# Heart Beat Sensor

**Introduction:**

Heartbeat Monitor/ Digital Pulse Meter is the economically priced instrument with latest technology. Using an advanced micro controller based circuit & probe design it provides an easy way to measure and monitor heartbeat rate. The instrument uses Infrared sensors, which can easily be clipped to finger ends to detect the heartbeat by finger plythysmography technology. A bar graph is provided to adjust the position of sensors at the best signal location. The unit is lightweight, easy to handle, extremely durable.

The detachable Infrared probe is designed to get the best results in all type of pulse rate measurement applications.

The pulse is also shown by LED indication.

**Home Use:**

The simple design and easy operation allows individuals to monitor the heartbeat during exercise and workouts. The device provides great safety to individuals with known heart problems.

The readings of pulse meters are accurate enough when they count from your finger at normal body temp.

A normal, healthy, human heart beats about 72 to 84 times per minute. A lower heart rate can result from being a consistent exerciser, from some medications for heart or blood pressure problems, or simply because of your genetic order.

Your heart rate at resting position can be measured by recording your pulse before arising in the morning on two or three different days and averaging the figures. If your rate is less than 50, or more than 90, please consult your doctor.

Your maximum heart rate is related with your age. Take 220 and subtract your age. This is rate as fast as your heart can safely be allowed to beat. Target heart rate should be 50 to 80 percent of your maximum heart rate. Target heart rate is required to estimate the useful intensity of exercise, by measuring heartbeats per minute. To begin a healthy activity program, aim for 50 to 60 percent of maximum heart rate. For a moderate exerciser, try 60 to 70 percent. If you are in great fitness condition then you may go for 70 to 80 percent of your max heart rate. Your pulse rate should come back to normal within 10 minutes after stopping the exercises or activity, if it does not - it means you are over exercising.

**Operation:**

1. Connect the AC Adapter and Sensor to the device & Switch ON the power switch.

2. Clip the sensor to the finger tip (on the center of nail of fore finger) as shown, as per requirement. Keep your hand and body stationary and breath normally.

3. Adjust the position of sensor on finger clip to get the maximum consistent signal. Normally a minimum of 6 to7 bars flashing with heartbeat rhythm should be visible to get the proper result.

(Proper readings may not be obtained if body temperature is below 35’C or fingers are very cold because this is due to an insufficient blood flow to finger ends). Also it may not be always possible to get the required sensitivity at earlobes due to various factor like dark skin color, insufficient flow of blood, presence of hair etc.

4. Start getting pulse beeps with LED indication and showing pulse count in display. After every 5 pulses the meter shows the average pulse per minute count. The average reading after every 5 pulses is stored in memory up to 15 times. The actual useful reading will be after about 10 pulses (2nd or 3rd reading).

For detailed observation the readings of about 1 minute in the Memory may be used. Pressing the memory button will automatically show all the readings from start in the memory one by one.

5. To take fresh set of readings press reset and start again as above.

**Technical Specifications:**

\* **PRINCIPAL OF DETECTION:** FINGER PLYTHYSMOGRAPHY

**\* PROCESSOR:** 8 BIT MICRO CONTROLLERS

\* **POWER SOURCE:** 12 VOLTS ADAPTER (INCLUDED) or 12 Volt Chargeable batteries Type GF22

\* **MEASUREMENT RANGE**: 10-300 PULSE PER MINUTE.

\* **ACCURACY:** 3% OF READING

* **SIZE & WEIGHT:** 15 x 10 x 3.5 cm & 250 Gms. (Approx.)