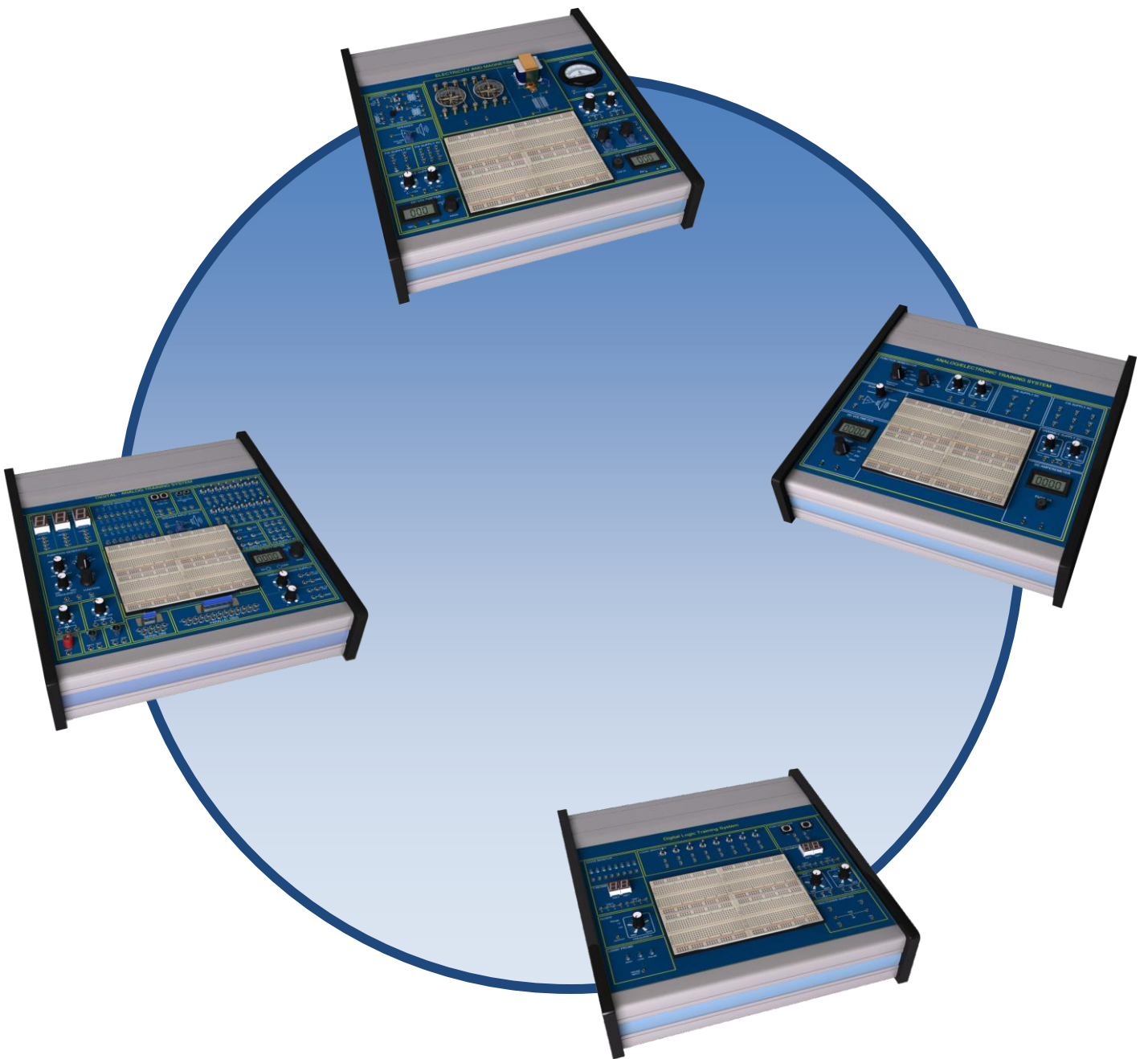


Electronics Engineering



OF.ETE1- Electricity & Magnetism Training System

This apparatus is designed to demonstrate the working principle of flywheel and its practical significance in industry.

Electricity & Magnetism Trainer is a low cost teaching system. It is designed to provide all the basic tools necessary to conduct experiments related to Electricity & Magnetism. It is also ideally suited for developing, debugging, integrating and testing systems.

Features:

- Bread Board Based
- Power Supplies Included
- Basic Measuring Instruments Included
- Flexibility to Perform Custom Experiments
- Passive Components Included in Modular Form
- Active Components/Circuits Included
- DC Motor, Coils and Transformers etc. Included
- Standard Function Generator Included
- Protection Circuits Included

Technical Features:

Function Generator:

Duty cycle: 50%

Frequency range: up to 100kHz in five steps

Output: Sine, Square, Triangle and TTL

- Variable Frequency Control
- Variable Gain Control

Magnetic Devices: Hall Sensor, 2XCompass, Plunger Relay

Potentiometer: 2.2k & 1k

Galvanometer: Analogue Scale

Transformers: Audio Input, Audio Output

Inductance Coils: Air Core, Mutual Inductance, Self Inductance

Fleming's Law: 2 x Magnet with Wire, Motor-Generator Set

FIX Supply DC: +5V DC, -5V DC, +12V DC, -12V DC

Variable supply DC: 0 ~ +25V DC, 0 ~ -25V DC

Fix supply AC: 2V - 0 - 2V, 12V - 0 - 12V, 15V - 0 - 15V

3 ½-Digit Digital Voltmeter/Ammeter LCD Type:

- **DC Voltage Range:** 200mV, 2V, 20V, 200V
- **DC Current Range:** 0 ~ 2A, Fuse Protected

Audio Amplifier: With volume Control

Solderless Breadboard:

- 2 Terminal Strips, Tie-point 1680
- 4 Distribution Strips, Tie-point 400



Speaker:

0.5W with amplifier

Accessories:

2mm patch cords, Power Cord, User Manual

OF.ETA2- Analog Electronic Training System

Analog/Electronic Trainer is a low cost Electronic teaching system. It is designed to provide all the basic tools necessary to conduct experiments related to Electronics Technology. It is also ideally suited for developing, debugging, integrating and testing systems.

Features:

- Bread Board Based
- Power Supplies Included
- Basic Measuring Instruments Included
- Flexibility to Perform Custom Experiments
- Standard Function Generator Included
- Protection Circuits Included

Technical Features:

Function Generator:

Duty cycle: 50%

Frequency range: up to 100KHz in five steps

Output: Sine, Square, Triangle and TTL

- Variable Frequency Control
- Variable Gain Control

Fix supply DC: +5V DC, +12V DC, -12V DC

Variable supply DC: 0 ~ +25V DC, 0 ~ -25V DC

Fix supply AC: 2V - 0 - 2V, 12V - 0 - 12V, 15V - 0 - 15V

3 ½-Digit Digital Voltmeter/Ammeter LCD Type:

- **DC Voltage Range:** 200mV, 2V, 20V, 200V
- **DC Current Range:** 0 ~ 2A, Fuse Protected

Audio Amplifier: With volume Control

Solderless Breadboard:

- **2 Terminal Strips, Tie-point 1680**
- **4 Distribution Strips, Tie-point 400**

Speaker: 0.5W with amplifier

Accessories: 2mm patch cords, Power Cord, User Manual

Experiments included:

- Application of Ohm's Law
- Parallel DC Circuit
- Characteristics and Applications of Zener Diode
- Half Wave Rectifier Circuit
- Bridge Rectifier Circuits
- Characteristics of Light Emitting Diodes
- Characteristics of Field-Effect Transistor (FET)
- Characteristics of Programmable Unijunction Transistors (PUT)
- Characteristics of DIAC
- Non-Inverting Amplifier Circuit
- Differential Amplifier Circuit
- Differentiator Circuit
- High-Pass Filter Circuit
- Series DC Circuit
- Diode Characteristics
- Diode in a DC Circuit
- Full Wave Rectifier Circuits with Center Taped
- Voltage Doubler Circuit
- Characteristics of Bipolar Junction Transistor
- Characteristics of Unijunction Transistor (UJT)
- Characteristic of Silicon Controlled Rectifier (SCR)
- Characteristics of TRIAC
- Inverting Amplifier Circuit
- Integrator Circuit
- Low-Pass Filter Circuit
- Band-Pass Filter Circuit



OF.ETL3- Digital Logic Training System

OF.ETL3 Digital Logic Training System is a comprehensive and self-contained system suitable for students engaged in digital logic experiments. All necessary equipments for digital logic experiments such as power supply, clock generator, switches and displays are installed on the main unit.

Breadboard allows students to experiment with essential topics in the field of digital logic. It is a time and cost saving device for both students and researchers interested in developing and testing circuit prototypes.



Features:

- Bread Board Based
- Power Supplies Included
- Basic Measuring Instruments Included
- Flexibility to Perform Custom Experiments
- Output Devices like LEDs and 7-Segment Included
- Input Devices like Push Switches, Toggle Switches Included
- Passive Components Included
- Protection Circuits Included

Technical Features:

- DC Power Supply:** +5V, +15V, -15V
- Clock Generator:** 1Hz – 64Hz
- Logic Switch:** 8-bit switch with complimentary TTL outputs
- Push Switch:** 2 independent switches, each with Q, Q' output
- State Monitors:** 8 independent LEDs to indicate high and low logic state
- Potentiometers:** Carbon Track, 1K and 10K
- 7-Segment Display:** Four 7-segment LED displays with BCD to 7-segment decoder/driver
- Logic Probe:** "LO" and "HI" LED display low and high state respectively

Solderless Breadboard:

- 2 Terminal Strips, Tie-point 1280
- 4 Distribution Strips, Tie-point 400

Accessories: 2mm patch cords, Power Cord, User Manual

Experiments Included:

- | | |
|---|--|
| <ul style="list-style-type: none"> • AND Gate Operation • NOT Gate Operation • NOR Gate Operation • Construction of XOR Gate from NAND Gate • Full Adder Operation • Full Subtractor Operation • Decoder Operation • Multiplexer Operation • Multiplexing 7-Segment Displays • D Latch and Flip Flop Operation • Re-circulating Data | <ul style="list-style-type: none"> • OR Gate Operation • NAND Gate Operation • XOR Gate Operation • Half Adder Operation • Half Subtractor Operation • 7-Segment Display Operation • BCD to 7-Segment Display • Using Multiplexer and Demultiplexer/Decoder • Comparator Operation • Latching BCD Data for Displaying 7-Segment Display • J-K Flip Flop Operation |
|---|--|

OF.ETD4 - Digital / Analog Training System

OF.ETD4 is a comprehensive and self-contained system suitable for anyone engaged in Digital and Analog circuit experiments. All necessary equipment for Digital and Analog circuit experiments such as power supply, function generator, Data Switches, LEDs, Logic Probe, 7-Segment Displays etc are installed on the main unit. The Bread board allows students to perform a wide variety experiments relating to essential topics in the field of digital and analog circuit. It is a time and cost saving device for both students and researchers interested in developing and testing circuit prototypes.

Features:

Bread Board Based
Power Supplies Included
Basic Measuring Instruments Included
Flexibility to Perform Custom Experiments
Output Devices like LEDs and 7-Segment Included
Input Devices like Push Switches, Toggle Switches Included
Standard Function Generator Included
Passive Components Included
Protection Circuits Included

Technical Features:

Fixed DC: +5V, -5V, +12V, -12V
Dual DC Power Supply: 0 ~ +15V and 0 ~ -15V adjustable
Fix Supply AC: 2V - 0 - 2V, 12V - 0 - 12V, 15V - 0 - 15V

Function Generator:

Output Waveform: Sine, Square, Triangle and TTL
Output Frequency: up to 100KHz in five steps
3 ½-Digit Digital Voltmeter LCD Type: 200mV, 2V, 20V, 200V
Data Switch: 16-bit switch with TTL Output

Push Switch:

- Two independent Switches
- Each with Q, Q' output

De-Bounce Switch: Each switch with DEBOUNCE circuit

Logic Indicator: 24 independent LEDs indicate high and low logic state

Digital Display: 3 independent 7-segment LED display with BCD to 7-segment decoder/driver Input with 8-4-2-1 code

Potentiometer: Carbon Track 1K and 100K

Interface Connectors:

- 2 x BNC Connectors interfaced to 2mm gold plated pins
- 1 x Banana Connector interfaced to 2mm gold plated pin
- DB-9 Connector with all pins interfaced to 2mm gold plated pins
- DB-25 Connector with all pins interfaced to 2mm gold plated pins

Solderless Breadboard:

- 2 Terminal Strips, Tie-point 1680
- 4 Distribution Strips, Tie-point 400

Audio Output: 0.5W Speaker with Audio Amplifier and Volume Control

Accessories: 2mm Patch Cords, Power Cord, User Manual

