

## **Electrical Module Package for Smart Lab**

LTEM-1230

### **Technical Specification:**

This training package is for teaching the basic of electricity and electronics. It contains a Power supply unit with measuring functions, plug panel, set of components for electrical engineering/electronics, set of jumper plugs and equipment trays.

### **Basic Electronics Package**

#### 1) DC Circuit

- Ohm's Law
- Kirchoff's Law
- Series/parallel circuit
- Galvanometer
- Wheatstone Bridge

#### 2) Measurement

- DC voltmeter
- DC ammeter
- Ohm meter
- V, A, R indicator

#### 3) AC Circuit

- Capacitance circuit
- Inductance circuit
- RC/RL circuit
- LC resonance circuit (series/parallel)

#### 5) Semiconductor-1

- Characteristics of diode
- Zener diode
- NPN transistor
- PNP transistor

#### 4) Transformer

- Auto transformer
- Transformer load
- Transformer turn ratio
- Input voltage and output voltage

#### 6) Semiconductor-2

- J-FET characteristics
- MOS-FET characteristics
- SCR characteristics
- TRIAC characteristics

#### 7) Transistor amplifier

- Common emitter amplifier
- Complementary amplifier
- Darlington amplifier
- Amplifier Biasing

#### 9) Active filter

- Band pass filter
- Low pass filter
- High pass filter

#### 8) OP AMP

- Differential amplifier
- Non-inverting amplifier
- Inverting amplifier
- OP AMP offset

#### 10) Regulated power supply

- Voltage regulator
- Bridge rectifier
- Variable V-regulator (OP AMP)
- Variable V-regulator (Transistor)

#### 11) Oscillator

- Crystal oscillator
- Colpitts oscillator
- Hartley oscillator
- Wien bridge oscillator
- Phase shift oscillator

#### 13) Digital logic

- Diode logic
- AND gate (CMOS)
- OR/XOR gate (CMOS)
- Inverter (CMOS)

#### 12) Pulse circuit

- Clipper circuit
- Schmitt trigger
- Bistable multivibrator
- Monostable multivibrator

#### 14) Sequential logic

- JK flip-flop (TTL)
- RS flip-flop (TTL)
- Counter (TTL)
- Shift register (TTL)

15) Combination logic

- Decoder (TTL)
- Encoder (TTL)
- Half adder/Full adder (TTL)
- Multiplexer/De-multiplexer (CMOS)

16) Signal converter

- A/D converter
- D/A converter
- F/V converter
- V/F converter

ACCESSORIES

- Power cord : 1ea
- User manual: 1ea
- USB cable: 1ea
- Breadboard Module: 1ea
- Dust cover: 1ea
- 2mm plug test cable: 1set
- BNC-2mm plug cable: 3ea
- Test cable for multimeter: 1set



Note: Picture just Reference. It may change

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