically, exercise programmes comprise a warm-up, workout for a specified time (in a zone) and cool down. The TiZ feature can be used to show the time in your zone as you actually workout.

If you go above or below your zone, the timer will stop until you are back in your zone.

### **Using the Calorie Counter**

Press MODE until the Cal icon appears.

The calorie counter starts automatically once heart rate is turned on.

To reset calories to zero, press and hold ST./FWD until the display shows zero.

*Note: if you just want the calories for your actual workout, reset just as you begin the session.*

### **Calorie Counter Ambient Heart Rate (AHR) Quick set**

Fusion 30 has a quick set feature, allowing you to set your AHR quickly just before you begin your workout.

Calories will be counted from 5 bpm above this value.

You need to be wearing the transmitter and monitor, and have heart rate switched on.

Move to the Cal main screen.

Press and hold SCAN to set the current displayed heart rate as your AHR.

*Note: if your heart rate is above 120bpm, the monitor will default to the setting already stored.*

## Training with your Impulse HRM

Exercising at the right heart rate intensity, is key to meeting your fitness and performance goals. The first step is to find out your maximum heart rate (MHR). Using a formula based on age or taking a sport-specific exercise assessment does this.

The formulas:

- Sedentary individuals use 220 minus your age to calculate your approximate maximum.
- If you exercise/train aerobically 3 or more times a

week, use 205 minus half your age.

Example for a person aged 30  
 $220 - 30 = 190$  beats per minute (bpm)

## Intensity of Exercise

If you are a beginner with the goal of improving overall fitness, losing weight or reducing stress, exercise in the healthy heart zone, which is 50-59 percent of your maximum heart rate.

If you already exercise regularly and are aiming to lose body fat, exercise in the fat burning zone, which is 60-69 percent of your maximum heart rate.

If your goal is to improve aerobic capacity or athletic performance, exercise in the aerobic zone, which is 70-79 percent of your maximum heart rate.

Competitive athletes usually incorporate interval training sessions into their programme in the anaerobic threshold zone, which is usually between 80-89 percent of maximum heart rate. This high intensity

exercise helps train muscles to handle lactic acid. It is advisable to structure these sessions.

However, train sensibly at the upper limits. Exercising regularly at a heart rate intensity that is too high does not produce additional aerobic benefits and increases the possibility of an athletic injury.

Example: Taking a 30 year old just starting on an exercise programme with the aim of getting fitter would start exercising at a gentle intensity of 50-59% of MHR (50% of 190=95 bpm, 59% of 190=112bpm). If they wanted to lose weight, then a slightly higher intensity of 60-69% MHR (114 to 131 bpm) would be required. If the same 30 year old is already fit and wants to improve aerobic capacity or athletic performance, a higher intensity of 70-79% MHR (133 to 150 bpm) is required. If interval training sessions is incorporated into the training programme, this should be done in the anaerobic threshold

zone, which lies between 80-89% MHR (152 to 169 bpm).

The F.I.T.T Method  
(Frequency, Intensity, Time and Type of exercise)

Frequency of Exercise

Exercise in the zone that you have set at least 3-5 times per week, with no more than 48 hours between sessions. Even on 'rest days' gentle exercise such as a leisurely walk can be beneficial.

Intensity of Exercise

Select a zone that is both within your capability and in which you can achieve consistency. Studies show that people who exercise at too high an intensity, especially in the initial stages of their programme, drop out sooner, have more injuries and tend to develop a negative impression towards exercise in general. If necessary, start in lower zone.

Time exercising

Aim for 20-60 minutes of continuous exercise in your

zone each session. If you are unable to do 20 minutes initially, gradually build up to this.

#### Type of exercise

Choose activities that use large muscle groups and which are continuous. Some good examples are walking, swimming, running, aerobic dance, stepper and ski machines, treadmills, cycling and exercise bikes. Feel free to include more than one activity - perhaps cycle one day, swim the next and do an aerobics class on the third.

Looking after your Fusion  
Thoroughly wipe and dry your monitor and transmitter after use.

Store in a cool dry place.

Do not expose to direct sunlight or temperatures above 122 degrees Fahrenheit (50°C) or below 14 degrees Fahrenheit (-10°C).

The elastic chest strap can be washed on a 30°C cycle.

#### Troubleshooting

##### ***What if the heart rate reading is erratic or totally absent?***

- 1- Make sure the chest transmitter is sufficiently tight. The transmitter should be positioned and the elastic strap tightened so that the electrodes are flat against your skin. Adjust the transmitter side to side or slightly up or down until it is positioned correctly, and the electrodes make good contact with your skin.
- 2- Make sure the transmitter electrodes are sufficiently moist. Moisten the electrodes with water, saliva or electrode gel. Accumulated sweat or dirt on the electrodes may impair electrical contact, so make sure they are kept clean.
- 3- Make sure you have switched heart rate on, with a long press and hold of MODE in any main screen.



***What if the heart rate reading becomes extremely high?***

Electromagnetic signals from outside sources may cause abnormally high heart rate readings. Common sources of electromagnetic signals are high voltage power lines, electric motors and mobile phones. Your heart rate should return to normal once you move away from the source.

## Technical specification

### *Fusion 20 & 30 Monitor*

Heart rate accuracy:	± 1bpm
Heart rate range:	30-240 beats per minute
Stopwatch resolution:	0.1 sec
Maximum stopwatch time:	9hr 59min 59.9 sec
Heart zone high limit value:	80 to 240bpm in 1bpm increments
Heart zone low limit value:	30 to high limit value minus 5bpm in 1bpm increments.

### *Fusion 30 Monitor*

Maximum time in zone:	9hr 59min 59.9 sec
Heart rate recovery range:	30 to 200bpm in 1 beat increments
Ambient heart rate range:	30 to 120bpm in 1 beat increments.

### *Transmitter*

Emitted frequency:	122kHz ±10%
Battery life:	Approximately 2 years when used 60 min/day
Range:	Up to 80cm (31.5 inches) to monitor.

Note: This is a consumer device and could suffer from interference from external electrical sources. The readings are for reference only and no responsibility can be accepted for the consequences of any erroneous readings.

## FCC Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

The radiated output power is far below the FCC Radio frequency exposure limits. Nevertheless, this device should be used in such a manner that the potential for human contact during normal operation is minimized.

This Equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However,

there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

## CE Statements

This device has been tested and found to comply with the requirements set up in the council directive on the approximation of the law of member states relating to EMC Directive 89/336/EEC, Low Voltage Directive 73/23/EEC and R&TTE Directive 99/5/EC.

## Selling country

Austria, Belgium, Denmark, France, Finland, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, U.K., Spain, Sweden.

***Healthcare Technology Ltd.***

**Dragon House, Hussar Court, Waterlooville,  
Hampshire, PO7 7SF, UK**

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Fusion20/30 ZT1CSC/ZW51/ZW52-MAN-200(GB.NL.SW.FIN)

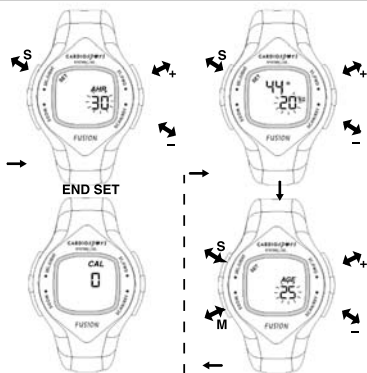


**F** Setting heart rate recovery • Inställning av den pulsåtervändningstiden  
 • Sykkeen palautuman asetus • Hartslogherstel instellen (Fusion30)



SETTING THE CALORIE COUNTER (Fusion 30)

**G** Setting the calorie counter • Calorimätarens inställning  
 • Kalorilaskurin asetus • Calorieteller instellen (Fusion 30)



**H** Set



**I** Set 12/24hr



**J** Reset STW



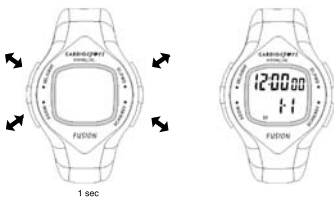
**K** Reset TiZ



**L** Reset CAL (Fusion30)



**M** Reset (Fusion 20 & 30)



**N** LIGHT (Option)

