

# Single Phase Transformer Lab



\*\* Shown image is just for illustration original may differ

### Introduction

Single Phase Transformer Lab is an elite training system for the Electrical laboratories. The product helps you to get fully acquainted with the basic concepts and functioning of a Single Phase Transformer. The product is represented in such an easy way that each test can be studied differently in proper sequence. The Lab practically expertise you in exercises Polarity, Transformation Ratio, Open Circuit Test, Short Circuit Test, Load Test, Iron Loss, Copper Loss, calculation of Efficiency and voltage regulation, etc. The vast scope of learning makes the subject easily and completely understandable.

### Product Features

- Microcontroller based digital measuring instruments for accurate results
- Control panel with digital microcontroller based measuring devices with high accuracy and resolution
- Transformer winding consist of copper for long term service
- Inbuilt Single phase auto-transformer to get multiple readings
- Inbuilt Single Phase resistive load that to be controlled by separate switches with indicator
- Equipped with supply indication Lamp
- Control Panel with round grills fitted on both sides for cooling purpose.
- Provided with suitable protection such as fuses, MCB, etc wherever requires
- Front board consist of MS Material with power coating / epoxy paint to avoid any rust
- Separate auxiliary supply to actuate digital measuring devices
- Specially designed BS10 Terminals and patch cords for electrical safety
- Earthing screw provided at the back side of the control set-up
- Product is provided along with protection fuses, colored patch cords, single phase cords, User’s manual having theory operating procedure with connecting diagram, FAQ, Glossary, etc

### Technical Specifications

<b>Mains Supply</b>	: Single Phase, 230VAC $\pm$ 10%, 50Hz
<b>Single Phase Transformer</b>	
Rating	: 1000VA
Primary Voltage	: 0-125V-0-125V
Secondary Voltage	: 0-125V-0-125V
Rated Current	: 4A
Winding	: Copper
Efficiency	: Above 85% (considering experimental losses)
Type	: E-I Core
<b>Single Phase Auto-Transformer</b>	
Rating	: 1000VA
Primary Voltage	: 230VAC $\pm$ 10%, 50Hz
Secondary Voltage	: 0-270VAC $\pm$ 10%, 50Hz
Rated Current	: 4A
Winding	: Copper
Type	: Toroidal Core

### Digital Meters Used

Technology Used	: Microcontroller based
AC Voltmeter	: 500V (2nos.)
AC Ammeter	: 10A (2nos.)
Wattmeter	: 1.5kW

### Single Phase Resistive Load

Rating	: 1kW
Type	: Resistive Tubes
Steps	: 1A with indicator
Control Scheme	: Through Toggle Switch

### Protection Devices

MCB	: 6A
Glass Fuse	: 5A
Grounding Nut	: Available at the rear side of the panel

### Experiments Can be performed:

- Study of Isolation Transformer
- Study of Step-up Transformer
- Study of Step-down Transformer
- Study of Additive Polarity Test in a Single Phase Transformer
- Study of Subtractive Polarity Test in a Single Phase Transformer
- Study of Open Circuit Test in a Single Phase Transformer
- Study and calculate power factor and equivalent parameters under Open Circuit Test
- Study of Short Circuit Test in a Single Phase Transformer
- Study and calculate power factor and equivalent parameters under Short Circuit Test
- Study of Load Test and correspondingly determine the Efficiency of Single Phase Transformer under different Loading conditions
- Study of Voltage Regulation in a Single Phase Transformer

### Supporting Accessories supplied with Product

- Patch Cords of different color scheme
- Single/Three Phase Mains Cord
- Extra Glass Fuses
- Operating Manual (softcopy)

**\*\*Please feel free to share your queries or requirements by filling your details in ask query section or request a Quote section on the website, we will be happy to cater your requirement.**