



## General Description

The Industrial Electronics Circuits Trainer is an advanced modular system designed to provide hands-on training in the principles and applications of industrial electronic components and circuits. This unit includes **nine experiment modules** along with a built-in **Function Generator** and **DC Power Supply**, making it suitable for technical institutions and engineering training centers.

## Module Overview & Experiment List

### Module 1: UJT and PUT Circuits

- UJT Volt-Ampere Characteristic Curve Measurement
- UJT Relaxation Oscillator
- UJT Equivalent Circuit
- PUT Volt-Ampere Characteristic Curve Measurement
- PUT Relaxation Oscillator

### Module 2: SCR and GTO Circuits

- SCR Characteristic Measurement
- SCR Phase Angle Controlled Circuit
- Zener and SCR Circuit
- GTO Characteristic Circuit
- GTO Oscillation Circuit

### Module 3: DIAC and TRIAC Circuits

- Zener Breakdown Characteristic Measurement

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



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- DIAC Characteristic Measurement
- DIAC and TRIAC Circuit
- Zener and TRIAC Circuit
- PUT and TRIAC Circuit

#### Module 4: SCS and SSR Circuits

- SCS Characteristic Measurement
- SCS Equivalent Circuit
- SCS and SCR Circuit
- SSR DC Output Circuit
- SSR AC Output Circuit

#### Module 5: Circuits and Temperature Sensors

- TRIAC Circuit
- Temperature Sensor with SCR & LM335
- Temperature Sensor with SCR & TC620

#### Module 6: Optical Elements and Applications

- Photoresistor Circuit
- Photo Interrupter / Photo Coupler Circuit
- Photodiode Circuit
- Phototransistor Circuit

#### Module 7: MOSFET and Application Circuits

- MOSFET Characteristic Measurement
- MOSFET Voltage Regulator
- MOSFET Full-Bridge Circuit
- MOSFET PWM Controlled Circuit
- MOSFET and PUT Circuit

#### Module 8: BJT and IGBT Application Circuits

- BJT Characteristic Measurement
- BJT Full-Bridge Circuit
- BJT PWM Controlled Circuit
- IGBT Characteristic Measurement
- IGBT PWM Controlled Circuit

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**Module 9: SCR / SCS / DIAC / TRIAC Application Circuits**

- SCR Application Circuit
- CdS and SCR Application Circuit
- DIAC and TRIAC Application Circuit
- SCS and SCR Application Circuit

**Function Generator & DC Power Supply Specifications****Waveform Outputs:**

- Sine, Triangle, Square, TTL Pulse

**Output Amplitude:**

- 10 Vpp

**Output Impedance:**

- 50  $\Omega$   $\pm$ 10%

**Duty Cycle Control:**

- 30% to 60%

**Display:**

- 4-digit LED

**Frequency Range:**

- 10 Hz to 100 kHz (4 ranges)
- 100 Hz to 1 MHz (4 ranges)

**Frequency Adjustment:**

- Coarse and Fine tuning available

**DC Power Output:**

- **Fixed Outputs:**  $\pm$ 5V,  $\pm$ 12V
- **Variable Outputs:** 0V to  $\pm$ 15V

**Input Power:**

- 220V AC  $\pm$ 10%, 50 Hz

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