

# BASIC ELECTRICITY & ELECTRONICS TRAINER

# ED-1010

- Various types of circuit experiments with 17 basic modules plus 3 optional modules
- Main console(power supply) and storage cabinet



## > SPECIFICATIONS

### MAIN CONSOLE

- **DC Output**
  - » 0~20V, 2A(Connector & Terminal Output)
  - » +12V, 1A(Connector & Terminal Output)
  - » ±5V, 1A(Connector & Terminal Output)
  - » ±15V, 1A(Connector Output)
- **AC Output**
  - » 24V(CT), 0.5A(Connector & Terminal Output)
  - » 110V, 0.5A(Terminal Output)
  - » 220V, 0.5A(Terminal Output)
- **Indication**
  - » Display Range : 0~20V FS AVM, 0~2A FS AAM
  - » Digital Voltmeter : 20V, 20V FS(2ranges) - 2ea
  - » Digital Ammeter : 0.2A, 2A FS(2ranges)
- **Protection Circuit**
  - » AC Output : 12V +12V(24V)(with Reset)
  - » DC Output : +12V, +5V, -5V(with Reset)
- **Input Voltage** : AC 220V, 50/60Hz
- **Dimension** : 610(W)x205(H)x190(D)mm
- **Weight** : 14kg

### MODULES & MODULE STORAGE CABINET

- **No. of Modules** : 20ea(including option modules : 3ea)
- **Dimension**
  - » (Module) : 310(W) x 32(H) x 220(D)mm
  - » (Storage cabinet) : 745(W) x 920(H) x 440(D)mm
- **Total Weight** : 130kg

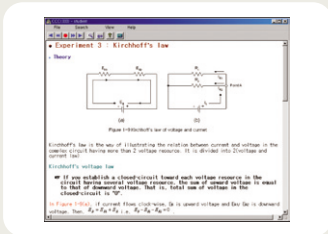
### SYSTEM REQUIREMENT

- IBM PC-compatible 486 or higher
- RAM : 8Mbyte, or higher, VGA : 640x480 or better
- PC Operating System : Windows NT, 2000, XP

### ACCESSORIES

- Software(CD or Floppy Disk) : 1ea
- AC Power Cord : 1ea
- Patch Cord(including Jumper) : 1set
- Connector Cable(for Module's power) : 2ea
- Instruction Manual : 1ea

## Operating Software



### • Experiment Process

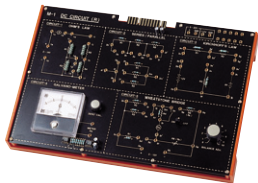
- » Experimental circuits and experiment methods for each experiment are presented in detail.(Connecting Methods between each terminal and the input signal conditions are explained in detail)
- » Experimenters and circuits are protected and measurement errors are prevented effectively by the teaching the measuring methods and related precautions.
- » Measured Data are recorded in the [experiment results input table].

Division	1-1	1-2	1-3	Division	Weight	Scores	Manual Scores
Mean Value	4.00	5.00	5.00	Ratio	71.33	81.33	
Std. Deviation	0.80	0.80	0.80	Maximal	5.00		
Calc. Value	4.00	5.00	5.00	Attitude	0.10	10.00	0.50
Student	4.00	5.00	5.00	Report	0.10	10.00	0.50
	5.00	5.00	5.00	Others	0.10	10.00	0.50
				Total			75.83

### • Experiment Result Input Table

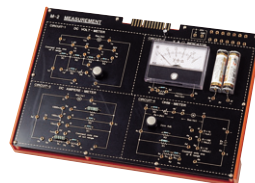
- » Experiment results, problems discovered during experiment or comments are recorded and presented to the teacher after storing the data in the floppy disk.
- » The recording window can execute automatic line passing and screen scroll regardless of the length of contents.
- » Data are recorded in the floppy disk stored during the environment setting by the Store command.
- » Receives floppy disk from the teacher to check additional instructions or replies to questions.

## Basic Electricity & Electronics Circuit Experiment(5 Modules)



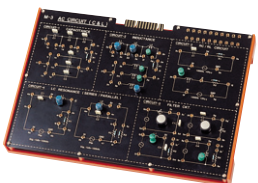
### M-1 DC Circuit

- P1. Ohm's Law
- P2. Series/Parallel
- P3. Kirchoff's Law
- P4. Galvano-Meter
- P5. Wheatstone Bridge



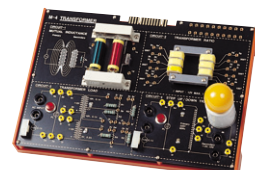
### M-2 Measurement

- P1. DC Volt-meter
- P2. V.A.O Indicator
- P3. DC Ampere-Meter
- P4. Ohm-Meter



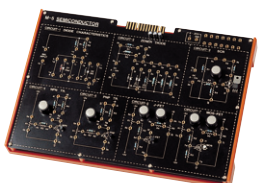
### M-3 AC Circuit(C&L)

- P1. Capacitance
- P2. Inductance
- P3. RC/RL Circuit
- P4. LC Resonance (Series/Parallel)
- P5. Filter Circuit



### M-4 Transformer

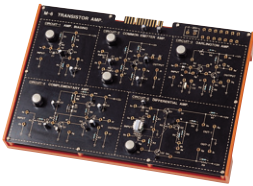
- P1. Mutual Inductance
- P2. Transformer Turn Ratio
- P3. Transformer Load
- P4. Step Up/Down Transformer



### M-5 Semiconductor

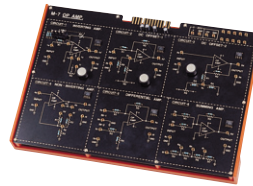
- P1. Diode Characteristics
- P2. Zener Diode Characteristics
- P3. SCR Characteristics
- P4. NPN Transistor Characteristics
- P5. PNP Transistor Characteristics
- P6. J-FET Characteristics
- P7. MOS-FET Characteristics

## Analog Circuit Experiment(6 Modules)



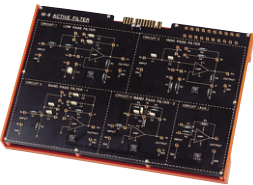
### M-6 Transistor Amplifier

- P1. Amplifier Biasing
- P2. Common Emitter Amp
- P3. Darlington Amp
- P4. Complementary Amp
- P5. Differential Amp



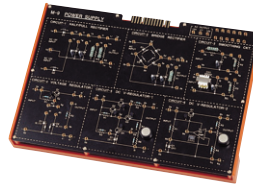
### M-7 Op-amp Circuit

- P1. Inverting Amp
- P2. DC Offset-1
- P3. DC Offset-2
- P4. Non-inverting Amp
- P5. Differential Amp
- P6. Summing Amp



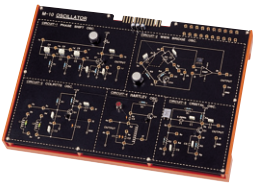
### M-8 Active Filter

- P1. Low Pass Filter
- P2. High Pass Filter
- P3. Band Pass Filter-1
- P4. Band Pass Filter-2
- P5. OP-Amp(Aux.)



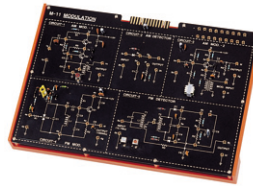
### M-9 Power Supply

- P1. Half/Full Rectifier
- P2. Bridge Rectifier
- P3. Smoothing Circuit
- P4. Simple Voltage Regulator
- P5. DC Volt. Regulator-1(by Tr. Circuit)
- P6. DC Volt. Regulator-2(by Op-Amp)



### M-10 Oscillator

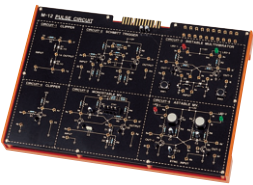
- P1. Phase Shift Oscillator
- P2. Wien Bridge Oscillator
- P3. Colpitts Oscillator
- P4. Hartley Oscillator
- P5. Crystal Oscillator



### M-11 Modulation

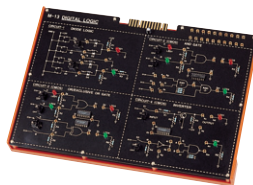
- P1. AM Modulation-1
- P2. AM Detector
- P3. AM Modulation-2
- P4. FM Modulation
- P5. FM Detector

## Digital Circuit Experiment(6 Modules)



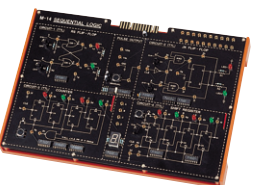
### M-12 Pulse Circuit

- P1. Clipper
- P2. Schmitt Trigger
- P3. Bistable Multivibrator
- P4. Clipper Tr. Inverter
- P5. Monostable Multivibrator
- P6. Astable Multivibrator



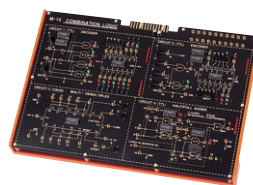
### M-13 Digital Logic Circuit

- P1. Diode Logic
- P2. AND/NAND Gate
- P3. OR/NOR Gate, Exclusive OR Gate
- P4. Inverter



### M-14 Sequential Logic Circuit

- P1. RS Flip-flop
- P2. JK Flip-flop
- P3. Counter(Binary/BCD)
- P4. Shift Register

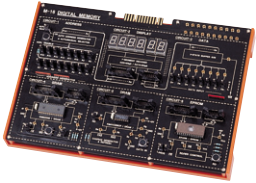


### M-15 Combination Logic Circuit

- P1. Decoder
- P2. Encoder
- P3. Multi/Demultiplexer
- P4. Half/Full Adder

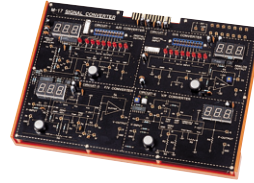
# BASIC ELECTRICITY & ELECTRONICS TRAINER

# ED-1010



## M-16 Digital Memory

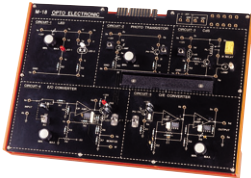
- P1. Address Generator
- P2. Display
- P3. Data Input
- P4. SRAM
- P5. DRAM
- P6. EPROM



## M-17 Signal Converter

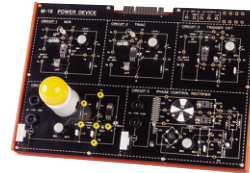
- P1. A/D Converter
- P2. D/A Converter
- P3. F/V Converter
- P4. V/F Converter

## Option Module Experiment(3 Modules)



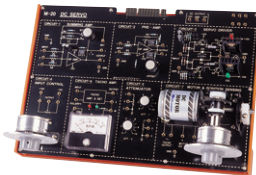
## M-18 Opto Electronic

- P1. LED
- P2. Photo Transistor
- P3. Cds
- P4. E/O Converter
- P5. O/E Converter



## M-19 Power Device

- P1. SCR
- P2. TRIAC
- P3. Trigger Circuit
- P4. Dimmer
- P5. Phase Control Rectifier



## M-20 DC Servo

- P1. Summing Amp.
- P2. Pre-Amp.
- P3. Servo Driver
- P4. Input Control
- P5. Tacho Amp.
- P6. Attenuator
- P7. Motor & Position Sensing