



1. Product Overview

The Electrical Wiring Trainer Board is an instructional platform designed to develop foundational skills in electrical engineering, wiring installations, measurement techniques, and circuit analysis. The system includes industry-standard electrical components that can be interconnected in multiple configurations for hands-on experimentation. All component symbols and circuit diagrams are clearly printed on the front panel for ease of learning. The board uses 4 mm safety terminals and color-coded cables to ensure safe, intuitive connections. Power is provided through an extra-low-voltage safety transformer.

2. Electrical Specifications & Components

2.1 Power & Safety Components

- Safety Single-Phase Transformer: **115–230 V / 6–12–24 VAC, 1 A**
- Fuse-holder with Fuse Type 6×30 mm, 1 A: **2 units**
- General Switch, Fuse & Signaling Lamp: **1 set**

2.2 Measuring Instruments

- Moving Iron Ammeter, Range: **0.5–1 A**
- Moving Iron Voltmeter, Range: **25 V AC**

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



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2.3 Passive Components

- **Resistors (10 pcs):** 2 Ω , 4 Ω , 8 Ω , 16 Ω , 31.5 Ω , 63 Ω , 250 Ω , 500 Ω , 1000 Ω , 2000 Ω
- **Linear Rheostat:** 100 Ω / 25 W
- **Inductors:** 60 mH, 0.5 A (2 units)
- **Electrolytic Capacitors:**
 - 100 μ F / 25 V DC: 1 unit
 - 500 μ F / 25 V DC: 2 units

2.4 Semiconductors & Other Devices

- Diodes A-100V: **4 units**
- 24 V Lamp Holders with Lamps: **2 units**
- 24 VAC Buzzer: **1 unit**
- Proximity sensor: **1 unit**

Electrical Sequence Trainer

3. System Overview

The Electrical Sequence Trainer provides practical training on industrial logic circuits, motor control operations, timing systems, and electrical protection schemes. The platform replicates real-world components used in industrial control panels. All terminals are insulated, and connections use protected 4 mm cables.

3.1 Training Capabilities

- Basic circuits
- Logic circuits
- Self-holding circuits
- Timer circuits
- Priority circuits
- Detection circuits
- Lamp & alarm circuits
- Motor operational circuits
- Reactor-driving circuits
- Jog control
- Forward/Reverse control
- Delay operation circuits
- Time activation circuits

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- Star-Delta (Y- Δ) starting circuits

4. Protection & Control Components

4.1 Protective Devices

- **Earth Leakage Circuit Breaker (ELCB):**
 - Quantity: 1
 - Rated Voltage: AC 220 V, 60 Hz
 - Rated Current: 30 A
 - Rated Residual Current: 30 mA

4.2 Contactors & Relays

- Electronic Contactors (5A2B): **3 units**
 - Contact Capacity: AC 240 V, 15 A / 4.5 kW
 - Auxiliary Contact: AC 240 V, 3 A
- Electronic Overload Relay (EOCR, 1/2 HP): **1 unit**
 - Internal CT Sensor: 3-CT (Tunnel type)
 - Current Setting: 0.3–1.5 A
 - Trip Time: 0–30 seconds
 - Contact Capacity: AC 230 V, 3 A
- General-purpose Relays (4C): **2 units**
 - Contact Capacity: AC 220 V, 3 A

4.3 Timers

- **ON-Delay Timer (30 sec):** 1 unit
 - Output Capacity: AC 220 V, 1.5 A
- **Flicker Timer (6 sec):** 1 unit
 - Output Capacity: AC 220 V, 2.5 A

5. Motor & Mechanical Components

- **Three-Phase Induction Motor:** 1 unit
 - Voltage: 3-Phase AC 220/380 V
 - Power: 25 W
 - Type: Squirrel-cage, 4-pole, Y- Δ Starting
- Rotary Disc Assembly: Rotational speed detection type
- Electronic Brake: Intensity control function

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6. Additional Training Components

- Digital Counter: 1 unit
- DC Power Supply: 24 V DC, 1 A (with fuse)
- Lamps: 4 units
- Buzzer: 1 unit
- Push Buttons: 4 units
- Toggle Switches: 2 units
- Fuse & Fuse Holder: 2 units
- Angle Adjustment Support: 1 unit

Digital Multifunctional Meter – Technical Catalogue

7. Measurement Features

- LCD Display with electrical wiring tips
- User-defined backlight settings: 10 / 20 / 30 seconds
- Precision: $\pm 0.2\%$
- True RMS Measurement
- Min/Max/Average Data Display
- 2-Point & 3-Point Earth Resistance Measurement
- Automatic Power-Off
- Bluetooth 4.0 Communication
- Auto/Manual Range Selection
- One-touch Calibration

7.1 Measurement Ranges

- **AC Voltage (ACV):** 0.0–750.0 V (True RMS)
- **DC Voltage (DCV):** 0.0–999.9 V
- **Insulation Resistance:**
 - DC 1000 V: 0.00 M Ω –1999 M Ω
 - DC 500 V: 0.00 M Ω –999.9 M Ω
 - DC 250 V: 0.00 M Ω –999.9 M Ω
- **Ground Resistance:** 0–2000 Ω
- **Ground Voltage (EV):** 0.0–750.0 V AC
- **Phase Indicator (PHA):** 0–750 V
- **Hot Line Detection (HOT):** AC 70–750 V (Buzzer + Display)
- **AC Current (ACA):** 0–9999 A, True RMS

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- **Leakage Current (mA):** 0.00–9.99 mA

8. Standard Accessories

- User Guide Manual
- **1.5 V AA Alkaline Batteries:** 5 pcs
- Protective Rubber Cover (Orange)
- Carrying Bag
- Test Leads:
 - Red (1.2 m), Black (1.2 m), Green (1.2 m)
 - Red 20 m roll, Yellow long roll, Green long roll
- Test Probes:
 - Red (600 V, CAT III)
 - Black (600 V, CAT III)
- Crocodile Clip: Black (EN61010, CAT III)

9. Standard Accessories for Trainer Boards

- Power Cord: 1 unit
- Insulated Connection Cables
- User's Guide & Experiment Manual: 1 set

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