



**Building Automation, Inc.**

## CXR Lighting Control Relays – For use with CX Series Panels Installation Instructions

### **Hubbell Building Automation**

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### **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 approved materials and components (i.e. twist on connectors, electrical box, etc.) as appropriate for installation.
- **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

CXR Relays are designed to be installed in CX Series 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:

Relay Model	Relay Type
CXR	2N 20A, 1P, NO Elect Held, 120/277VAC
	3L 30A, 1P, Latching, 120/277V, 20A 347VAC
	TN 20A, 2P, NO Elect Held, 208/240/480VAC
	TC 20A, 2P, NC Elect Held, 208/240/480VAC

## INSTALLING INDIVIDUAL RELAY CARDS

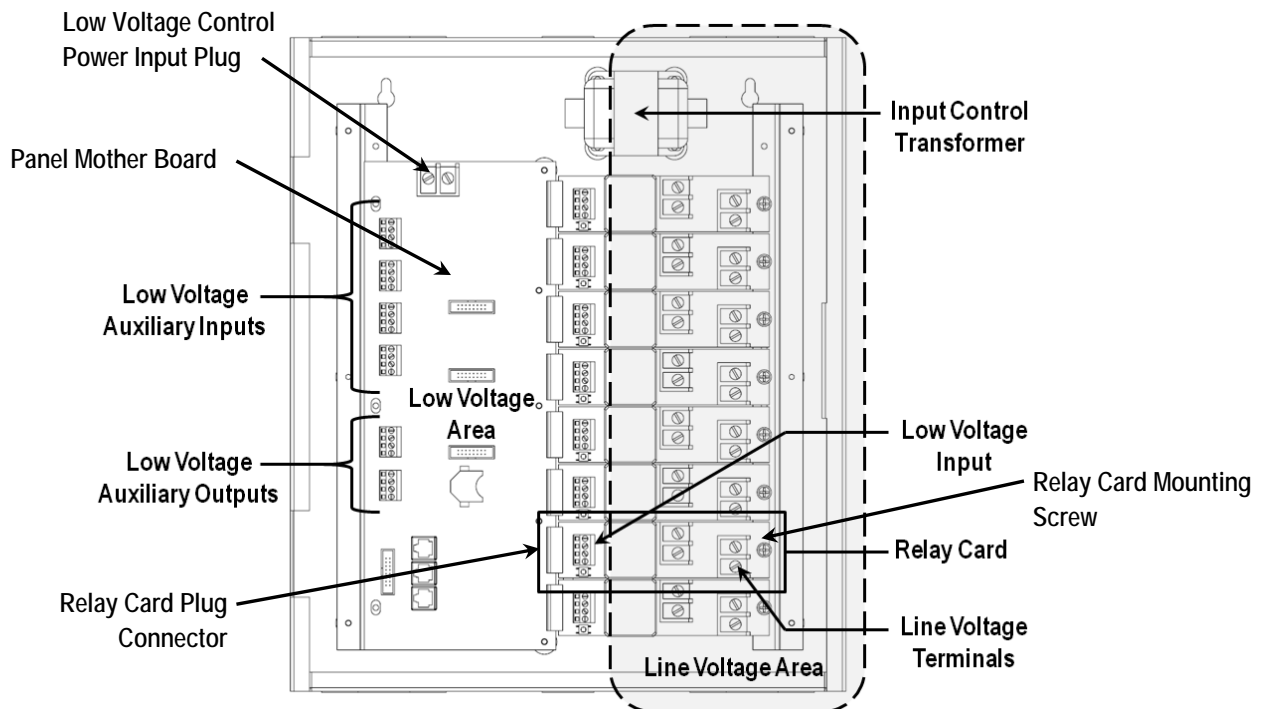
Install Relays in the CX Panel as follows:

1. Disconnect Low Voltage Control Input Plug located at the top of the Mother Board
2. Align the relay board in the desired relay position and insert the Relay Card Plug Connector (Male) into the socket (Female) on the mother board. 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.

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

**Caution:** ALWAYS remove supply power to the Panel Mother Board prior to making any connections between relay boards and panel mother board. Failure to do so may result in personnel injury, damage to the panel, and void its warranty

**Figure 1 – CX Panel Interior**



## CONNECTING LIGHTING LOADS

With the power turned off, route the lighting system line and load leads through the high 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:** If no Panel Load Schedule exists, use the Panel Load Schedule Form supplied in the clear plastic pocket inside the Panel Door to record the lighting circuit relay assignments while connecting the relays

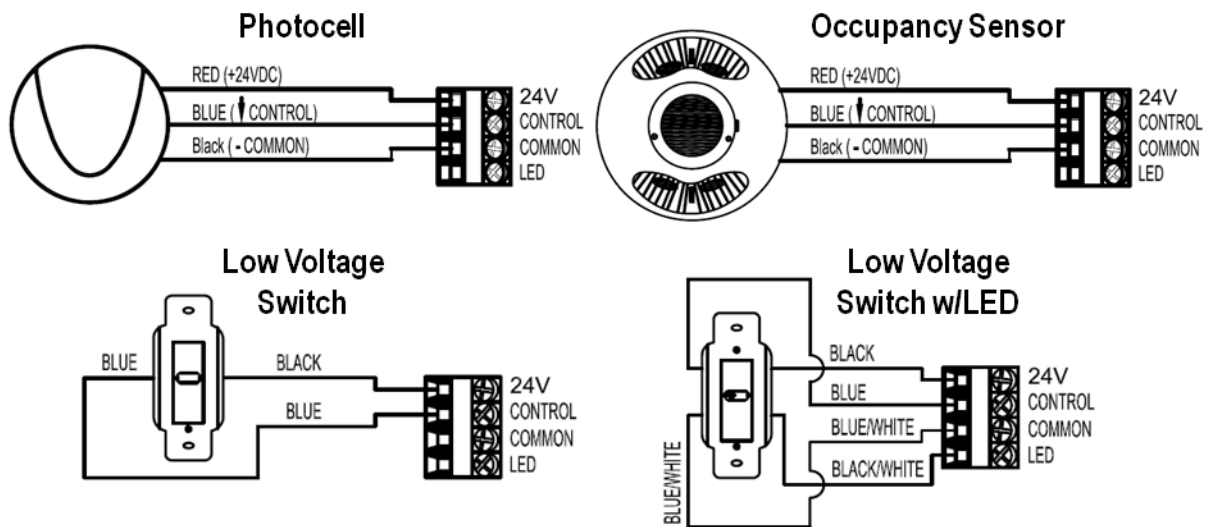
## CONNECTING LOW VOLTAGE INPUT

Bring the low voltage wiring for the contact inputs in through the knockouts in the low voltage wiring area where indicated in Figure 1. The CXR Relay Card includes one input. The input is software configurable through programming to support momentary switches, maintained switches (latching), motion sensors, or photocells. The input 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.

Low Voltage Control Diagrams shown in Figure 3 below are for use with Hubbell Building Automation Input Devices ONLY. Diagrams may not apply to input devices from other manufacturers.

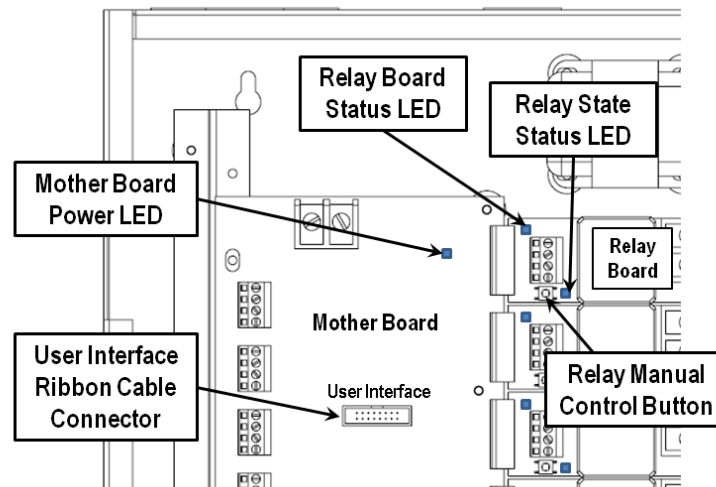
**Figure 2 - Low Voltage Input Wiring Diagrams**



## OPERATING THE PANEL

Connect the User Interface control ribbon cable to the User Interface Ribbon Cable Connector on the Mother Board where shown in Figure 3. The User Interface control ribbon cable is supplied connected to the User Interface Module that is attached to the panel door. Connect the green ground jumper to the panel housing ground lug, labeled “GND” with the hardware provided. The green ground jumper is supplied attached to the panel door. Provide control power to the panel and restore power to the lighting 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 Mother board 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 State 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 lighting 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 Building Automation Technical Service at (888) 698-3242 for assistance and replacement as required.

## CXR RELAY SPECIFICATIONS

- Relay Load Ratings:
  - CXR2N – 120/277VAC, Electrically Held, NO, 20Amps, HID and Fluorescent Ballast 15Amps Tungsten (120V only), 3/4HP at 120V and 277V,
  - CXR3L – 120/277/347VAC, Latching, 30Amps, HID and Fluorescent Ballast at 120/277 VAC, and 20Amps Tungsten at 120VAC, 1HP at 120V, and 20Amps, HID and Fluorescent Ballast at 347V
  - CXRTN – 208/240/480VAC, Electrically Held, NO, 20Amps, HID, Ballast, 2HP
  - CXRTC – 208/240/480VAC, Electrically Held, NC, 20Amps, HID, Ballast, 2HP
- Low Voltage Input – One located on relay board:
  - Low Voltage Switches – 2 or 3 wire momentary or maintained style, with or without LED indication.
  - Motion Sensor Input – Three wire 24 VDC,
  - Photocell – Four wire 24VDC power, 0-10V DC control input.
- Operating Environment:
  - Indoor Use Only; 0 to 50°C; Relative Humidity: 0 – 90% non-condensing.