

# EIS-3000

## Power Transmission-Distribution & Electrical Installation Trainer



### FEATURES

- Ideal for engineering, electrical installation, and measurement in simulation.
- Training on electrical installation:
  - 1-Phase, 3-phase, 3-phase 4-wire (R/S/T/N)
  - Earth-to-earth and earth-to-neutral (insulation-to-installation)
- Training on electrical safety measurement:
  - AC voltage, DC voltage, earth resistance, ground voltage, phase insulation resistance, phase test, line status test, resistance by leakage current, and capacitance by leakage current
- Fault simulation:
  - ELCB practices, circuit breaker practices, variable tests on leakage current, variable tests on earth resistance and battery voltage tests
- Complying international electrical installation and safety standards:
  - IEC 364 and EN 61010-1

### INTRODUCTION

The EIS-3000 Power Transmission-Distribution & Electrical Installation Trainer is designed to help the user understand both power transmission system from a power plant and power distribution system through high-voltage transmission and transformation of electric energy. It is equipped with comprehensive metering displays in single-phase and three-phase sections.

- Power generation, transmission and distribution
- Fault simulation of electric installations and demonstration of actual measurements
- Learning of electrical installations and usage of measuring instruments

### Comprehensive electrical measurement

The EIS-3000 Power Transmission-Distribution & Electrical Installation Trainer is an integrated simulation equipment for measuring AC voltage, DC voltage, earth resistance, insulation resistance and leakage current in single-phase AC circuit, 3-phase AC circuit, and 3-phase 4-wire AC circuit and performing an electric leakage shutoff test.

### Versatile training purposes for private sector and public sector

As a multi-purpose equipment, the EIS-3000 Power Transmission-Distribution & Electrical Installation Trainer enables private companies to train their staffs on electricity safety and measuring methods. Also, it helps to train school teachers in high school or vocational school. It also helps college professors teach basic principles of electricity and measurement methods for their students. The user can make a best use of it with Multifunctional Digital Electric Meter (model: CEM-2200).

### To practice field simulations

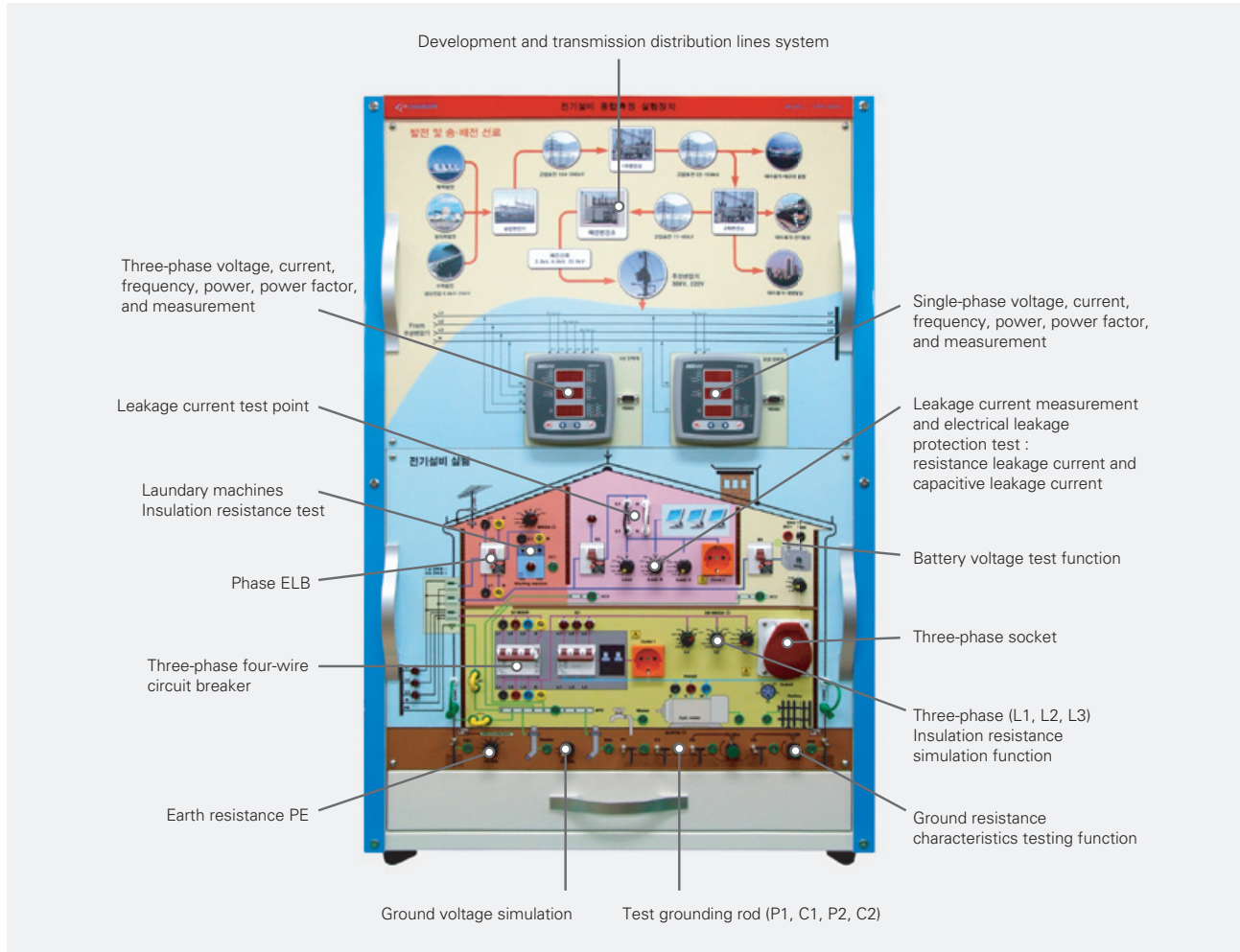
The EIS-3000 Power Transmission-Distribution & Electrical Installation Trainer allows the user to measure insulation resistance, earth resistance, effect of ground voltage, and ground resistance as it comprises single-phase AC circuit and 3-phase AC circuit.

### To perform AC load experiment

When measuring the single-phase leak current, the user can test by charging load as there is a socket for load. The user can charge load through sockets for single-phase load and 3-phase load in a 3-phase line.

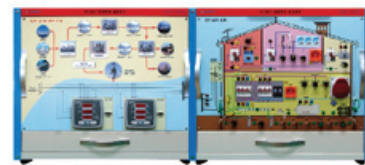
# EIS-3000

EIS-3000 is an educational equipment devised by international standards in relation to electrical fields like IEC 364 and EN61010-1.



## EXPERIMENTAL CONTENTS

- Power generation, transmission and distribution
- Prevention of electric accidents and safety of electric equipment
- Electromagnetic interference and prevention
- Electrostatic interference and prevention
- Safety training on thunder stroke damages
- 1-phase / 3-phase voltage measurement (AC and DC)
- Measurement of AC current and frequency
- Measurement of R/S/T phase and live line voltage
- Measurement of insulation resistance and leakage current
- Measurement of ground resistance (2-point / 3-point) and line to ground voltage
- Performance testing on electrical circuit breaker



EIS-3000B



EIS-3000A

## SPECIFICATIONS

<b>Digital meter for monitoring power transmission and distribution</b>	Accuracy : IEE687 Class 1.0 Communication : RS-485 MODBUS / DNP3.0 / Lonworks Measurement: Phase voltage, line voltage, current, power, active power, reactive power, apparent power, power factor and frequency 3-phase indication: 4-digit digital meter (3ea) 1-phase indication: 4-digit digital meter (3ea)
<b>Insulation resistance</b>	1-phase power line: 0.08MΩ, 0.1MΩ, 0.2MΩ, 1MΩ, 10MΩ, 100MΩ, 200MΩ, OPEN 3-phase power line: L1: 0.2MΩ, 0.5MΩ, 1MΩ, 10MΩ, 100MΩ, 200MΩ, 500MΩ, OPEN L2: 0.3MΩ, 0.75MΩ, 2MΩ, 20MΩ, 150MΩ, 300MΩ, 400MΩ, OPEN L3: 0.09MΩ, 0.1MΩ, 0.2MΩ, 1MΩ, 10MΩ, 100MΩ, 200MΩ, OPEN
<b>Ground resistance</b>	2-point earth test Water pipe:7.5Ω, heater:10Ω, gas pipe:3Ω, radiator:100Ω, motor:10Ω 3- point earth test 1Ω, 2Ω, 3Ω, 5Ω, 7.5Ω, 10Ω, 30Ω, 110Ω
<b>Auxiliary earth resistance</b>	0 ~ 10kΩ variable: 2ea
<b>Ground rod</b>	PE1 / PE2 / P1 / P2 / P3 / C1 / C2
<b>Ground voltage</b>	0V / 6V / 9V (selectable)
<b>Phase test point</b>	U(L1), V(L2), W(L3)
<b>Leakage current load</b>	R-Load1: 1kΩ, 10kΩ, 100kΩ, 200kΩ, 300kΩ, OPEN Leakage current (R-load2): 30mA, 15mA, 2mA, 1mA, 0.4mA, 0.2mA, 0.1mA, OPEN Leakage C-load: 0.033, 0.01, 0.001, OPEN
<b>DC voltage output</b>	0V, 5V, 12V, 24V (max. 1A)
<b>Electric leakage circuit breaker</b>	1-phase 15A / 30mA : 3ea
<b>Circuit breaker</b>	3-phase 4-wire 10A : 1ea 3-phase 3-wire 10A : 1ea
<b>AC output socket</b>	1-phase: 2ea (outlet 1 & 2) 3-phase 4-wire + PE: 1ea (outlet 3)
<b>Input voltage</b>	1-phase 220V ±15% (50/60Hz) 3-phase 380V ±15% (50/60Hz) 4-wire (L1/L2/L3/N)

## STANDARD ACCESSORIES

- Power cord: 1-phase (2 meters) x 1ea  
3-phase (4 meters) x 1ea
- Angle stand : 1 ea
- Experimental lead wire : 1 set
- User's guide & experimental manual: 1 ea

## OPTIONS (highly recommended for effective experiments)

- **Multifunctional Digital Electric Meter (CEM-2200)**
  - AC voltage : 0V to 750V true RMS
  - DC voltage : 0V to 1000V
  - Insulation resistance : 500V / 999.9MΩ
  - Ground resistance (earth Ω) : 0 ~ 2000Ω
  - Electroscop (live) : Buzzer alarm and LCD display
  - Phase meter (PHA) : 3-phase 110V ~ 750VAC
  - IrDA communication and memory function