



# RESPIRATION RATE MONITOR MODEL-RESPRATE100

This trainer has been designed with a view to provide practical and experimental knowledge of Respiration Rate Monitor used for Respiration training in Biomedical Engineering.



## SPECIFICATIONS

### 1. Hardware

Following Parts and Modules are assembled on Single PCB of size - 18 Inch x 15 Inch

#### 1. Respiration Rate Monitor Board

1. Real Time Respiration Rate Monitor
2. Respiration Rate (RR) Display : 16 x 2 LCD display
3. Accuracy :  $\pm 2$  breaths/minute
4. Tachypnea Limit Range : 0-255 Breaths per minute
5. Apnea Period Selection: 10, 20, 30, 60 Sec.
6. Transducer : Piezoelectric
7. On board visual and audible Tachypnea and Apnea indicator
8. User selectable Apnea period control On board Respiration event indicator
9. Output up to 5Vpp
10. Real time Waveform Measurement
11. DSO output through 2mm socket
12. Test point on the Board
13. Study & signal processing output for each Block Threshold & Output adjustable
14. Power Supply 230  $\pm 10\%$ , 50Hz
15. PC connectivity

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**Dealer:-**

## 2. Accessories

- |    |   |                         |
|----|---|-------------------------|
| 1. | USB Cable   | : 1 No                  |
| 2. | Required Connecting Electrodes  | : 1 Set                 |
| 3. | Jumper wires  | : 50 Nos.               |
| 4. | Pen Drive with Software, Library, Driver, Codes, Soft Copy of Manual and Mobile App | : 16 GB                 |
| 5. | Printed Practical Manual  | : 1 No.                 |
| 6. | E-Books for Biomedical IOT Subject  | : 10 Nos. in PDF Format |
| 7. | Mp4 Video Class for Biomedical IOT Subject  | : 40 Nos                |
| 8. | Excitation accessories for each sensor  |                         |

## 3. Cabinet and PCB

The complete circuit diagram is screen printed on component side of the PCB with circuit and Parts at the same place. The PCB with components on front side is fitted in elegant wooden box having lock and key arrangement. The acrylic cover is fitted on PCB to safeguard parts. It works on 230 V AC Supply.

## EXPERIMENTS

1. To understand theory of Respiration Rate and Basic Respiration system
2. To study of, exchange of gases in alveoli of lungs.
3. To study of Apnea (Slow rate of Respiration).
4. Study of Tachypnea (Fast rate of Respiration).
5. To understand theory, working and Block Diagram of Respiration Rate Monitor
6. To understand installation procedure of Respiration Rate Monitor.
7. To study of Real Time analysis of Respiration Rate
8. To understand Interface and Connection Diagram of Respiration Rate Monitor.
9. To Observe different types of Respiration Rate conditions - Apnea and Tachypnea
10. To monitor Respiration Rate Waveforms of a person in different conditions and to interpret it
11. To understand how to testing and calibrate any Make Respiration Rate Monitor
12. To understand Trouble shooting procedure
13. To Observe different types of Respiration Rate Waveforms of a person on Computer using PC interface
14. To Observe different types of Respiration Rate Waveforms of a person on CRO using 2 mm sockets
15. To send Respiration Rate Data using Wifi Wireless Node to Main Base IOT Receiver