CX Commercial Lighting Control Panels

HUBBELL Control Solutions

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HUBBELL Lighting

L3 I3 C3 4
L4 I4 C4 5
L5 I5 C5 6

CX Panels Replace Costly and Labor Intensive Conventional Time Clocks and Contactors.

CX Panels can save up to 50% in labor and materials when used in place of conventional time clock and contactor combinations. The use of the Astronomical Clock in place of roof mounted photocells increases cost savings, lowers maintenance, and improves reliability.

Save Time

- Compact single enclosure includes relays, control functions and input terminals for low voltage devices.
- All inputs are software assignable to any HBA low voltage input device including switches, motion sensors, and photocells.
- Low voltage devices connect directly to panel without any ancillary parts such as power packs.
- LCD user interface incorporates easy to follow intuitive programming tools.

Lower Cost

- Can save up to 50% in parts and labor cost over conventional time clock and contactor systems.
- Lowers energy consumption with expanded programming options.
- Astronomical clock eliminates the need for roof mounted photocells.
- Pre-programmed scenarios offer a wide variety of options to maximize energy savings for each possible control zone.

Save Energy

- HBA CX Panels meet ASHRAE 90.1, IEEC, and California (CEC) Title 24 energy codes.
- CX Panels contribute to LEED certification requirements.
- Allows multiple low voltage inputs from HBA switches, motion sensors, and photocells to enhance energy savings for scenarios such as manual switch ON and automatic motion sensor OFF control.

Increase Control

- Sunrise/sunset controls provided using internal astronomical clock.
- Scenarios offer many easy to use control combinations.
- Priorities and masking allow for personalized control solutions.

CX Panels Product Installation Features

The CX Series panels are self-contained lighting control systems. All inputs are low voltage and hard-wired to terminal blocks in the panel. Input power supply is multi-tapped or universal for typical service voltages. Line voltage terminals are located with generous space for easy connection.

1. **CX Panel User Interface** – The easy to use and understand color LCD Display with keypad has been designed based on input styles of commonly used devices such as cell phones.

2. **Panel Door Lock** – The CX Panel is designed to be locked once the qualified electrician has completed all connections. All programming, system status, and manual controls are available via the User Interface once the door is secured.

3. **Low Voltage Input Device Wiring Diagrams** – Indicates point-to-point connection requirements for each type of device.

4. **Line Voltage Input Leads** – These leads are marked for various input supply voltages.

5. **Control Power Transformer** – This transformer has multi-tap leads to be connected to common input line voltage supply.

6. **Control Power Disconnect** – A disconnect plug is provided for low voltage input control power to allow for safe removal and replacement of relay cards.

7. **Individual Relay Card** – Relays are individually mounted for easy replacement, improved reliability and to allow for panels to include any mix of relay types.

8. **Relay Manual Override Button** – Allows for relays to be manually operated. Manual control of relays is also available through the User Interface.

9. **Relay Status Light** – Indicates relay operation status.

10. **Relay Board Input Terminal Block** – Most types of low voltage input including Switches, Motion Sensors or Photocells may be connected to any relay input terminal block. These inputs are software assignable as to type and control. Any input can control any relay or group.

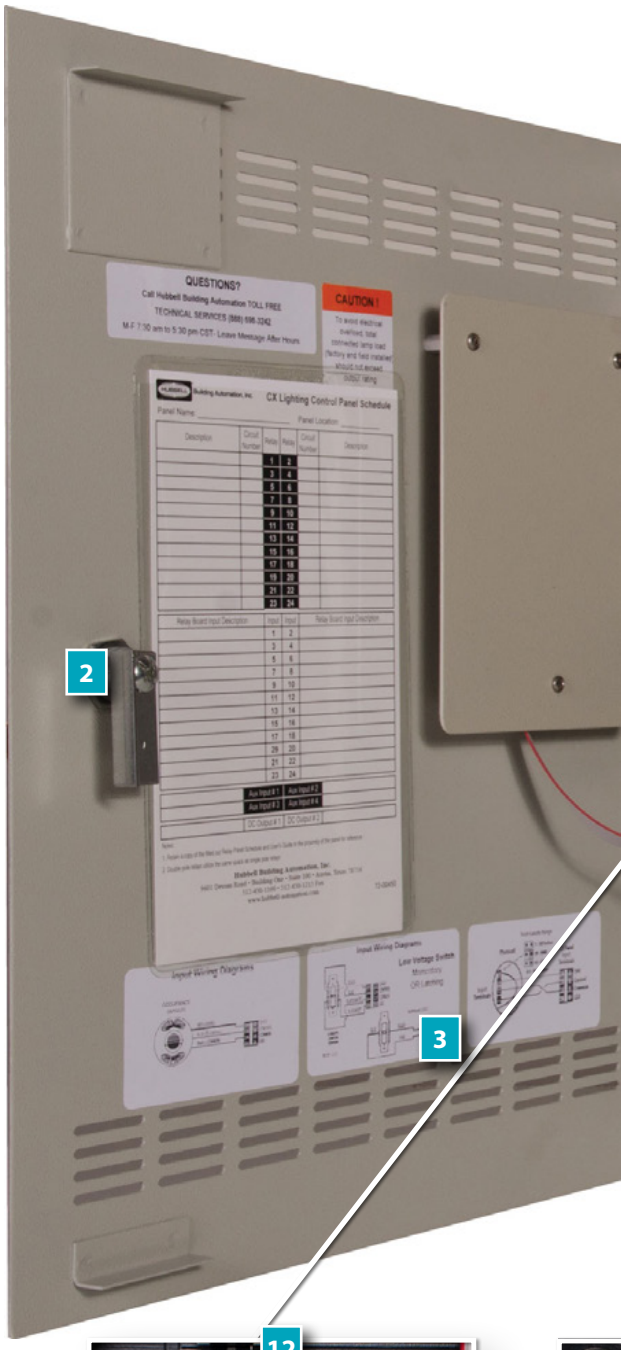
11. **Line Voltage Control Circuit Terminals** – Lighting circuits are connected to these heavy duty screw terminals. Each terminal will accommodate two #14 - #10 stranded or solid copper wire of the same type and size.

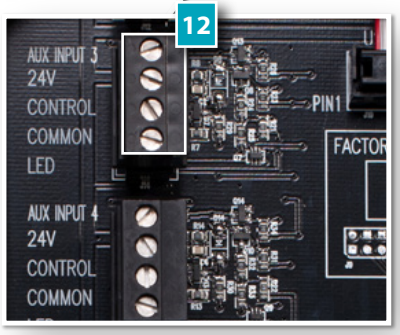
12. **Auxiliary Inputs** – The CX Panel is supplied with additional low voltage inputs to accommodate a wide variety of control scenarios that require more than one input for a relay or group. Any type of low voltage input including Switches, Motion Sensors or Photocells may be connected to any input terminal block. These inputs are software assignable as to type and control. Any input can control any relay or group.

13. **Dry Contact Output Terminals** – Each Output Terminal allows for the CX Panel to signal other systems with N.O./N.C. momentary or maintained contacts.

14. **Master/Secondary Panel Interface Card Connector** – Cards provided with the secondary panel provide easy connection with CAT5 or CAT5e cable.

15. **Wireway Divider** - Separates Line and Low Voltage wiring.





Auxiliary Inputs

Auxiliary Input Features

- Provisions for multiple device control of a single relay or group.
- Scenarios program allows for easy mapping of auxiliary inputs.

Dry Contact Output Features

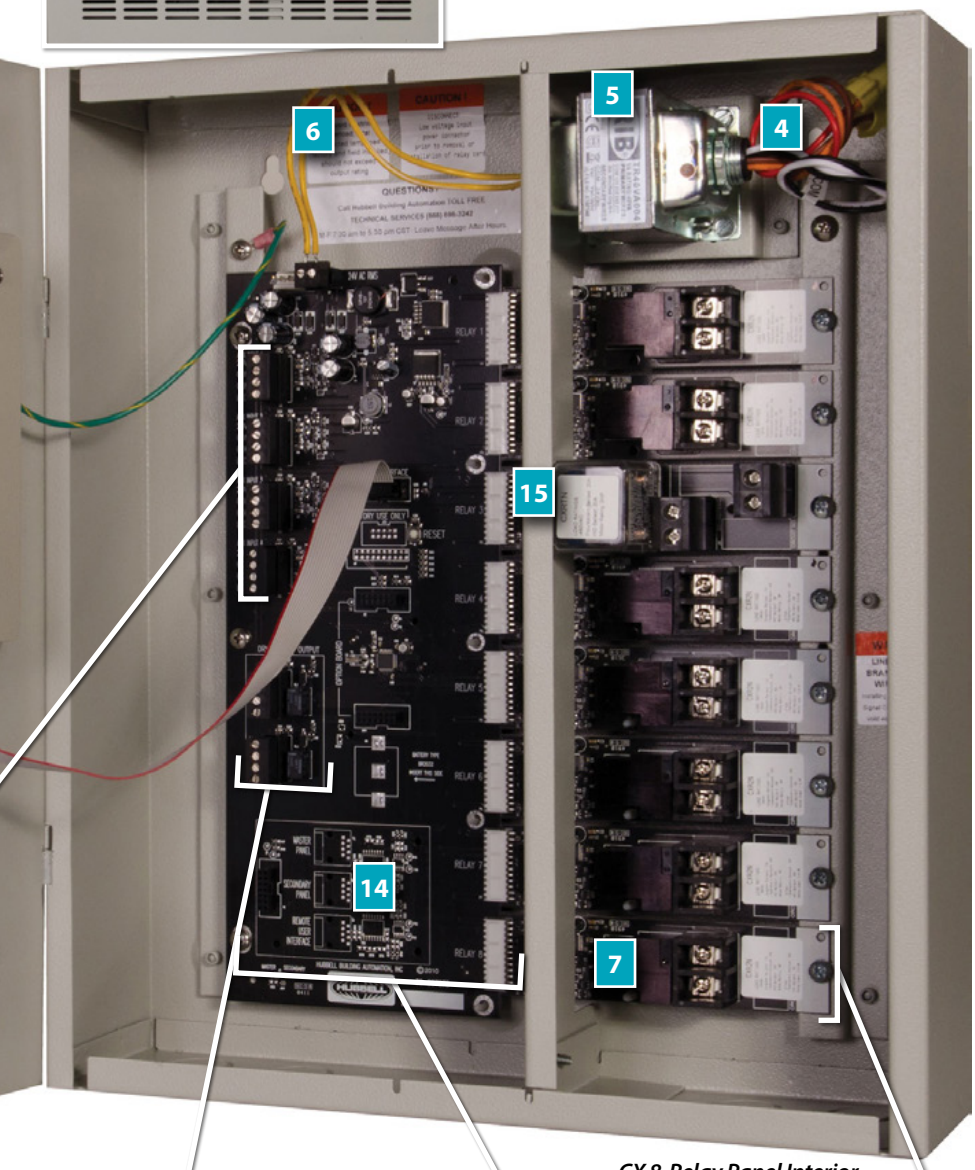
- Normally open or normally closed output.
- Momentary or maintained.
- Allows for interconnection to other building functions such as security, fire alarm, or building management system.

Relay Card Features

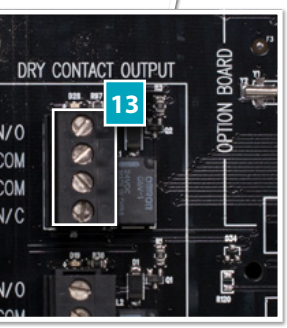
- 1-pole and 2-pole relays fit in the same sized space.
- Relay self-identifies once installed.
- Available 20A/1P N/O, 20A/2P N/O or N/C and 30A/1P latching.
- 14K SCCR for 20A/1P N/O, 20A/2P N/O or N/C.
- 18K SCCR for 30A/1P latching.

CX Dimming Card Features

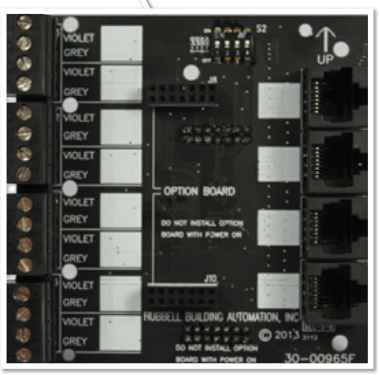
- Full range dimming with preset dimming levels.
- Ramp Up, Fade Down, Minimum Dim Level.
- Max Dim Level (Demand Response System Settings)
- Operates with 0-10V dimmable ballasts.
- Provides manual and automatic control of dimming levels.
- 8 Dimming channels per card.
- Works with CX switch stations.



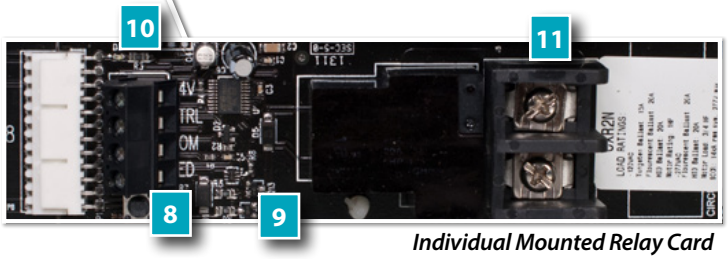
CX 8-Relay Panel Interior



Dry Contact Outputs



CX Dimming Card



Individual Mounted Relay Card

CX PANELS PROGRAMMING CAPABILITIES

The easy to use and understand color LCD Display has been designed based on input styles of commonly used devices such as cell phones.

Color LCD Display – Allows for most programming to be completed in a single screen. Right side scroll bars appear when more choices are available than are currently visible.

Function Keys – These keys provide programming choices in various screens. Key labels appear on-screen when keys are available.

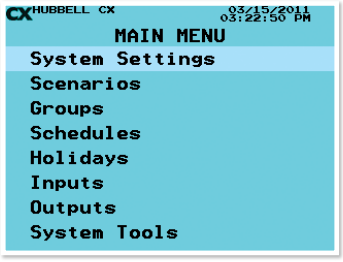
Alpha-Numeric Keypad – This keypad is used to populate names and numeric values while programming. Tap/Scroll operation is similar to that used for cell phones.

Escape Key – This key takes the user to the previous screen. Warning prompts when changes have been made but not saved.

Help Key – This key will bring up help screens in specific locations driven by the field that is highlighted.

Navigation Keys – Allows user to navigate Up/Down/Right/Left/ Toggle through editable fields to select program choices.

Enter Key – Use this key to make selections.



CX Main Menu

The CX Panel Main Menu presents easy to understand programming and system status choices. Press ENTER to begin programming from system home screen. Simply scroll up/down and then press ENTER to navigate to menu choices.

It's so EASY and INTUITIVE that a contractor can complete programming in less than 30 minutes for most projects.

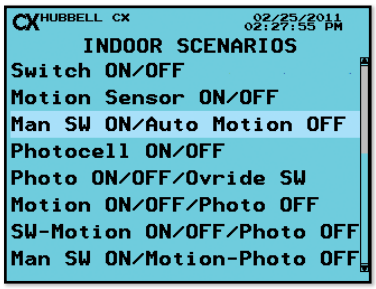
- Simple Arrow navigation and Enter buttons make selections easy.
- Color LCD screen allows for settings to be made in a single screen.
- All Low Voltage Inputs are assignable to any type of control device.
- Help screens are available throughout the program by touching the HELP key when the (?) symbol appears.
- Naming is made easy through selectable name input.
- Choose City and State from a large list of pre-configured longitude and latitude values.

CX Scenarios Programming

The Scenarios programming feature allows the user to select from a group of pre-programmed control schemes to more easily assign relays and inputs for the desired actions. The use of Scenarios will shorten programming time by only requiring unique input, automatically assigning characteristics, masking and priorities specifically associated with the selected behavior.

Outdoor Scenarios:

- Photocell ON/Photocell OFF
- Photocell ON/Schedule OFF
- Photocell ON/Schedule OFF/Override Switch
- Astro-Clock ON/Astro-Clock OFF
- Astro-Clock ON/Schedule OFF
- Astro ON/Schedule OFF/Override Switch



Indoor Scenarios

Indoor Scenarios:

- Switch(es) ON/OFF
- Motion Sensor ON/OFF
- Manual Switch ON/Auto Motion Sensor OFF
- Photocell ON/OFF
- Photocell ON/OFF/Override Switch
- Motion ON/OFF/Photocell OFF
- Switch-Motion ON/OFF/Photocell OFF
- Manual Switch ON/Motion-Photocell OFF
- Schedule ON/Schedule OFF
- Schedule ON/Schedule OFF/Override Switch
- Schedule ON/Schedule OFF/Blink Override Switch
- Schedule OFF/Blink Override Switch
- Schedule ON/Schedule OFF/Blink Sweep Switch
- Schedule OFF/Blink Sweep Switch
- Schedule ON/Schedule OFF/Switch ON-OFF After Hours
- Schedule ON/Schedule OFF/Sensor ON-OFF After Hours
- Master Override All Programming Switch
- Master Override All Programming Exterior Input

CX Programming Specifications

The CX Panel has a diverse set or programming capabilities designed to meet or exceed Energy Code requirements and give maximum flexibility to building users. The User Interface Main Menu is the gateway to easy input and development of system programming for the project. The system provides the following programming capabilities:

- System Settings for Time and Date, Astronomical Clock and System Global Settings
  - Astronomical Clock Select from Major U.S. Cities List
  - Relay Function, Blink Alert, and After Hours Sweep
  - 4 Open/Close Time Schedules
  - Panel Names, Power ON Settings, and Display Settings
- Scenarios Menu allows for the application of pre-programmed Indoor and Outdoor templates
  - User only needs to input unique information related to the selected Scenarios
  - Scenario auto-populates data related to specific chosen behavior
- 32 Groups are available that can include any or all relays
- 64 Schedules are available that can be ON only, OFF only or with both ON and OFF events
  - Schedules may be selected as M-F, M-F + Saturday, or All Days customizable per day
  - All schedules may include Holidays
  - Date ranges may be set for any Schedule
  - 4 levels of Priority can be applied to ON and OFF events independently
- Outputs are programmable to activate by any schedule or input
  - Maintained or Momentary, Normally Open or Normally Closed contact form selection
- Holidays may be "Block Schedule" dates or may have Holiday Schedules applied
  - A master list of standard holidays may be chosen as recurring year-after-year dates
  - 99 custom Month-Day-Years dates may be programmed
  - 4 Holiday schedules can be created and applied to any of the 99 dates
- Inputs are program assignable to any type of device
  - Switches, Motion Sensors, or Photocells can be connected to any input
  - Inputs may be jumpered and mapped to additional relays or groups
  - 4 levels of Priority can be applied to ON and OFF events independently
  - Masking can be applied to ON and OFF events independently
  - Panel provides device power for 8 devices on 4/8 relay panels and 24 devices on 16/24 relay panels
- System Tools include Access Control, Manual Control, Diagnostics and System Information
  - Program Save/Back-up/Restore
  - Upload/Save Program and Logging with

CX Commercial Lighting Control Panels

CX Master and Stand Alone, and Secondary Panels

The Hubbell Control Solutions CX Commercial Lighting Control Panels provide feature-rich and cost effective lighting control for maximum energy savings. The LCD User interface is located in the door and utilizes simple and intuitive scrolling menus to program, check status or update the panel. The easy to use Pre-Programmed Scenarios Menu makes project commissioning simple and fast.

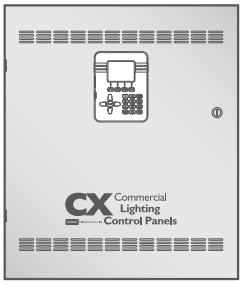
CX04 / CX08 Configurations

4-Relay Stand Alone[1] (4-Relay Panel is not available as a master or secondary panel.)

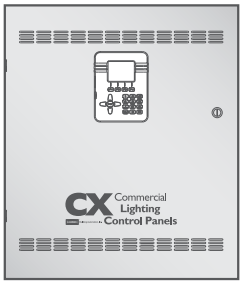
8-Relay Master

8-Relay Secondary

CX16 / CX24 Configurations



16-Relay Master



24-Relay Master

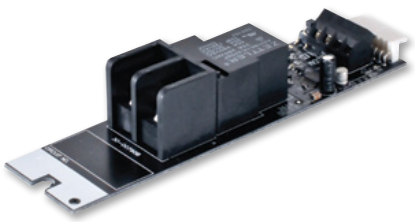
16-Relay Secondary

24-Relay Secondary

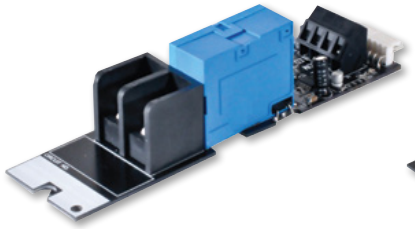
CXR Relays

Panel Mounted or Individual

The CX Panels have 4 types of available CXR relays. Each relay is individually board mounted and can be installed in any combination in the panel. Types include electrically held normally open (N/O), electrically held normally closed (N/C), and latching. Ratings are 20A/1P 20A/2P, and 30A/1P. Pre-Configured Panels are available with relays of the same type. Combinations of any relay type must be ordered separately and field installed into Space Only standard panels.



CXR2N 20A/1P
14K SCCR



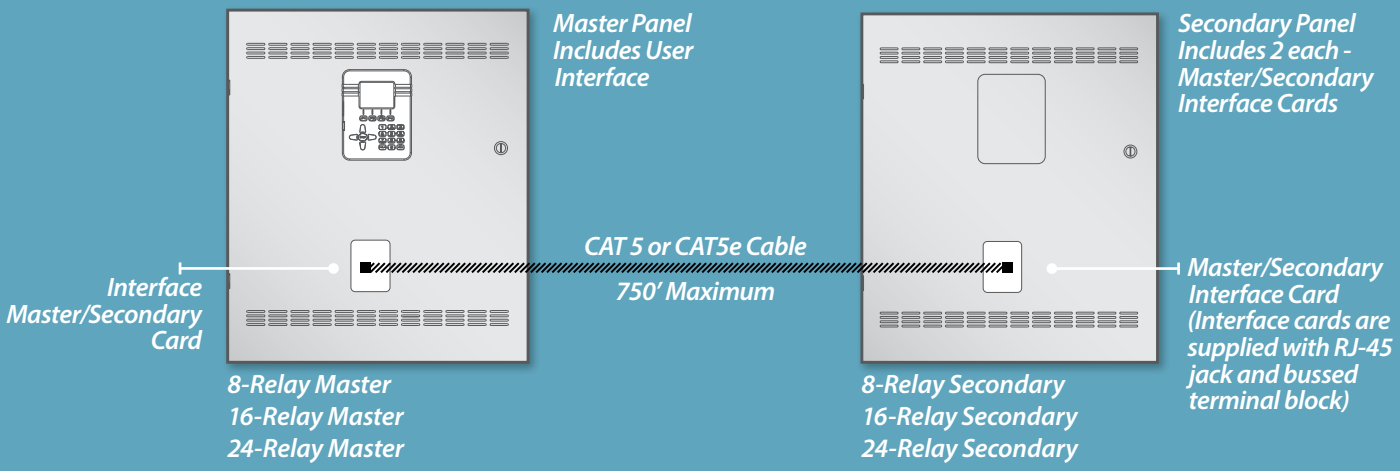
CXR3L 30A/1P
18K SCCR

CXRTN, CXRTC 20A/2P
14K SCCR

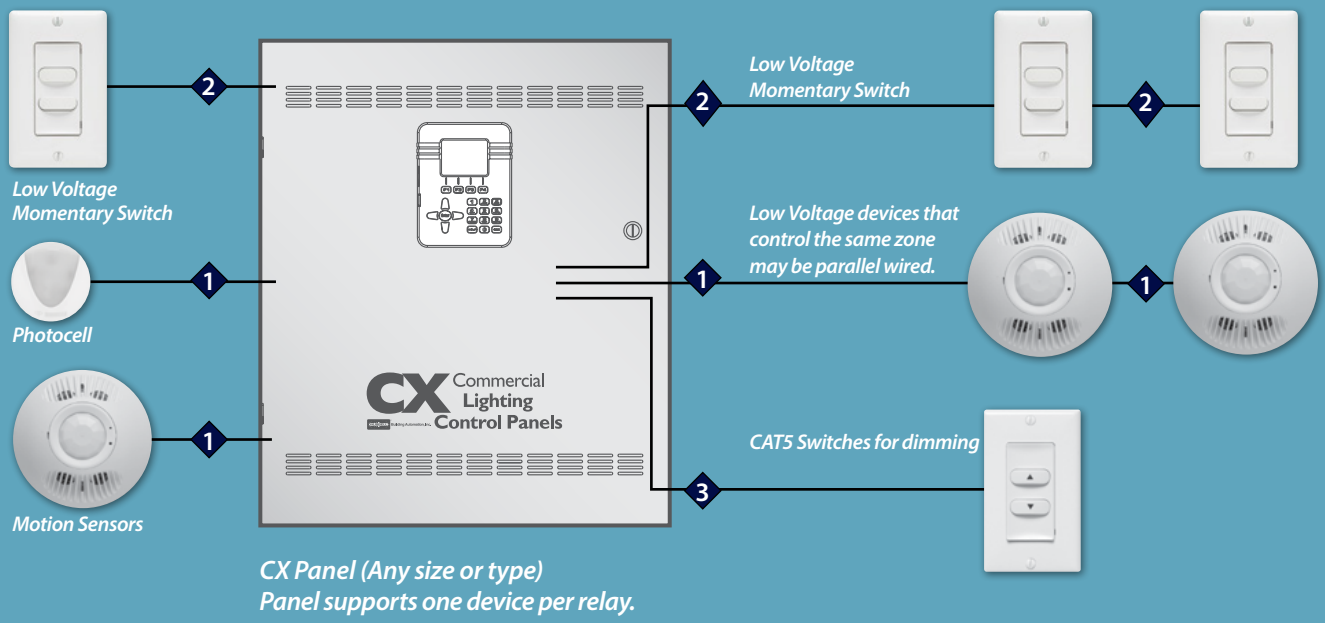
CX Panels
Flexible Design Application

CX Master / Secondary Panels are easily applicable to a wide range of small to medium commercial projects.

CX Master and Secondary Panel Connections



CX Panel Typical Input Connections



CX Panel (Any size or type)
Panel supports one device per relay.

CABLES

1. 3 #18 insulated class 2 copper wire.
2. #18 insulated class 2 copper wire. Number of wires varies based on number of buttons and LED indication.
3. CAT5 #24-26 4 pair cable.

CX Commercial Lighting Control Panels
Product Ordering Guide

CX16 and CX24
16- and 24-Relay Panels

CX04 and CX08
4- and 8-Relay Panels

CX4, CX8, CX16, CX24 Panels

CX			S				
MODEL	**SPACES**	**INPUT VOLTAGE**	**ENCLOSURE**	**RELAY QUANTITY**	**RELAY TYPE**	**OPTIONS**
CX CX Lighting Control Panel	**04** 4 Relay Spaces **08** 8 Relay Spaces **16** 16 Relay Spaces **24** 24 Relay Spaces	**2** 120/208/240/277 Multi-Tap for 4&8 Relay Size 120-277 Univeral for 16&24 Relay Size **3** 120/277/347 Tri-Tap for 4&8 Relay Size 347-480 Universal for 16&24 Relay Size	**S** NEMA 1 Surface	**00** No Relays - Spaces Only (See Note 5) **04** 4 Relays Installed (See Note 4) **08** 8 Relays Installed (See Note 4) **16** 16 Relays Installed (See Note 4) **24** 24 Relays Installed (See Note 4)	**SP** Space Only **2N** 20A Electrically Held N/O 120-277V **3L** Latching 120-277-347V **TN** 20A Electrically Held N/O 480V (See Note 3) **TC** 20A Electrically Held N/C 480V (See Note 3)	**M** Master Panel (See Note 2) **S** Secondary Panel (See Note 2 and Note 6) **N** Stand Alone Panel (See Note 1)

Example: CX082S082NM
8-Relay CX Master Panel with 8-20A/ 1P electrically held N/O relays, surface enclosure, 120 / 277 input power

NOTES:
1. Required for CX04 Series Panels. Not Available for CX08, CX16, CX 24
2. Not available for CX04.
3. 2-Pole relays take the same amount of space as 1-Pole relays.
4. Installed relays must be all of the same type. Relay Type TC and 2C not available in fully populate panels
5. "00" option has no relays, all must be ordered separately and installed in the field.
6. Secondary panel includes (2) master/secondary panel interface cards.

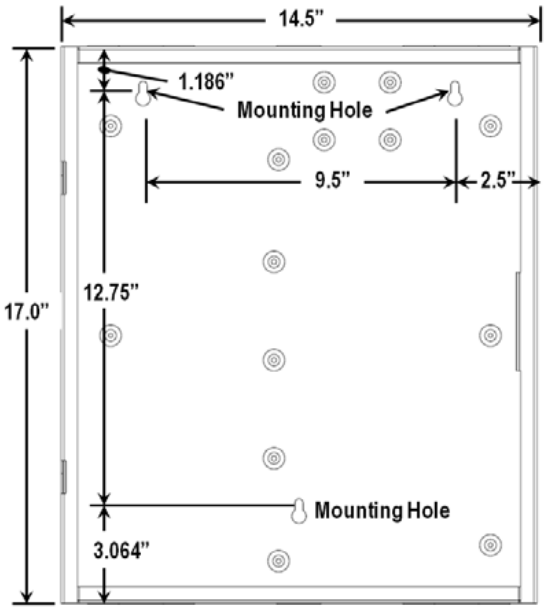
PRODUCT SPECIFICATIONS- CX PANEL ACCESSORIES

CX4, CX8, CX16, CX24 Panel

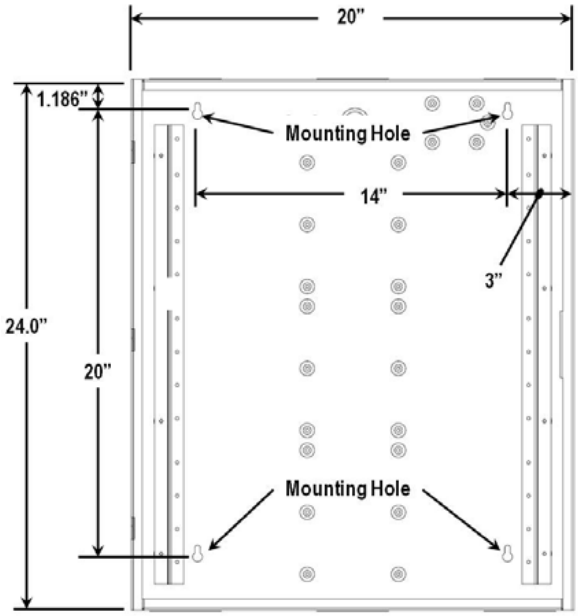
Programming and configuration	Programmable via user interface mounted on door Fully programmable by users with door closed and locked Stand Alone, Master, or Secondary Panels. One Master and one Secondary may be connected as a system
Physical	NEMA 1 surface enclosure Pre-drilled mounting holes for mounting to wall, KOs provided on top and bottom 4/8 relay and 16/24 relay enclosures are provided with a hinged locking door
Electrical Input 120/277/347 Optional	120/208/240/277VAC for 4/8 size, 120-277VAC Universal for 16/24 size Standard,
Operating environment	Location: NEMA 1 interior space Operating temperature: 0° to 50°C (32° to 112°F) Relative humidity (non-condensing): 10% to 90%
Certifications	Certified to UL 916 and cUL

DIMENSIONAL INFORMATION

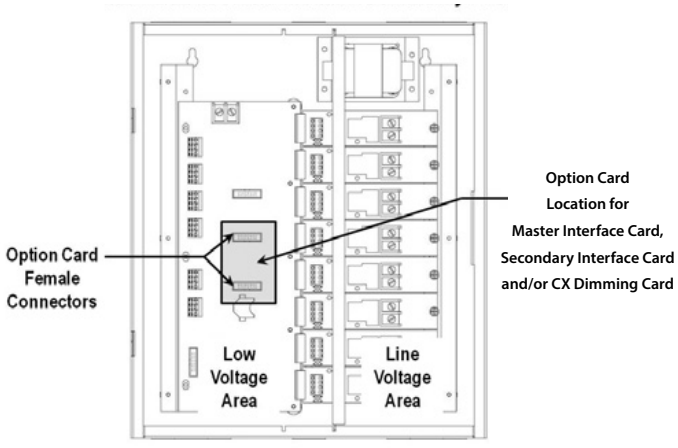
Panel and Mounting



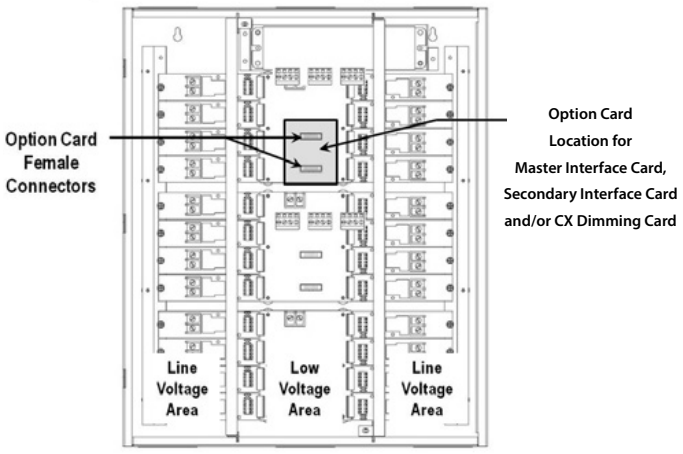
CX04 and CX08 4- and 8-Relay Panels
14.5" W x 17"H x 4" D



CX16 and CX24 16- and 24-Relay Panels
20" W x 24"H x 4" D

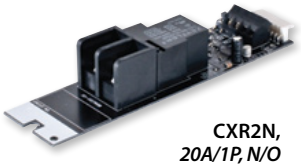


CX08 Master OR Secondary Panel

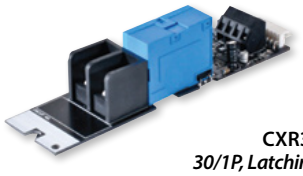


CX16, X24 Master OR Secondary Panel

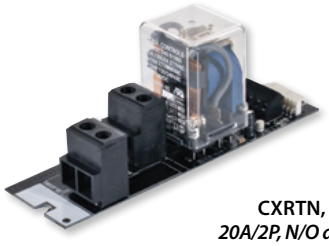
CXR Relays



CXR2N,
20A/1P, N/O



CXR3L
30/1P, Latching



CXRTN, CXRTC
20A/2P, N/O and N/C

ORDERING INFORMATION

CXR	
MODEL	**RELAY TYPE**
CXR Relays for use with CX Panel	**2N** 20A 1-Pole Electrically Held N/O 120-277V 14KSCCR @ 277VAC
	3L 30A 1-Pole Latching 120-277-347V 18KSCCR @ 277VAC, 14KSCCR @ 347VAC
	TN 20A 2-Pole Electrically Held N/O 480V 14KSCCR @ 480VAC
	TC 20A 2-Pole Electrically Held N/C 480V 14KSCCR @ 480VAC

PRODUCT SPECIFICATIONS - CXR RELAY

Physical	Mounts inside NEMA 1 surface panel enclosure Pre-drilled mounting hole for securing relay cards Individual relay cards – 1P and 2P are equal in size
Operating environment	Location: NEMA 1 interior space Operating temperature: 0°to 50° C (32° to 112° F) Relative humidity (non-condensing): 10% to 90%
Certifications	Certified to UL 916, UL924 and cUL
Relay Ratings	

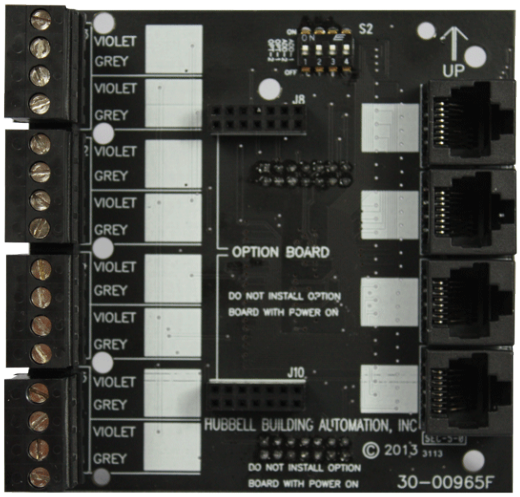
Characteristics			Load Ratings				SCCR Rating
Type	Poles	VAC	Tungsten	Flour. Ballast *	HID Ballast	Motor Rating	
CXR2N- Elec Held , N.O	1	120	15A	16A	20A	1 HP	14K Amps
		227	NA	16A	20A	3/4 HP	
CXR3L- Latching	1	120	20A	30A	30A	1 HP	18K Amps
		277	NA	30A	30A	NA	
		347	NA	20A	20A	NA	14K Amps
CXRTN - Elect Held, N.O.	2	480	NA	20A	20A	2 HP	14K Amps
CXRTC - Elec Held, N.C.	2	480	NA	20A	20A	2HP	

* Electronic Flourescent Ballast Rating is 16A

CX Dimming Card

Features

- Full range dimming with preset dimming levels
- Ramp Up, Fade Down, Minimum Dim Level
- Max Dim Level (Demand Response System Settings)
- Operates with 0-10V dimmable ballasts
- Provides manual and automatic control of dimming levels
- Upgrade option to existing and new CX Panels
- 8 Dimming channels per card
- Works with CAT5 Switches



ORDERING INFORMATION

CXDIMCONTRBD	
MODEL	
CXDIMCONTRBD	**CX Panel 8-Channel Dimming Controller Option Board**

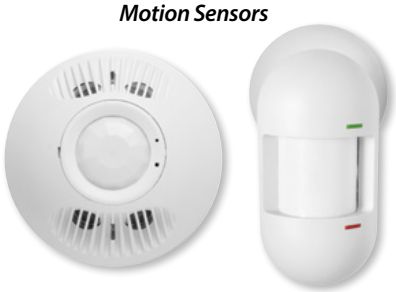
PRODUCT SPECIFICATIONS- CX DIMMING CARD

Power requirements	Low Voltage via CX Panel Option Port
Output (Low Voltage Sensors)	Eight 0-10V Dimming Channels 0-10V Screw terminals. #16 solid or stranded copper wire. 0-10V output 50mA per channel Four RJ45 Connections for discrete RJ45 CAT5 Switches
User Interface	LCD Color Display via CX Panel Supports CAT5/RJ45 Switches

CX Panel Accessories

Photocells

Motion Sensors



OMNI® *LightOWL®*

Low Voltage Switches

Photocells
The CX Panels support direct connection to HCS Low Voltage Photocells.

Features

- Open Loop photosensor
- Foot-candle range: 0.3–6,000 fc
- Indoor and outdoor versions
- Mounts vertically and horizontally
- Architecturally attractive design
- UL and cUL listed

Motion Sensors
The CX Panels support direct connection to HCS *OMNI* Series Stand Alone Motion Sensors featuring IntelliDAPT® technology.

The ceiling mount *OMNI* series and wall mount *LightOWL* series sensors can be used with the CX Panel inputs without the use of power packs.

Low Voltage Switches
The CX Panels support direct connection to HCS LVS Series Low Voltage momentary contact switches. These switches are available with or without LED indication. Add WH for White or IV for Ivory finish at the end of the part number.

CAT5 Low Voltage Switches for Dimming
For use with the CX Dimming Card, these switched are available in Raise-Lower and On/Off configurations.

ORDERING INFORMATION

PHOTOCELL TYPE	
LUXSTATLS	Indoor
LUXSTATLSO	Outdoor

ORDERING INFORMATION

Consult hubbell-automation.com for detailed catalog numbers, specifications and application guidelines.

ORDERING INFORMATION

SWITCHES	
LVSM1NP	Momentary, 1 Button, No Pilot
LVSM1PL	Momentary, 1 Button, w/Pilot LED
LVSM2NP	Momentary, 2 Buttons, No Pilot
LVSM2PL	Momentary, 2 Button, w/Pilot LEDs
LVSM3NP	Momentary, 3 Buttons, No Pilot
LVSM3PL	Momentary, 3 Buttons, w/Pilot LEDs
LVSM4NP	Momentary, 4 Buttons, No Pilot
LVSM4PL	Momentary, 4 Buttons, w/Pilot LEDs
CXSW-1	One Button
CXSW-2	Two Button
CXSW-3	Three Button
CXSW-4	Four Button
CXSW-6	Six Button

PRODUCT SPECIFICATIONS- CX PANEL ACCESSORIES

PHOTOCELL - LUXSTATLS & LUXSTATLSO

Electrical	Four jumper-selectable foot candle ranges: 0.3–30fc, 3–300fc; 30–3,000fc; 60–6,000fc Low-voltage Class 2 device Protective hard-plastic cover
Dimensions	2″ dia., 1.2″ height (50.8mm dia., 30.5mm height)
Certifications	UL and cUL listed LUSTATLSO - IP 54 rated

LOW VOLTAGE SWITCHES – LVSM & CX SERIES

Electrical Ratings	Each switch: 100mA @ 30VDC Max Each pilot LED: 18-30VDC, internal 2.2kohm resistor
Configurations	1 - 4 buttons, with or without pilot LED Momentary
Operating environment	Indoor use only Operating temperature: 32° to 122°F (0° to 50°C) Relative humidity (non-condensing): 10% to 90%
Dimensions	4.87″ dia., 2.44″ deep (123.7 mm dia., 62mm deep)
Mounting	Single-gang NEMA-style switch box (average switch box) Decorator-style wall plate not included

HUBBELL® Lighting

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Greenville, SC 29607
hubbelllighting.com

Hubbell Lighting Brands:

Alera Lighting
Architectural Area Lighting
Beacon Products
Columbia Lighting
Compass Life Safety
Devine Lighting
Dual-Lite
Hubbell Control Solutions
Hubbell Industrial
Hubbell Outdoor
Kim Lighting
Kurt Versen
Litecontrol
Precision-Paragon [P2]
Prescolite
Progress Lighting
Security Lighting Systems
Spaulding Lighting
Sportsliter Solutions
Sterner
Thomas Research Products
Whiteway

Hubbell Control Solutions
Lighting Control Product Lines:

Networked Lighting Controls
- NX™ Distributed Intelligence controls

Wireless Lighting Controls
- wiHUBB® Distributed lighting controls
- wiSCAPE™ Outdoor lighting controls
- wiSTAR™ Self-powered lighting controls

Daylight Harvesting Controls
- Zone 5™ Daylighting controls
- LuxStat Simple daylighting control

Lighting Control Panels
- CX Commercial Lighting Controls
- LX Networked Lighting Controls

Occupancy/Vacancy Sensors
- LightHAWK®2 Wall switch sensor
- LightOWL® Wall-mount occupancy sensor
- OMNI® Ceiling-mount occupancy sensor
- WASP™2 High-mount occupancy sensor
- Dimming WASP™ Indoor/outdoor sensor

Hubbell, A Name You Can Trust

Hubbell Control Solutions is a strong proponent of innovative, integrated energy-saving lighting controls. From introducing the industry's first self-adaptive occupancy sensor to today's advanced wired and wireless distributed intelligence lighting controls, the company continues to offer the most comprehensive line of occupancy sensors on the market. Other products include daylight harvesting and high bay controls.

The brand is part of Hubbell Lighting, one of the largest lighting manufacturers in North America. Hubbell Lighting brands offer products for commercial, industrial and residential markets. The company's history of innovation extends back to 1886 and Harvey Hubbell's invention of the very first lighting control device—the pull chain switch.

HUBBELL® Control Solutions

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