

## Speed Measurement using Optical Transducer

**Model : SE-1031**



**SINCOM SE-1031 Speed Measurement using Optical Transducer Trainer** is a highly versatile and comprehensive trainer that is specifically designed for accurately measuring the speed of a motor using an optical transducer. This trainer is equipped with advanced features such as a Digital LCD Display, which allows for easy visualization of the motor's speed and an Electrical Motor with speed control facility, ensuring precise speed measurements. The trainer also features an Optical TX-RX sensor, which enables accurate speed detection. With its microcontroller based system, this trainer offers reliable and efficient speed measurement capabilities.

### Features

- ❖ Optical TX-RX sensor
- ❖ Microcontroller Based System
- ❖ High Accuracy and Resolution
- ❖ Digital LCD Display
- ❖ Motor with Speed Control Facility
- ❖ Memory Display
- ❖ Wide Speed Range
- ❖ In-Built Fixed regulated DC Power Supply
- ❖ Presents a multi-color Circuit Diagram printed on the front panel of the white board
- ❖ Enclosed in an attractive, light weight, High Quality, Poly Coated Imported Pine Wooden cabinet
- ❖ Interconnections by 2mm high quality banana sockets and pins.

### Technical Specifications

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|-----------------------------------|------------------------|
| ▪ AC Mains Power Supply           | : 230V $\pm$ 10%, 50Hz |
| ▪ Fixed Regulated DC Power Supply | : +5V, +12V /500mA     |
| ▪ Transducer                      | : Optical              |
| ▪ Optical TX                      | : LED                  |
| ▪ Optical RX                      | : Photo Diode          |



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|----------------------------|---|
| ▪ Optical Reflected signal | : Photo Reflective Tape and LED blinking    |
| ▪ Controller               | : Microcontroller Based system              |
| ▪ Speed Display            | : 4 Digit LCD Display                       |
| ▪ RPM Range                | : 60-5000 RPM                               |
| ▪ Maximum RPM              | : 5000 RPM                                  |
| ▪ Resolution               | : 0.1 Upto 1000 RPM, 1 Above 1000 RPM       |
| ▪ Accuracy                 | : $\pm 0.05\% \pm 1$ Digit                  |
| ▪ Motor Setup              | : AC Motor with speed control potentiometer |
| ▪ Speed Measurement by     | : Push to Press switch                      |
| ▪ Memory                   | : To store RPM reading                      |
| ▪ Weight                   | : 5.0 kg (approx)                           |
| ▪ Dimensions (mm)          | : L 270 x W 390 x H 130                     |
| ▪ Interconnections         | : 2mm Banana sockets                        |
| ▪ Operating Temperature    | : 0-55°C, 80% RH                            |

### Learning Scope

- To Study the principle of Opto-Coupler used for determination of RPM.
- To observe & Note the speed of a given motor using optical transmitter & receiver unit.

**Other Instruments Required :** Digital Multimeter (DMM), CRO 20MHz.

**Accessories Included :** AC Motor with speed control setup ,Patch Cords, Detail Instruction Manual.