



Sciencetech TechBooks are compact and user friendly learning platforms to provide a modern, portable, comprehensive and practical way to learn Technology. Each TechBook is provided with detailed Multimedia learning material which covers basic theory, step by step procedure to conduct the experiment and other useful information.

Every time the heart muscles contract, blood is ejected from the ventricles and a pulse of pressure is transmitted through the circulatory system. When this pulse is travelling through the vessels, it causes vessel's wall displacement, which is measurable at various points on the peripheral circulatory system. The pulse can be felt by placing finger tip over the radial artery in the wrist or some other location of the body. The pulse pressure and waveform indicates the blood pressure and flow. Instrument used to detect the arterial pulse and pulse pressure waveform in the extremities are called Plethysmograph.

The pulse gives a measure of pulse wave velocity and can be recorded and compared with the ECG signal. The pulse wave travels at 5 to 15m/s, depending on the size and rigidity of the arterial wall. Larger and more rigid the artery wall, greater is the velocity.

Features

- Amplified pulse output provided
- On board variable gain control facility
- Separate test points to observe waveform after each block
- Self contained and easy to operate

Scope of Learning

Study of:

- Basic amplification of bio signal through instrumentation amplifier.
- Basic transmission method (optical) for pulse analysis.
- Real time heart rate monitoring using optical sensor.
- Physiological analysis of blood flow (volume change) in finger.

Technical Specifications

- | | |
|-------------------------------------|------------------------------------------------------------------------------------------|
| Cable | : 2 core shielded cable |
| Cable Length | : 1.1 meter approx. |
| Connector Plug | : 3.5 mm stereo plug |
| For IR Phototransistor (3mm) | |
| Chip material | : Silicon |
| Lens colour | : Black |
| Rise and fall time | : 15/15 μ s |
| For IR LED (3mm) | |
| Material | : GaAlAs |
| Lens colour | : Blue |
| Wave length | : 940 nm |
| Operating angle | : $\pm 30^\circ$ |
| Test Point | : 7 nos. |
| Dimensions (mm) | : W 326 x D 252 x H 52 |
| Power supply | : 110V - 260V AC, 50/60Hz |
| Weight | : 1.5 Kg. (approximately) |
| Operating Condition | : 0-40°C, 85% RH |
| Product Tutorial | : Online on www.SciencetechLearning.com |
| Included Accessories | : Optical sensor finger clip, Power Supply,-1 no. |