Custom Low Voltage Led Lighting Control System
By Pannon Wiring Inc

Features

Applications:

- Smart Home.
- Office.
- Retail Store.
- Building.

PLC Control:

- 1 master and up to 8 remote base control panels per system.
- Up to 720 dimmable Led lighting zones per system.
- 0-10V and PWM dimming methods for 24 VDC low voltage lighting zones.
- 0-10V, PWM, TRIAC-Reverse & forward Phase dimming for line voltage lighting zones.
- Each lighting zones are equipped with fast acting (resettable) circuit protector.
- All 24 VDC lighting zones are Class-2 circuits.
- Lighting control system is fully customizable for the project specific needs (only pay for what you need).

Wall Stations:

- Up to 16 HMIs (touch screen panels) can be used with the system.
- 4inch, 6inch, 8inch, 10inch, 12inch and 15inch HMIs are available.
- Security code protection can be set for any selected HMI screen.
- Hundreds of control screens can be created on each HMI.
- Local low voltage momentary push buttons can be used to control lighting zones as well.

Remote Control:

- Username and password protection for up to 15 different users.
- Remote control App available for tablet and smartphone.
- Web control with Windows computer.

24 VDC Led Lighting Circuit:

- System uses constant current Class 1 or Class 2 Led driver's low voltage output to energize multiple Led lighting zones.
- PLC controlled relays are turning on/off the 24 VDC power for the led lighting zones.
- PLC controlled low voltage dimming controllers (0-10V or PWM) are setting the lighting zones for the preset or desire level.
- Each lighting zones are Class 2 and protected with 4A fuse (or resettable circuit protector).
- Maximum 80 Watts per 24 VDC lighting zones.

120 VAC Lighting Circuit:

- PLC controlled relay panel is turning on/off the 120 VAC lighting zones.
- 0-10V, PWM, Reverse & Forward Phase dimming protocols.
- Every four 120 VAC lighting zones are protected with 20A circuit breaker.
- Maximum 200 Watts per 120 VAC lighting zones (or can be boost to 1920W with Lutron Power Booster).

Additional Features:

- Timers.
- Temperature control.
- Ventilation control.
- Pump control.
- Solenoid-valve control.
- Garage door control.
- Integration: Modbus RTU, TCP/ASCII
- System sends Email to client: Event, alarm…

Specifications

Electrical:

- **100-240 VAC, 50/60Hz 1-Phase.**

Standards:

- **UL.**
- **CE.**

Environment:

- **Operating: 0°C to 40°C (32° F to 104° F).**
- **Humidity: 20- 90% RH non-condensing.**
- **UL Type 1, Non-Hazardous Locations.**
- **Wall mounting (Vertical).**

Terminals:

- **Terminal blocks accept wire size 26-10AWG, (30A, 300V rated) for all field connections.**
- **Tightening Torque for field connections 0.5 Nm (4.4 lb-in). Copper wire only!**

Circuit Protection:

- **Built in miniature circuit breaker 20A, 277VAC / 48VDC, 1-pole C curve, thermal magnetic, 10kA SCCR.**
- **Built in fuse terminal blocks (100kA SCCR) with indicator (4A fuses) for each 24 VDC zone.**
- **GMA series, compact dimension (5mm x 20mm), fast acting, 4A, 250VAC, glass tube fuses.**
- **Built in resettable circuit protectors with indicator available.**

Wiring:

- **THHN Stranded #14 & #12 Cu, 600V rated (Internal Power Circuit).**
- **Z+F Insulated Wire Ferrules (Internal Wiring).**
- **Multi-conductor MTW #16 & #18 Cu, 600V rated (Internal Control Circuit).**
- **For field wiring use copper wire only, with rating of 75°C/167°F!**

System Limit:

- **1 Master control base with up to 8 Remote Bases.**
- **Up to 80 dimming lighting zones per Base.**
- **Up to 9 Relay Control Panels (80 zones each) per system.**
- **Up to 720 dimming zones per system.**
- **Up to 64 inputs (push buttons) for Wall Stations per Base.**
- **Up to 576 inputs (push buttons, occupancy sensors) for Wall Stations per system.**
- **Up to 16 HMIs (touch screen panels) per system.**

CPU Specifications:

- **User Memory: 50MB (Includes program, data and documentation).**
- **Memory Type: Flash and Battery Backed RAM.**
- **Data Logging/Project Transfer: microSD card slot.**
- **Battery (optional): Note: Although not needed for program backup, a battery is included with the CPU. Install this battery if you want the CPU to retain the Time and Date along with any Tag name values that you have set up as retentive.**

System Example

System Example

Distribution Panel 120 VAC/60HZ

- 120 VAC power
- 120 VAC power
- 120 VAC power
- 120 VAC power
- 120 VAC power

24 VDC Class 1 & 2 LED Drivers

up to 8 remote base control panels

Master Base Control Panel #0

Remote Base Control Panel #1

24 VDC input

Relay Control Panel #0

Class-2 24 VDC output

120 VAC Dimming Control Panel #0

HMI

HMI

Push Buttons

Occupancy Sensors

0-10V LED Dimming Controllers

120 VAC Lighting zone 1

120 VAC Lighting zone 2

24 VDC Led Lighting Zone 1

24 VDC Led Lighting Zone 2

24 VDC Led Lighting Zone 3

24 VDC Led Lighting Zone 4

1 Master plus 8 Remote Base Control Panel per system.

Up to 80 dimming lighting zones per Base Control Panel.

Up to 9 Relay control Panels (80 zone each) per system.

Up to 720 dimming zones per system.

Up to 64 input (push buttons) for wallstations per Base Control Panel.

Up to 576 input (push buttons) for wallstations per system.

Up to 16 HMI (touch screen) panels per system.