

# DEMONSTRATION PANEL FOR THE ELECTRIC TESTING CARRIED OUT IN INDUSTRIAL BUILDINGS

## Mod. PDG-2/EV

### INTRODUCTION

This panel can be used by teachers for their lessons and by students for an easy learning and testing on electrical prevention systems supplying them with the means for verifying the rule of art and the relevant technical standards.

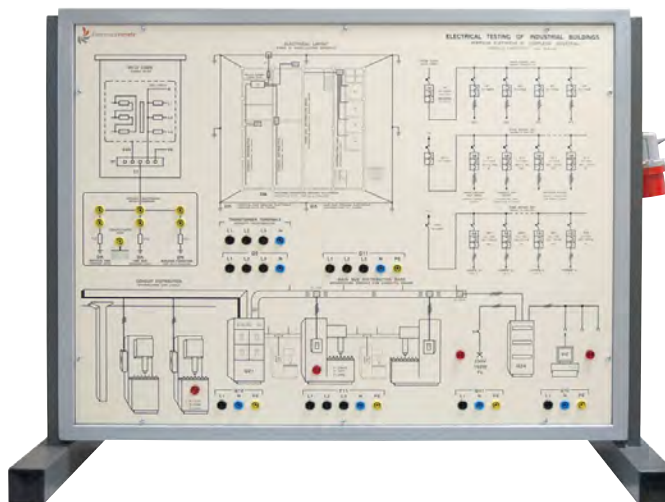
Actual electrical devices installed, already connected with each other, enable to check the operation, besides carrying out the measurements of all the electric parameters with conventional instruments.

The panel is made of insulating material and it represents the support of the necessary devices for carrying out the testing programme. The apparatuses are represented on the panel with their standardized international symbols, electrical block diagram and lay-out, for an easy reference. Furthermore, when necessary, test points correspond to standardized educational terminals with high protection degree against accidental contacts. Four switchboards including the protection devices (main switchboard, department switchboards) are available in the rear part of the equipment.

### TRAINING PROGRAM:

This panel can be used to define the electrical installations of an industry (power distribution via TN system) with reference to the following topics:

- Design of the electrical installation in industrial sheds
- Main switchboard (cabin switchboard)
- Department switchboard
- Distribution by channel or by ducts-bars
- Installation plans
- Graphical symbols for installation plans
- Earth plates and plan of earthing systems
- Installations in places with risk of explosion
- Installations in places with risk of fire
- Drawing up Form A (atmospheric discharges) and Form B (earthing systems)



**Furthermore, this panel is designed to deal with topics, visual checks, tests concerning:**

- Analysis of diagrams and documents, warning signs
- Suitability of materials and of equipment
- Protection against direct contacts
- Protection against indirect contacts
- Precautions against fire starting and propagation
- Breaking devices for servicing
- Functional and emergency control devices
- IP protection degree of cases
- Identification of circuits, of fuses, of operation switches
- Suitability of the connections of conductors
- Checking the current-carrying capacity of ducts
- Checking the section of the protection conductor according to fault current
- Correct choice of protection devices against overcurrents
- Continuity tests of protection and equipotential conductors
- Measurement of isolation resistance
- Measurement of fault loop impedance
- Polarity tests
- Analyzing the functionality of differential circuit breakers

## TECHNICAL SPECIFICATIONS:

Framework is made of sheet steel chemically treated and painted with several coats of epoxy varnish; its base is provided with rubber feet and it can be positioned on a working top. All the necessary electric components for the correct power supply of circuits are included in the panel.

Main components installed:

- 1 three-phase isolation transformer 230-400 V / 230-400 V 750 VA
- 1 simulator of cabinet earthing system with 3 fixed resistances of 1  $\Omega$
- 1 four-pole magnetothermal circuit breaker 4 x 6 a, curve C, with releasing coil
- 1 delayed differential relay of 0.03-1 A, with detecting TA
- 2 sets of three fuse holders with fuses of 2 A
- 1 magnetothermal differential circuit breaker 4 x 3 A "C" / 0.3 A "S" "A"
- 1 magnetothermal differential circuit breaker 2 x 1.6 A "C" / 0.3 A "AC"
- 1 magnetothermal differential circuit breaker 2 x 0.5 A "C" / 30 mA "AC"
- 1 magnetothermal differential circuit breaker 2 x 1 A "C" / 30 mA "A"

**Dimensions of demonstration panel:** 800 x 600 mm

**Dimensions of framework:** 840 x 450 x 680 mm

**Net weight:** 50 kg

## SUPPLIED ACCESSORIES:

- 1 single-phase power cord with EEC socket and plug
- 3 jumpers with safety plugs ( $\varnothing$  4 mm) for assembling the various installation conditions

## RECOMMENDED ACCESSORIES:

- Multi-function microprocessor instrument for electric testing
- Digital current probe
- Digital autoranging multimeter
- Electric CAD for Windows

## POWER SUPPLY:

3 x 400 V / N / PE 50-60 Hz  
Max. absorption: 750 VA

## THEORETICAL-EXPERIMENTAL HANDBOOKS

*Application handbook with exercises.*