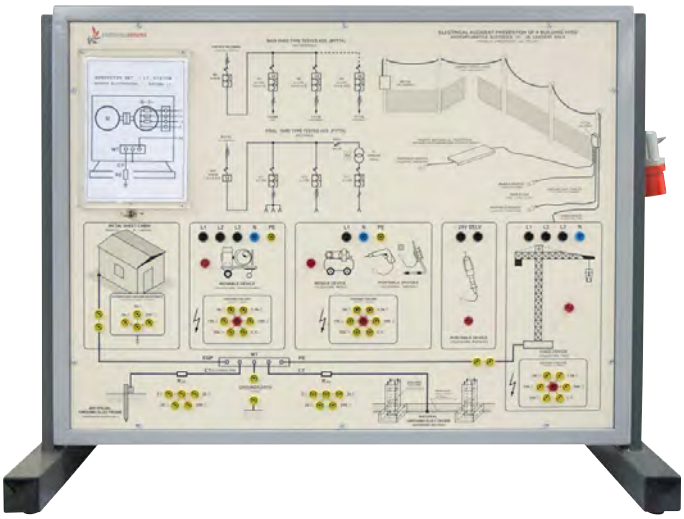
DEMONSTRATION PANEL OF ELECTRICAL PREVENTION SYSTEMS IN A BUILDING YARD

Mod. PDG-3/EV

INTRODUCTION

This demonstration 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. Two switchboards including the protection devices (reproduction of ASC-certified boards for yards) are available in the rear part of the equipment.



TRAINING PROGRAM:

This panel can be used to define the electrical installations of a building yard (power distribution via TT, TN or IT system) with reference to the following topics:

- Main switchboard of power distribution
- Department switchboard
- Distribution cables laid on the ground and hanging by ropes
- Protection of electric cables against mechanical damages in passage points
- Fixed power consuming devices
- Transportable power consuming devices
- Movable power consuming devices
- Portable power consuming devices
- Powering the yard via TT, TN or IT system
- Protection against direct contacts
- Protection against indirect contacts
- Earth conductor
- Artificial earth plates
- Natural earth plates
- Equipotential connections

Furthermore, this panel can be used to carry out the following testing and measurements by instruments:

- Suitability of materials and of equipment
- Protection and breaking devices
- Identification of neutral and earth conductors
- Measurement of earth resistance
- Continuity tests of protection conductors
- Analyzing the functionality of differential circuit breakers
- Measurement of isolation resistance
- Checking the protection devices with automatic break
- Measurement of fault loop resistance / impedance

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 500 VA
- 1 switch for selecting TT, IT, TN distribution system
- 1 simulator of cabinet earthing system with fixed resistance of 0.3 Ω
- 2 simulators of earth plate with resistances of 2 Ω, 20 Ω, 200 Ω, 2 kΩ
- 1 simulation of extraneous conducting part with resistances of 200 Ω, 1000 Ω, 5000 Ω
- 1 four-pole operation switch and differential circuit breaker of 25 A 30 mA "AC"
- 1 magnetothermal differential circuit breaker 4 x 1 A "C" / 0.3 A "S"
- 1 magnetothermal differential circuit breaker 4 x 1 A "C" / 0.3 A "AC"
- 1 magnetothermal circuit breaker 4 x 0.5 A "C
- 1 magnetothermal circuit breaker 2 x 0.5 A "C
- 1 magnetothermal circuit breaker 1/N 2 A "C
- one 1/N breakable fuse holder with fuse of 2 A
- 1 SELV transformer of 230/24 V 50 VA
- 1 simulator of isolation fault in a power consuming device (to earth) with resistances of 50 kΩ, 15 kΩ, 5 kΩ, 500 Ω and bolted fault

Dimensions of demonstration panel: 800 x 600 mm
Dimensions of framework: 840 x 450 x 680 mm
Net weight: 54 kg

SUPPLIED ACCESSORIES:

- 1 single-phase power cord with EEC socket and plug
- 10 jumpers with safety plugs (Ø 4 mm) for assembling the various installation conditions
- 4 identification tables of the selected distribution system

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.

 ELETTRONICA VENETA S.P.A. - 31045 Motta di Livenza (TV) Italy - Via Postumia 16 - Tel. +39 0422 765 802 - Fax +39 0422 861 901 - E-mail: export@elettronicaveneta.com