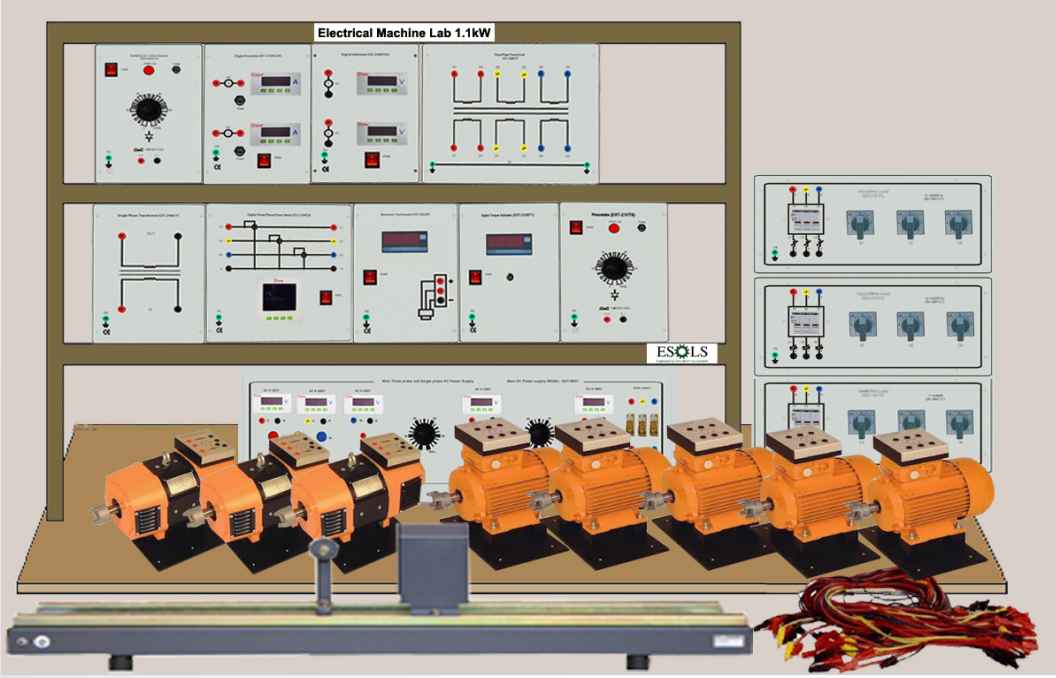
ELECTRICAL MACHINE LAB 1.1KW (AC &DC) SMT-EM-1.1 ACDC



MACHINE LAB 1.1KW (AC &DC) SMT-EM-1.1 ACDC

This Modular type training system comprises of AC / DC Machines and Transformer Modules with Digital Meters. This Training system contains high accuracy digital meters for accurate values without any human error. The system provides a hands-on approach to the understanding of electrical machines principles suitable for training technician and undergraduate engineers.

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Summary of Modules Required for all above Experiments

Sr. No.	Item Name	Model No.	Qty
1	Variable Three-phase AC and Variable DC power supply 1.1kW	EST-M001	1
2	Resistive load (Single &Three Phase 1.1kW)	EST-1017R	1
3	Inductive load (Single &Three Phase 1.1kW)	EST-1017L	1
4	Capacitive load (Single &Three Phase 1.1kW)	EST-1017C	1
5	Variable DC Power Supply For Excitation	EST-2108T01	1
6	Digital AC/DC voltmeter (125-250-500V)	EST-2109T3PV	2
7	Digital AC/DC ammeter (5A)	EST-2109T5A	2
8	Three Phase Power Meter (kWh, kVARh included)	EST-2109T29	2
9	RPM Meter with Sensor	EST-2109R1	1
10	Torque Indicator with Sensor	EST-2109T1	1
11	Rheostat	EST-210T9	1
12	Two level Frame with table	EST-2109F	1
13	Connecting Wires	EST-2109CW	1
14	Single Phase Transformer	EST-2107T1	1
15	Three Phase Transformer	EST-2107T3	1
16	DC Shunt Machine 1.1kW	EST-2105MG1	1
17	DC Series Machine **1.1kW**	EST-2105MG2	1
18	DC Compound Machine (Can be used as Shunt, Series and Compound) Generator 1.1kW	EST-2105MG3	1
19	AC Single Phase Induction Capacitor Start Motor 1.1kW	EST-2105M1	1
20	AC Single Phase Induction Capacitor Start Cap Run Motor 1.1kW	EST-2105M2	1
21	AC Three Phase Induction Motor 1.1kW	EST-2105M3	1
22	AC Three Phase Slip Ring Machine (Can be used as Motor and AC Generator) **Machine 1.1kW**	EST-2105M4	1
23	AC Three Synchronous Machine 1.1kW	EST-2105M5	1
24	Universal Base for Motors and Generators	EST-2109MB	1

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Complete list of Experiments:

1. To study the magnetizing characteristics of DC shunt generator
2. Working Principle of DC Shunt Motor / Generator (Self & Separately Excited)
3. Vary Torque & Speed of DC Shunt Motor / Generator (Self & Separately Excited)
4. Drawing Characteristic Curves of DC Shunt Motor / Generator (Self & Separately Excited)
5. Study Characteristic Curves of DC Series Motor / Generator
6. Speed and Torque analysis of DC Series Motor / Generator
7. Study Functions & Characteristics of DC Compound Motor / Generator
8. Study Connections of Cumulative Compound & Differential Compound Motor / Generator
9. Study Characteristic Curves of DC Compound Motor / Generator
10. Speed and Torque analysis of DC Compound Motor / Generator
11. Operation of Capacitor Start Single Phase Induction Motor
12. Operation of Capacitor Run Single Phase Induction Motor
13. No Load Test of Single Phase Induction Motor
14. Study the characteristics of WYE and DELTA Connections.
15. Construction & Working of 3-Phase Induction Motor
16. Run Up Test on 3-Phase Induction Motor at No Load
17. Perform Load Test on 3-Phase Induction Motor and Determine Efficiency
18. Load Measurement at Changing Speed of Induction Motor with Slip Ring Rotor
19. Load Measurement at Changing Torque of Induction Motor with Slip Ring Rotor
20. To study the characteristics of three phase synchronous generator.
21. To investigate the Voltage regulation of a 1-Phase Transformer.
22. To perform the Short circuit and open circuit tests of a 1-Phase Transformer.
23. To investigate the Voltage regulation of a 3-Phase Transformer.
24. To perform the Short circuit and open circuit tests of a 3-Phase Transformer.

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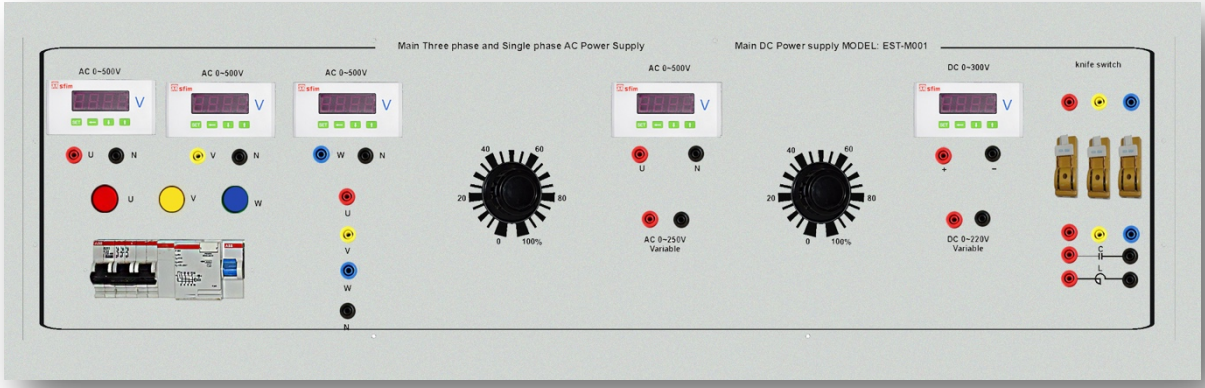
AC/DC Machine Lab with Single Phase & Three Phase Transformer Trainers

MODULES SPECIFICATIONS

Note: The complete AC / DC Machine Training System includes all the equipment required to perform the full range of student assignments. The system comprises of AC / DC Machines and Transformer Panels with Digital Meters. The system provides a hands-on approach to the understanding of electrical machines principles suitable for training technician and undergraduate engineers.

Every effort has been made to ensure that the information contained in this catalogue is accurate; however no labiality is accepted for errors. Should an error be discovered please inform the company in writing, giving full details. All modular images given are for guidance only and are not guaranteed as exact supplied they may have different shape components and parts according to the market availability.

Variable Three-phase AC and Variable DC power supply 1.1kW (EST-M001)



Technical Specs:
Input Voltage: 380/440V 3 Phase Fix 50Hz
Output Voltage: 0 to 230V Single Phase and 0 to 440V Three Phase AC.
DC Output= 0 to 230V DC
Output Current: 6 A

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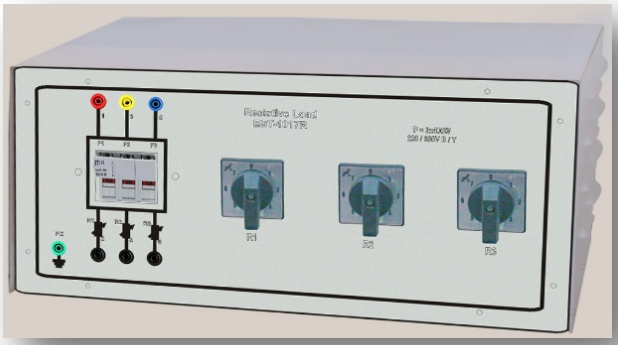
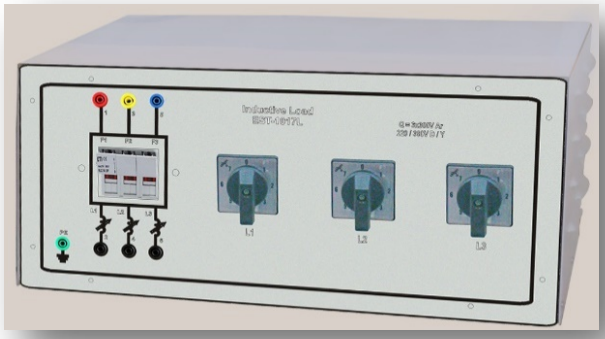
Resistive load (EST-1017R)



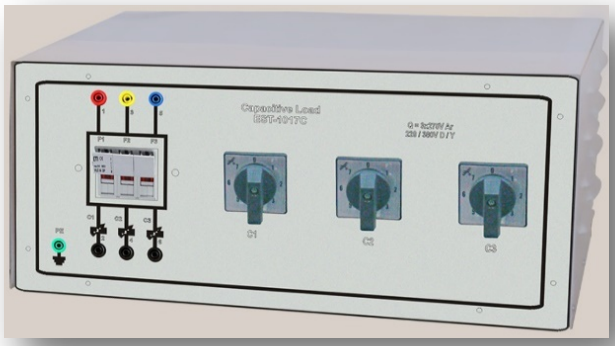
- Composed of three resistances, with possibility of star, delta and parallel connection, controlled by three switches with seven steps each.
- Max. power in single or three-phase connection:
- 1200 W
- Rated voltage: 380/220 V Y/D
- Rated voltage in single-phase: 220 V

Inductive load (EST-1017L)



- Composed of three inductances, with possibility of star, delta and parallel connection, controlled by three switches with seven steps each.
- Max. reactive power in single or three-phase connection: 900 VAr
- Rated voltage: 380/220 V Y/D
- Rated voltage in single-phase: 220 V

Capacitive load (EST-1017C)



- Composed of three batteries of capacitors, with possibility of star, delta and parallel connection, controlled by three switches with seven steps each.
- Max. reactive power in single or three-phase connection: 825 VAr
- Rated voltage: 380/220 V Y/D
- Rated voltage in single-phase: 220 V

Variable DC power supply (EST-2108T01)

- Suitable for carrying out some tests on electrical starting from 0 V by replacing the excitation rheostats.
- Output: from 0 to 220 V, 0.6 A

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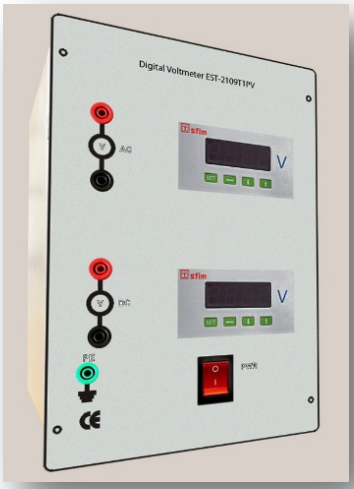
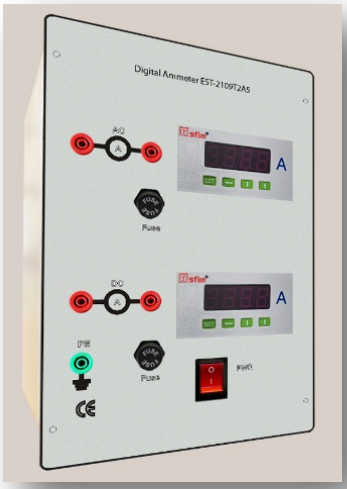
Digital Voltmeter (EST-2109T3PV)



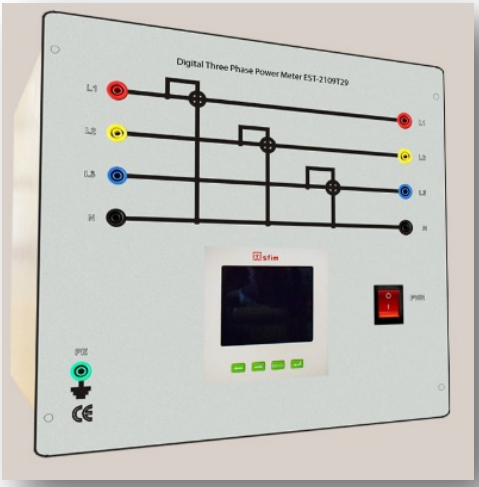
- AC/DC Voltmeter.

Digital Ammeter (EST-2109T5A)



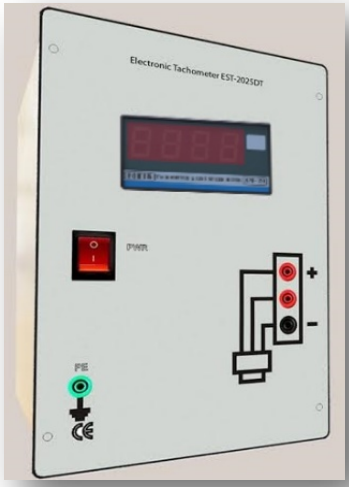
- AC/DC Digital Ammeter with 5A Fuse.

Three Phase Power meter (EST-2109T29)



- Microprocessor controlled three-phase power analyzer. Measurement of voltages, currents, frequencies, active power, reactive power, apparent power.
- Input voltage: 450 V (max 800 Vrms)
- Input current: 5 A (max 20 Arms)
- Operating frequency: 47 ÷ 63 Hz
  Auxiliary supply: single-phase from mains

RPM Meter with Sensor (EST-2109R1)



- Digital Instrument that, coupled to an optical speed transducer, Allows measuring the rotating speed of electrical machines

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Torque Indicator with Sensor (EST-2109T1)

- Technical Specs:
- Digital Instrument that used with Load cell for Toque measurement.

Rheostat (EST-210T9)

- 1500 watt.
- Used for motor speed control

Two level Frame with table (EST-2109F)

Connecting leads

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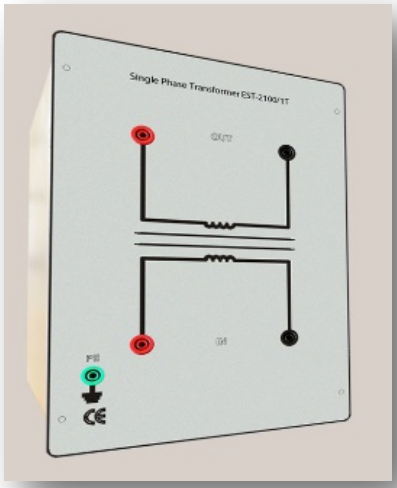
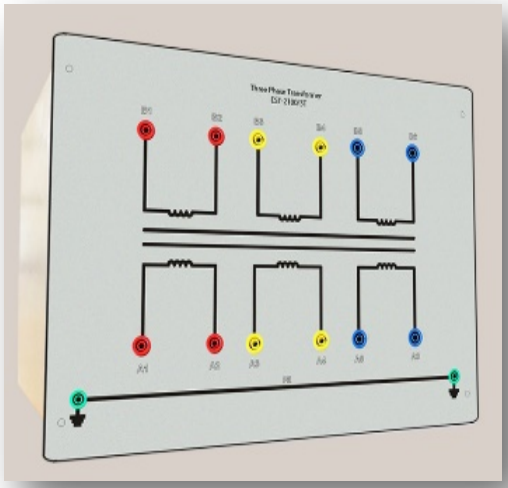
Single Phase Transformer (EST-2107T1)



- Technical Specs:
- Input Voltage:440V , 50HZ
- Output Voltage:230V, 50HZ
- Power 1.1kW

Three phase transformer (EST-2107T3)



- Technical Specs:
- Input Voltage:440V , 50HZ
- Output Voltage:230V, 50HZ
- Power 1.1kW

DC Shunt Machine 1.1kW (EST-2105MG1)

- Power: 1.1 kW
- Voltage: 220 V
- Speed: 3000 rpm

DC Series Machine 1.1kW (EST-2105MG2)

- Power: 1.1 kW
- Voltage: 220 V
- Speed: 3000 rpm

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DC Compound Machine (Can be used as Shunt, Series and Compound) Generator 1.1kW (EST-2105MG3)

- Power: 1.1 kW
- Voltage: 220 V
- Speed: 3000 rpm

AC Single Phase Induction Capacitor Start Motor 1.1kW (EST-2105M1)

- Motor: 1.1 kW
- Voltage: 230V 50Hz.
- Speed: 3000 rpm

AC Single Phase Induction Capacitor Start Cap Run Motor 1.1kW (EST-2105M2)

- Motor: 1.1 kW
- Voltage: 230V 50Hz.
- Speed: 3000 rpm
- Dc rotor excitation winding

AC Three Phase Induction Motor 1.1kW (EST-2105M3)

- Motor: 1.1 kW
- Voltage: 380/440 V D/Y 50Hz.
- Speed: 3000 rpm

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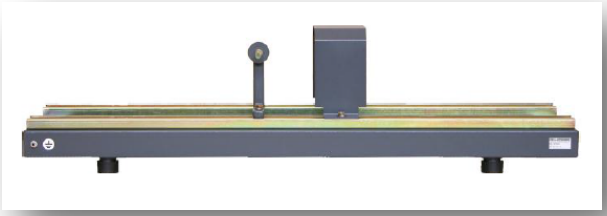
AC Three Phase Slip Ring Machine (Can be used as Motor and AC Generator) Machine 1.1kW (EST-2105M4)

- Motor: 1.1 kW
- Voltage: 380/440 V D/Y 50Hz.
- Speed: 3000 rpm

AC Three Phase Synchronous Machine (1.1kW) (EST-2105M5)

- Alternator: 1.1 kVA
- Motor: 1.1 kW
- Voltage: 380/440 V D/Y 50Hz.
- Speed: 3000 rpm

Universal Base for Motors and Generators (EST-2109MB)



- Duralumin alloy structure mounted on anti-vibration rubber feet, provided with slide guides for fixing one or two machines.
- Complete with coupling guard.

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