Load Control Panel Relays
Installation Instructions

Load:Logic™ Control Panels

Installation Overview

The installation instructions contained in this document are provided as a guide for proper and reliable installation. All electrical wiring and mounting hardware should be prepared with consideration of the requirements outlined in the wiring and mounting diagrams contained in these instructions.

These instructions include information as follows:

Precautions
Description
Product Configuration
Installing Individual Relay Cards
Connecting Power to the Panel
Connecting Loads
Connecting Low Voltage Inputs
Operating the Panel
Troubleshooting
Relay Specifications

Precautions

- **READ AND FOLLOW ALL SAFETY INSTRUCTIONS.**
- **CAUTION - RISK OF ELECTRICAL SHOCK.** To prevent electrical shock, turn OFF power at the circuit breaker before installing or servicing unit. Never wire energized electrical components.
- **NOTICE:** For installation by a licensed electrician in accordance with National and/or local Electrical Codes and the following instructions.
- **CAUTION: USE COPPER CONDUCTOR ONLY.**
- Be sure to read and understand all instructions before installing or servicing unit
- For Indoor use only. Do not use outdoors.
- Do not mount near gas or electric heaters.
- Disconnect switch or a circuit breaker must be provided and marked as the disconnecting device.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
- Confirm that device ratings are suitable for application prior to installation.
- No user serviceable parts contained inside unit. Refer all service related questions to the factory.
- All servicing shall be performed by qualified service personnel.
- Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
- Use only materials and components approved for electrical installations.
- **NOTICE:** Do not install if product appears to be damaged.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- Do not use this equipment for other than intended use.

SAVE THESE INSTRUCTIONS!

Description

Relays are designed to be installed in Hubbell 's Load:Logic™ Control Panels only. Individual relays of any type can be placed in any position in the panel. Two pole relays fit in the same space as one pole relays. Relay types are as follows:

Product Configuration

Relay Model	Relay Type
R21HN	Electrically held, 20A/1P, 120/277V AC, 14kSCCR, N/O
R31LX	Latching relay, 30A/1P, 120/277V AC, 18kSCCR
R202HN	Electrically held, 20A/2P, 480V AC, 14kSCCR, N/O
R202HC	Electrically held, 20A/2P, 480V AC, 14kSCCR, N/C

NOTE: *R202HC cannot be used in emergency circuits.*

Installing Individual Relay Cards

Install relays in the panel as follows:

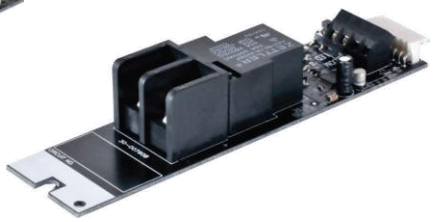
1. Disconnect the low voltage control input plug located at the top of the motherboard.
2. Align the relay board in the desired relay position and insert the Relay Card Plug Connector (Male) into the socket (Female) on the motherboard. Be sure that all of the pins line up and that the connection is tight.
3. Insert and tighten the Relay Card Mounting Screw. Be sure that when tightened that the Relay Card Plug Connector does not loosen due to the torque force. See the Relay Specifications section on page 5 for appropriate torque ratings.

All terminations within the panel enclosure require installation by a licensed electrician in accordance with National and/or local Electrical Codes

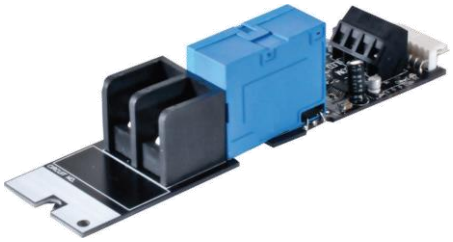
WARNING: *ALWAYS* remove supply power to the panel motherboard prior to making any connections between relay boards and panel motherboard. Failure to do so may result in personnel injury, damage to the panel, and void its warranty.

R202HN & R202HC

R21HN



R31LX



Connecting Loads

With the power turned OFF, route the electrical system line and load leads through the line voltage area of the panel shown in **Figure 1**. Connect line and load leads for each lighting load to the output terminals of the appropriate relay as delineated in the project plans and/or Panel Load Schedule. Space is provided for the circuit identification number to be written adjacent to the terminals on each relay card

Caution: Prior to making any connections to the relay outputs, verify that none of the loads are shorted. Failure to do so may result in personnel injury, damage to the panel, and void its warranty.

Notice: Use the Panel Load Schedule Form supplied in the clear plastic pocket inside the panel door to record the circuit relay assignments while connecting the relays.

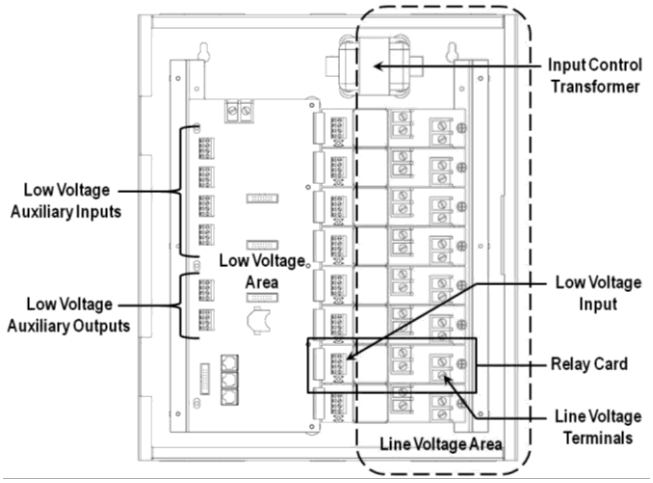
Connecting Low Voltage Inputs

Bring the low voltage wiring for the contact inputs in through the knockouts in the low voltage wiring area where indicated in **Figure 1**. Each relay card includes one (1) low voltage input. Inputs are software configurable through programming to support momentary switches, maintained switches (latching), occupancy sensors, or photocells. These inputs may be connected prior to programming. Inputs may be connected to any terminal location regardless of final control programming. Connect contact closure input devices to the input terminals using 18 AWG wire.

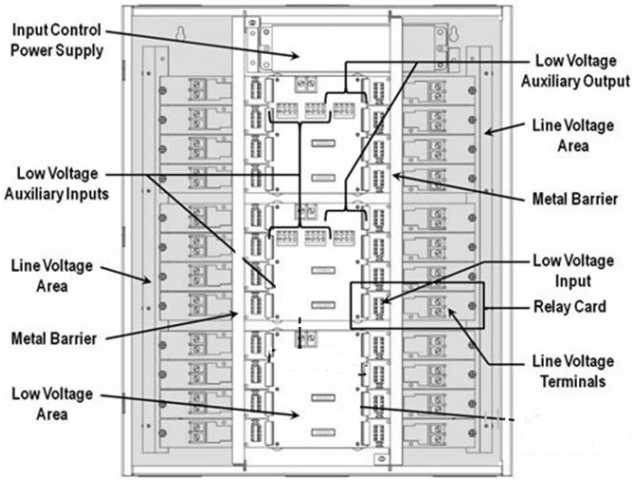
Notice: Use the Panel Load Schedule Form supplied in the clear plastic pocket inside the panel door to record the low voltage input types while making connections.

Figure 1 - Panel Interiors

4- and 8-relay

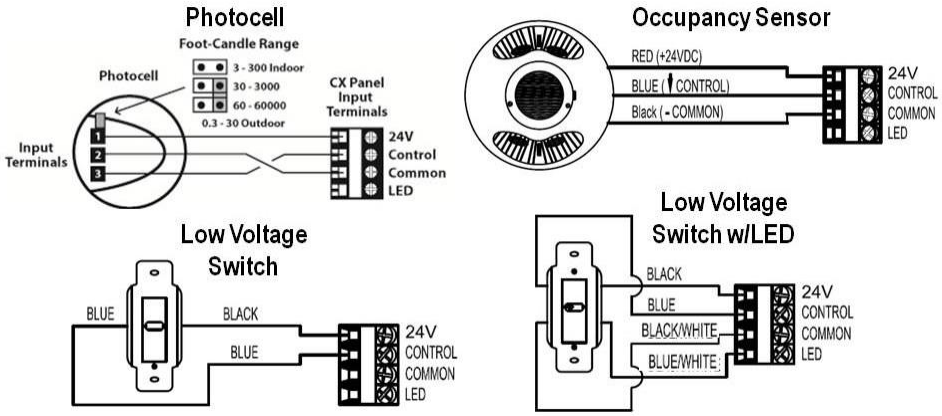


16-relay



Low Voltage Input Wiring Diagrams shown in **Figure 2** below are for use with Hubbell Wiring Device-Kellems input devices ONLY. Diagrams may not apply to input devices from other manufacturers.

Figure 2 - Low Voltage Input Wiring Diagrams

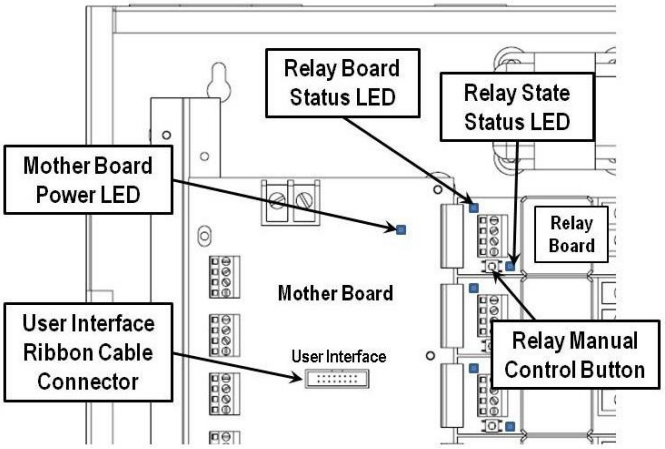


Energizing the Panel

A user interface control ribbon cable is supplied connected between the user interface ribbon cable connector on the motherboard and the User Interface Module that is attached to the panel door. **See Figure 3**. The red indicator (tracer) in the cable should be on the same side as the PIN 1 designation at the connection marked User Interface in the panel's motherboard. The green ground jumper is supplied connected between the panel door and the panel housing ground lug, labeled "GND".

Provide control power to the panel and restore power to the circuits at the source circuit breakers. The panel will take a few moments to initialize during which time the user interface screen on the front of the panel door will initiate and display the clock, date, and time zone un-programmed factory defaults. Inside the panel, the motherboard power status LED will show continuous "green". The relay board status LED will turn ON "green" for approximately 2 seconds and then go OFF. Push, but do not hold the relay manual control button on each relay card to operate each relay to test functionality. The relay status LED will turn ON "red" when the relay is energized and be OFF when the relay is un-energized. The panel is now fully functional and ready to control the loads.

Figure 3 - Panel Start-Up Controls



Troubleshooting

A blinking “green” Relay board status LED indicates that communication has not been properly established for this card. Contact Hubbell Wiring Device-Kellems Technical Service at (800) 288-6000 for assistance and replacement as required. A complete Troubleshooting Guide is contained in the “Load Control Panel User Manual” provided as a downloadable document at www.hubbell-wiring.com.

Relay Specifications

- Overall Dimensions:
  - All relay cards: 1.625” W x 5.5” L
- Relay Load Ratings:
  - **R21HN** - 120/277V AC, Electrically Held, N/O - 20Amps - HID and Fluorescent Standard Ballast; 16Amps - Fluorescent Electronic Ballast/LED Driver; 15 Amps - Tungsten (120VAC only), 1HP - 120VAC; 3/4HP 277V AC
  - **R31LX** - 120/277V AC, Latching - 30Amps - HID and Fluorescent Standard Ballast at 120/277 V AC; 16 Amps - Fluorescent Electronic Ballast/LED Driver at 120/277 V AC; 20A mps - Tungsten at 120V AC; 1HP - 120V AC; 3/4HP 277V AC
  - **R202HN** - 208/240/480V AC, Electrically Held, N/O - 16Amps - HID Ballast; 2HP
  - **R202HC** - 208/240/480V AC, Electrically Held, N/C - 16Amps - HID Ballast; 2HP

- Low Voltage Inputs:
  - One (1) per each relay board
  - Low Voltage Switches: **DSM30 or DSL30 Series** - 2- or 3-wire momentary or maintained style, with or without LED indication. LED indication support is LED - “ON” when switch is active and LED - “OFF” when switch is inactive. Green “ON” with Red “OFF” indication is not supported.
  - Occupancy Sensor Input: **ATD, ATP and ATU 24V DC Series** - Three-wire 24 VDC, maximum of eight (8) sensors can be connected to 4- or 8-relay panels.
  - Photocells: **DHIP, DHOP, DHAP and DHSP**: Three wire 24VDC power. **DHADC**: 0-10V DC control input.

- Operating Environment:
  - Indoor Use Only; 0 to 50°C; Relative Humidity: 0 to 90% non-condensing.

- Line Voltage Terminal Torque Ratings:
  - **R21HN** and **R31LX** maximum torque = 16 lb-in.
  - **R202HN** and **R202HC** maximum torque = 12 lb-in.

Panel Load Schedule Form

A Panel Load Schedule Form is supplied in the clear plastic pocket inside the panel door to record the lighting circuit relay assignments while connecting the relays. Low voltage input types and assignments should also be recorded on the form.