

### Industrial Electronics Trainer



#### ALL ELECTRONIC CIRCUITS TRAINERS

- ✓ Basic Electronic Circuits Trainer
- ✓ Basic Electricity and Electronic Trainer
- ✓ Digital Logic Circuits Trainer
- ✓ Advanced Digital Logic Circuits Trainer
- ✓ Electronic Circuits Trainer
- ✓ Practical Electronic Circuits Trainer
- ✓ Power Supply Circuits Trainer
- ✓ **Industrial Electronics Circuits Trainer**

## IE2060

### DESCRIPTION

#### Curriculum Outlines:

- Design and implementation of UJT and PUT thyristor circuits.
- Design and implementation of SCR, TRIAC, and DIAC thyristor circuits.
- Design and implementation of SCS, GTO, SBS, and SSR thyristor circuits.
- Design and implementation of MOSFET, BJT, and IGBT transistor circuits.
- Design and implementation of temperature sensors and optical elements circuits.

### FEATURES

#### Curriculum Objectives:

- Understanding the basic theory of industrial electronics circuits.
- Design and implementation of the ability training for thyristor and transistor.
- Ability to research and develop the thyristor and transistor.
- Familiar with the applications of the high efficiency industrial electronics circuits.



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|---|---|---|
|    | <p><b>1</b><br/>UJT and PUT</p>                 | <p><b>UJT and PUT Circuits</b><br/>Experiment 1: UJT Volt-ampere Characteristic Curve Measurement<br/>Experiment 2: UJT Relaxation Oscillator<br/>Experiment 3: UJT Equivalent Circuit<br/>Experiment 4: PUT Volt-ampere Characteristic Curve Measurement<br/>Experiment 5: PUT Relaxation Oscillator</p> |
|    | <p><b>2</b><br/>SCR and GTO</p>                 | <p><b>SCR and GTO Circuits</b><br/>Experiment 1: SCR Characteristic Measurement<br/>Experiment 2: SCR Phase Angle Controlled Circuit<br/>Experiment 3: Zener and SCR Circuit<br/>Experiment 4: GTO Characteristic Circuit<br/>Experiment 5: GTO Oscillation Circuit</p>                                   |
|  | <p><b>3</b><br/>DIAC and TRIAC</p>              | <p><b>DIAC and TRIAC Circuits</b><br/>Experiment 1: Zener Breakdown Characteristic Measurement<br/>Experiment 2: DIAC Characteristic Measurement<br/>Experiment 3: DIAC and TRIAC Circuit<br/>Experiment 4: Zener and TRIAC Circuit<br/>Experiment 5: PUT and TRIAC Circuit</p>                           |
|  | <p><b>4</b><br/>SCS and SSR</p>                 | <p><b>SCS and SSR Circuits</b><br/>Experiment 1: SCS Characteristic Measurement<br/>Experiment 2: SCS Equivalent Circuit<br/>Experiment 3: SCS and SCR Circuit<br/>Experiment 4: SSR DC Output Circuit<br/>Experiment 5: SSR AC Output Circuit</p>  |
|  | <p><b>5</b><br/>SBS and Temperature Sensors</p> | <p><b>SBS Circuit and Temperature Sensors</b><br/>Experiment 1: SBS Characteristic Measurement<br/>Experiment 2: SBS and TRIAC Circuit<br/>Experiment 3: Temperature Sensor Using SCR and LM335<br/>Experiment 4: Temperature Sensor Using SCR and TC620</p>  |

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| <p><b>Optical Elements and Application Circuits</b><br/>Experiment 1: Photoresistor Circuit<br/>Experiment 2: Photo Interrupter/Photo Coupler Circuit<br/>Experiment 3: Photodiode Circuit<br/>Experiment 4: Phototransistor Circuit</p>                                       | <p><b>6</b><br/>Optical Elements</p>   |    |
| <p><b>MOSFET and Application Circuits</b><br/>Experiment 1: MOSFET Characteristic Measurement<br/>Experiment 2: MOSFET Regulator<br/>Experiment 3: MOSFET Full Bridge Circuit<br/>Experiment 4: MOSFET PWM Controlled Circuit<br/>Experiment 5: MOSFET and PUT Circuit</p>     | <p><b>7</b><br/>MOSFET</p>             |   |
| <p><b>BJT and IGBT Circuits</b><br/>Experiment 1: BJT Characteristic Measurement<br/>Experiment 2: BJT Full Bridge Circuit<br/>Experiment 3: BJT PWM Controlled Circuit<br/>Experiment 4: IGBT Characteristic Measurement<br/>Experiment 5: IGBT PWM Controlled Circuit</p>    | <p><b>8</b><br/>BJT and IGBT</p>       |  |
| <p><b>UJT/PUT/SCR/TRIAC/IGBT Application Circuits</b><br/>Experiment 1: UJT Application Circuit<br/>Experiment 2: PUT Application Circuit<br/>Experiment 3: SCR Application Circuit<br/>Experiment 4: TRIAC Application Circuit<br/>Experiment 5: IGBT Application Circuit</p> | <p><b>9</b><br/>SCR/SCS/DIAC/TRIAC</p> |  |