



Description

The Universal Lab Trainer is a comprehensive educational platform designed for electronics laboratory training. It integrates multiple power supply sources, signal generation modules, logic training facilities, and measurement instruments into a single compact unit, making it ideal for academic, vocational, and technical training applications.

Technical Specifications

Power Supply Modules

DC Power Supply Module

- Fixed Outputs:
 - +5 V / 0.5 A
 - -5 V / 0.5 A
 - +12 V / 0.5 A
 - -12 V / 0.5 A
- Variable Outputs:
 - +0 to +25 V / 0.5 A
 - 0 to -25 V / 0.5 A

AC Power Supply Module

- Output Configuration: **19 V – 15 V – 0 V – 15 V – 19 V**

Signal Generation

Function Generator (2 Channels) & Clock Generator (2 Channels)

- Frequency Range: **1 Hz to 1 MHz** (6 decades)
- Clock Output Range: **1 Hz to 1 MHz** (6 decades)
- Frequency Ranges:
 - 1 Hz – 10 Hz

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



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- 10 Hz – 100 Hz
- 100 Hz – 1 kHz
- 1 kHz – 10 kHz
- 10 kHz – 100 kHz
- 100 kHz – 500 kHz

Waveform Outputs

- Sine Wave: **0 to 12 V peak-to-peak (variable)**
- Triangle Wave: **0 to 8 V peak-to-peak (variable)**
- Square Wave: **0 to 22 V peak-to-peak (variable)**

Logic & Experimentation Modules

- Solderless Breadboard Module
- Pulse Generation Module:
 - Two pulse switches
 - **80 μ s single-shot pulse** (positive and negative)
- Two-digit **7-segment LED display module** for numerical experiments
- **16-bit LED indicator module** with buffered outputs (three-color LEDs, separate input terminals)
- **16-bit HI/LO data output switch module** with slide switches and corresponding output terminals
- **TTL/CMOS selection switch**
- **3-state logic probe module**
- **Speaker module:** 8 Ω , 0.25 W with buffer

Measurement & Interface

Digital DC Voltmeter Module

- Display: **4-digit LED**
- Voltage Ranges:
 - 0 – 199.9 V DC
 - 0 – 19.99 V DC
 - 0 – 1.999 V DC
 - 0 – 199.9 mV DC
- Input Impedance: **10 M Ω (all ranges)**

Adaptor Module

- Five-channel **banana-to-2 mm adaptor interface**

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- Turn-pin sockets

Electrical & Mechanical

- Mains Power Supply: **240 V AC, 50 Hz** (fused and protected)
- Dimensions (W × D × H): **310 × 260 × 90 mm (approx.)**
- Weight: **Approx. 3.5 kg**

Accessories Included

- Comprehensive **CD-format experiments manual**
- Instruction manual with **self-maintenance guide and circuit diagrams**
- Power cord

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