Introduction

This system studies the topics related with the lighting plants (advanced) in the electric civil installation. It has a modular structure and it consists of didactic panels installed on a vertical frame. The modularity of this didactic system grants to the students a direct and immediate approach to the topics, offering the opportunity to study various subjects performing several experiments as following.

Features

01 Facilitates easy and safe wiring by students due to use of 4mm sturdy Shrouded banana path cords & shrouded socket arrangements.
02 All panels are mounted on finely painted sturdy base frame with easy panels interchangeability.

Panels Provided

SN.	Name of Panel	Order Code	Qty.
01	Aluminum Lighting Installation trainer Rack	69700	01
02	Single Phase Power supply	69501	01
03	Light push button	69505	01
04	Low consumption fluorescent lamps	69510	01
05	Incandescent and fluorescent lamps	69514	01
06	Twilight switch	69521	01
07	Timer switch	69522	01
08	Emergency Light	69541	01
09	Stand-by Battery	69542	01
10	Dimmer / Pushbutton light regulator	69556/57	02
11	Presence and twilight sensor	69558	01

Accessories Provided

SN.	Description	Qty.
01	Shrouded connecting leads 4mm 50cm Red	05
02	Shrouded connecting leads 4mm 100cm Red	05
03	Shrouded connecting leads 4mm 50cm Black	05
04	Shrouded connecting leads 4mm 100cm Black	05

List of Experiments

SN.	Name of Experiment	Panels Required
01	Low consumption lamps lighting installation	69501, 69505, 69510
02	Emergency light installation	69501, 69541, 69542
03	Lighting installation controlled by dimmer	69501, 69510, 69556/57
04	Lighting installation controlled by pushbutton light regulator	69501, 69510, 69556/57
05	Lighting installation controlled by twilight switch (outdoor type)	69501, 69510, 69521
06	Lighting installation controlled by presence and twilight switch (indoor type)	69501, 69510, 69558
07	Lighting installation controlled by timer switch	69501, 69510, 69522

Note: Specifications are subject to change.

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30.07.2022

DETAILS OF MODULES

1. SINGLE PHASE POWER SUPPLY
Order Code - 69501

Single Phase Power Supply is designed to familiarize students with various methods of protection of power circuits. It has been made with safety and protection in mind and with strong insulation

Procedure

01 Connect the Input AC Voltage at Input
02 Switch ON the Two Pole MCB Terminal
03 Turn the key lock switch
04 Check the light indication
05 Observe the Output at Output Terminal

2. LIGHT PUSH BUTTON
Order Code - 69505

Switch modules come in a wide variety and are designed to familiarize students with various methods of switching voltages, currents and loads. They have been made with safety and protection in mind and with strong insulation. Light Push Button switch is a switch most commonly used to operate electric lights permanently connected equipment, or electrical outlets.
This module is provided with a single pole switch.

Procedure

1. When we push the switch then both the contact of terminals are connected.

3. LOW CONSUMPTION FLUORESCENT LAMP
Order Code – 69510

Low consumption fluorescent lamp is a compact fluorescent lamp (CFL) is a fluorescent lamp designed to replace an incandescent lamp; some types fit into light fixtures formerly used for incandescent lamps. The lamps use a tube which is curved or folded to fit into the space of an incandescent bulb, and compact electronic ballast in the base of the lamp. The module has two low consumption fluorescent lamps The module has been made with safety and protection in mind and with strong insulation.

Procedure

01 Connect the CFL at CFL Holder
02 Apply the 230V AC at input terminal
03 Switch ON the 230V AC Supply
04 Check the CFL is glow with respect to input voltage

4. INCANDESCENT AND FLUORESCENT LAMPS
Order Code- 69514

The Incandescent light appears yellowish Compared to fluorescent incandescent lamps produce light from heat. The fluorescent lamp is a low-pressure mercury-vapor gas-discharge lamp that uses fluorescence to produce visible light. The module has two in can descent lamps and one fluorescent lamp with starter. The module has been made with safety and protection in mind and strong insulation.

Procedure.

01.Apply the input AC 220V at input (L-N)
02.Check the incandescent lamp is glow
03.Make the circuit as connection diagram

5. TWILIGHT SWITCH
Order Code- 69521

Twilight switches switch the outdoor lighting on and off. As soon as the light intensity falls under a preset lux level, the switch turns on the lighting. On the other hand, if the light intensity is higher than the preset level, then the lighting switches off. The module Twilight switch has adjustable. output. The module has been made with safety and protection in mind and with strong insulation.

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DETAILS OF MODULES

6. TIME SWITCH

Order Code- 69522

Timer switch is a timer that operates an electric switch controlled by the timing mechanism. It is a daily timer switch with tappets. The module has been made with safety and protection in mind and with strong insulation.

Procedure

1. **Time Setting**: Rotate the switching dial in clockwise direction untill the current (day / time in case of weekly model) is almost opposite to the marking arrow F. For fine adjustment rotate the minute hand in the clockwise direction untill the clock shows the current time.
2. **Programming**: Required switch ON time is set on the switching dial by radially pulling outwards the corresponding black segments. Each segment on daily corresponding to 15mins. &on weekly dial corresponding to 2 Hours.

7. EMERGENCY LIGHT

Order Code- 69441

An emergency light is a battery-backed lighting device that switches on automatically when a building experiences a power outage**.** This ensures that lights remain alight during a power outage allowing occupants to easily locate the exits should they need to evacuate the building.

Complete with 2 Ni-Cd rechargeable batteries

2.4V,0.5Ah

Autonomy: 2 hours

Procedure

01 Make the circuit safe for work to be carried out (as detailed above)

02 Identify the voltage of the connection which will be made to the safety light fitting.

03 Examine the unit connections.

04 Connect the common wire and the right voltage wire for the connection voltage to the electrical conduit

8. STAND-BY BATTERY

Order Code- 69542

Standby batteries are meant to act as an emergency power source where the main power source has failed for some reason. Consequently, standby batteries are kept fully charged so that they can "kick in" immediately**.** A storage battery held in reserve as an emergency power source in event of failure of regular power facilities at a radio station or other location.

Battery type: Rechargeable
Capacity: 2.2AH
Nominal Voltage: 12V
Current: Less than 0.66A

9. DIMMER / PUSHBUTTON LIGHT REGULATOR

Order Code- 69556/57

Dimmer switches are simple electronic devices that are used to control the brightness level of lighting. Many homeowners have dimmers installed to control lighting, save money on their electric bills or as an extended feature of their security system.

Operating Voltage: 240V
Material: V0 polycarbonate (flame redartent)
Colour: Silver
Wattage: 650W
Mounting Type: Panel mount

Procedure

01 When we operate dimmer simply raise and lower the intensity of lamp.

Pushbutton light regulator is very similar to light dimmers. Their function is to regulate/control the intensity of lamp and provide a convenient environment for the residents.

Pushbuttons electronic light brightness regulator, with external controls.
Adjustment from 60W to 600W, resistive.
Adjustment from 60VA to 500VA , inductive.

Procedure

01 When we operate push button light regulator simply raise and lower the intensity of lamp.

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DETAILS OF MODULES

10. PRESENCE AND TWILIGHT SENSOR

Order code- 69558

A twilight switch is an electronic component that allows the automatic activation of a lighting circuit when natural lights drops in a given environment. Among a large number of uses , the most common is to enable automatic lighting streets , roads , highways, gardens, courtyards, etc. When sunlight drops below a certain level is a switch most commonly used to operate electric lights permanently connected equipment, or electrical outlets. This module is provided with a single poles switch.

Automatic infrared sensor with twilight switch.

Range: 0 to 1800,12 meters

Time adjustment from 10sec to 10 min

Glow regulation from 3 to 2000lux

01 When we push the switch then the both the contact of terminals are connected.

11. ALUMINUM FRAME - MODULAR PANELS

Order Code - 69700.

Aluminum Lighting Installation trainer Rack madeup aluminium profile size 40×40mm, foldable and light in weight 10 panel setup can be interchange convidently to perform experiments. Dimention Length 1100 × Hieght 1000×Depth 350mm.

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