

# DEMONSTRATION PANEL OF ELECTRICAL SYSTEMS OF CENTRAL HEATING PLANTS

## Mod. PDG-5/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.



### TRAINING PROGRAM:

This panel shows an electrical installation that can be used in central heating plants of buildings of residential, business, craft, industrial use, with reference to the following topics:

- Oil-fired central heating plants exceeding 100000 kcal/h
- Gas-fired central heating plants exceeding 30000 kcal/h
- Compliance of the system with CEI Guide 64-50
- Classification of places (AD zones) for boiler rooms
- Outdoor emergency switch
- Switchboard for central heating plant
- Ducts and apparatuses allowed in a central heating plant
- Heat generator, thermostats, pressure switches, for working and safety
- Fuel cutoff valves
- Gas detection and signalling
- Detection and signalling of carbon oxide CO

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

- Operation tests

## 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 heat generator including operation thermostat, minimum temperature thermostat and maximum temperature thermostat
- 1 safety pressure switch
- 1 GAS cutoff valve
- 1 electro-mechanical room thermostat
- 1 room chronothermostat
- 1 simulator of circulation pump
- 2 zone valves with electrical control of 24 V
- 1 single-phase transformer of 230 V / 24 V 50 VA
- 1 (outdoor) circuit breaker 2 x 25 A
- 1 switch for protection and control of burner 2 x 1 A
- 1 switch of pump protection 2 x 1 A
- 1 relay 2 x 16 A 24 Vac for thermostats-pump interface
- 1 circuit breaker 2 x 16 A (of pump servicing)
- 1 detector of METHANE or of LPG
- 1 detector of carbon oxide CO

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

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

**Net weight:** 36 kg

## SUPPLIED ACCESSORIES:

- 1 single-phase power cord with UNEL plug

## RECOMMENDED ACCESSORIES:

- Digital autoranging multimeter

## POWER SUPPLY:

230 V / PE 50-60 Hz  
Max. absorption: 250 VA

## THEORETICAL-EXPERIMENTAL HANDBOOKS

*Application handbook with exercises.*