



Introduction

The Three Phase Squirrel Cage Induction Motor Training System is a versatile and adaptable educational setup designed for electrical laboratories. It enables students to gain a clear understanding of the construction, working principles, and operational characteristics of a three-phase squirrel cage induction motor.

The system provides hands-on experience through practical experiments such as running, reversing, no-load test, block rotor test, slip measurement, and load testing. All panel connections are simplified and clearly represented, allowing students to perform experiments independently.

Note: Shown image is for illustration purposes only. Actual product may vary.

Training Objectives

- To understand the construction and working of three-phase induction motors
- To study squirrel cage rotor operation
- To perform running and reversing operations
- To measure slip and analyze motor performance
- To conduct no-load, block-rotor, and load tests
- To evaluate efficiency and operational characteristics

Key Features

- Digital microcontroller-based measuring instruments with high accuracy and resolution
- Screen-printed symbols, circuit diagrams, and graphics for easy understanding
- Designed using standard BS-10 terminals with patch cords for safety
- Copper-wound motor for long operational life
- Class "F" insulation for enhanced thermal protection
- Standard mechanical loading arrangement
- Heavy-duty MS channel base with provision for concrete mounting
- Brake drum/pulley with internal heat suppression facility
- Contact/non-contact digital speed measurement system
- Equipped with supply indication lamps

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.



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System Components

Three Phase Induction Motor

- Type : Squirrel Cage
- Power Rating : 1 HP
- Voltage Rating : 415 V AC $\pm 10\%$, 50 Hz
- Current Rating : As per standard
- Speed : 1440 RPM $\pm 10\%$
- Insulation : Class 'F'

Loading Arrangement

- Type : Mechanical loading
- Brake Drum / Pulley : MS / Aluminum cast with heat suppression facility
- Spring Balance : 2 Nos. (Salter make)

Machine Base

- Material : MS "C" Channel
- Construction : Heavy-duty with suitable interconnections

Measuring Instruments

- **AC Wattmeter** : 4.5 kW
- **AC Voltmeter** : 0 – 500 V
- **AC Ammeter** : 0 – 10 A

Digital Tachometer

- Range : Up to 19,999 RPM
- Type : Contact / Non-contact

Three Phase Autotransformer

- Type : Closed type
- Function : Smooth variation of input voltage for controlled testing

Protection Devices

- MCB (TPN) : 16 A
- Glass Fuse : 5 A

Technical Specifications

Mains Supply

- Voltage : 415 V AC $\pm 10\%$
- Frequency : 50 Hz

Scope of Learning / Experiments

- Study of three-phase squirrel cage induction motor
- Understanding fundamental and operational principles

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- Running and reversing of motor
- Slip measurement and analysis
- No-load test performance
- Block rotor test
- Load test performance
- Evaluation of motor characteristics and efficiency

Supporting Accessories Supplied

- Patch cords with different color schemes
- Single-phase and three-phase mains cords
- Extra glass fuses
- Digital tachometer
- Learning material manual (soft copy)

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