



KL-500

## POWER ELECTRONIC (I) INDUSTRIAL ELECTRONIC TRAINER



KL-58001

### 2. Meter/Motor Unit (KL-58001)

- Dual-Scale ACV: 0-110V-220V, class 2.5
- Dual-Scale ACA: 0-100mA-1A, class 2.5
- Dual-Scale DCV: 0-10V-20V, class 2.5
- Dual-Scale DCA: 0-100mA-1A, class 2.5
- AC 110V/220V motor

### Experimental Modules

- 2mm plugs and sockets used throughout, connected by 2mm test leads
- Circuit symbols, blocks and components printed on the surface of each module
- Modules secured in plastic housing, the dimension: 297x226x60mm
- With storage cabinet for all modules to be easily stored
- Comprehensive experiment manuals



Stand feet for easy operation on the Workbench



Storage cabinet for all modules to easy storing

### List of Modules

- |                 |  |
|-----------------|--|
| Module KL-53001 | UJT Experiments  |
| Module KL-53002 | PUT Experiments  |
| Module KL-53003 | PUT & SCR Experiments  |
| Module KL-53004 | SCS Experiments  |
| Module KL-53005 | UJT & PUT Trigger SCR Experiments                            |
| Module KL-53006 | SCR Control DC Motor & DIAC TRIAC Characteristic Experiments |
| Module KL-53007 | Automatic Control Lamp & TRIAC Control Speed Experiments     |
| Module KL-53008 | Temperature Ratio & Photo-Coupl & Touch Control Experiments  |
| Module KL-53009 | Over/Under-Voltage Breaker & Flasher Control Experiment      |
| Module KL-53010 | TRIAC Liquid Level & IC Timer Switch Experiments             |
| Module KL-53011 | Digital Signal Driver & Zero-Voltage Switch Experiments      |
| Module KL-53012 | Zero-Voltage Switch Experiments                              |
| Module KL-53013 | SCR Converter Experiment                                     |



KL-53001



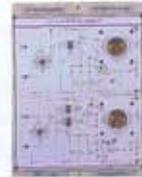
KL-53002



KL-53003



KL-53004



KL-53005



KL-53006



KL-53007



KL-53008



KL-53009

**POWER ELECTRONIC (1)**  
**INDUSTRIAL ELECTRONIC TRAINER**

KL-500



KL-53010



KL-53011



KL-53012



KL-53013

**List of Experiments**

**(1) Power Supply Unit Experiment**

- a. AC Voltage measurement
- b. DC Voltage measurement

**(2) UJT Experiments**

UJT Characteristic & Equivalent Circuit

- a. UJT Introduction
- b. UJT Characteristic
- c. UJT Equivalent Circuit
- d. CDS Trigger
- e. RTH Trigger

UJT Oscillator Circuit & Timer Switch

- a. UJT Relaxation Oscillator
- b. UJT Timer Switch

**(3) PUT Experiments**

PUT Characteristic & Equivalent Circuit

- a. PUT Introduction
- b. PUT Characteristic
- c. PUT Equivalent Circuit
- d. CDS Trigger
- e. RTH Trigger

PUT Oscillator Circuit & Timer Switch

- a. PUT Circuit Oscillator
- b. PUT Timer Switch

**(4) PUT & SCR Experiments**

PUT Staircase Generator & VCR Circuit

- a. PUT Staircase Generator Circuit
  - b. PUT Voltage Control Ramp Circuit
- SCR Characteristic & RC Shift Control circuit
- a. SCR Principle
  - b. SCR Characteristic Curve
  - c. SCR Construction
  - d. SCR Trigger Mode
  - e. SCR RC Shift Control circuit

**(5) SCS Experiment**

SCS Characteristic Experiment

- a. SCS Construct and Operation Mode
  - b. Use VOM Meter Measure SCS
  - c. SCS Schmitt Circuit
  - d. SCS Simulate PUT Circuit
- SCS Trigger Circuit Experiment

- a. CDS Trigger
- b. RTH Trigger

**(6) UJT & PUT Trigger SCR Experiments**

UJT Trigger SCR Shift Control Circuit

- a. Shift Control Basic Circuit
  - b. Shift Control Analysis
  - c. AC Shift Control Circuit Analysis
  - d. UJT Trigger SCR Shift Control Circuit
- PUT Trigger SCR Shift Control Circuit

- a. PUT Trigger SCR Shift Control Circuit

**(7) SCR Control DC Motor & DIAC, TRIAC Characteristic Experiments**

SCR Control DC Motor Forward/Reverse Experiment

- a. SCR Cut-Off Principle
- b. SCR Control DC Motor Forward/Reverse Control Experiment

DIAC, TRIAC Characteristic Experiment

- a. DIAC Construction and Characteristic
- b. DIAC Operation Mode and Measurement
- c. TRIAC Construction and Characteristic
- d. TRIAC Trigger Mode
- e. TRIAC Static Measurement

**(8) Automatic Control Lamp & TRIAC Control Speed Experiments**

Automatic Control Lamp Experiment

- a. TRIAC Shift Control
  - b. TRIAC Automatic Control Lamp Experiment
- TRIAC Control Motor Speed Experiment
- a. Different Motor Introduction
  - b. TRIAC Control Motor Speed Experiment

**(9) Temperature Ratio & Photo-Couple & Touch Control Experiments**

Bridge Temperature Ratio Control Experiment

- a. Component Of Thermal Converter Electronic
- b. SCR Bridge Temperature Ratio Control Experiment

Photo-Couple & Touch Control Experiment

- a. Photo-Couple Control Circuit
- b. FET Construction and Characteristic
- c. Touch Alarm Circuit



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## POWER ELECTRONIC (1) INDUSTRIAL ELECTRONIC TRAINER

### (10) Over /Under Voltage Breaker & Flasher Control Experiment

- Over/Under Voltage Breaker Experiment
- OPA Characteristic and Reverse & Non-reverse Circuit
  - Voltage Comparison Circuit
- Flasher Control Experiment
- Application Of TRIAC Power Control
  - AC Circuit Control
  - Multivibrator

### (11) TRIAC Overflow & IC Timer Switch Experiments

- TRIAC Overflow Control Experiment
- Digital Circuit Introduction
  - TRIAC Overflow Control Experiment
- IC Timer Switch Experiment
- NE 555 IC Circuit Introduction
  - IC Timer Switch Experiment

### (12) Digital Signal Driver & Zero-Voltage Switch Experiments

- Digital Signal Driver Control Experiment
- Digital Signal Driver Control Experiment
- Zero-Voltage Switch Experiments (1)
- Ideal Half-Wave Zero-Voltage Switch Experiments

### (13) Zero-Voltage Switch Experiments

- Zero-Voltage Switch Experiments
- TRIAC Zero-Voltage Switch Experiments
  - IC Mode Zero-Voltage Switch Experiments

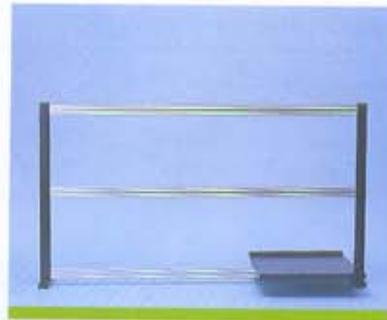
### (14) SCR Converter Experiment

- Parallel Converter Introduction
- Series Converter Introduction
- Converter Trigger Source
- Converter Voltage Adjust
- Converter Output-Waveform Improvement

### (15) Accessories (KL-58002)

- Tank x2
- Short-jumper
- Experiment manual
- One set of 2mm-2mm multilam, stackable test lead
- Power cord
- Storage Cabinet

### (16) Option (KL-59003)



Option: Rack Frame (KL-59003)