

**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.
- If any Emergency Circuits are fed or controlled from this panel, it must be located electrically where fed from a UPS, generator, or other guaranteed source of power during emergency and power outage situations.

**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 relay. Relay types are as follows:

Model	Relay Type	
CXR	2N	1-Pole, Elect. Held N.O. 20A@120VAC-Tungsten; 16A @ 277VAC-Elect. Ballast; 20A @277VAC-Mag. Ballast; 14K SCCR @277VAC
	3L	1-Pole Latching 20A @120VAC-Tungsten; 16A @120/277VAC-Elect. Ballast; 30A @120/277VAC-Mag. Ballast; 20A @347VAC-Elect. Ballast; 18K SCCR @347VAC
	3LEM	1-Pole, Latching 20A @120VAC-Tungsten; 16A @120/277VAC-Elect. Ballast; 30A @120/277VAC-Mag. Ballast; 20A @347VAC-Elect. Ballast; 20A @347VAC-Mag. Ballast; 5K SCCR @347VAC
	TN	2-Pole, Elect. Held N.O. 20A @208/240/480VAC Mag. Ballast; 14K SCCR @480VAC
	TC	2-Pole, Elect. Held N.O. 20A @208/240/480VAC Mag. Ballast; 14K SCCR @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.*

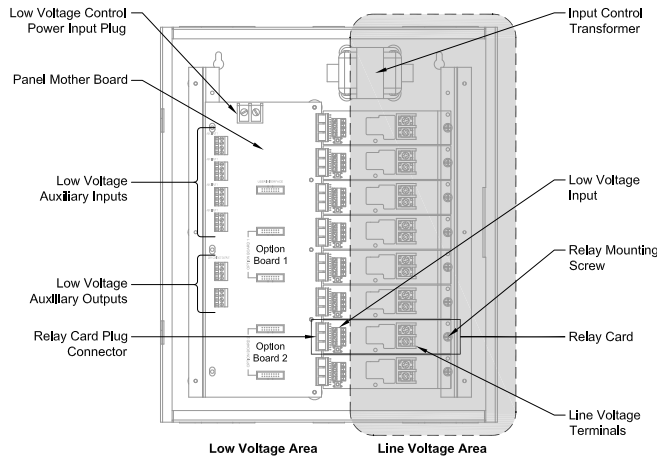


Figure 1 - CX Panel Interior

**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 2 below are for use with Hubbell Control Solutions Input Devices ONLY. Diagrams may not apply to input devices from other manufacturers.

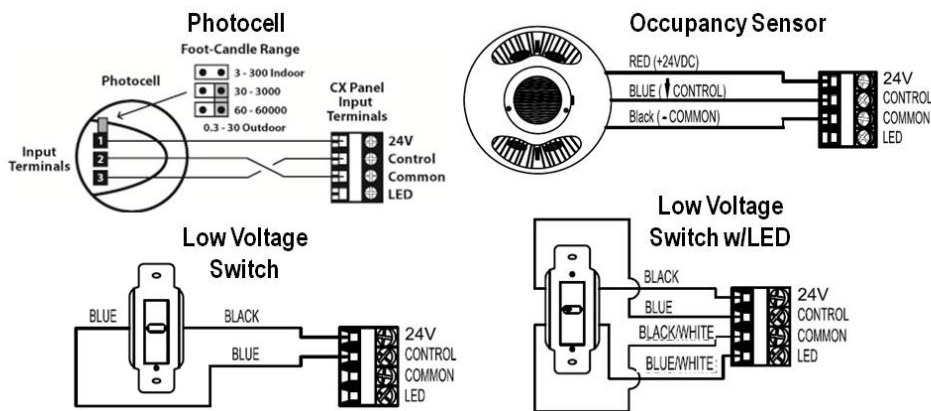


Figure 2- Low Voltage Input Wiring Diagrams

## OPERATING THE PANEL

After installation of the panel and following the CX panel instructions, 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 turn off.

Push, but do not hold the Relay Manual Control button (Figure 3) on each relay card to operate each relay to test functionality. This is a physical override to indicate the internal relay has the capacity to function. It does not confirm communication on the BUS.

The Relay State Status LED (Figure 3) will turn on "red" to indicate a form of control has been established to that relay. Whether the red LED is on or off depends on programming and relay state combination and should only be used to reference the relay is being controlled. The red LED does not indicate a problem.

The panel is now fully functional and ready to control the lighting loads.

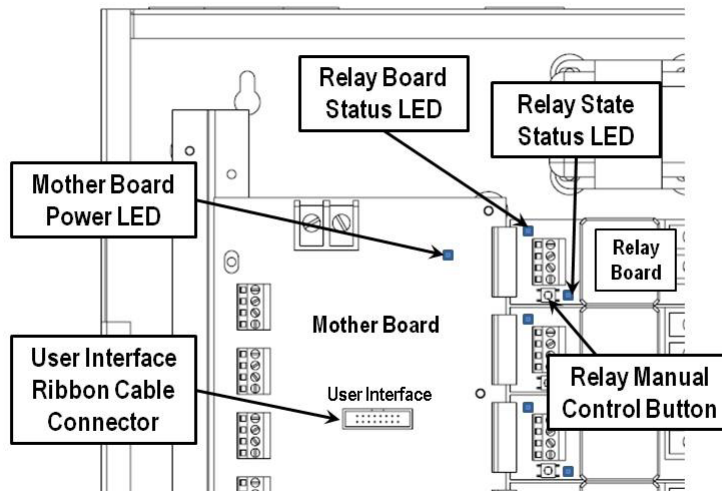


Figure 3- Low Voltage Input Wiring Diagrams

## CX Emergency Relay (CXR3LEM) Function

If any Emergency Circuits are fed or controlled from this panel, it must be located electrically where fed from a UPS, generator, or other guaranteed source of power during emergency and power outage situations. When the panel loses normal power the CXR3LEM relay will close its contacts providing the Emergency Circuit power. When normal power is established the CXR3LEM relay will turn on, off or last state based on programming.

## TROUBLESHOOTING

A blinking "green" relay board status LED indicates that communication has not been properly established for this card.

1. Power down the panel
2. Remove the relay card and check the connectors on the relay card and on the motherboard to verify they are undamaged.
3. Reinstall the relay card
4. Power up the panel and see if the LED indicator light stopped blinking and verify the relay card is seen through the controller.

The relay does not appear to turn ON.

1. With the load removed, check continuity of the relay terminal blocks.
  - a. If the green relay board status LED is on there should be resistance
  - b. If the green relay board status LED is off there should be no resistance
2. Verify the supply breaker is on and energized
3. Relay contact may be damaged

The relay does not appear to turn OFF the load.

1. With the load removed, check continuity of the relay terminal blocks.
  - a. If the green relay board status LED is on there should be resistance
  - b. If the green relay board status LED is off there should be no resistance
2. Relay contact may have been welded shut.
3. Circuit from supply breaker may be wired in parallel to load.

For further assistance contact Hubbell Control Solutions Technical Service at (800) 888-8006 for assistance and replacement as required. Or visit our website chat line found on our website. <https://www.hubbell.com/hubbellcontrolsolutions/en/>

72-00447B

**CXR RELAY SPECIFICATIONS**

Characteristics		Load Ratings					SCCR Rating
Type	Poles	VAC	Tungsten	Elect. Ballast	Magnetic Ballast	Motor Rating	
CXR2N - Elec. Held, N.O.	1	120	20A	N/A	N/A	3/4HP	14K
		277	N/A	16A	20A	3/4 HP	
CXR3L - Latching	1	120	20A	16A	30A	1 HP	18K Amps
		277	N/A	16A	30A	N/A	
		347	N/A	20A	N/A	N/A	
CXR3LEM - Latching *	1	120	20A	16A	30A	1 HP	5K Amps
		277	N/A	16A	30A	3/4 HP	
		347	20A	20A	20A	N/A	
CXR2N - Elec. Held, N.O.	2	208/240/480	N/A	N/A	20A	2 HP	14K Amps
CXR2C - Elec. Held, N.C.	2	208/240/480	N/A	N/A	20A	2 HP	

\* Includes mechanical override lever, suitable for use on emergency lighting circuits

**GENERAL SPECIFICATIONS**

Operating Voltages	CXR2N 120/277VAC (50/60Hz) CXR3L 120/277/347VAC (50/60Hz) CXR3LEM 120/277/347VAC (50/60Hz) CXRTN 208/240/480VAC (50/60Hz) CXRTC 208/240/480VAC (50/60Hz)
Class 2 output rating	CX04/CX08; 24VDC, 150mA (max. 300mA) CX16/CX24; 24VDC, 150mA (max. 900mA)
Class 2 terminal	Wire size 14, 16, 18, 20, 22 AWG Recommended Tightening Torque: 0.45 N-m (4 in-lbs.)
Status Indicator	Green - Indicates relay is in closed position Red- Dependant on input being programmed
Operating environment	32°-112°F (0°-50°C) Relative humidity (non-condensing): 10%-90%
Inrush withstand	500A @ 2ms (CXR3LEM)
Dimensions	1.625" W x 5.5" L (41.28mm W x 139.7mm L)
Mounting	Mounts inside a CX series panel Pre-drilled mounting hole for securing relay card Individual relay cards - 1P and 2P are equal size
Safety Standards	UL 916, CAN/CSA C22.2 No.205 UL 924, CAN/CSA C22.2 No. 141 Emergency Lighting (CXR3LEM)
Warranty	5 year limited
Control input device types	Low voltage switches - Momentary or maintained style, Pilot light indicator support Occupancy sensor - Three wire, 24VDC Daylight sensor -Three wire 24VDC