



POWER FLEXIBILITY ECONOMY

WattStopper lighting control panels offer the convenience of scheduled control combined with the flexibility to suit any application. Lighting Integrator (LI) provides a range of control capabilities built on a common technology platform of low voltage, relay-based control. Contractor panels afford simple, effective control via pre-assembled, easy-to-install packages.

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NUMEROUS CONTROL CONFIGURATIONS

With WattStopper's Lighting Integrator (LI) lighting control panels, users can implement the control capabilities they need for their specific applications. Lighting Integrator simplifies integration with external controls, whether these are other building systems or other lighting control devices. Lighting Integrator is a solution that works today and well into the future.

LI offers a technology platform that accommodates several different control configurations to suit virtually any application.

From basic low voltage switching to sophisticated PC-based control, LI has a configuration to meet every user's needs.

Lighting Integrator Technology Highlights

Industry-exclusive heavy duty relay

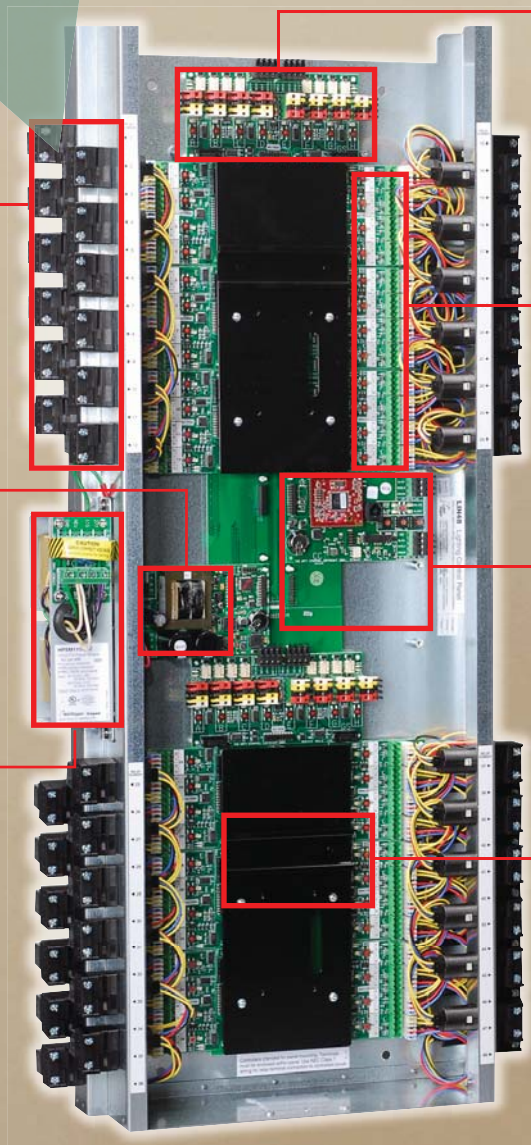
Mechanically latching HDR heavy duty relay, rigorously engineered with 14,000 Amp Short Circuit Current Rating. The relay meets NEMA inrush current requirements for controlling electronic ballast lighting loads, and is rated a minimum 300,000 cycles.

Optional integrated control of emergency lighting

Provides coordinated control of emergency lighting along with normal lighting. Available in most LI control configurations, this option affords fail-safe emergency lighting operation for most common applications, and allows integrated control via schedule, switch, photocell, or other control device.

Unique Smartwired switching

Simple pushbutton functionality allows users to quickly group relays for common on/off or pattern (scene) control.



HDR Relays

24 Volt Power for Sensors and Accessories

Input Options

- 115/277 Volts
- 115/347 Volts
- 240 Volts

Inputs for Programmable Group Switching of Relays

- Channel status LEDs
- Pilot light outputs
- Override pushbuttons
- Switch and sensor inputs

Relay Driver Cards

- Relay status LEDs
- Pilot light outputs
- Override push buttons
- Switch and sensor inputs

Intelligence Card Options

Accessory DIN Rail

- Holds up to two low voltage accessory/automation modules



BRINGING ENERGY SAVINGS TO COMMON APPLICATIONS

Educational

- Supplement daytime scheduled control with afterhours occupancy-based control
- Add daylighting capabilities for classroom lighting
- Event Scheduler for convenient scheduled control of academic and athletic events

Retail

- Achieve code compliance without burdening managers with additional responsibilities
- Increase energy savings by integrating lighting, HVAC, and security systems
- Maintain security by easily adjusting exterior lighting schedules to provide secure environments



Office Buildings

- Integrate with other BACnet manufacturers' equipment for seamless control
- Provide personal desktop control
- Comply with mandated automated lighting shutoff code requirements

Public Spaces

- Use trending and analysis to reduce energy consumption
- Enable multiple-user access simultaneously
- Simplify administration with PC based touch-screens and animated floor plans or virtual control panels



PRODUCT MATRIX

Building Space Type

Public area with predictable occupancy pattern

Areas with irregular occupancy patterns or sensors mandated by codes

Lighting Control Strategy

L i g h t i n g w i l l b e

Primary Scheduling Function

Lighting control panel will provide its own automation and scheduling

Application

Flexible programming with a PC and software. The application can be any size, including large and complex facilities, from 1 to 500 panels

Flexibility via remote programming or PC based automation

Lighting Integrator Platform

**LIC:
Lighting Integrator
Complete Control**

P. B11-B26

Applications that demand advanced scheduling, reporting and usage monitoring benefit from the sophisticated control capability of LI Complete Control. From the convenient administrative and operating capabilities of WinControl software to the range of control options, Complete Control is cost effective for any size application from a single standalone panel up to a maximum of 500 panels on a digital network.

**Refer to DLM
panel options**

Extensive capabilities are available using the Digital Lighting Management LMCP panel, which incorporates key LI technology and combines it with the flexibility and scalability of the DLM technology platform.

Visit the DLM section of this guide for more information, particularly the LMCP product cut sheet on **P. A31-32.**

**Services
P. B87-B88**

Comprehensive services include design, startup, onsite training and troubleshooting as necessary.



Use Occupancy Sensor

C o n t r o l l e d b y R e l a y P a n e l

Another system will provide the automation and scheduling of lighting control

Lighting control does not need automation and scheduling

Theatrical system will provide the automation and control with DMX512

BAS will provide the automation and scheduling through BACnet

No scheduling and programming; remote control with low voltage switches only

LID:
Lighting Integrator with DMX512 connectivity
P. B27-B32

In theatrical applications, such as auditoriums and theaters, controlling all lighting from a single system ensures coordination of house and work lighting with theatrical lighting cues. LID panels enable this, while the LIDA panel option offers the flexibility afforded by the use of dataline switches.

LILM:
Lighting Integrator with native BACnet
P. B33-B42

In applications where administrators prefer to coordinate control of building lighting systems directly from a building automation system, LILM panels enable easy integration of lighting controls with industry standard BACnet based systems.

LI:
Lighting Control
P. B43-B46

When the application demands flexible remote control of lighting circuits, a basic LI panel offers robust control paired with flexibility. Exclusive HDR heavy duty relays ensure reliable performance while compatibility with a wide range of low voltage switches, occupancy sensors and daylighting sensors offers control flexibility.



LIGHTING INTEGRATOR COMPLETE CONTROL LEVEL


Applications that demand advanced scheduling, reporting and usage monitoring benefit from the sophisticated control capability of LI Complete Control (LIC). From the convenient yet comprehensive administrative and operating capabilities of WinControl software to the range of control options, Complete Control is cost effective for any size application from a single standalone panel up to a maximum of 500 panels on a digital network.

When local dataline control capabilities are desired, such as the convenience of programmable switch buttons or distributed control options, LI Complete Control offers options for the use of digital dataline switches.

LIC HIGHLIGHTS

- Advanced lighting control scenarios: time delay override, common area with egress timer, intelligent switch scenarios, load shed, daylight switching, cleaning function
- Distributed control and communication for up to 500 networked LI panels
- Connectivity via direct RS232, or via WebLink TCP/IP or BACnet/IP
- Programmable dataline switches for flexible user override
- Comprehensive usage, trending and alarming capabilities





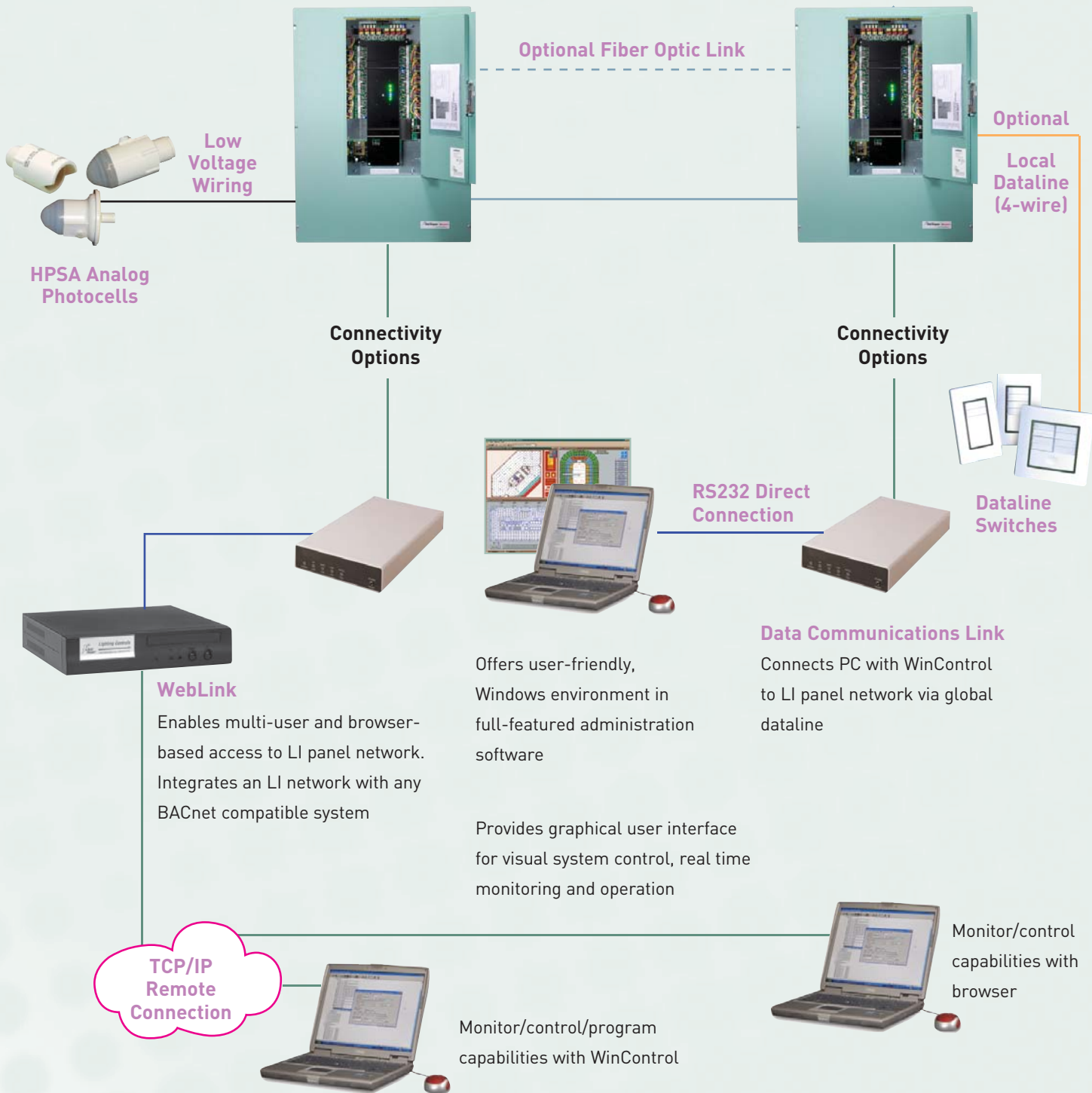
CHOOSE LI COMPLETE CONTROL LEVEL FOR THE MOST DEMANDING APPLICATIONS

In settings where the flexibility and convenience of PC-based control is desired, the Lighting Integrator Complete Control (LIC/LICA) configurations offer advanced scheduling, reporting, and monitoring. Cost-effective for any size application, LIC systems can range from a single standalone panel to a maximum of 500 panels on a digital network.

Designers can choose from a wide range of control options, such as ambient light level based control of exterior or interior lighting via HPSA series analog photocells (page B25-26). LIC panels work with standard low voltage wall switches and occupancy sensors. Use WebLink (page B23-24) for remote TCP/IP connectivity for WinControl, a web browser user interface for override and monitoring and BACnet integration with building automation systems. WebLink also offers an optional Event Scheduler.



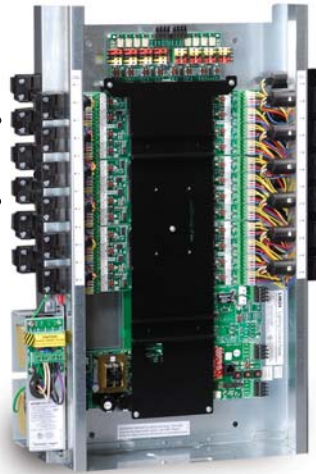
SYSTEM LAYOUT



LI Complete Control Level Interior (LIC8, LIC24, LIC48, LICA8, LICA24, LICA48)

Distributed processing architecture with robust 2-wire digital network communications

Complete scheduling, monitoring, and reporting capabilities via exclusive WinControl software



Priority array based logic engine for simple execution of complex control scenarios

Compatible with legacy Complete Control systems

PROJECT
LOCATION/TYPE

Product Overview

Description

The WattStopper Lighting Integrator Complete Control (LIC) system is a full featured networked control system that provides the maximum flexibility for lighting control by providing both panel based and distributed load control options. A digital communication bus allows user programming generated at the WinControl workstation to be transferred to the panels where it runs autonomously. Once loaded into the panels, the lighting automation features operate without the need for an online PC. This distributed processing capability ensures a high degree of reliability. LIC incorporates all the base features of the Lighting Integrator hardware platform including the HDR mechanically latching, heavy duty relay.

LICA panels, with local dataline support, provide local Dataline Switch functionality.

Operation

Each LIC panel stores the user generated programming in non volatile memory housed within the Complete Control intelligence card. This controller monitors all inputs and uses a unique priority array based logic engine to generate the appropriate load response (relay control) based on simple or complex combinations of input triggers that can include schedules, override switches, occupancy sensors, photocells and signals from other building systems.

LIC features a library of scenario based control schemes that provide powerful control options without the complexity of low level user programming. These control scenarios include provisions for common area logic with egress, cleaning crew overrides, load shed, force on, force off, blink warn, and after hour time delay.

Features

- Network up to 500 panels via open topology digital data bus
- Create user programming offline using WinControl software and transfer to panels
- Import site documentation from WinControl Designer project design and documentation software
- Programmable group codes with scenario based logic provide system-wide control
- Powerful data logging feature with manual and automatic log transfer to PC
- Option for seamless building system integration using BACnet protocol
- Supports WattStopper occupancy sensors directly without power packs
- Generate detailed documentation reports of all aspects of system hardware and software via WinControl software
- Programmable analog inputs provide multiple set points for photocells or other analog devices
- Programmable dataline switches connect to panel with 4 wire open topology digital data bus
- Provides full support for WattStopper AS series Automatic Wall Switch
- Remote network supervision and programming via TCP/IP connection using optional WebLink device
- Qualifies for use on ARRA-funded projects

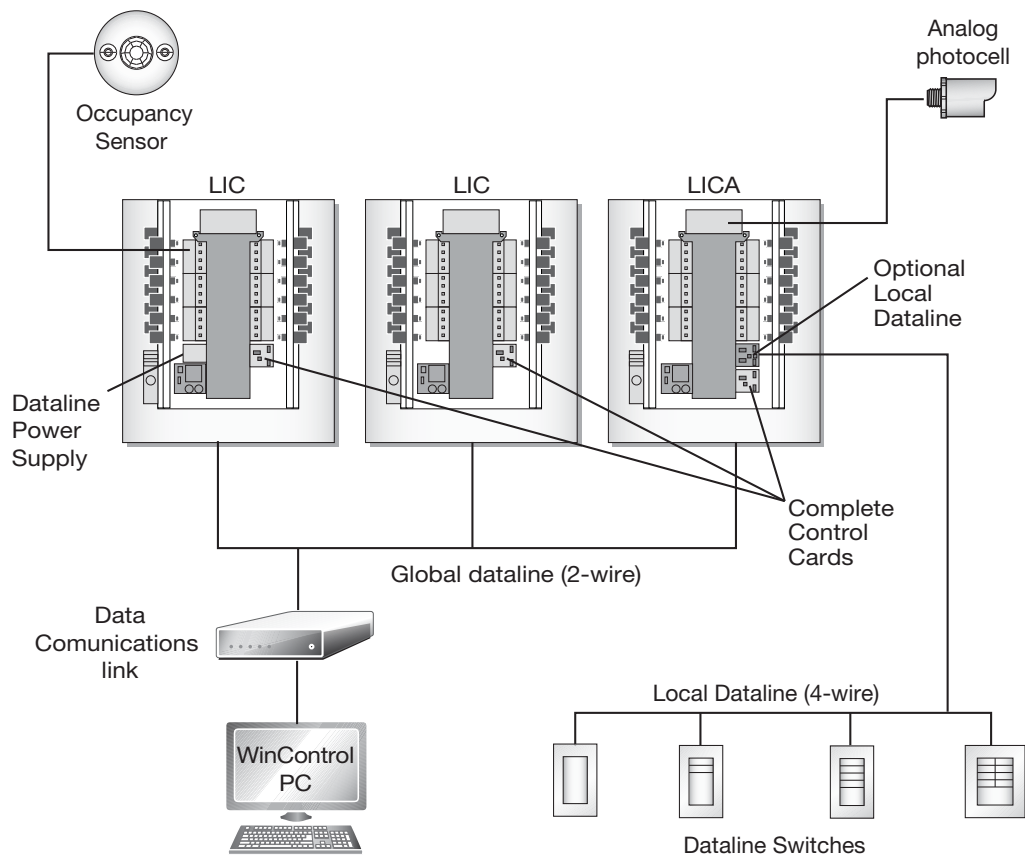


LIC Specifications

- Panel configurations provide 8, 24, or 48 relay size interiors
- Standard relay, individually replaceable WattStopper HDR series, latching SPST, meets new NEMA electronic ballast requirements, 14,000 Amps SCCR, with integral manual override
- Digital network dataline, one pair twisted and shielded, open topology allows linear, star, and T network configurations for panels/connectivity 4000' max length
- Network link device provides RS-232 connection to digital dataline for PC or WebLink and visual indication of system operation
- Analog input, 12 VDC source provided, 0 – 4 VDC input, 8 inputs provided per group switching card
- Optional local dataline, two pair twisted, open topology allows linear, star, and T configurations, 63 HDLS series switch addresses available per dataline, 1500' max length (LICA option)
- Analog set points, 32 maximum per panel, high set/low set with individual high/low time delays
- Direct wire switch inputs, one each per relay and group switch channel, automatically configure for occupancy sensor operation
- Pilot light output per relay and group switch channel, configurable for any Class 2 voltage
- DIN rail mounting for automation modules
- UL listed, one year warranty

LIC System Layout

Panel System Layout and Configuration



Note: Dataline power supply required in one panel only.



General LI Information

Description

WattStopper's Lighting Integrator (LI) is a low voltage, relay based lighting control panel. Panel interiors are configured as 8, 24 or 48 relay capacity with the quantity of relays installed as called for on the order. The interior mounts into the appropriate enclosure. The LI panel enclosure and cover are shipped separately from the panel interior to facilitate project rough-in requirements.

Operation

LI relays are driven to a latched on or off position via a 24 volt DC pulse generated by the relay driver cards. A momentary pushbutton is provided for each relay to manually toggle the relay's state with each button press. An isolated contact in the relays provides positive status feedback to the relay driver circuits, which are annunciated by an LED associated with each relay. Removable terminal blocks allow connection of direct wired low voltage devices for remote control of relays.

- Interior provides complete isolation between line and low voltage when used with an LI enclosure (LENC)
- Individual plug-in, latching style single pole HDR relays with isolated pilot/status contacts
- Integral push button override, status LED, and pilot light output per relay
- Two slots available for optional automation, networking and integration control cards

Operation (cont'd.)

Inputs can be wired to accommodate maintained or momentary three wire or two wire inputs. The switch input circuits are auto sensing and will automatically configure appropriately when WattStopper occupancy sensors are connected.

Group Switching

Group switching, also referred to as Smartwired switching, is a simple button press interface that allows any quantity of relays in a panel to be assigned quickly to each group switching channel for common on/off control or for pattern (scene) control. Each of the eight channels is provided with an override pushbutton, LED status indicator and terminals for connection of wall switches and occupancy sensors. An eight or 24 size panel can be ordered with one group switch card (8 channels), 48 size panels can have two group switch cards for a total of 16 channels (8 controllable by scheduling, eight by switching only).

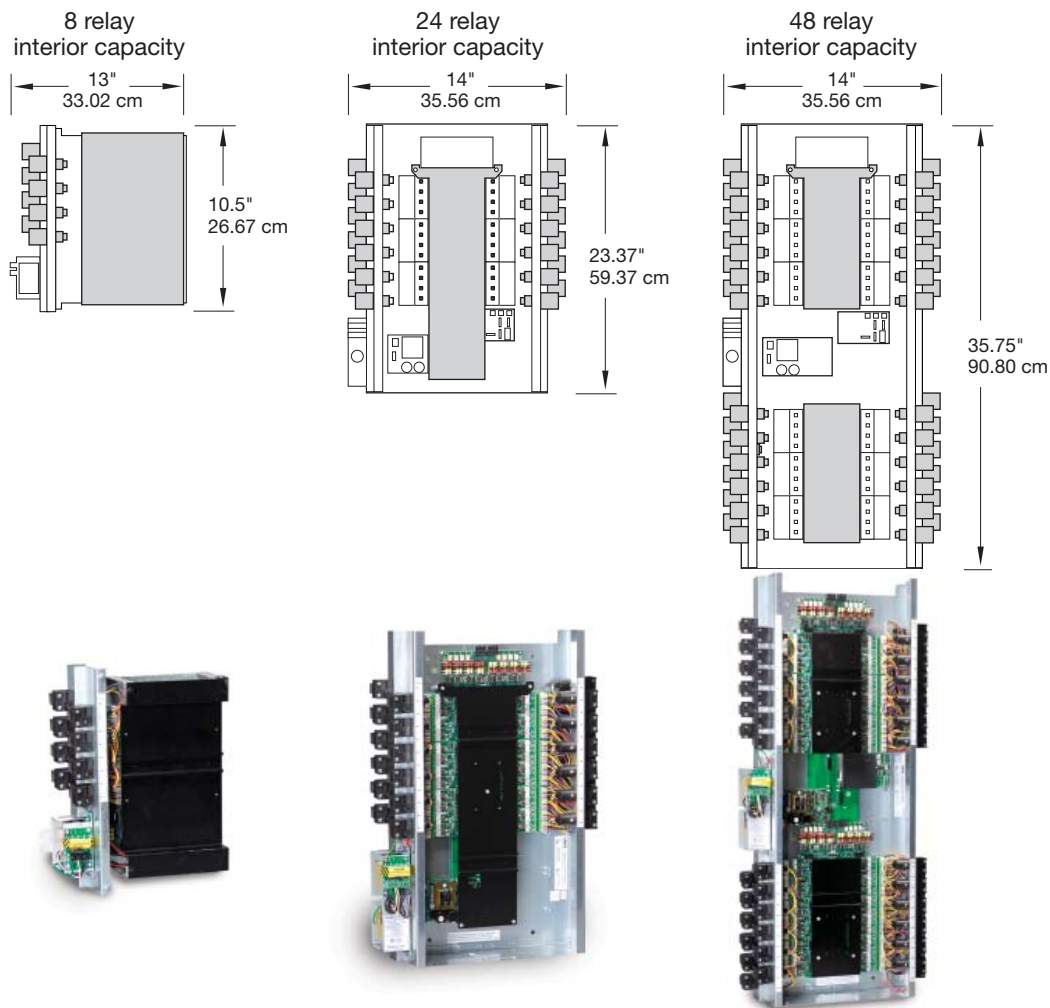
- Supports WattStopper low voltage occupancy sensors without need for separate sensor power packs
- Smartwiring feature allows grouping of relays for common control
- DIN rail mounting provided within the Class 2 section for mounting of optional accessories
- Control multi-pole circuits with optional contactors and compatible LENC enclosure
- Optional configuration available for use on emergency lighting circuits



General LI Specifications

- Interior capacity:
 - 8 SPST relays
 - 24 SPST relays
 - 48 SPST relays
- Input voltage options, 120/277V 60 Hz, 120/347V 60 Hz, 240V 50 Hz
- Group switching, eight channels per installed group switching card. One card max per LI8 and LI24. Two cards max LI48.
- Low voltage switch inputs, removable terminal blocks with tool-less connection, configurable for three wire momentary, two wire momentary (toggle), and two wire maintained dry contact switches or WattStopper occupancy sensors.
- Accessory power available
 - LI8: 1000 MA @24VAC or 800 MA @ 24VDC
 - LI24 and LI48: 1400 MA @ 24VAC or 800 MA @ 24VDC
- SCCR (short circuit current rating) 14,000 amps with HDR Heavy Duty Relay
- HDR SPST relays:
 - Coil voltage, 24 VDC, pulse ON and pulse OFF
 - Mechanically latched contacts
 - 1/2" K,O, mounting, LV plug-connection, individually replaceable
 - Contact ratings
 - 30 amps ballast @ 277V
 - 20 amps ballast @ 347V
 - 20 amps tungsten @ 120V
 - 30 amps resistive @ 347V
 - 1.5 HP @ 120V
 - Endurance: 300,000 mechanical cycles
- Pilot light output, 24 V rectified or 24VAC, other voltages configurable with external power supply
- One year warranty

Panel Interior Dimensions



Ordering Information

Interior Capacity	Installed Options					
	Voltage Options	Relay Count	Group Switch Card	Emergency Relays	Coil Voltage	Dataline Power Supply
<input type="checkbox"/> LIC8	<input type="checkbox"/> 115/277	<input type="checkbox"/> HDR relays installed (max of interior capacity)	<input type="checkbox"/> GS cards (max 1 in 8, 2 in 48)	<input type="checkbox"/> EM relay count (Not available in 8-relay size panels; max. of 24 in 24-relay or 48-relay size interior)	<input type="checkbox"/> 115 <input type="checkbox"/> 240 <input type="checkbox"/> 277 <input type="checkbox"/> 347	<input type="checkbox"/> DP dataline power supply (one required per each network)
<input type="checkbox"/> LIC24	<input type="checkbox"/> 115/347					
<input type="checkbox"/> LIC48	<input type="checkbox"/> 240					
<input type="checkbox"/> LICA8						
<input type="checkbox"/> LICA24						
<input type="checkbox"/> LICA48						

WinControl Software for LI Complete Control

Windows-based control and automation for Lighting Integrator Complete Control panels

Panel programming off- or online

Detailed activity logs, runtime reports, and graphs



System management and administration

Design, layout and document lighting control projects

Simulator function for training purposes

PROJECT
LOCATION/TYPE

Product Overview

Description

WinControl Software provides PC-based automation and control for WattStopper Lighting Integrator Complete Control (LIC and LICA) panel systems. The integral design program, WinControl Designer, can layout and document lighting control projects, and produce CAD-ready diagrams in DXF format.

Operation

WinControl provides a user interface for programming, monitoring and controlling functions for LIC panel networks. Administrators can use the software to program control schedules off-line, and then execute updates with a simple command. Once programmed using WinControl, the panels execute control scenarios, including scheduled off with blink warning, time delay overrides with blink warning, or automatic daylight switching with occupant interlock/override. Administrators can configure password-protected security settings to specify users with authority to change programming or documentation, and execute control functions. Online operation enables users to control individual relays or make immediate changes to scheduled operations.

System Reports and Analysis

WinControl provides comprehensive monitoring and reporting capabilities, including reports for documenting control system devices and schedules. It generates activity logs, exception reports and run-time graphs that can be used for trend analysis or to track actual lighting usage (down to the individual relay level, if desired) and evaluate energy costs. The software can also verify that the system is operating as intended, or identify and diagnose potential concerns.

Applications

Facilities with multiple LIC panels, such as office building campuses, convention centers, airports, arenas and large commercial facilities are ideal settings for lighting control management via WinControl. Capable of automating and controlling all types of interior and exterior lighting applications, WinControl is also adept at administration down to the relay level. Operators can tailor lighting control to building and occupant activities on a daily or weekly basis with programmable holiday and exception schedules.

Features

- Explorer-like view of all system components
- Remote operation capabilities via modem network or TCP/IP connection via WebLink
- Design export to DXF format with output, including single line riser diagram, panel schedules and specification summary
- Weekly scheduling with holiday and astronomic control
- Designer wizard creates lighting control project layouts
- User-programmable override and time delays
- Full support for AS-100 Automatic Control Switches
- Program panels for HPSA Analog Photocell operation with up to 32 setpoints
- Configure panels for varied occupancy sensor behavior to check occupied and unoccupied periods
- Qualifies for use in ARRA-funded projects



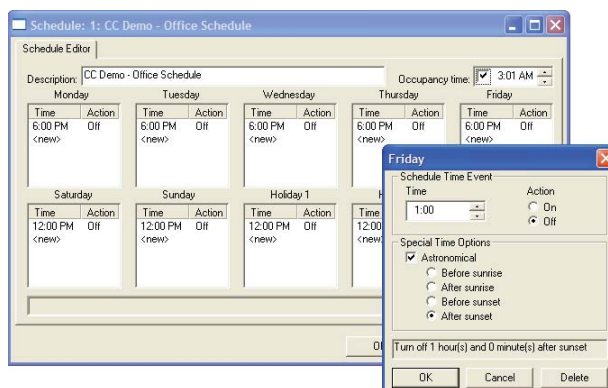
Specifications

- Compatible with Windows Vista Business and XP Professional
- PC Requirements: 256 MB RAM, CD-ROM, 100 MB free hard disk space
- Monitor Requirements: 16-bit color, minimum 800x600 resolution
- Data Communications Link (HLINKCC) required to connect PC to LIC panel network

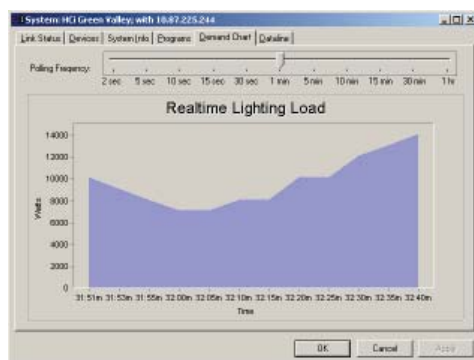
Sample WinControl Screens and Reports



Users can select reports from a browser-like screen.



Users set up weekly schedules, modify daily events, and specify actions for weekends and holidays on this scheduling screen.



Real time load report graph provides administrator with a snapshot of lighting system usage.

Date	Group Runtime	Runtime@Device	Std. Dev.
Tue 6/13/2006	101:34	8:28	2.39
Device: Relay 911-0: 132-Jm Yelland (RP-AL-2)		Runtime: 11:16	
Fri 6/16/2006	111:30	8:18	0.58
Device: Relay 911-2: 105-Pete Horton (RP-JL-2)		Runtime: 11:06	
Device: Relay 911-27: 102-Ed Horton (RP-AL-4)		Runtime: 19:23	

Monitoring and trend analysis are enabled by reports such as these runtime and runtime exception reports.

Type	Circuit	Description	LV Switch	Comment	Circuit Load	Normal Schedule	Override Duration	Variable Override	Blank Warn	Pulse	HID Load	Log Tracki	Common	Relay Number
1	Pilot	HB-2-1	Office 201	201	90	0001 - CC Di	00:10	<None>	✓	No	✓	✓	No	1
2	Pilot	HB-2-1	Office 202	202	90	0001 - CC Di	00:10	<None>	✓	No	✓	✓	No	2
3	Pilot	HB-2-2	Open Office East 2		225	0001 - CC Di	00:00	<None>	✓	No	✓	✓	No	3
4	Pilot	HB-2-2	Open Office East 1		450	0001 - CC Di	00:00	<None>	✓	No	✓	✓	No	4
5	Pilot	HB-2-3	Open Office West 2		315	0001 - CC Di	00:00	<None>	✓	No	✓	✓	No	5
6	Pilot	HB-2-3	Open Office West 1		630	0001 - CC Di	00:00	<None>	✓	No	✓	✓	No	6
7	Pilot	HB-2-4	Condoor / Lobby	203	495	<None>	00:03	<None>	✓	No	✓	✓	Yes	7
8	Pilot	HB-2-5	Conference Room	204	210	<None>	00:00	<None>	✓	No	✓	✓	No	8
9	Pilot	HB-2-5	Conference Linear	205	135	<None>	00:00	<None>	✓	No	✓	✓	No	9
10	Pilot	HB-2-6	Mens Restroom, Fair		140	<None>	00:00	<None>	✓	No	✓	✓	No	10
11	Pilot	HB-2-6	Womens Restrooms		140	<None>	00:00	<None>	✓	No	✓	✓	No	11

Documenting, programming and controlling panel relays is simplified with point and click screens and drop down menus.

Ordering Information

Catalog No.	Description
<input type="checkbox"/> WCHSTD250	WinControl Software for Lighting Integrator Complete Control 250-relay system
<input type="checkbox"/> WCHSTD500	WinControl Software for Lighting Integrator Complete Control 500-relay system
<input type="checkbox"/> WCHSTD750	WinControl Software for Lighting Integrator Complete Control 750-relay system
<input type="checkbox"/> WCHSTDUL	WinControl Software for Lighting Integrator Complete Control unlimited-relay system
Additional networking component:	
<input type="checkbox"/> HLINKCC	Lighting Integrator Data Communications Link (required for PC connection to LI dataline)

WinControl Graphics for LI Complete Control

Graphical enhancement to standard WinControl software

Facility-specific on-screen system graphics

Supports multiple graphics peripherals and file formats



Real time programming and monitoring

Status, documentation, and programming data for each system device

Multiple site graphics on single screen view

PROJECT

LOCATION/TYPE

Product Overview

Description

An optional package for WinControl Software, WinControl Graphics provides capabilities for on-screen system programming changes, real time monitoring and operation in a graphical environment. It functions with WattStopper Lighting Integrator Complete Control (LIC) panel systems.

Operation

WinControl Graphics works seamlessly with WinControl. All panel, load, and scheduling data entered in WinControl is automatically shared and available for access from within the WinControl Graphics environment, eliminating duplication of data input. The customized graphic screen displays enable system administrators to instantly identify the status of specific devices, or control the system with ease (e.g., turn individual lamps or relays on or off using a simple mouse click). WinControl Graphics also supports multiple graphic file formats so users can easily import graphics from other applications to customize displays.

Customized Graphical Displays

WinControl Graphics allows users to create and modify graphic displays for customizing the application and to view system lighting status on screen in real time. Typically, a floor or building plan, map, photograph or similar graphic is imported to create a custom control screen so that users may easily identify lighting zones. Customized lighting control buttons are associated with the graphic so that a lighting operation can be turned on or off via a simple mouse click. Users can accommodate multiple graphic displays on a single screen, enabling them to conduct system administration on different sites from a single location.

Applications

For large, complex facilities, such as convention centers, airports, stadiums, or high-rise office buildings, WinControl Graphics offers a versatile, user-friendly system administration tool.

Features

- Multiple site graphics on single screen view
- On-screen simulation of system operation
- Point and click control of individual relays or groups of relays
- Displays system activities in context of specific building plans
- Supports BMP, WMF, JPEG, AVI, PCX, DCX graphics file formats
- Zoom, resize, and scroll capabilities for easy maneuverability
- Screens and control buttons may be tailored to individual requirements
- Qualifies for use in ARRA-funded projects



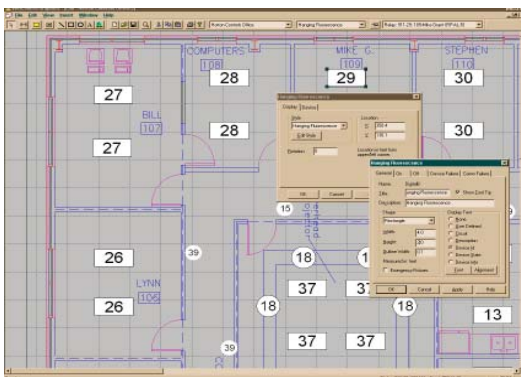
System Requirements

- Compatible with Windows Vista Business and XP Professional
- PC Requirements: 512 MB RAM plus 1.0 MB per graphic screen, CD-ROM, 100 MB free hard disk space plus 1.0MB per graphic screen

- Monitor Requirements: 16-bit color, minimum 800x600 resolution
- Data Communications Link (HLINKCC) required to connect PC to LIC panel network

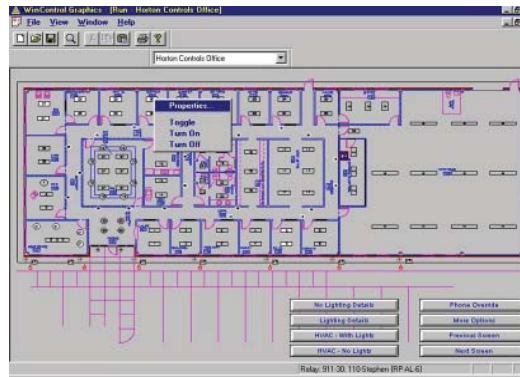
Sample WinControl Graphics Screens

WinControl Graphics System Screen



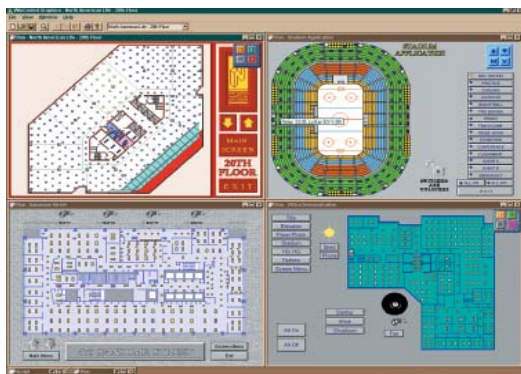
Graphic screens accurately display fixtures, switches, and other system devices and their on/off status.

WinControl Graphics Run Mode



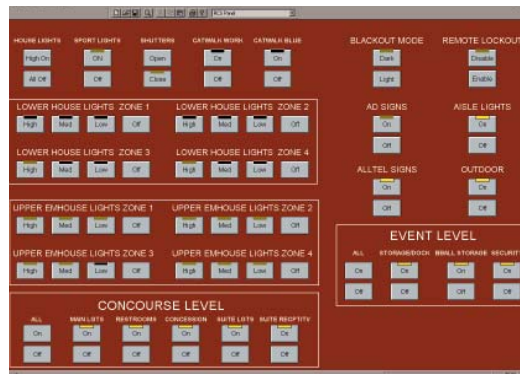
The run mode enables users to see programming changes on-screen and in real time.

Multiple Site Viewing on Single Screen



Multiple site graphics are accessible on a single screen.

Customized Graphical Displays



Users can customize graphic displays to streamline system administration.

Ordering Information

Catalog No.	Description
<input type="checkbox"/> WCHGR250	WinControl Graphic Software for Lighting Integrator Complete Control 250-relay system
<input type="checkbox"/> WCHGR500	WinControl Graphic Software for Lighting Integrator Complete Control 500-relay system
<input type="checkbox"/> WCHGR750	WinControl Graphic Software for Lighting Integrator Complete Control 750-relay system
<input type="checkbox"/> WCHGRUL	WinControl Graphic Software for Lighting Integrator Complete Control unlimited-relay system
Required software package:	
<input type="checkbox"/> WCHSTD	WinControl Software for Lighting Integrator Complete Control
Additional networking component:	
<input type="checkbox"/> HLINKCC	Lighting Integrator Data Communications Link (required for PC connection to LI data line)

Data Communications Link for LI Complete Control

PC connection to a Lighting Integrator panel network

Industry standard RS232 connection

Alarm contacts

LED status indicators



Ensures all individual panel clocks are synchronized

PROJECT
LOCATION/TYPE

Product Overview

Description

The Data Communications Link (HLINKCC) provides the connection between a PC and an LIC/LICA network. It enables PCs running WinControl software to communicate to multiple panels linked together.

Operation

The Data Communications Link interfaces PCs with the panel network. It connects at any point on the shielded, twisted pair communications wire. The device enables all the lighting control panels in an LIC/LICA system to be programmed and monitored from a computer using WinControl software. It also provides notification of failed field devices or relays, including a failure in the Data Communications Link itself via an LED and a set of relay contacts. The Data Communications Link is connected to a PC using the cable (HCABLE-C).

Networking

The Data Communication Link enables PC control and automation of networked LIC or LICA panels. Multiple units can be used on an LI panel network to provide multiple operator stations or as portals to other building control systems.

Administrators may select from additional networking options. For remote access via telephone lines, the LI modem option (HMODEM) may be selected, which connects to the Data Communications Link. If multi-user access to the panel network is desired via TCP/IP or the internet, the WebLink appliance (WL-BASE) can be added.

Features

- System synchronization clock with automatic daylight savings and leap year adjustment
- Alarm contacts and LEDs to annunciate failed devices
- LED status indicators for power, online, and data activity
- Terminals for connection to global dataline
- Qualifies for use in ARRA-funded projects

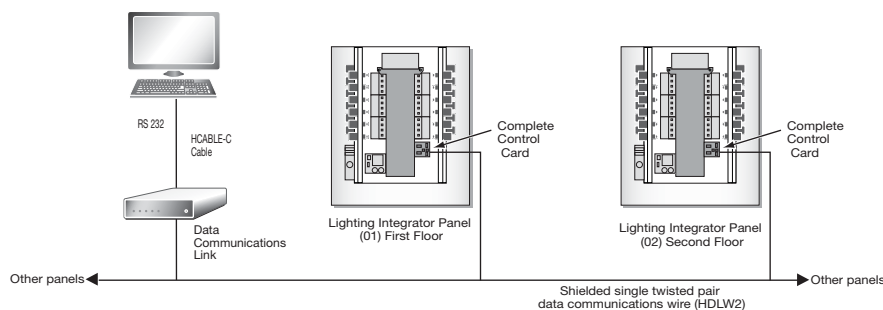


Specifications

- RS232 serial communications port
- 300/1200/2400/4800/9600/19200 auto baud
- Alarm contacts rated at 28 VDC and 2 mA maximum
- 115 VAC plug-in transformer power supply
- Shipping weight: 3 lbs. (1.36 kg.)
- UL and CUL listed
- One year warranty

System Layout

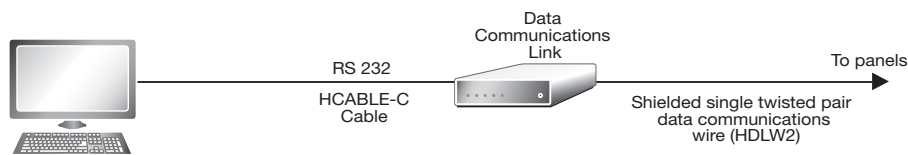
Networked System Layout



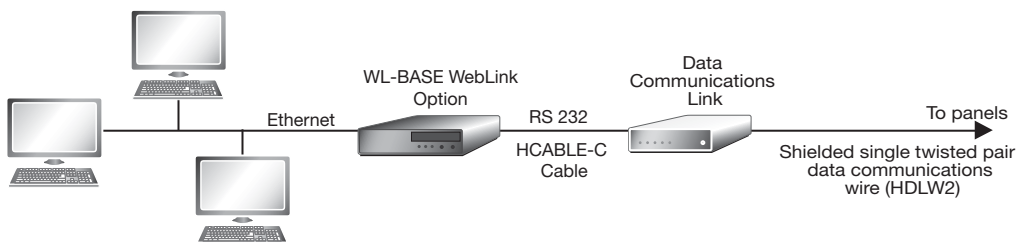
LIC panel network with PC connection via Data Communications Link

Networking Options

Data Communication Link Applications



Communications components for single-user connections.



Communications components for multi-user LAN, WAN or internet connections

Ordering Information

Catalog No.	Description
<input type="checkbox"/> HLINKCC	Data Communications Link with 115V power supply for LI Complete Control
Additional networking components and options:	
<input type="checkbox"/> WL-BASE	WebLink Appliance
<input type="checkbox"/> HDWL2	Shielded single twisted pair data communications wire
<input type="checkbox"/> WCHSTD-xxx	WinControl software
<input type="checkbox"/> HCABLE-C	RS232 connection cable

WebLink Network Appliance for LI Complete Control

IP connectivity to Lighting Integrator panel network

Multi-user access for those using WinControl software



Set up control schedules through Web browser interface

Integrate with BAS system via BACnet protocol

PROJECT
LOCATION/TYPE

Product Overview

Description

The WebLink Network Appliance is one option for connectivity between a standard IP network and a Lighting Integrator (LI) panel network. It enables multiple users to access and control a network of LI Complete Control (LIC) panels from any location on an Ethernet network (e.g., LAN, WAN or internet). Optional WebLink Scheduler Software provides scheduling capabilities via a standard web browser. Optional My Lights Software offers personal lighting control via individual desktop PCs. Optional BACnet Integration exposes relays and group codes as BACnet objects.

Operation

WebLink connects to and automatically maintains communications directly with a LIC network through a Data Communications Link (HLINKCC) serial connection. The WebLink provides web browser-based access to panels on the network for viewing panel status and overriding relays. It allows panel network connectivity to be shared among multiple user connections for simultaneous access, providing an IP connection to other installations of WinControl software on remote PCs over a dedicated or enterprise LAN or WAN.

WebLink Scheduler Software

With optional WebLink Scheduler Software, users can employ their browser instead of WinControl to schedule a full calendar. Annual, monthly, weekly and daily calendars are displayed to multiple PCs as web pages. Users can set up new events for any time period by selecting a specific date, time and action, or easily perform modifications of one-time or recurring events. Schedule templates enable creation and storage of alternative schedules for special events that need unique lighting scenarios, an ideal feature for convention and multiuse centers, stores and arenas.

My Lights Software

Optional My Lights software offers personal space lighting control via desktop PC. In its manual mode, My Lights provides users with on/off control via a display on their PC. In automatic mode, My Lights maintains space lighting by monitoring PC mouse and keyboard activity; when activity ceases, My Lights turns lighting off after a preset interval initiated by a blink warning. Users may override this automatic off with any mouse or keyboard movement.

Features

- Enables IP network connectivity to LIC panel network for multiple users via WinControl
- Compatible with legacy CC panels
- Configurable for DHCP services or static IP address
- Optional shelf for rack mounting
- Labels and descriptors of LIC network devices (i.e., relays, switches) automatically synchronize with WinControl for easy device selection
- Provides connectivity with BAS systems using industry standard BACnet protocol
- Qualifies for use in ARRA-funded projects

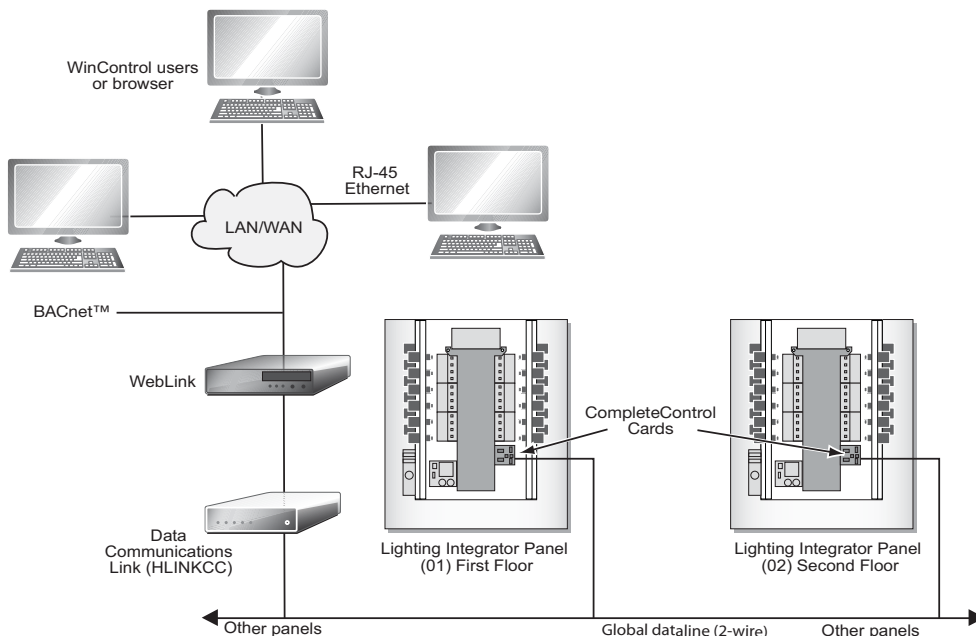


Specifications

- Includes AC Adapter: Input (AC 100~240 V) 215.9 mm x 63.5 mm) W x H x D
- USB port and Serial DB9 connector - for connection to HLINK
- 10/100 RJ45 Ethernet LAN connector
- Dimensions: 7.5" x 8.5" x 2.5" (190.5 mm x 215.9 mm x 63.5 mm) W x H x D
- Shipping weight: 3.2 lbs (1.45 kg)
- One-year warranty

System Layout

LIC Panel System with WebLink



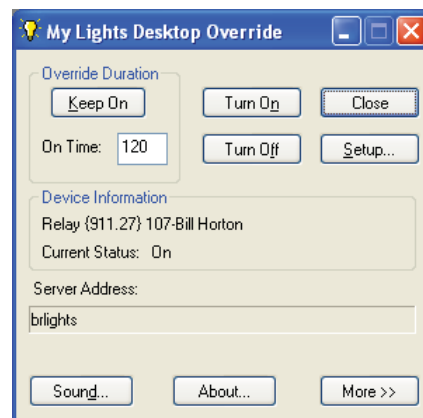
WebLink Options

Main Scheduler Screen



WebLink's main scheduler screen shows recent actions on the LI network, actions scheduled for the day, and quick links to alternate views.

My Lights



Individual users can access this control display from desktop PCs launched from a simple applet in the Windows system tray.

Ordering Information

Catalog No.	Description
<input type="checkbox"/> WL-BASE	WebLink v2 Network Appliance with AC adapter
<input type="checkbox"/> WL-OPTSCHED	WebLink Scheduler Software (browser-based)
<input type="checkbox"/> WL-MYLIGHTS	My Lights Software for personal desktop PC control and override
<input type="checkbox"/> WL-RACKSHELF	Black Shelf for rack mounting up to 50 lbs., 5.25"x17.25"x12.13" (133.4mm x 438.2mm x 308.1mm) HxWxD
<input type="checkbox"/> WL-UPS	UPS backup for WebLink

Analog Photocell for Lighting Integrator Complete Control

Color-coded Class 2 connection to panel

All adjustments made via WinControl software



Calibration remote from sensor (compliant with CA Title 24 requirements)

Three application-specific models for easy selection

PROJECT
LOCATION/TYPE

Product Overview

Description

Analog series photocells provide ambient light level measurements to Lighting Integrator Complete Control (LIC) panels, enabling flexible, multi-setpoint control of lighting. The outdoor model, HPSA, is completely weatherproof and equipped with a hooded lens to help protect against snow and glare. Indoor models include the HPSA-S for mounting in skylights, clearstories and atriums, and the HPSA-I, which is ideal for daylight shed applications and is mounted on the ceiling or wall.

Applications

The outdoor model HPSA is typically mounted on the building roof facing north. The HPSA provides exterior ambient light level information to the LIC panel where one or more setpoints have been established to control exterior lighting. The skylight model HPSA-S is designed to be compatible with the high light levels encountered near the glass in skylights, atriums and clearstories. Typically, the HPSA-S will provide light level information to the panel and be used to hold off/shed unnecessary interior lighting during bright daylight hours. The HPSA-I is also used to shed interior lighting in response to daylight, but is designed to operate in the relatively low ambient light levels present at the ceiling in interior rooms.

Operation

Analog series photocells are powered by Class 2 DC voltage supplied from any input terminal on a Group Switching card installed in an LIC panel. The photocells return a DC signal to the panel in proportion to the amount of light striking the photocell lens. No adjustments are needed at the photocell head. Powerful WinControl software normalizes the photocell signal and provides an easy user interface, permitting setup of lighting control scenarios based on footcandle level setpoints. Two modes allow for basic applications where default settings produce the desired control. An advanced mode allows the setpoints, time delays and dead-band to be fine-tuned for more sophisticated application requirements

Features

- Exterior and skylight models provide flexible mounting options via 1/2" threaded conduit fitting
- No calibration or adjustments required at the photocell location; all setup done in software
- Interior model mounts simply, without tools, using the provided peel and stick adhesive
- Color-coded flying leads and matching color-coded terminals in panel simplify installation
- Qualifies for use in ARRA-funded projects

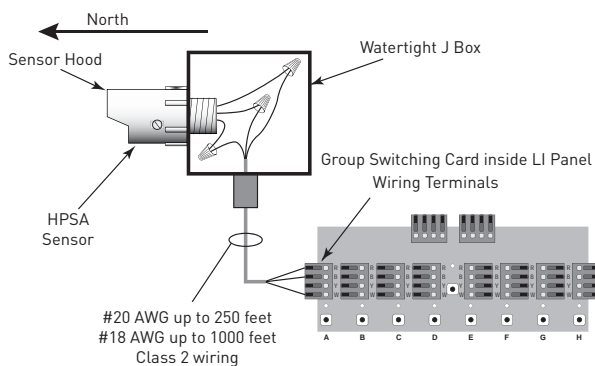


Specifications

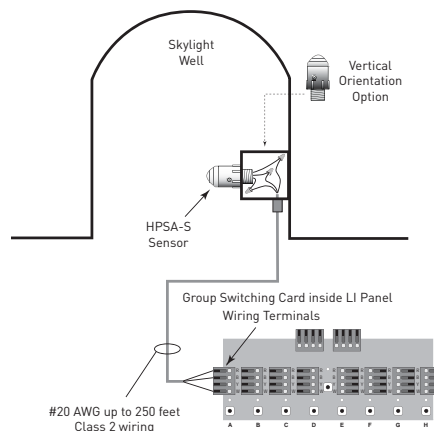
- Calibration: none (controlled by system software)
- Input Voltage: 12VDC
- Sensor Output: 0-4.4 VDC
- Peak Current: 4.5 mA maximum
- Slew Rate:
One minute full scale response time
- Wire Color Code: Red: +12VDC; Black: 0-4.4VDC signal to panel; White: DC common
- Operating Temperature:
-40°F-140°F (-40°C- 60°C)
- Mounting:
HPSA and HPSA-S: ½" NPT x .69" stem;
HPSA-I : 0.5" x .64" stem with 3M® adhesive pad
- Housing: UV stabilized plastic
- Dimensions:
HPSA: 2.25" x 1.28" diameter
HPSA-I: 1.23" x 2.00" diameter
HPSA-S: 2.25" x 1.28" diameter

Application Diagrams

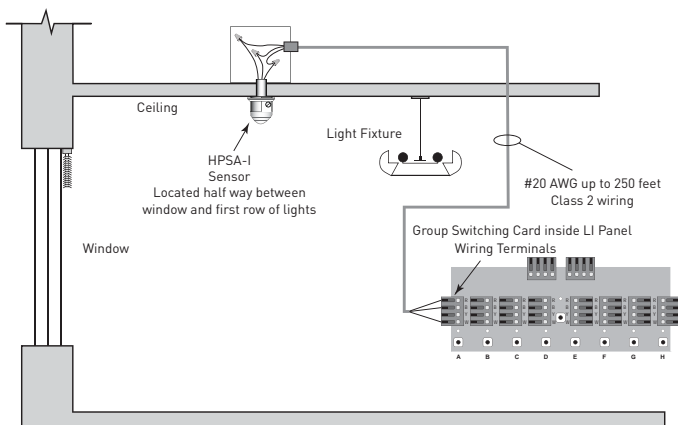
HPSA Outdoor Wiring



HPSA-S Skylight Wiring



HPSA-I Indoor Wiring



Ordering Information

Catalog No.	Description	Application Range
<input type="checkbox"/> HPSA	Outdoor analog photocell sensor, white housing	0 - 200 FC
<input type="checkbox"/> HPSA-I	Indoor analog photocell sensor, white housing	0 - 500 FC
<input type="checkbox"/> HPSA-S	Skylight analog photocell sensor, white housing	0 - 6000 FC

NOTE: May be ordered with custom calibration by adding suffix "X" and stating desired range.



LIGHTING INTEGRATOR WITH DMX512 INTERFACE LEVEL

In theatrical applications, such as auditoriums and theaters, the convenience of controlling all lighting from a single system ensures that non-stage lighting is controlled along with theatrical lighting cues. LID panels enable this level of integration. The LIDA option provides DMX512 theatrical control as well as the additional functionality of local dataline switches.

LID HIGHLIGHTS

- Optional group switch override setup with smartwired pushbutton programming
- Fail safe operation; relays do not change state if DMX signal lost
- Flexible switch override priority scheme allows switches to be enabled or disabled
- Compatibility with dataline switches affords additional override capability





LI DMX Level Interior (LID8, LID24, LID48, LIDA8, LIDA24, LIDA48)

Control relays from any DMX control device

Allows local switch overrides with priority



Supports one DMX512 universe

PROJECT
LOCATION/TYPE

Product Overview

Description

The Lighting Integrator DMX panel (LID) allows control of relays in Lighting Integrator (LID) panels from theatrical control devices (i.e., control consoles and show controllers).

Operation

Selected relays in an LID panel are each controlled by one DMX control channel. A channel level greater than 50% turns the relay on and a level below 50% turns the relay off. Local override is accommodated via wiring the low voltage switch terminals on the relay driver cards or group switch card. An optional group switch card(s) adds smartwiring capability for eight or 16 group switches (the latter requires two group cards in a 48 size panel). These switches can easily be configured to control groups of relays to match DMX channels containing more than one relay.

Optional local dataline capability (LIDA) offers additional override capability via dataline switches.

Features

- Control all or portion of panel relays via theatrical control system
- Optional group switch override setup with smartwired pushbutton programming
- Fail safe operation; relays do not change state if DMX signal lost

Override Priority

Relays are controlled by a variety of inputs to the panel, including direct wired override switches (LIDA only), direct wired group switches, dataline switches, and the DMX control signal. Relays that are controlled by both DMX and a switch respond based on the following override priority scheme:

DMX level >75%:	relay ON, accept switch override
DMX level <75% but >50%:	relay ON, ignore switch override
DMX level >25% but <50%:	relay OFF, ignore switch override
DMX level <25%:	relay OFF, accept switch override
DMX level 50:	DMX null, no operation performed, accept over-

Applications

Applications include auditoriums, ballrooms, themed entertainment venues, arenas, churches, and TV/film studios.

- Flexible switch override priority scheme
- Compatibility with optional dataline switches affords additional override capability
- Qualifies for use in ARRA-funded projects

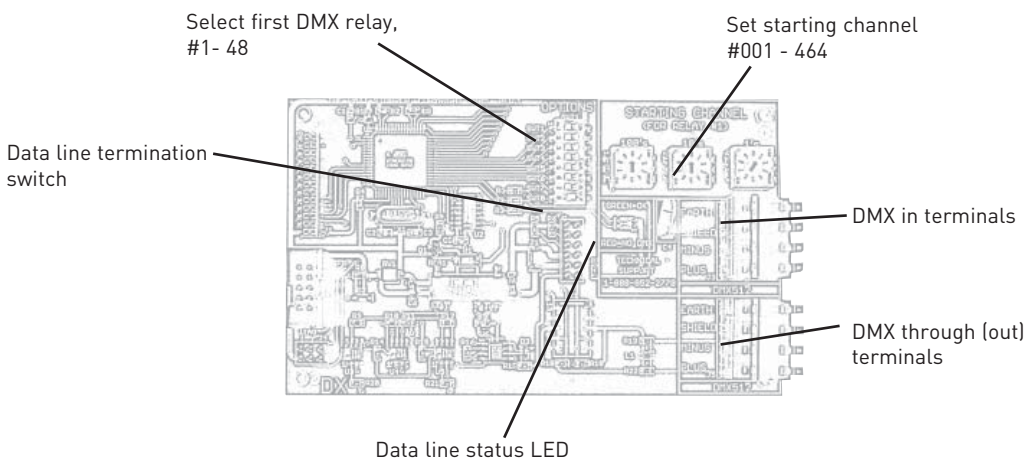


Specifications

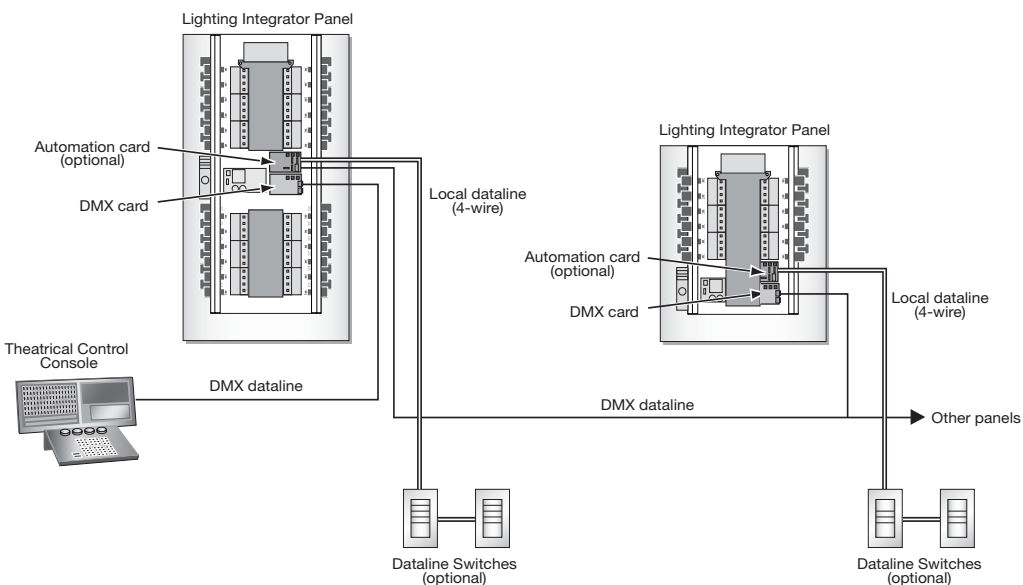
- Terminal connection for DMX in and DMX through (out)
- Starting channel number set via three rotary selector switches, max address is 464 (512 - 48)
- Select starting relay for DMX range of relays for control (#1- 48) using DIP switches #1 - 6
- LED status indicators (Red LED = power on, no DMX data, Green LED = DMX data true)
- RS485 com optically isolated with 500 volt minimum breakdown
- Integral end of line termination selected via DIP switch position 8
- One year warranty

System Layout & Wiring

LI DMX512 Card



LID Panel Network with DMX Interface





General LI Information

Description

WattStopper's Lighting Integrator (LI) is a low voltage, relay based lighting control panel. The LI interior is shipped as a separate assembly from the panel enclosure and cover to facilitate project rough-in requirements. Interiors are configured as 8, 24 or 48 relay capacity with the quantity of relays installed as called for on the order. The interior field mounts into an appropriate enclosure supplied separately.

Operation

LI relays are driven into a latched on or off state via a 24 volt DC pulse generated by the relay driver cards. A momentary pushbutton is provided for each relay driver circuit to manually force the relay to toggle its state with each button press. An isolated set of contacts in the relays provides a positive status feedback to the relay driver circuits that are annunciated by an LED associated with each relay. Removable terminal blocks allow connection of direct wired low voltage devices for remote control of relays.

- Interior provides complete isolation between line and low voltage when used with a compatible LENC series enclosure
- Individual plug-in, latching style single pole relays with isolated pilot/status contacts
- Integral push button override, status LED, and pilot light output per relay
- Two slots available for optional automation, networking and integration control cards

Operation (cont'd.)

Inputs can be wired to accommodate momentary three wire, momentary two wire (toggle) or maintained contact switches as well as occupancy sensors. The switch input circuits are auto sensing and will automatically configure appropriately when WattStopper occupancy sensors are connected.

Group Switching

Group switching provides the unique WattStopper Smartwired switching function. This simple button press interface allows any quantity of relays to be assigned quickly to each group switching channel for common on/off control or for pattern (scene) style control. Each of the eight channels is provided with an override pushbutton, LED status indicator and terminals for connection of wall switches and occupancy sensors. Eight and 24 size panels can be ordered with one group switch card (8 channels), 48 size panels can have two group switch cards for a total of 16 channels (8 controllable by scheduling, eight by switching only).

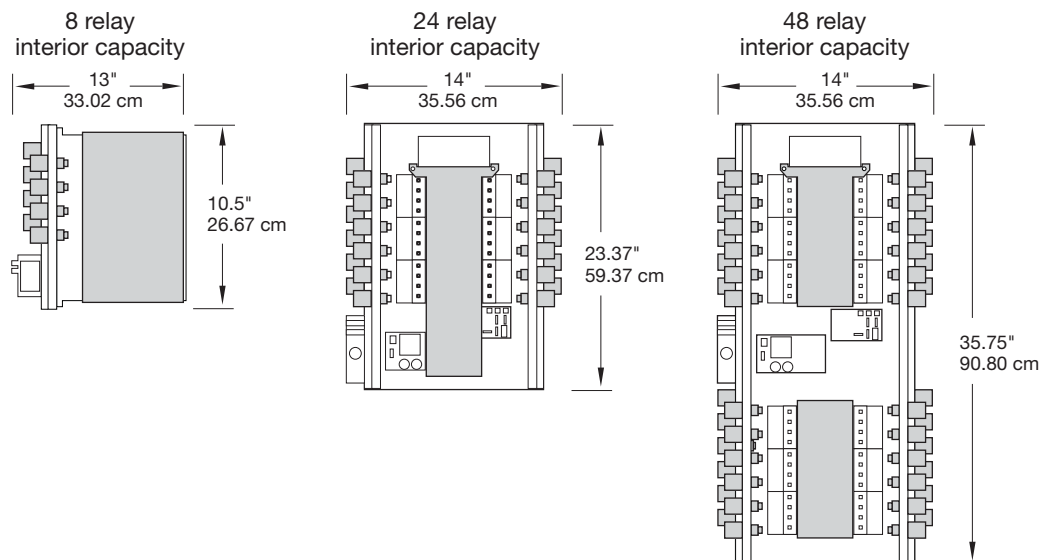
- Supports WattStopper occupancy sensor heads without need for separate sensor power packs
- Smartwire feature allows grouping of relays for common control
- DIN rail mounting provided within the Class 2 section for mounting of optional accessories
- Control multi-pole circuits with optional contactors and compatible LENC enclosure
- Optional configuration available for use on emergency lighting circuits



General LI Specifications

- Interior capacity:
 - 8 circuits, up to 8 SPST relays
 - 24 circuits, up to 24 SPST relays
 - 48 circuits, up to 48 SPST relays
- Input voltage options, 120/277V 60 Hz, 120/347V 60 Hz, 240V 50 Hz
- Group switching, eight channels per installed group switching card. One card max per LI8 and LI24. Two cards max LI48.
- Low voltage switch inputs, removable terminal blocks with screw-less connection, configurable for three wire momentary, two wire momentary (toggle), and two wire maintained dry contact switches or WattStopper occupancy sensors.
- Accessory power available
 - LI8: 1000 MA @24VAC or 800 MA @ 24VDC
 - LI24 and LI48: 1400 MA @ 24VAC or 800 MA @ 24VDC
- SCCR (short circuit current rating) 14,000 amps with HDR Heavy Duty Relay
- HDR SPST relays:
 - Coil voltage, 24 VDC, pulse ON and pulse OFF
 - Mechanically latched contacts
 - ½" K,O, mounting, LV plug-connection, individually replaceable
 - Contact ratings
 - 30 amps ballast @ 277V
 - 20 amps ballast @ 347V
 - 20 amps tungsten @ 120V
 - 30 amps resistive @ 347V
 - 1.5 HP @ 120V
 - Endurance: 300,000 mechanical cycles
- Pilot light output, 24 V rectified or 24VAC, other voltages configurable with external power supply
- One year warranty

Panel Interior Dimensions



Ordering Information

Interior Capacity	Installed Options				
	Voltage Options	Relay Count	Group Switch Card	Emergency Relays	Coil Voltage
<input type="checkbox"/> LID8 <input type="checkbox"/> LID24 <input type="checkbox"/> LID48 <input type="checkbox"/> LIDA8 <input type="checkbox"/> LIDA24 <input type="checkbox"/> LIDA48	<input type="checkbox"/> 115/277 <input type="checkbox"/> 115/347 <input type="checkbox"/> 240	___ HDR relays installed (max of interior capacity)	___ GS cards (max 1 in 8, 24, 2 in 48)	___ EM relay count [Not available in 8-relay size panels; max. of 24 in 24-relay or 48-relay size interior]	<input type="checkbox"/> 115 <input type="checkbox"/> 240 <input type="checkbox"/> 277 <input type="checkbox"/> 347



LIGHTING INTEGRATOR WITH NATIVE BACnet

In applications where owners prefer to coordinate control of building lighting systems directly from a building automation system, LI BACnet panels (LILM or LIB) enable easy integration of lighting controls with industry standard MS/TP BACnet based systems.

LI WITH BACnet HIGHLIGHTS

- Easy installation and verification of lighting circuits by electrical contractor without requiring services of BAS installation professional
- Industry standard MS/TP twisted pair networking allows LI panels to “piggyback” on BAS network or be configured on a separate network segment
- Easy grouping of relays via either smartwiring (pushbutton programming) or from BACnet workstation using standard BACnet objects and properties
- BAS required only for scheduled parameters (Occupied/Unoccupied); all other lighting control functions (e.g., blink warn, wall switch override, afterhour time delay) managed by LILM panel



BACnet is a registered trademark of ASHRAE





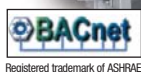


LILM Series Lighting Integrator Panel Interiors (LILM8, LILM24, LILM48)

Compatible with Digital Lighting Management switches and occupancy sensors

HDR relays include switch for manual override even when panel is powered off

Integral user interface for setup and diagnostics



Scheduling via DLM Segment Manager or BAS interface

Stand alone or networked operation

Eight independent control channels

PROJECT
LOCATION/TYPE

Product Overview

Description

The LILM series panel provides simple network-capable lighting control enabling the automation of lighting functions throughout an entire facility. The HDR relays in the panel can respond directly to inputs from Digital Lighting Management (DLM) switches and occupancy sensors.

Operation

LILM panels each provide eight automation channels that can be assigned any combination of relays. Each channel can respond to unique schedules sent from the optional Segment Manager or directly from a BACnet-enabled building automation system. Individual relays, or groups of relays, can be controlled by DLM digital switches and occupancy sensors. Controls are assigned to relays using Push n' Learn or through simple menus on the integral user interface.

Networking

When multiple DLM local networks and one or more LILM panels are connected to a high speed digital DLM segment network for remote management, the Segment Manager automatically recognizes them and allows configuration with minimal additional setup.

Applications

LILM panels are ideal for applications that can benefit from the unique features and energy savings of the DLM system. They provide effective control of building exterior lighting as well as larger interior areas that are not suited for DLM distributed controls. Recommended applications include office building lobbies, corridors, loading docks, etc., and school gymnasiums, commons areas and hallways.

Features

- Standard single pole heavy duty relays
- Available in interiors sized for 8, 24, or 48 relays maximum
- Compatible with DLM occupancy sensors
- Two free-topology DLM Cat 5e local networks for switches and sensors
- Programmable DLM switches for control of relays or groups
- Qualifies for use in ARRA-funded projects



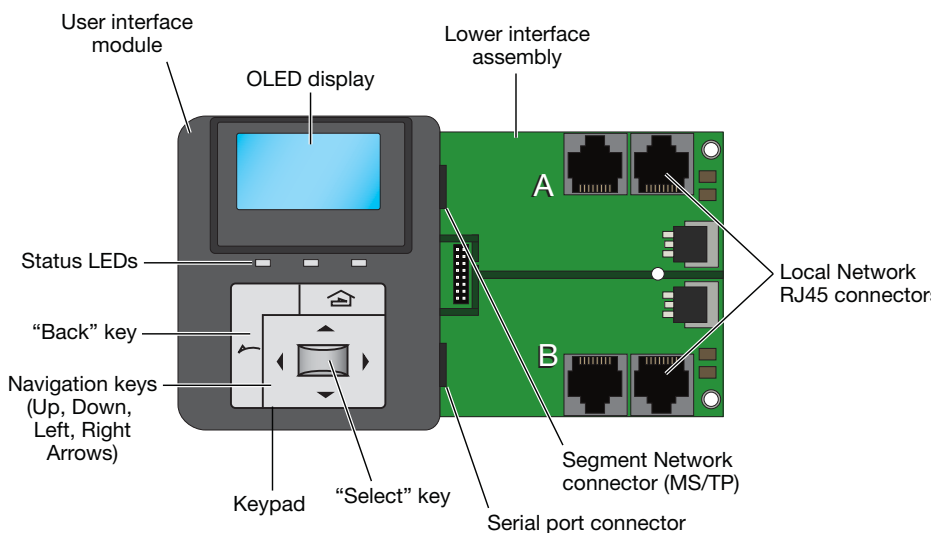
LILM Specifications

- Integral user interface for setup, status and diagnostic capabilities; 5 line by 32 character OLED display with backlight; 7 button keypad
- Class 2 connection to 2 independent DLM local network segments: 24VDC output, up to 250mA across 2 RJ45 ports per segment
- Free-topology DLM local network segments may include digital switches and sensors; Category 5e cable, up to 1,000' total per local network
- Digital network connector for connection to DLM segment network
- Segment network parameters:
 - WattStopper LM-MSTP wire rated for BACnet MS/TP (RS485)
 - Linear topology; 4000' maximum per segment
- Automation channels: 8 per panel, provide global schedule and control functions; schedule requires LMSM segment manager or third party BAS
- UL and cUL listed
- One year warranty

See General LI (Lighting Integrator) Specifications section for interior mechanical and electrical specifications.

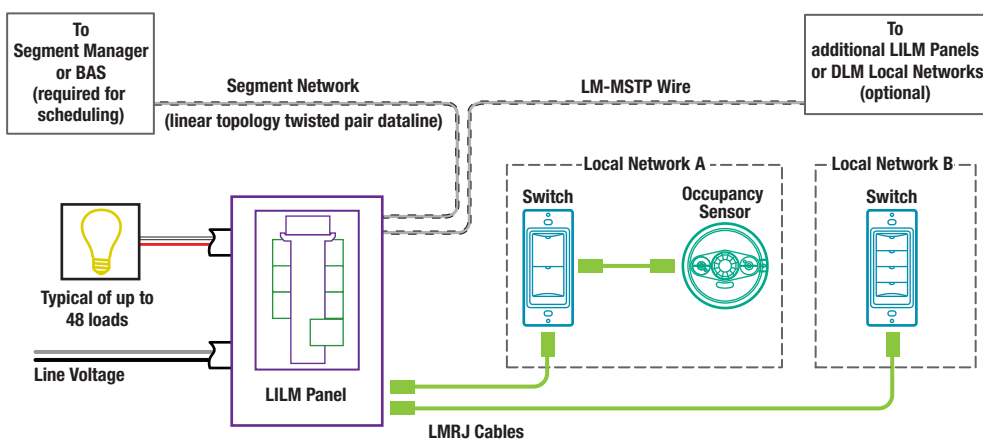
User Interface

LILM User Interface and DLM Local Network Connection Detail



Connecting

Sample Connection Diagram with DLM Switches and Sensor





General LI Information

Description

WattStopper's Lighting Integrator (LI) is a low voltage, relay based lighting control panel. Panel interiors are configured as 8, 24 or 48 relay capacity with the quantity of relays installed as called for on the order. The interior mounts into the appropriate enclosure. The LI panel enclosure and cover are shipped separately from the panel interior to facilitate project rough-in requirements.

Operation

LI relays are driven to a latched on or off position via a 24 volt DC pulse generated by the relay driver cards. A momentary pushbutton is provided for each relay to manually toggle the relay's state with each button press. An isolated contact in the relays provides positive status feedback to the relay driver circuits, which are annunciated by an LED associated with each relay. Removable color-coded terminal blocks allow connection of direct wired low voltage devices for remote control of relays.

- Interior provides complete isolation between line and low voltage when used with a compatible LENC series enclosure
- Individual plug-in, latching style single pole relays with isolated pilot/status contacts
- Integral push button override, status LED, and pilot light output per relay
- Two slots available for optional automation, networking and integration control cards

Operation (cont'd.)

Inputs can be wired to accommodate maintained or momentary three wire or two wire inputs. The switch input circuits are auto sensing and will automatically configure appropriately when WattStopper occupancy sensors are connected.

Smartwiring Direct Wired Switches

A unique WattStopper switching function, this simple button press interface allows any quantity of relays to be assigned quickly to each group switching channel for common on/off control or for pattern (scene) control. Each of the eight channels is provided with an override pushbutton, LED status indicator and terminals for connection of wall switches and occupancy sensors. An eight or 24 size panel can be ordered with one group switch card (8 channels), 48 size panels can have two group switch cards for a total of 16 channels (8 controllable by scheduling, eight by switching only).

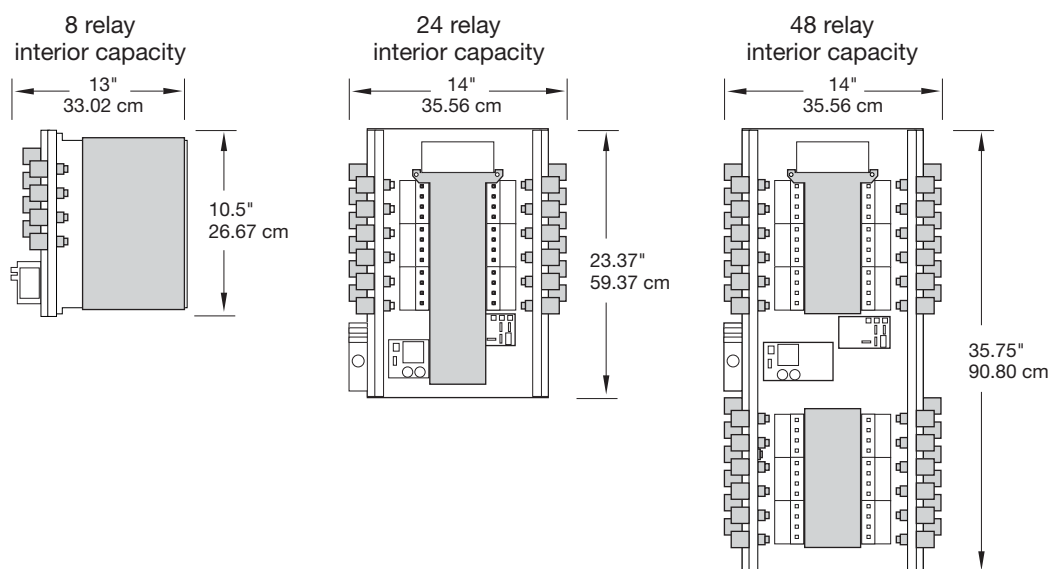
- Supports WattStopper low voltage occupancy sensors without need for separate sensor power packs
- Smartwiring feature allows grouping of relays for common control
- DIN rail mounting provided within the Class 2 section for mounting of optional accessories
- Control multi-pole circuits with optional contactors and compatible LENC enclosure
- Optional configuration available for use on emergency lighting circuits



General LI Specifications

- Interior capacity:
 - 8 SPST relays
 - 24 SPST relays
 - 48 SPST relays
- Input voltage options, 120/277V 60 Hz, 120/347V 60 Hz, 240V 50 Hz
- Low voltage switch inputs, removable terminal blocks with screw-less connection, configurable for three wire momentary, two wire momentary (toggle), and two wire maintained dry contact switches or WattStopper occupancy sensors.
- Accessory power available
 - LI8: 1000 MA @24VAC or 800 MA @ 24VDC
 - LI24 and LI48: 1400 MA @ 24VAC or 800 MA @ 24VDC
- Group switching, eight channels per installed group switching card. One card max per LI8 and LI24. Two cards max LI48.
- SCCR (short circuit current rating) 14,000 amps with HDR Heavy Duty Relay
- HDR relays:
 - Coil voltage, 24 VDC, pulse ON and pulse OFF
 - Mechanically latched contacts
 - 1/2" K.O. mounting, LV plug-connection, individually replaceable
 - Contact ratings:
 - 20 amps ballast @ 277V
 - 20 amps ballast @ 347V
 - 20 amps tungsten @ 120V
 - 20 amps resistive @ 347V
 - 1.5 HP @ 120V
 - Endurance: 300,000 mechanical cycles
- Pilot light output, 24 V rectified or 24VAC, other voltages configurable with external power supply
- Operating conditions: for indoor use only; 32-131°F (0-55°C); 5-95% RH, non-condensing
- California Office of Statewide Health Planning and Development (OSHPD) Special Seismic Certification Preapproval (#OSP-0257-10); tested in accordance with ICC-ES AC-156
- One year warranty

Panel Interior Dimensions



Ordering Information

Interior Capacity	Installed Options				
	Voltage Options	Relay Count	Group Switch Card	Emergency Relays	Coil Voltage
<input type="checkbox"/> LILM8	<input type="checkbox"/> 115/277	<input type="checkbox"/> HDR relays	<input type="checkbox"/> GS cards (max	<input type="checkbox"/> EM relay count	<input type="checkbox"/> 115
<input type="checkbox"/> LILM24	<input type="checkbox"/> 115/347	installed (max	1 in 8, 24, 2 in 48)	(Not available in 8-relay size	<input type="checkbox"/> 240
<input type="checkbox"/> LILM48	<input type="checkbox"/> 240	of interior capacity)		panels; max. of 24 in 24-relay	<input type="checkbox"/> 277
				or 48-relay size interior)	<input type="checkbox"/> 347

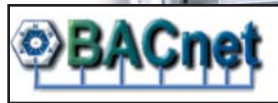
Order enclosures for LILM panel interiors separately.

Lighting Integrator with BACnet Option Interior (LIB8, LIB24, LIB48)

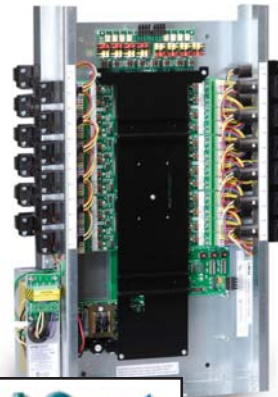
Native level integration between lighting control panel and BAS via BACnet

Configure and control LI panel with any BACnet workstation

No proprietary configuration tools or software needed for commissioning



BACnet is a registered trademark of ASHRAE



Industry standard MS/TP communication

Integral blink warnings and override time delays handled by LI panel automatically

PROJECT
LOCATION/TYPE

Product Overview

Description

The Lighting Integrator Native BACnet panel (LIB) enables native level integration of lighting control between the LIB panel and any building automation system that supports the ANSI/ASHRAE BACnet communication protocol. The LIB allows the BAS to schedule, monitor status, and override lighting freely without the need to support lighting-specific functions (e.g., blink warning, local override switches, and delay timers).

Operation

With the LIB panel system, panel relays and channels are automatically exposed to the BAS as standard BACnet objects. Relays can be individually commanded and monitored for their actual/on/off status, or be combined into channels and commanded and monitored as a group. This permits a building to be conveniently divided into lighting control zones, greatly reducing the number of individual objects a BAS must administer. LIB panels perform all typical lighting control sequence of operations without continuous supervision by the BAS.

Lighting Control Specific Functions

The LIB panel provides integral automation capabilities that enable lighting control compliant with state energy codes based on ASHRAE 90.1 and IECC. Its distributed processing also ensures operation of primary lighting control functions, such as wall switch overrides, blink warnings, and afterhours time out of overrides.

Applications

In most applications, a BAS will set lighting zones to occupied/unoccupied status through a schedule or a workstation command. The LIB panel then coordinates local switch overrides, time delays and blink warnings based on this status.

Features

- Integral automation enables BAS to easily provide code compliant lighting control
- Distributed processing ensures operation of primary lighting control functions
- Compatible with WattStopper occupancy sensors 2nd standard low voltage switch
- Supports Auto On, or energy saving Manual On function for lighting in areas scheduled as occupied
- Supports AS-100 Automatic Control Switch sweep off function
- Qualifies for use in ARRA-funded projects



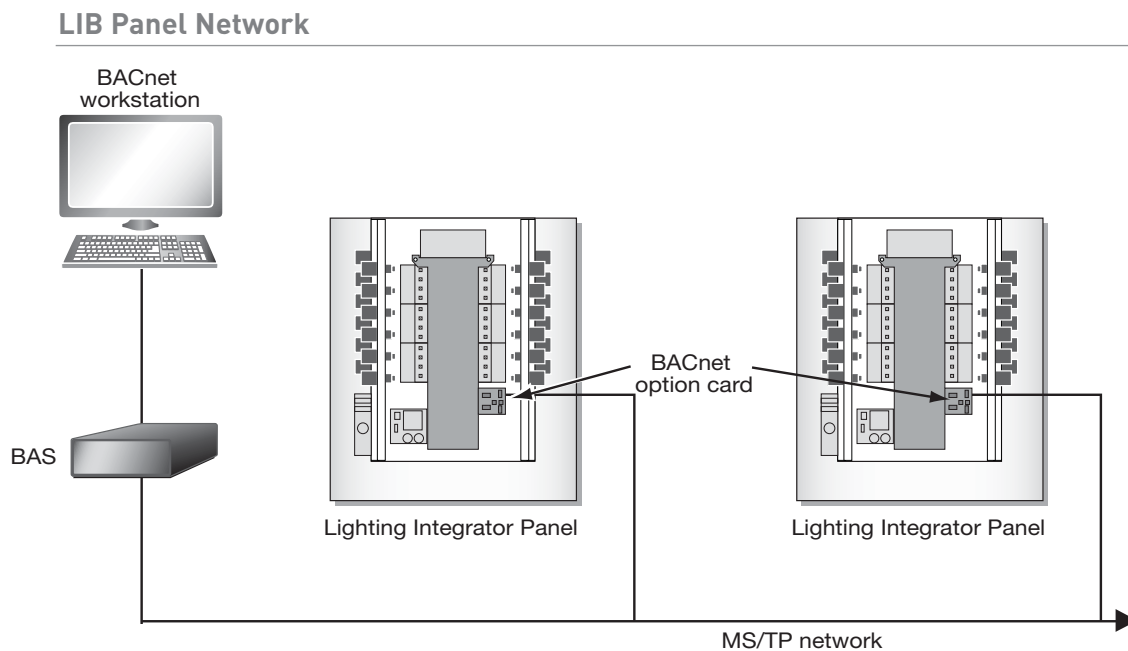
Specifications

- MS/TP communications port with removable 120 ohm "end of line" termination jumper
- 9600/19200/38400/76800 baud rates, selectable
- MS/TP MAC address selectable, 0 - 127
- Device ID selectable, 0 - 999 or 86000 - 86999
- Compatible with direct wired low voltage switches for relay override; not compatible with HDLS series dataline switches
- Description property writable for all objects
- One year warranty

BACnet Objects Supported

- Binary Output, Instance range 01-48 (1 per relay), monitor and control relays ON (1), OFF (NULL)
- Binary Value, Instance range 01-08 (1 per channel), command channels to occupied (1) or unoccupied (0) status
- Multi State Value, Instance range 01-08 (1 per channel), read channel relays' status as ALL ON, ALL OFF, BLINK, or MIXED state
- Binary Value, Instance range 101-108 (1 per channel), sets channel relays to manual-ON (1) or auto-ON (0)
- Analog Value, Instance range 101-108 (1 per channel), sets blink warning time for channel relays as five minutes (5) or no blink (0), or AS-100 switch (250)
- Analog Value, Instance range 201-208 (1 per channel), sets time delay for each channel relay (1-240 minutes) or no time delay (0)
- Analog Value, Instance range 01-48 (one per relay), sets relay to follow channel A-H (1-8)

Native BACnet Card and System Layout





General LI Information

Description

WattStopper's Lighting Integrator (LI) is a low voltage, relay based lighting control panel. The LI interior is shipped as a separate assembly from the panel enclosure and cover to facilitate project rough-in requirements. Interiors are configured as 8, 24 or 48 relay capacity with the quantity of relays installed as called for on the order. The interior field mounts into an appropriate enclosure supplied separately.

Operation

LI relays are driven into a latched on or off state via a 24 volt DC pulse generated by the relay driver cards. A momentary pushbutton is provided for each relay driver circuit to manually force the relay to toggle its state with each button press. An isolated set of contacts in the relays provides a positive status feedback to the relay driver circuits that are annunciated by an LED associated with each relay. Removable terminal blocks allow connection of direct wired low voltage devices for remote control of relays.

- Interior provides complete isolation between line and low voltage when used with a compatible LENC series enclosure
- Individual plug-in, latching style single pole relays with isolated pilot/status contacts
- Integral push button override, status LED, and pilot light output per relay
- Two slots available for optional automation, networking and integration control cards

Operation (cont'd.)

Inputs can be wired to accommodate momentary three wire, momentary two wire (toggle) or maintained contact switches as well as occupancy sensors. The switch input circuits are auto sensing and will automatically configure appropriately when WattStopper occupancy sensors are connected.

Group Switching

Group switching provides the unique WattStopper Smartwired switching function. This simple button press interface allows any quantity of relays to be assigned quickly to each group switching channel for common on/off control or for pattern (scene) style control. Each of the eight channels is provided with an override pushbutton, LED status indicator and terminals for connection of wall switches and occupancy sensors. Eight and 24 size panels can be ordered with one group switch card (8 channels), 48 size panels can have two group switch cards for a total of 16 channels (8 controllable by scheduling, eight by switching only).

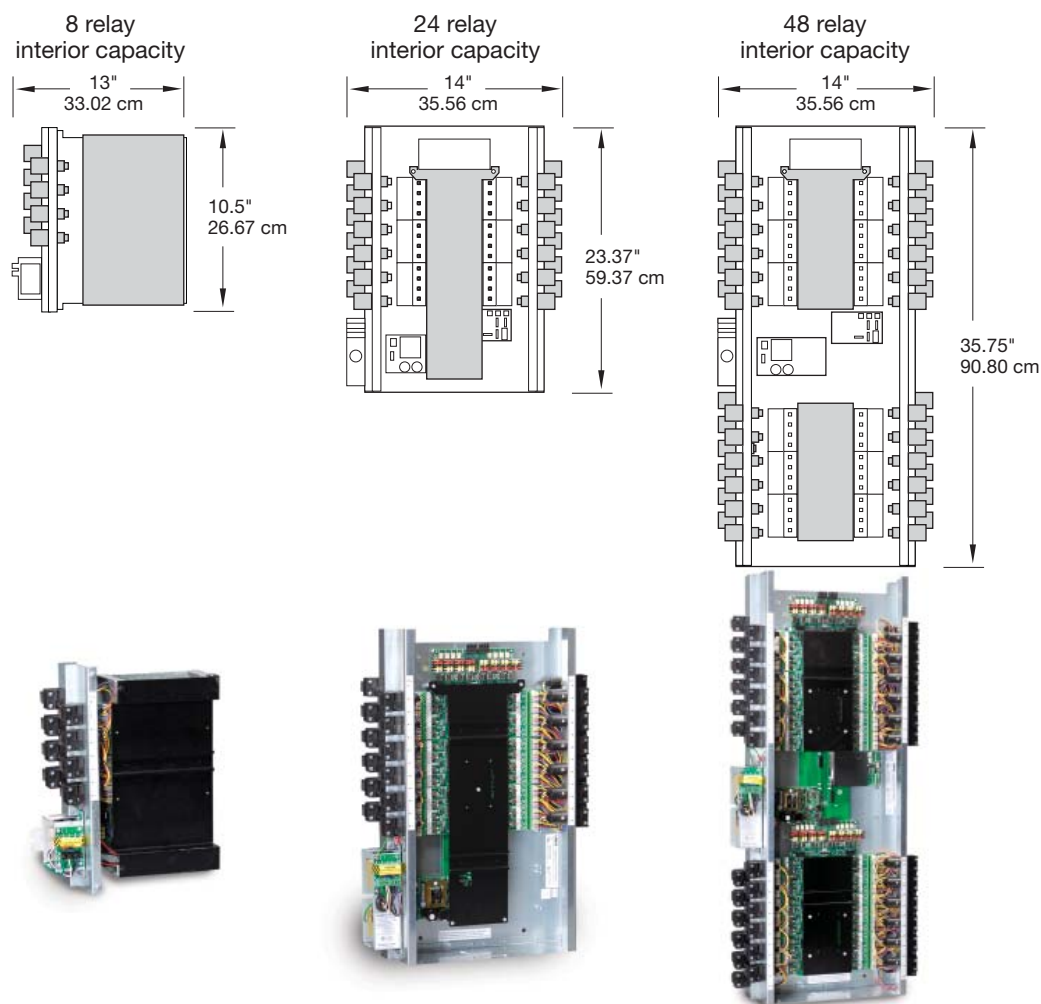
- Supports WattStopper occupancy sensor heads without need for separate sensor power packs
- Smartwire feature allows grouping of relays for common control
- DIN rail mounting provided within the Class 2 section for mounting of optional accessories
- Control multi-pole circuits with optional contactors and compatible LENC enclosure
- Optional configuration available for use on emergency lighting circuits



General LI Specifications

- Interior capacity:
 - 8 circuits, up to 8 SPST relays
 - 24 circuits, up to 24 SPST relays
 - 48 circuits, up to 48 SPST relays
- Input voltage options, 120/277V 60 Hz, 120/347V 60 Hz, 240V 50 Hz
- Group switching, eight channels per installed group switching card. One card max per LI8 and LI24. Two cards max LI48.
- Low voltage switch inputs, removable terminal blocks with screw-less connection, configurable for three wire momentary, two wire momentary (toggle), and two wire maintained dry contact switches or WattStopper occupancy sensors.
- Accessory power available
 - LI8: 1000 MA @24VAC or 800 MA @ 24VDC
 - LI24 and LI48: 1400 MA @ 24VAC or 800 MA @ 24VDC
- SCCR (short circuit current rating) 14,000 amps with HDR Heavy Duty Relay
- HDR relays:
 - Coil voltage, 24 VDC, pulse ON and pulse OFF
 - Mechanically latched contacts
 - 1/2" K,O, mounting, LV plug-connection, individually replaceable
 - Contact ratings
 - 30 amps ballast @ 277V
 - 20 amps ballast @ 347V
 - 20 amps tungsten @ 120V
 - 30 amps resistive @ 347V
 - 1.5 HP @ 120V
 - Endurance: 300,000 mechanical cycles
- Pilot light output, 24 V rectified or 24VAC, other voltages configurable with external power supply
- One year warranty

Panel Interior Dimensions



Ordering Information

Interior Capacity	Installed Options				
	Voltage Options	Relay Count	Group Switch Card	Emergency Relays	Coil Voltage
<input type="checkbox"/> LIB8	<input type="checkbox"/> 115/277	<input type="checkbox"/> HDR relays installed (max of interior capacity)	<input type="checkbox"/> GS cards (max 1 in 8, 24, 2 in 48)	<input type="checkbox"/> EM relay count (Not available in 8-relay size panels; max. of 24 in 24-relay or 48-relay size interior)	<input type="checkbox"/> 115
<input type="checkbox"/> LIB24	<input type="checkbox"/> 115/347				<input type="checkbox"/> 240
<input type="checkbox"/> LIB48	<input type="checkbox"/> 240				<input type="checkbox"/> 277
					<input type="checkbox"/> 347



LIGHTING INTEGRATOR LOW VOLTAGE SWITCHING PANEL

When the application demands simple remote control of lighting circuits, a basic LI panel offers robust control paired with flexibility. Exclusive HDR heavy duty relays ensure reliable performance while compatibility with a wide range of low voltage switches, occupancy sensors and daylighting sensors offers control flexibility.

BASIC LI

- Industry-exclusive heavy duty relay (HDR) for robust switching control
- Smartwired switching for pushbutton programming of relays into groups for common control
- Compatible with all standard low voltage switch types
- Compatible with WattStopper low voltage occupancy sensors
- Option for contactors for multi-phase load control
- Option for BACnet integration





Lighting Integrator Lighting Control Interior(LI8, LI24,LI48)

Models for 8, 24 or 48 circuits of control

Industry-exclusive heavy duty relay



Compatible with wide range of low voltage control devices (e.g., switches, occupancy sensors and daylight sensors)

Smartwiring enables easy grouping of relays into channels for common control

PROJECT

LOCATION/TYPE

Product Overview

Description

WattStopper's Lighting Integrator (LI) is a low voltage, relay based lighting control panel. Panel interiors are configured as 8, 24 or 48 relay capacity with the quantity of relays installed as called for on the order. The interior mounts into the appropriate enclosure. The LI panel enclosure and cover are shipped separately from the panel interior to facilitate project rough-in requirements.

Operation

LI relays are driven to a latched on or off position via a 24 volt DC pulse generated by the relay driver cards. A momentary pushbutton is provided for each relay to manually toggle the relay's state with each button press. An isolated contact in the relays provides positive status feedback to the relay driver circuits, which are annunciated by an LED associated with each relay. Removable color-coded terminal blocks allow connection of direct wired low voltage devices for remote control of relays.

Operation (cont'd.)

Inputs can be wired to accommodate maintained or momentary three wire or two wire inputs. The switch input circuits are auto sensing and will automatically configure appropriately when Watt Stopper occupancy sensors are connected.

Smartwiring

A unique WattStopper switching function, this simple button press interface allows any quantity of relays to be assigned quickly to each group switching channel for common on/off control or for pattern (scene) control. Each of the eight channels is provided with an override pushbutton, LED status indicator and terminals for connection of wall switches and occupancy sensors. An eight or 24 size panel can be ordered with one group switch card (8 channels), 48 size panels can have two group switch cards for a total of 16 channels.

Features

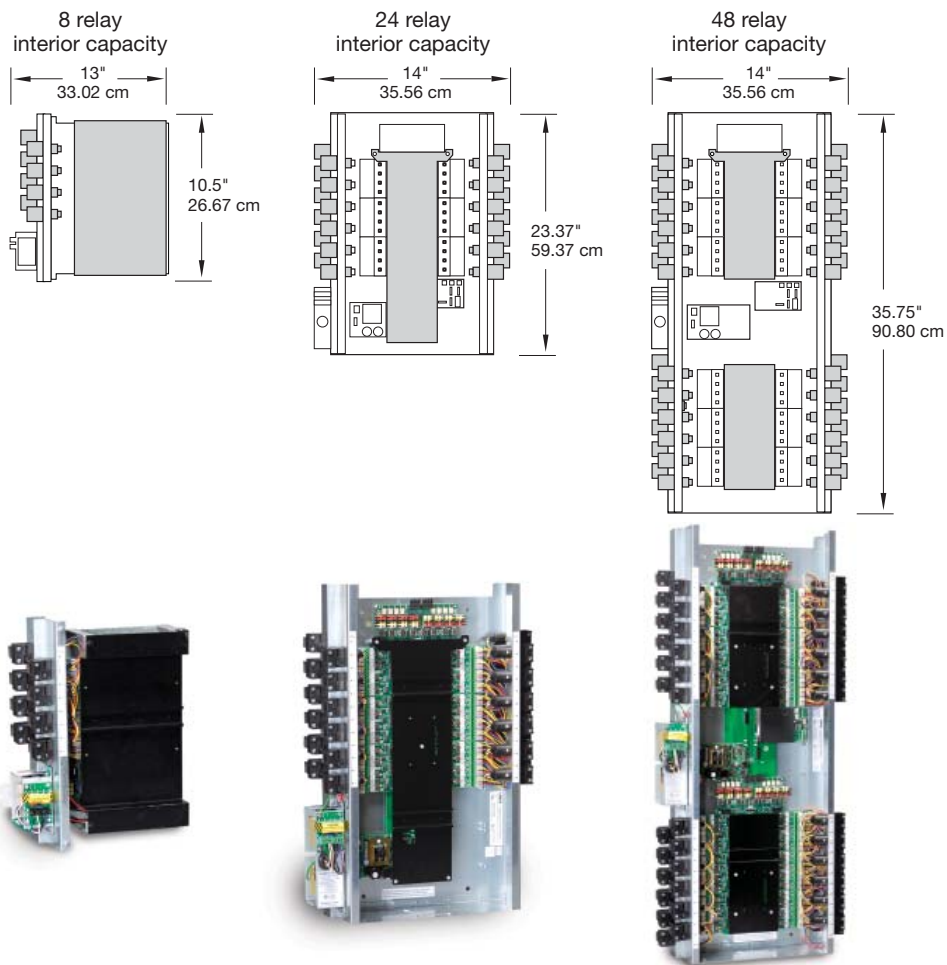
- Interior provides complete isolation between line and low voltage when used with a compatible LENC series enclosure
- Individual plug-in, latching style single pole relays with isolated pilot/status contacts
- Integral push button override, status LED, and pilot light output per relay
- Two slots available for optional automation, networking and integration control cards
- Supports WattStopper low voltage occupancy sensors without need for separate sensor power packs
- Smartwiring feature allows grouping of relays for common control
- DIN rail mounting provided within the Class 2 section for mounting of optional accessories
- Control multi-pole circuits with optional contactors and compatible LENC enclosure
- Optional configuration available for use on emergency lighting circuits
- Qualifies for use in ARRA-funded projects



Specifications

- Interior capacity:
 - 8 circuits, up to 8 SPST relays
 - 24 circuits, up to 24 SPST relays
 - 48 circuits, up to 48 SPST relays
- Input voltage options, 120/277V 60 Hz, 120/347V 60 Hz, 240V 50 Hz
- SCCR (short circuit current rating) 14,000 amps with HDR Heavy Duty Relay
- Low voltage switch inputs, removable terminal blocks with tool-less connection, configurable for three wire momentary, two wire momentary (toggle), and two wire maintained dry contact switches or WattStopper occupancy sensors.
- Accessory power available
 - LI8: 1000 MA @24VAC or 800 MA @ 24VDC
 - LI24 and LI48: 1400 MA @ 24VAC or 800 MA @ 24VDC
- Pilot light output, 24 V rectified or 24VAC, other voltages configurable with external power supply
- Group switching, eight channels per installed group switching card. One card max per LI8 and LI24. Two cards max LI48.
- HDR SPST relays:
 - Coil voltage, 24 VDC, pulse ON and pulse OFF
 - Mechanically latched contacts
 - 1/2" K,O, mounting, LV plug-connection, individually replaceable
 - Contact ratings
 - 30 amps ballast @ 277V
 - 20 amps ballast @ 347V
 - 20 amps tungsten @ 120V
 - 30 amps resistive @ 347V
 - 1.5 HP @ 120V
 - Endurance: 300,000 mechanical cycles
- One year warranty

Panel Interior Dimensions



Ordering Information

Interior Capacity	Installed Options				
	Voltage Options	Relay Count	Group Switch Card	Emergency Relays	Coil Voltage
<input type="checkbox"/> LI8	<input type="checkbox"/> 115/277	<input type="checkbox"/> HDR relays installed (max of interior capacity)	<input type="checkbox"/> GS cards (max 1 in 8, 24, 2 in 48)	<input type="checkbox"/> EM relay count (Not available in 8-relay size panels; max. of 24 in 24-relay or 48-relay size interior)	<input type="checkbox"/> 115
<input type="checkbox"/> LI24	<input type="checkbox"/> 115/347				<input type="checkbox"/> 240
<input type="checkbox"/> LI48	<input type="checkbox"/> 240				<input type="checkbox"/> 277
					<input type="checkbox"/> 347



LIGHTING INTEGRATOR ENCLOSURES AND ACCESSORIES

Every LI control configuration is compatible with a full range of low voltage switches and control devices to extend automation functionality. Additional accessories, such as contactors and photocells, provide additional control options. Comprehensive services ensure optimal system performance.



Lighting Integrator Panel Enclosures

16-gauge all steel tubs with galvineal finish

Screw on, powder coated cover permits temporary hanging via key hole screw slots

Surface or flush mounting with back mounting holes, screw cover

Lockable door access to Class 2 panel section, meets NFPA 70

Studs provided for quick installation of panel interior section

UL and CUL listed; one year warranty



PROJECT
LOCATION/TYPE

Product Overview

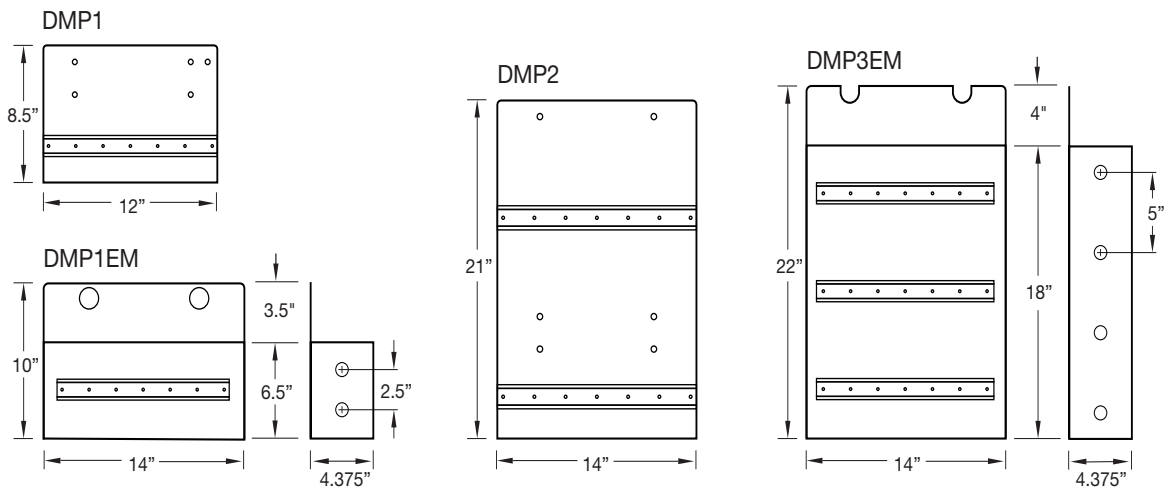
Description

Lighting Integrator panel enclosures are designed specifically to work with all configurations of LI panel interiors containing 8 to 48 relays. The enclosures are provided with integral mounting studs that are configured to accept the panel interior making the installation quick and easy. Covers are secured to the tubs with screws and have keyhole style mounting. This allows the cover to be temporarily hung on the tub during the construction phase of the project. All covers have hinged doors that expose only the low voltage (Class 2) section of the panel and are equipped with key locks and two keys each. All Lighting Integrator enclosures are NEMA 1 rated. Consult factory for other NEMA rated applications.

Configurations

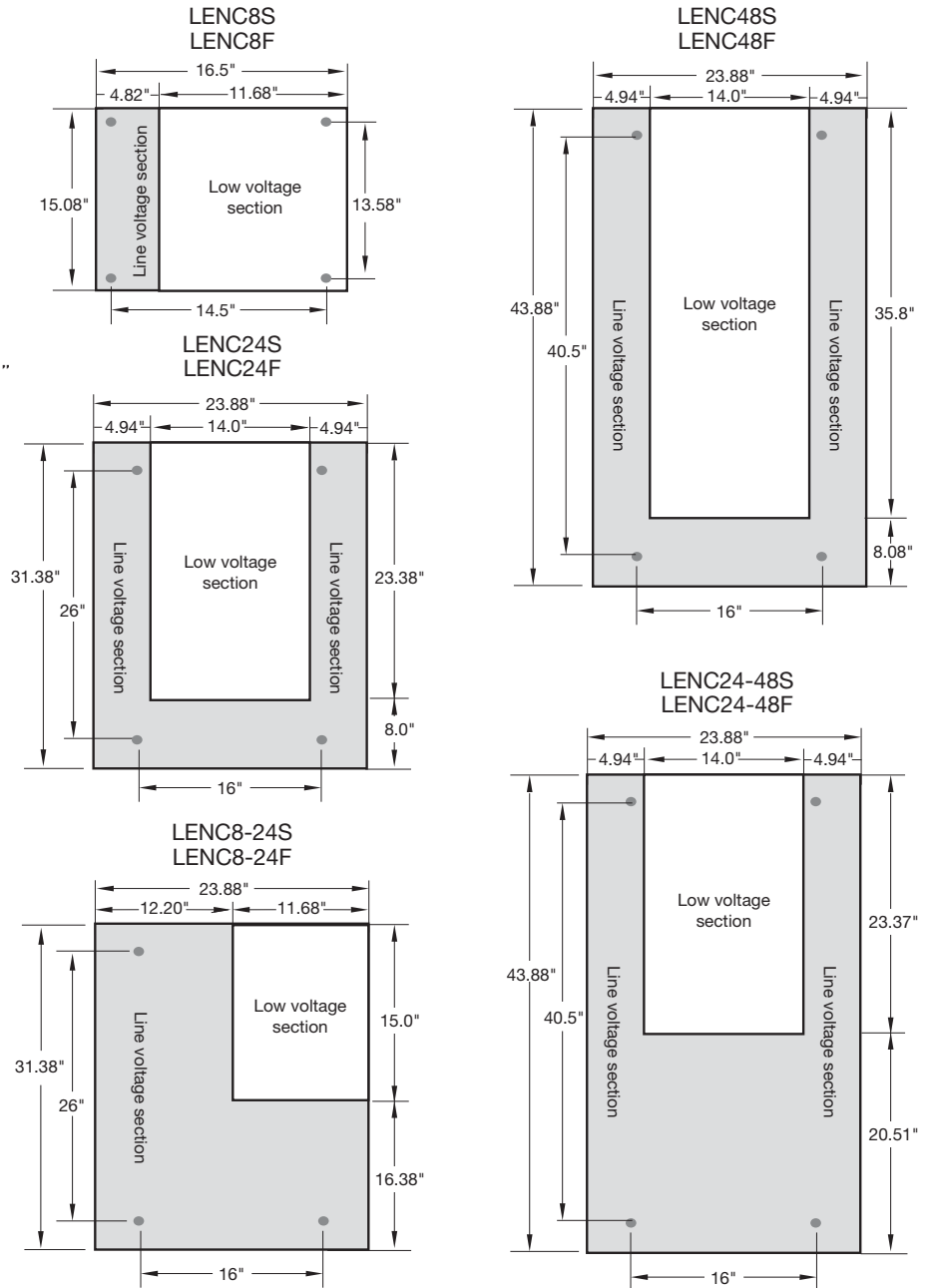
Enclosures rated for 24 or 48 relay capacity have space provided at the bottom for optional mounting plates (DMP) to accept DIN rail mounted accessories such as multi-pole contactors and ELCU-100 Emergency Lighting Control Units. Standard LENC24 and LENC48 enclosures will accommodate up to six four pole contactors (requires DMP mounting plate) or four ELCU-100 units (requires DMP-1EM mounting plate). LENC8-24 and LENC24-48 enclosures have additional space provided and will accommodate up to twelve four pole contactors (requires DMP-2 mounting plate) or 12 ELCU-100 units (requires DMP-3EM mounting plate).

DIN Rail Mounting Options



Tub Dimensions

Note:
Tub depth 4.50"
Cover thickness .075"



Ordering Information

Catalog No.	Description	Overall Dimensions Including Cover (HxWxD)	Overall Weight
<input type="checkbox"/> LENC8S	8 relay capacity, surface mount	15.75" x 16.62" x 4.575"	18 lbs
<input type="checkbox"/> LENC8F	8 relay capacity, flush mount	17.10" x 18.48" x 4.575"	20 lbs
<input type="checkbox"/> LENC8-24S	8 relay capacity with 24 size tub, surface mount	32.00" x 24.00" x 4.575"	45 lbs
<input type="checkbox"/> LENC8-24F	8 relay capacity with 24 size tub, flush mount	33.35" x 25.85" x 4.575"	50 lbs
<input type="checkbox"/> LENC24S	24 relay capacity, surface mount	32.00" x 24.00" x 4.575"	45 lbs
<input type="checkbox"/> LENC24F	24 relay capacity, flush mount	33.35" x 25.85" x 4.575"	50 lbs
<input type="checkbox"/> LENC24-48S	24 relay capacity with 48 size tub, surface mount	44.50" x 24.00" x 4.575"	62 lbs
<input type="checkbox"/> LENC24-48F	24 relay capacity with 48 size tub, flush mount	45.85" x 25.85" x 4.575"	66 lbs
<input type="checkbox"/> LENC48S	48 relay capacity, surface mount	44.50" x 24.00" x 4.575"	62 lbs
<input type="checkbox"/> LENC48F	48 relay capacity, flush mount	45.85" x 25.85" x 4.575"	66 lbs
<input type="checkbox"/> DMP	mounting plate, one DIN rail for up to 6 contactors	8" x 12" x 4.625"	1.86 lbs
<input type="checkbox"/> DMP-2	mounting plate, two DIN rail for up to 12 contactors	21" x 14" x 4.625"	5.30 lbs.
<input type="checkbox"/> DMP-1EM	mounting plate, one DIN rail with barrier for up to 4 ELCU-100s	10" x 14" x 4.37"	3.64 lbs.
<input type="checkbox"/> DMP-3EM	mounting plate, three DIN rail with barrier for up to 12 ELCU-100s	22" x 14" x 4.37"	7.60 lbs.

Qualify for use in ARRA-funded projects.

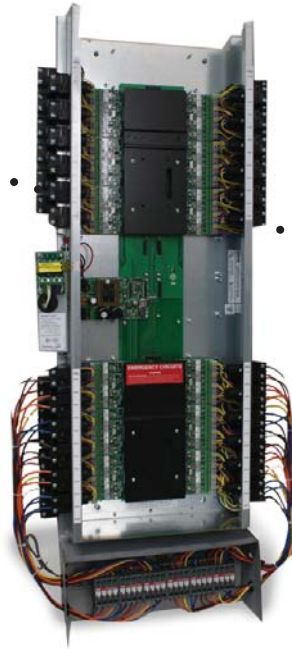


Lighting Integrator Emergency Relay Panel Option

UL924 listed for use on emergency circuits

Factory-assembled interior mounts in standard LI enclosure, ships completely wired

Meets NEC (NFPA70) UL 924 requirements for emergency lighting control



Allows normal control of emergency circuits via schedule, switch, photocell or other device

Guarantees that emergency lighting will turn on upon loss of normal power

PROJECT
LOCATION/TYPE

Product Overview

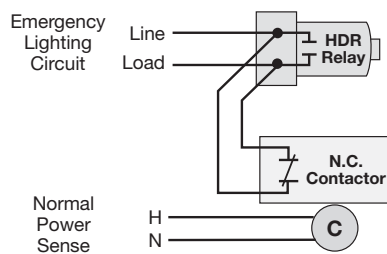
Description

The Lighting Integrator Emergency Relay Panel option provides certified fail-safe operation of lighting control circuits controlled by HDR relays in an LI lighting control panel. The option is available with any 24 or 48 size LI panel.

Operation

A dedicated normal power sense connection monitors the presence of normal power and allows the HDR relays to control the emergency lighting circuits based on ordinary control schedules and devices, such as switches, occupancy sensors, and daylighting control devices. When normal power is lost for any reason, all HDR relays controlling emergency circuits are each individually bypassed automatically by a set of normally closed contacts. The HDR relays do not change state during a power outage so lighting is restored when normal power is restored.

Wiring



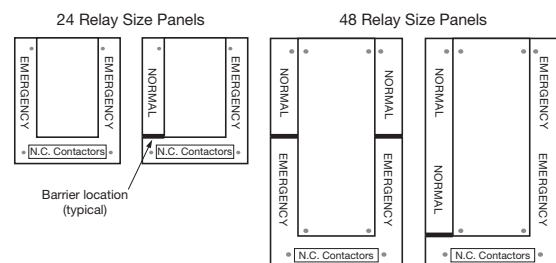
Applications

The Lighting Integrator emergency lighting control panel option is ideal for applications where always-hot emergency lighting circuits need to be controlled along with the normal lighting circuits. Because the lighting control panel with integrated yet dedicated emergency relays operates normally based on the type of intelligence card installed in the panel, this is suitable for virtually any type of application. These panels can be used reliably for fail safe emergency lighting operation in schools, office buildings, libraries, airports, industrial plants, warehouses, and auditoriums.

Specifications

- 30 Amp normally closed contactors used for shunt operation
- One to 24 emergency relays per panel, 24 or 48 size enclosure only
- Emergency relay rating: same as HDR
- Normal power sense input, 120, 277 or 347 volts, voltage specific
- UL listed for use on emergency circuits

Emergency Relay Panel Configurations



Description

Order LI Emergency Relay Panel option using the ordering section on the LI level panel cut sheet.

Pub. No. 29702 rev 10/2009

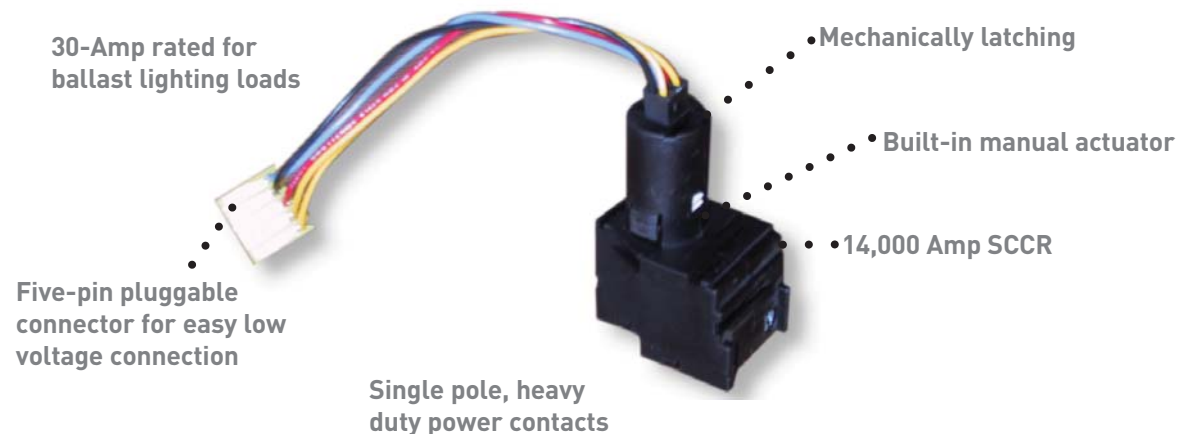
Ordering Information

WattStopper®
www.wattstopper.com
800.879.8585

A Group brand Legrand



HDR Low Voltage Relay



PROJECT
LOCATION/TYPE

Product Overview

Description

This low voltage relay is used for control of lighting circuits and other electrical loads in WattStopper's Lighting Integrator control panels. Momentary, low voltage pulses from the panel's control system switch the relays on or off. Mechanical latching operation results in lower power consumption. The relay will remain in the last switched state in the event of a power loss. A built-in manual actuator allows lights to be turned on in the event of a panel or relay failure. The relay mounts into a standard knockout and comes with a plug-in cable for easy panel connection. Typically, users specify the number of relays and the panel is assembled and shipped with this quantity.

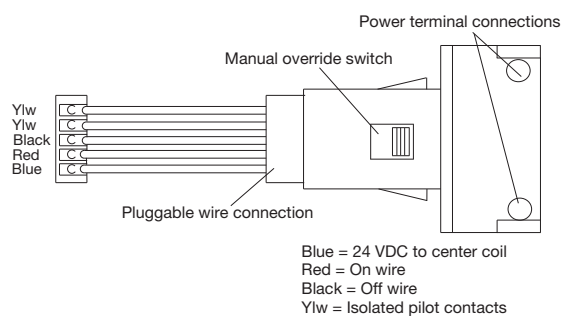
Specifications

- 1/2" knockout mounting
- Accepts wire gauge #10 - #14 AWG, copper wire, solid or stranded
- Operating voltage 24 VDC
- Isolated pilot relay contacts, .5 Amp @ 30 VAC/DC for status feedback
- Integral manual override
- Rated 14,000 amps Short Circuit Current Rating (SCCR)
- Suitable for use with all HID ballasted loads
- Expected service life is over 25 years at nominal load and cycle rate
- Dimensions: 3.2"x 1.3"x .85" (81.3 mm x 33.0 mm x 21.6 mm)
- UL listed, CSA certified; five year warranty

Ratings

- | | |
|--------------------------------|------------------|
| • Ballast load (including HID) | 30 Amp @ 277 VAC |
| • Tungsten load | 20 Amp @ 347 VAC |
| • Resistive load | 20 Amp @ 120 VAC |
| • Motor load | 30 Amp @ 347 VAC |
| | 1½ HP @ 120 VAC |

HDR Wiring



Ordering Information

Catalog No.	Description
<input type="checkbox"/> HDR5P	Mechanically Latching Relay (low voltage) with five-pin plug-in connector, pilot contacts, override switch

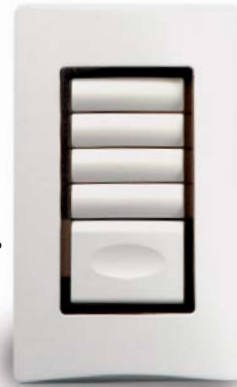
Qualifies for use in ARRA-funded projects.

Dataline Switch for LI Complete Control

Pushbutton control for single relays, groups of relays, and/or channels in Lighting Integrator panel systems

Screwless wallplate and removable lens caps for labeling

Pilot light LEDs for visual status feedback



1-, 2-, 4-, and 8-button configurations

Locator light bar for visibility when dark

Local dataline compatibility provides easy installation and operation

PROJECT
LOCATION/TYPE

Product Overview

Description

The Lighting Integrator (LI) Dataline Switch (HDLSxSS) is designed for use with LI Complete Control (LICA) and LI DMX (LIDA) panels and offers flexible and user-friendly lighting control of a single relay or a group of relays in one panel or a network of panels.

Operation

Dataline Switches install into standard wallboxes and connect to an LICA/LIDA panel via dual twisted pair digital bus wiring. Each switch unit contains one master button and up to eight individual switch buttons which can be individually programmed (smartwired) to control relays or groups of relays. Individual switch buttons are programmed directly from WinControl software on LICA systems or by lifting the switch covers to uncover the smartwiring buttons on LIDA systems. Pressing these buttons (see Switch Programming and Wiring) sends a unique digital code that identifies the buttons and switch to the panel. The buttons can then be assigned to a relay or a group of relays. The master button is programmed via DIP switches on the back of the switch with a choice of functions.

Control Capabilities

Dataline switches can be used with LICA and LIDA systems. In LICA systems, the buttons may also control system-wide group codes.

Applications

Multiple Dataline Switches connect together and to a panel via 4-conductor data communications wiring (also referred to as the local dataline). This reduces the wiring required by conventional switches, since up to 63 devices per panel can share the dataline. Dataline Switches are ideal for commercial office or other buildings where individual occupant lighting control needs are paramount. These switches are flexible enough to accommodate individual needs while facilitating efficient, area-wide automated lighting control. The "cleaning" scenario enables maintenance crews to control needed lighting without interfering with the needs of individuals working after hours.

Features

- Works with with LICA and LIDA systems
- Bi-color pilot light status LEDs indicates relay states for each button (red = All On, green = mixed state, no color = All Off)
- Locator light bar for finding switch in the dark
- Optional key lock version for public locations
- Optional cleaning control scenario
- Optional On Only setting to prevent inadvertently turning lights off
- Master button with programmable configurations (Restore/All Off; All Off, All On/ All Off, or Disabled)
- Available in white, ivory, almond, and gray
- Qualifies for use in ARRA-funded projects



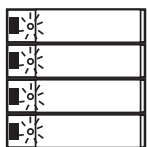
Specifications

- Standard wallbox mounting, non-gangable
- Removable switch button lens caps accommodate 3/8" (9mm) laminated tape
- Custom engraving available
- Environmental: Operating temperature range 32 to 139°F (0 to 60°C), 5-95% RH noncondensing
- Dimensions: 4.5" x 2.75" x 1.8" (69.8mm x 114.3mm x 46mm) HxWxD for 1-, 2-, and 4-button switch; 4.5" x 4.5" x 1.8" (114.3mm x 114.8mm x 46mm) HxWxD for 8-button switch
- One year warranty

Switch Programming and Wiring

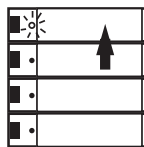
Smartwiring a Dataline Switch

- 1** Remove wallplate and Press Smartwire tab once. Smartwire LED flashes once. All switch button LEDs begin flashing.



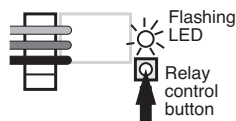
Smartwire tab
Smartwire LED

- 2** Press switch button to be programmed. Selected button LED continues to flash. Other LEDs stop flashing.



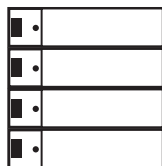
Smartwire LED

- 3** Press relay control button to add or delete from group.

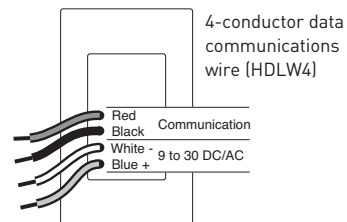


Flashing LED
Relay control button

- 4** Press Smartwire tab again. All LEDs stop flashing. Smartwiring is completed. Repeat for other buttons as needed.



Dataline Switch Wiring



Ordering Information

Catalog No.	Color	Description	Catalog No.	Color	Description	Size	Power Consumption
<input type="checkbox"/> HDLS1SS-7	White	Single Dataline Switch	<input type="checkbox"/> HDLS1SS-7K	White	Keyed Single Dataline Switch	Single-gang	45 mA
<input type="checkbox"/> HDLS1SS-2	Ivory		<input type="checkbox"/> HDLS1SS-2K	Ivory			
<input type="checkbox"/> HDLS1SS-4	Almond		<input type="checkbox"/> HDLS1SS-4K	Almond			
<input type="checkbox"/> HDLS1SS-9	Gray		<input type="checkbox"/> HDLS1SS-9K	Gray			
<input type="checkbox"/> HDLS2SS-7	White	Dual Dataline Switch (2 individual buttons + Master button)	<input type="checkbox"/> HDLS2SS-7K	White	Keyed Dual Dataline Switch (2 individual buttons + Master button)	Single-gang	50 mA
<input type="checkbox"/> HDLS2SS-2	Ivory		<input type="checkbox"/> HDLS2SS-2K	Ivory			
<input type="checkbox"/> HDLS2SS-4	Almond		<input type="checkbox"/> HDLS2SS-4K	Almond			
<input type="checkbox"/> HDLS2SS-9	Gray		<input type="checkbox"/> HDLS2SS-9K	Gray			
<input type="checkbox"/> HDLS4SS-7	White	Quad Dataline Switch (4 individual buttons + Master button)	<input type="checkbox"/> HDLS4SS-7K	White	Keyed Quad Dataline Switch (4 individual buttons + Master button)	Single-gang	55 mA
<input type="checkbox"/> HDLS4SS-2	Ivory		<input type="checkbox"/> HDLS4SS-2K	Ivory			
<input type="checkbox"/> HDLS4SS-4	Almond		<input type="checkbox"/> HDLS4SS-4K	Almond			
<input type="checkbox"/> HDLS4SS-9	Gray		<input type="checkbox"/> HDLS4SS-9K	Gray			
<input type="checkbox"/> HDLS8SS-7	White	Octal Dataline Switch (8 individual buttons + Master button)	<input type="checkbox"/> HDLS8SS-7K	White	Keyed Octal Dataline Switch (8 individual buttons + Master button)	Double-gang	75 mA
<input type="checkbox"/> HDLS8SS-2	Ivory		<input type="checkbox"/> HDLS8SS-2K	Ivory			
<input type="checkbox"/> HDLS8SS-4	Almond		<input type="checkbox"/> HDLS8SS-4K	Almond			
<input type="checkbox"/> HDLS8SS-9	Gray		<input type="checkbox"/> HDLS8SS-9K	Gray			

LVSW-100 Series Low Voltage Switches

Low voltage pushbutton switches for on/off control of one or more loads

Compatible with LC8, LP8, LI and LMCP Series lighting control panels

LED pilot light on each button



Customizable, field replaceable buttons

Single gang devices, compatible with standard decorator style face plates

Appearance matches DLM LMSW-100 Series digital wall switches

PROJECT

LOCATION/TYPE

Product Overview

Description

LVSW-100 Series Low Voltage Switches are lighting control devices that use conventional point-to-point low voltage wiring for control of single or multiple loads. Each button provides a momentary contact that is intended for use with compatible low voltage relay panels or similar lighting control panels or devices. Each button has an LED indicator that can serve as a status indicator or as a locator light.

Operation

LVSW-100 Series switches are totally passive and contain no active electronics or power supply. The buttons are single pole momentary contact and all share a common return. Operation is dependent upon a Class 2 connection to a compatible relay panel or other device that can react to a momentary contact signal. The LED indicators associated with each switch button are reliant on a 24 VDC source originating from the lighting control panel.

LED and button options

Switches are available with one, two, three, four and eight buttons. If the connected panel supports the feature, the blue LED associated with each button can be used to indicate the state of the controlled lighting load. Alternately, the LED indicators can be lighted continuously and serve as locator lights to help users find the switch in the dark. Each switch may be personalized in the field with custom-engraved buttons.

Applications

The LVSW-100 Series Low Voltage Switches are perfect for use with LC8 Series lighting control panels, as well as Lighting Integrator panels or LP8 Series "Peanut" panels. They are ideal for applications that do not require, or do not accommodate, digital switch control yet would benefit from the styling that matches the appearance of Digital Lighting Management (DLM) digital wall switches, such as projects combining DLM controls and small panels.

Features

- Sleek single gang devices fit decorator wall plates (not supplied); 1-, 2-, 3-, 4-, and 8-button models
- Blue LED indicator on each button can be used as a locator light or as a status indicator
- Five color options and custom engraving options; standard buttons may be replaced in the field
- RoHS compliant

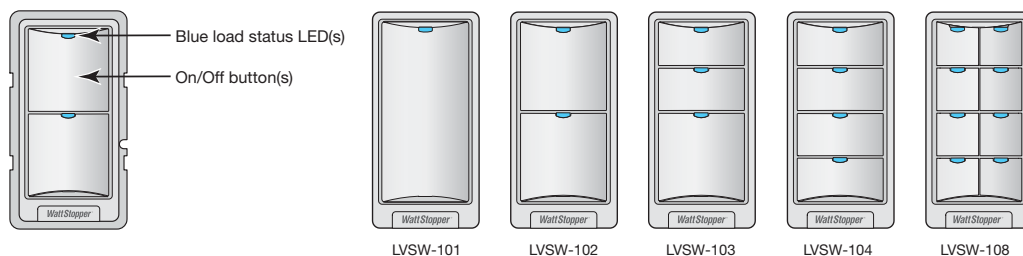


Specifications

- Input voltage: 24 VDC maximum, from panel
- Maximum contact operating current: 50 mA
- Maximum operating current (per LED): 30 mA
- Wire connections; removable terminal blocks
 - one terminal per button
 - one terminal per LED
 - two common terminals; shared with all buttons and LEDs
- Operating conditions: for indoor use only; 32-130°F (0-55°C), 5-95% RH noncondensing
- UL and cUL listed
- Five year warranty

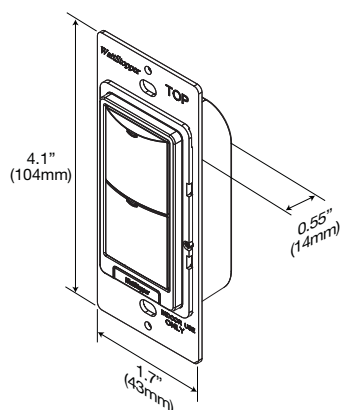
Product Controls

Product Controls and Models

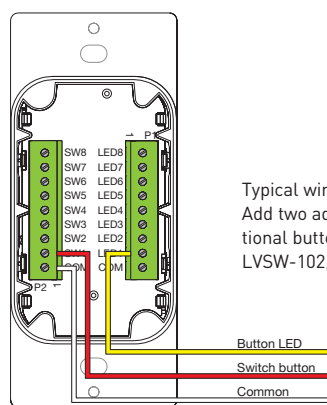


Dimensions & Wiring

Dimensions



Wiring



Typical wiring for one button and LED. Add two additional wires for each additional button and LED (e.g. 5 wires for LVSW-102, 7 wires for LVSW-103, etc.).

Ordering Information

Catalog No.	Color	Product Description	Catalog No.	Color	Product Description
<input type="checkbox"/> LVSW-101-W	White	1-Button Low Voltage Wall Switch	<input type="checkbox"/> LVSW-104-W	White	4-Button Low Voltage Wall Switch
<input type="checkbox"/> LVSW-101-LA	Light Almond		<input type="checkbox"/> LVSW-104-LA	Light Almond	
<input type="checkbox"/> LVSW-101-I	Ivory		<input type="checkbox"/> LVSW-104-I	Ivory	
<input type="checkbox"/> LVSW-101-G	Grey		<input type="checkbox"/> LVSW-104-G	Grey	
<input type="checkbox"/> LVSW-101-B	Black		<input type="checkbox"/> LVSW-104-B	Black	
<input type="checkbox"/> LVSW-102-W	White	2-Button Low Voltage Wall Switch	<input type="checkbox"/> LVSW-108-W	White	8-Button Low Voltage Wall Switch
<input type="checkbox"/> LVSW-102-LA	Light Almond		<input type="checkbox"/> LVSW-108-LA	Light Almond	
<input type="checkbox"/> LVSW-102-I	Ivory		<input type="checkbox"/> LVSW-108-I	Ivory	
<input type="checkbox"/> LVSW-102-G	Grey		<input type="checkbox"/> LVSW-108-G	Grey	
<input type="checkbox"/> LVSW-102-B	Black		<input type="checkbox"/> LVSW-108-B	Black	
<input type="checkbox"/> LVSW-103-W	White	3-Button Low Voltage Wall Switch			
<input type="checkbox"/> LVSW-103-LA	Light Almond				
<input type="checkbox"/> LVSW-103-I	Ivory				
<input type="checkbox"/> LVSW-103-G	Grey				
<input type="checkbox"/> LVSW-103-B	Black				

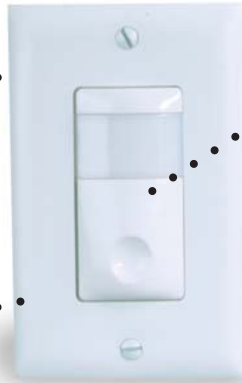
Note: Switches do not include face plates. Order decorator style plate separately.

AS-100 Automatic Control Switch

Automatic or manual switching options

Simple retrofit installation and operation; no neutral needed

Shutoff warning with optional audible beep during grace period



Pushbutton overrides the shutoff event

Multiway operation for 3- and 4-way switching

Terminal style back-wiring

PROJECT
LOCATION/TYPE

Product Overview

Description

The IntelliSwitch® AS-100 Automatic Control Switch operates as both a manual and automatic control device. Manually, it allows users to control loads on/off. Automatically, it receives signals to turn lighting on or off from lighting control panels or other lighting control systems.

Operation

The AS-100 replaces a standard wall switch. Occupants turn the lights on and off manually by its pushbutton. However, when a timed power interrupt signal is received from a lighting control panel, the AS-100 is automatically commanded to turn on, turn off or delay off. The duration of the power interrupt signal determines how the AS-100 will operate (see Power Interruption Signals section).

Used with a lighting control panel, the AS-100 allows users to manually turn lighting on in private offices, while lighting in common areas turns on

Operation (continued)

automatically. After hours, if lights were not shut off by users, a signal from the control panel would command the switch to delay off. Lighting “blink” warns users that lights will turn off in five minutes. The locator LED on the AS-100 blinks and an audible beep sounds (if enabled). If the button is pushed during this five minutes, the shutoff will be cancelled and the switch will remain on until the next commanded shutoff signal.

Applications

Since signaling is accomplished through power interruption, the AS-100 does not require additional signal wiring from a lighting control system or panel. It is designed for easy retrofit of lighting shutoff control in buildings. This greatly reduces installation labor and costs, making it an economical and effective lighting control strategy.

Features

- Settings are selected with the front pushbutton using configuration LEDs; face plate does not need to be removed for setup
- Users can select automatic-on operation, and an audible beep warning
- Selectable beep warning sounds every minute during last five minutes, and every five seconds during last minute
- Five minute delay-off time with user ability to cancel impending shutoff
- Self-adjusting zero crossing switching for consistent, reliable operation of high inrush loads
- Can be used in 3-way, 4-way and multiway switching applications
- Compatible with all electronic ballasts and motor loads
- Microcontroller enhances reliability
- Command off without delay off time
- Qualifies for use in ARRA-funded projects



Specifications

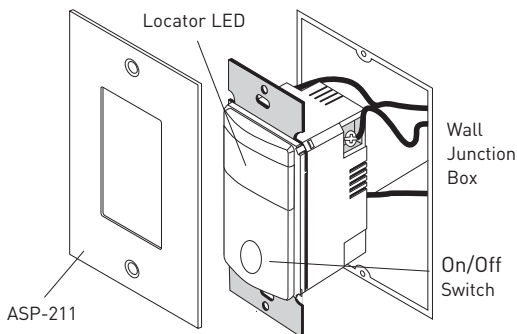
- Dual voltage 120/277 VAC, 60 Hz
- No minimum load requirements
- Power interruption signal resolution ± 0.1 seconds
- Dimensions: 2.69" x 1.75" x 1.81" (68.0mm x 45.0mm x 46.0mm) LxWxD
- UL and CUL listed; five-year warranty

Power Interruption Signals

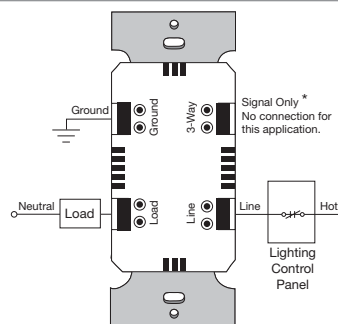
Duration	Operation	Operation description
<u>Normal Operating Mode</u>		
1-2 sec	Delay off	Power interruption "blinks" lights and initiates 5-minute delay before shutting load off. Locator light flashes and audible beep sounds (if enabled). Pushing the button cancels shut off from occurring.
3 sec	Turn on	Turns load on if automatic on feature is enabled
5 sec	Turn off	Turns load off

Installation & Wiring

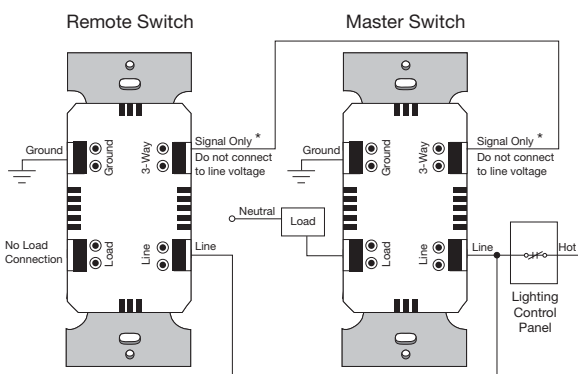
Installation



Single Switch Wiring with Panel



Multiway Switch Wiring with Panel

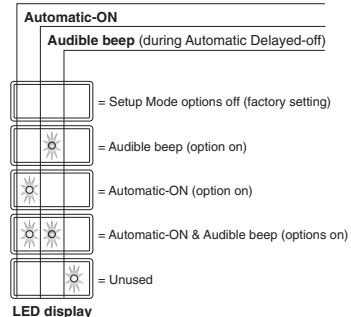


Each switch wired for multiway operation has the ability to turn on, turn off or override a shutoff signal.

Setup Mode Options

Setup Mode Options:

(Option is on when LED flashes in display)



Ordering Information

Catalog No.	Color	Description	Load Requirement
<input type="checkbox"/> AS-100-W	White	120 VAC, 60 Hz or 277 VAC, 60 Hz	0-1300W @ 120 V Watt Ballast & Tungsten or 0-3000W @ 277 V Watt Ballast
<input type="checkbox"/> AS-100-A	Lt. Almond		
<input type="checkbox"/> AS-100-I	Ivory		

One ASP-211 Single-gang Decorator Cover Plate included. Order ASP-422 for Two-gang Decorator Cover Plate with Blank Option, or ASP-432 for Two-gang Decorator Cover Plate with Toggle Switch Option (specify color).

Multi-Button Low Voltage Switch

Architectural Lexan plate,
screwless cover

Pilot light indication • • • • •



Simple to label with protective
plastic cover

1, 3, 5 or 9 button
models available

PROJECT
LOCATION/TYPE

Product Overview

Description

WattStopper's multi-button low voltage switches offer flexible and user-friendly lighting control via 1, 3, 5, or 9 button models.

Operation

The multi-button switches toggle lighting on and off by signaling WattStopper lighting control panels or occupancy sensors (with manual control capability). If lights are off, pressing the button turns lights on. If lights are on, pressing the button turns them off.

Adjacent to each standard button is a red pilot light indicating the status of controlled lighting when connected to a pilot light output from a lighting control panel. This is particularly useful when switches are placed in a location where the controlled lighting cannot be seen. Terminals on the back of the switch provide easy wiring without additional connectors.

Multiple Push Buttons

The multi-button switches provide control of multiple lighting groups or zones from a single location. Depending on the configuration of the lighting control panel, the single larger button on the 3, 5 and 9 button switches can be used for specialized control functions such as all on, all off, or cleaning operation. The switch's multiple push buttons and compact design replace multiple gang switch locations with a single or double gang wall switch.

Applications

From single room, single switch, to central, multiple switch station locations, the multi-button switches keep a consistent and pleasing look. Consistency in appearance is maintained with WattStopper dataline switches or other architecturally designed switches. The multi-button switches are particularly well suited for demanding switch locations such as reception desk areas, nursing stations, guard stations and administration areas.

Features

- 1, 3, 5, or 9 button models available
- Pilot light next to each standard button for remote indication of the lighting status
- Locator light bar helps users find the switch easily in the dark
- Mounts in a single or double gang box; no special plates or large gang boxes are required
- Lens caps are removable for easy labeling of standard buttons
- Terminal back screws simplify wiring
- Screwless cover plate enhances switch aesthetics
- Low voltage switch wiring simplifies installation making it easy to add switches anywhere needed and to accommodate multiple switching locations
- Architectural design matches WattStopper dataline and other switches
- Qualifies for use in ARRA-funded projects

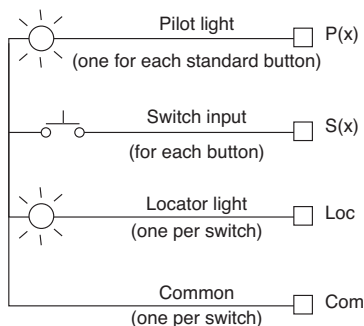


Specifications

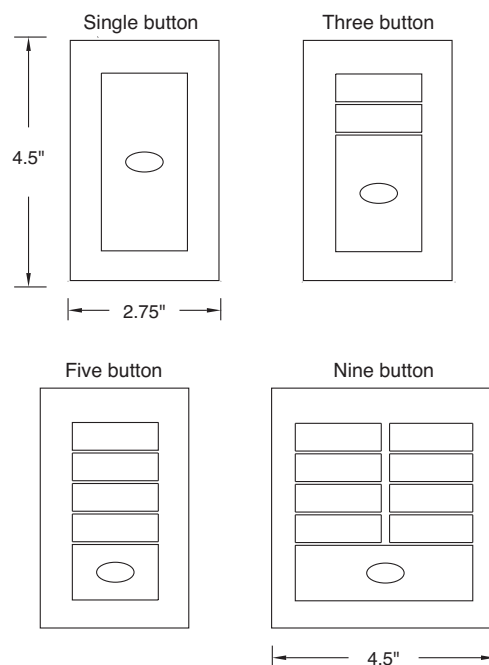
- Compatible with: WattStopper Lighting Integrator and legacy panel programmable inputs; occupancy sensors with manual control capability; LC-100 intelligent power pack
- Removable lens caps for labeling each standard button with 3/8" (9mm) laminated tape; larger button does not have labeling capability
- Pilot and location light LED, 18-30 VAC rectified or DC; each LED draws 5 mA @ 24 V
- Custom engraving available
- Available in white, ivory, almond, or gray
- Dimensions: 2.75" W x 4.5" H x .94" D (69.8mm x 114.3mm x 23.9mm) for 1, 3, and 5 button switch; 4.5" W x 4.5" H x .94" D (114.3mm x 114.3mm x 23.9mm) for 9 button switch
- One year warranty

Wiring & Dimensions

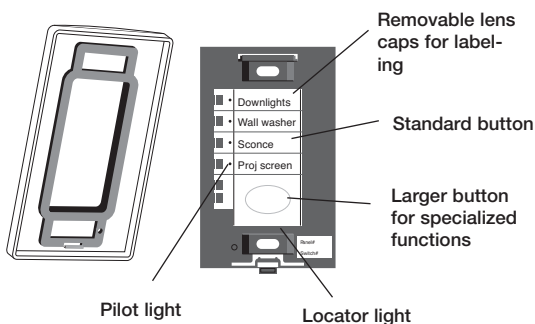
Wire Connections



Switch Configurations



Product Features



Ordering Information

Catalog No.	Color	Description	Standard Button	Larger Button	Size	Max Pilot Load
<input type="checkbox"/> L1S-7	White	Single button switch	0	1*	Single-gang	10 mA
<input type="checkbox"/> L1S-2	Ivory					
<input type="checkbox"/> L1S-4	Light Almond					
<input type="checkbox"/> L1S-9	Gray					
<input type="checkbox"/> L3S-7	White	Three button switch	2*	1	Single-gang	15 mA
<input type="checkbox"/> L3S-2	Ivory					
<input type="checkbox"/> L3S-4	Light Almond					
<input type="checkbox"/> L3S-9	Gray					
<input type="checkbox"/> L5S-7	White	Five button switch	4*	1	Single-gang	25 mA
<input type="checkbox"/> L5S-2	Ivory					
<input type="checkbox"/> L5S-4	Light Almond					
<input type="checkbox"/> L5S-9	Gray					
<input type="checkbox"/> L9S-7	White	Nine button switch	8*	1	Double-gang	45 mA
<input type="checkbox"/> L9S-2	Ivory					
<input type="checkbox"/> L9S-4	Light Almond					
<input type="checkbox"/> L9S-9	Gray					

* with pilot light

Decorator Seven-button Low Voltage Momentary Switch



PROJECT
LOCATION/TYPE

Product Overview

Description

The Decorator Seven-button Low Voltage Momentary Switch (DCC7) features a raise/lower paddle and five buttons to control any device that requires multiple contact closures. It is available in four colors, and is compatible with other Decorator style products, including the DCC2 Low Voltage Momentary Decorator Switch with LED.

Operation

The DCC7 controls up to seven contact points when each of its contacts are connected to the desired I/O board position. For example, when used in conjunction with compatible LED systems, specific buttons may be used to control specific colors, while the paddle may be used to cycle from one color to the next or serve as a master on/off. Since the DCC7 is typically wired to custom I/O boards, its setup is flexible.

Ideal for Color-changing LED Systems

The DCC7's combination of economical control with maximum flexibility make it ideal for controlling multiple-color LED systems.

Applications

The DCC7 controls any device that requires multiple contact closures, such as WattStopper Lighting Integrator control panels, color-changing LED systems, electronically controlled shades, and devices that interface with DALI, DMX or RS485 products via dry contact closures. Additionally, its simple contact closure design provides a momentary on/off signal to many other devices, allowing it to initiate actions for other manufacturers' devices (e.g. LED or RGB lighting).

The DCC7 can also be used as a momentary switch for manual-on applications with WattStopper sensors and power packs.

Features

- Five buttons and two-position paddle provide seven contact closure inputs
- Available in four colors, and is compatible with Decorator styling
- Each of the DCC7's nine 22 AWG wires are labeled for easy reference
- Long-life LED can function as either an indicator or pilot light
- Works with interface devices that use a variety of protocols, including DALI, DMX or RS485 via its two-wire momentary dry contact closures



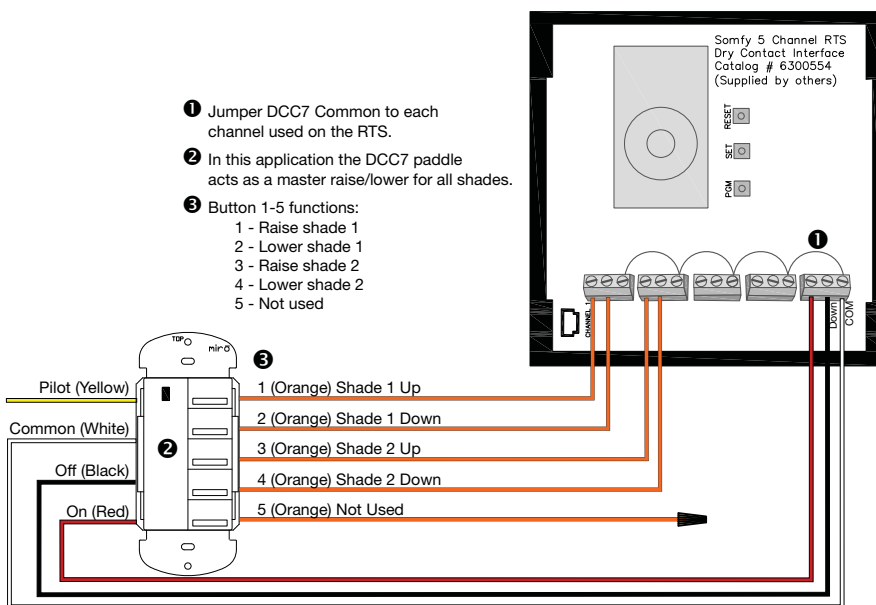
Specifications

- 12VAC/VDC, 24V Rectified, 24VAC/VDC
- 50mA Max. Internal Contact rating
- 500mΩ resistance when closed
- Operating Conditions:
Temperature: 32-104°F (0-40° C)
Humidity: 0-80%, noncondensing

- Fits conventional decorator switch openings
- Dimensions: 2.64" x 1.75" x 1.98" (67.1mm x 44.5mm x 50.3 mm) L x W x D; depth in wall 1.65" (41.9mm)
- Five-year warranty

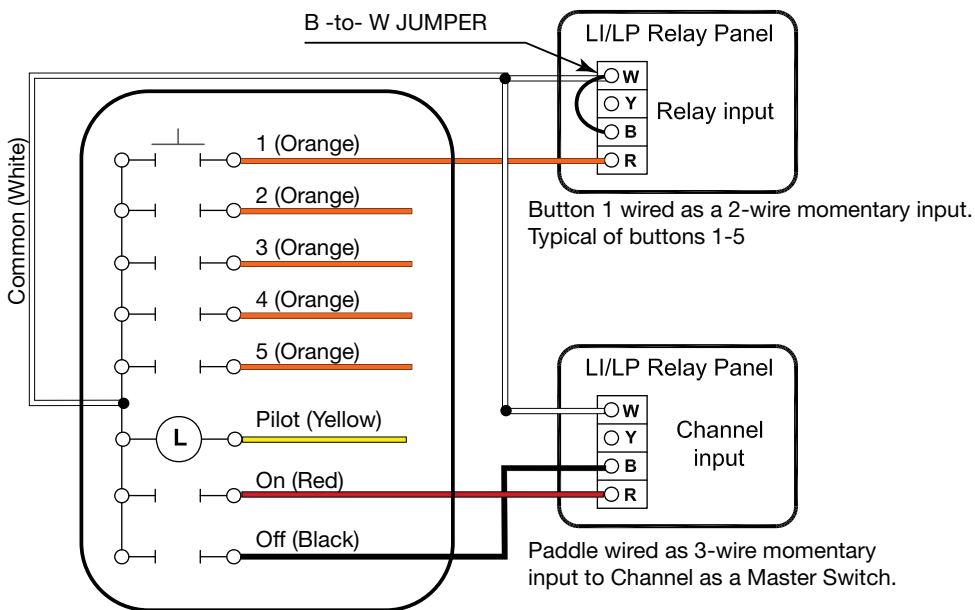
Wiring Diagrams

DCC7 Wired for Shade Control



NOTE:
The DCC7 can be wired with shades from other manufacturers. Please contact your local district manager or representative for more information.

DCC7 with LP Peanut or LI Panel



Ordering Information

Catalog No.	Color	Product Description	Voltage/Power
<input type="checkbox"/> DCC7-A	Lt. Almond	Decorator Seven-button Low Voltage Momentary Switch	12VAC/VDC, 24V Rectified, 24VAC/VDC
<input type="checkbox"/> DCC7-B	Black		
<input type="checkbox"/> DCC7-I	Ivory		
<input type="checkbox"/> DCC7-W	White		

Decorator Low Voltage Momentary Switch

Decorator styling compatible with screwless or standard wall plates

Quiet operation

Multiway switching



Long-life LED locator or pilot light

Available in four colors

Three-wire momentary on/off contact operation

PROJECT
LOCATION/TYPE

Product Overview

Description

The Decorator Low Voltage Momentary Switch (DCC2) has a clean appearance and provides significant benefits over other three-wire momentary devices. It is intended for use with WattStopper lighting control panels and other applications requiring a momentary contact switch that provides on/off signals. Available in four colors, it complements other decorator devices and matches the full line of Wireless Lighting Control Decorator products.

Operation

When the top of the switch is pressed down, the DCC2 makes an internal contact between an on and common terminal. When the bottom of the switch is pressed, it makes an internal contact between an off and common terminal. This allows the switch to provide an on/off signal to a relay panel or other device.

Three- and four-way switching is easily accomplished by parallel wiring a DCC2 to any number of other DCC2 switches. And by field wiring a jumper between the on and off terminals, the DCC2 can provide a two-wire momentary output to allow its use with WattStopper occupancy sensors or the manual-on BZ-150 Universal Voltage Power Pack.

Locator or Pilot Light

The DCC2 includes an internal green LED which can function as either a locator or pilot light, depending upon the application and how the switch is wired. By incorporating an LED inside the switch instead of another light source, the end-user is assured of both a long lamp life and very low power consumption.

Applications

The DCC2 can operate a wide array of WattStopper products, including lighting control panels, occupancy sensors and power packs. Additionally, its simple contact closure interface can provide a momentary on and off signal to many other devices, allowing it to initiate actions for other manufacturer's devices (e.g., those that output DMX512 or RS485 signals that can control LEDs or other lighting systems).

Features

- Long-life LED locator/pilot light
- Three-way, four-way and multiway switching
- Unlimited number of switches may be connected
- Decorator styling
- Available in light almond, black, ivory and white

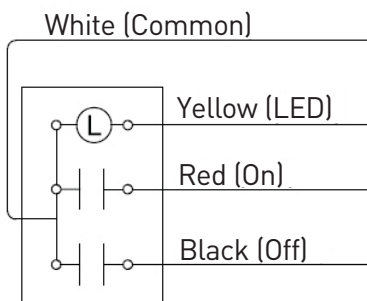


Specifications

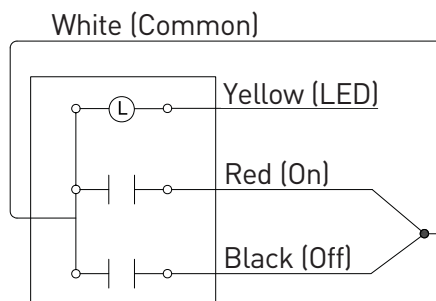
- 12VAC/VDC, 24V Rectified, 24VAC/VDC
- 50mA Max. Internal Contact rating
- 500mΩ resistance when closed
- Single pole, double throw with center position rest
- Fits conventional decorator switch openings
- Dimensions: 2.64" x 1.75" x 1.98" [67.1mm x 44.5mm x 50.3 mm] L x W x D; depth in wall 1.65" [41.9mm]
- Five-year warranty

Wiring

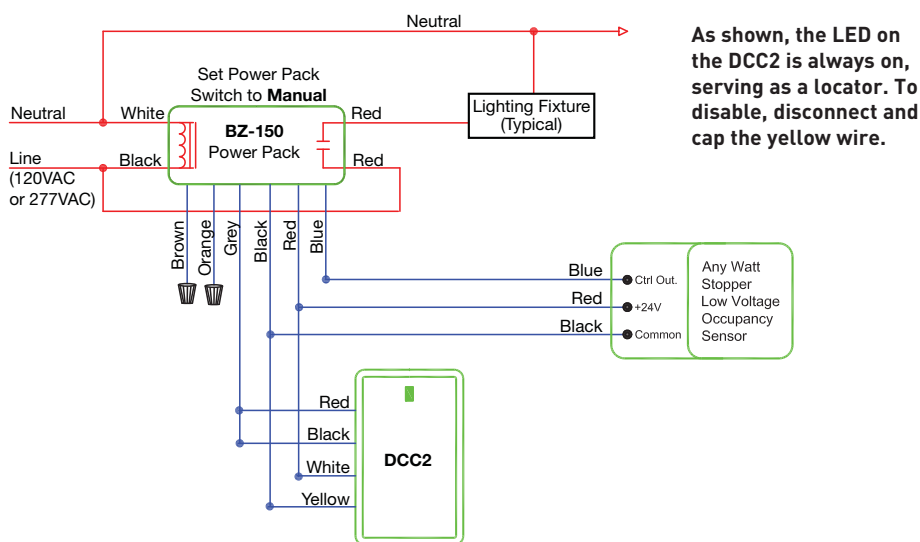
As a Three-wire Momentary



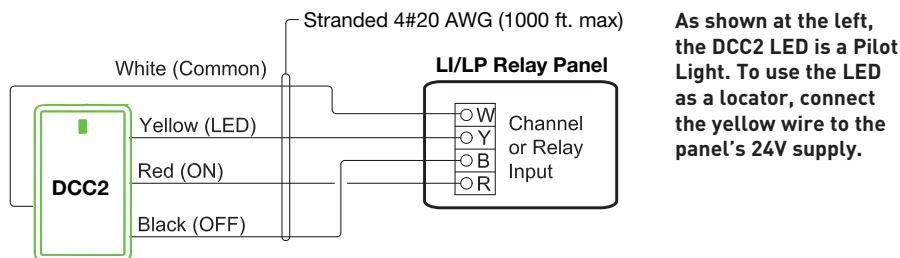
As a Two-wire Momentary



As an Input to a BZ-150 Power Pack for Manual-on Operation



As an Input to a Relay Panel



Ordering Information

Catalog No.	Color	Product Description	Voltage/Power
<input type="checkbox"/> DCC2-A	Light Almond	Decorator Low Voltage	12VAC/VDC, 24V Rectified, 24VAC/VDC
<input type="checkbox"/> DCC2-B	Black	Momentary Switch	
<input type="checkbox"/> DCC2-I	Ivory		
<input type="checkbox"/> DCC2-W	White		

Momentary Toggle Switches



PROJECT
LOCATION/TYPE

Product Overview

Description

The LVS-1 is a low voltage momentary contact switch used with WattStopper lighting control panels. Its appearance matches conventional toggle switches and it fits standard switch plate openings.

Operation

The LVS-1 features a quiet, single-pole, double-throw momentary operation. When toggled up or down, the switch momentarily makes a contact closure, sending an on or off signal to the control panel. At rest, the switch sits in the center position, making no contact closure. This switch is recommended for most low voltage switching applications because 3-way, 4-way and multi-way switching can be accomplished easily by parallel wiring the LVS-1 to any other LVS-1. Any number of switches can be connected together to fit a specific application need.

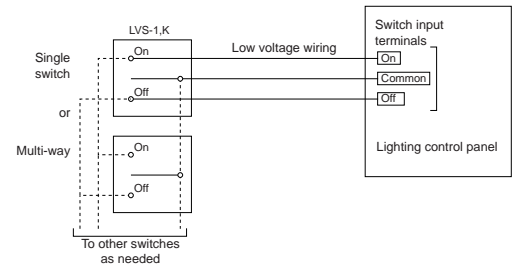
Features

Made specifically for low voltage control use, the LVS-1 uses side wire screw terminals for easy, reliable connection to switch wiring. The switch is available in either ivory, white or gray. A key operated model is also available for use in areas where security or vandalism is a concern.

Specifications

- 3 Amp, 24 VAC/VDC
- Single-pole, double-throw with center position rest
- Fits conventional toggle switch openings
- Size: 2.19" x 1.06" x 1.31" (55.6mm x 26.9mm x 33.3mm)
- 3 year warranty

Wiring



Ordering Information

Catalog No.	Color	Description
<input type="checkbox"/> LVS-1-W	White	Standard momentary toggle switch
<input type="checkbox"/> LVS-1-I	Ivory	
<input type="checkbox"/> LVS-1-G	Gray	
<input type="checkbox"/> LVS-1K-G	Gray	Key operated toggle in gray (key supplied with switch)

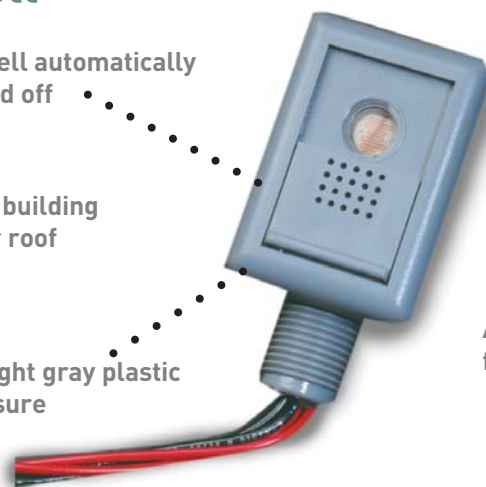


EM Photocell

Low voltage photocell automatically turns lighting on and off

Mounts on building exterior or roof

Raintight gray plastic enclosure



Compatible with all Watt Stopper lighting control panels and power packs

Simple to wire and install

Adjustable aperture window for varying ON setpoint

PROJECT

LOCATION/TYPE

Product Overview

Description

The EM is a low voltage photocell used for controlling exterior lighting. It works with Watt Stopper power packs and lighting control panels (Lighting Integrator and LP series panels) by signalling a change in light levels to the panel.

Operation

Typically mounted so the light level window faces the northern sky, the EM photocell provides an ON signal when the ambient light level drops below a preset "dark" setpoint. It then provides a signal OFF as the ambient light level rises above the preset "light" setpoint. The setpoint can be changed for specific applications by opening and closing the photocell's aperture window. Normally, a lighting control panel or a power pack supplies power to the photocell. The photocell's relay contact red wires are connected to the panel or to a low voltage controlled load.

Specifications

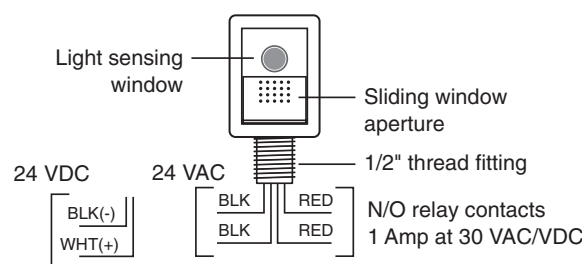
- 1 - 15 footcandle range (10.8 - 161.5 lux)
- Isolated relay contacts 1 amp @ 30 VAC/VDC
- Power input: 24 VAC, 1 VA or 24 VDC, 1 VA
- Dimensions: 2.64" x 1.57" x 1.89" (67.1mm x 39.9mm x 48.0mm)
- One year warranty

Catalog No.	Description	Voltage
<input type="checkbox"/> EM-24A2	Exterior photocell	24 VAC
<input type="checkbox"/> EM-24D2	Exterior photocell	24 VDC

Features

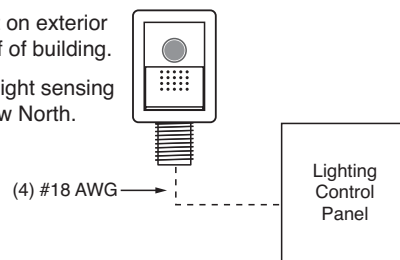
- One set of normally open, isolated relay contacts; contacts are closed when sensed light level is below dark setpoint, open when light level is above light setpoint
- 8-second time delay and built-in setpoint dead-band prevent cycling
- 1/2" threaded male conduit base for easy mounting on conduit fittings or junction boxes.

Accessory Enclosure Interior



Accessory Enclosure Interior

Mount on exterior or roof of building. Point light sensing window North.



Ordering Information

WattStopper
www.wattstopper.com
800.879.8585

Multi-pole Contactor

Multi-pole design enables control of multiple single-phase or multi-phase loads

Compatible with all HID and electronic ballast loads

Four pole, SPST power contacts

Normally closed or normally open contacts

Silver cadmium oxide contacts for long life

Accepts wire gauge #10 - #14 AWG



PROJECT

LOCATION/TYPE

Product Overview

Description

The Multi-pole Contactor is a compact, electrically held lighting contactor used for controlling lighting and other electrical loads in Watt Stopper Lighting Integrator (LI) lighting control panels.

Specifications

- Electrically held
- Screw compression terminals
- Coil holding power consumption 10VA
- Compact DIN rail mounting
- Dimensions: 2.9" x 1.75" x 2.95" (73.7mm x 44.5mm x 74.9mm); weight 11.3 oz.
- UL 508 listed, CSA certified; one year warranty

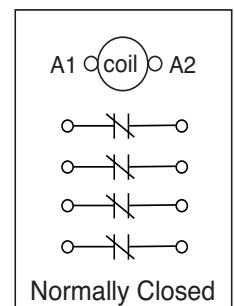
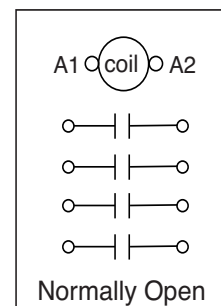
Operation & Features

The contactor is compatible with all HID and electronic ballast loads. All line and load wiring is feed-through style, and screw terminals accept both standard blade and phillips head screw drivers. Contactors may be added to any 24- or 48-relay size Lighting Integrator panel. Contactors may be ordered with LI panels (by specifying them in the LI panel catalog number) or they may be ordered separately. They may also be easily added to existing lighting control panels with DIN rail mounting capability, providing a simple way to expand the number of circuits controlled.

Ratings

- Ballast load 30 Amp @ 600 V (magnetic, electronic, HID ballasts)
- Tungsten load 20 Amp @ 277 V
- Resistive load 30 Amp @ 480 V
- Motor load 5 HP @ 460 V, 3 phase

Contactor Diagram



Ordering Information

Catalog No.	Description	Voltage
<input type="checkbox"/> C115NC	4-pole normally closed	115V coil
<input type="checkbox"/> C277NC	4-pole normally closed	277V coil
<input type="checkbox"/> C115NO	4-pole normally open	115V coil
<input type="checkbox"/> C277NO	4-pole normally open	277V coil
<input type="checkbox"/> C347NC	4-pole normally closed	347V coil
<input type="checkbox"/> C347NO	4-pole normally open	347V coil



Lighting Integrator Wire

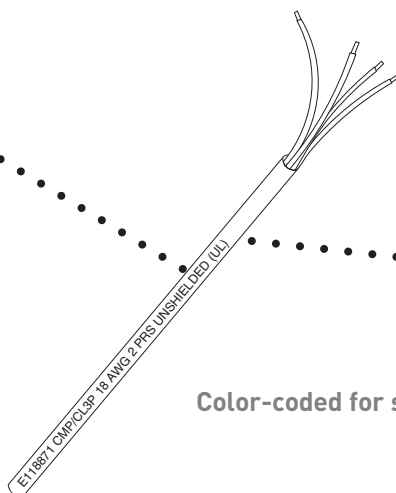
Data communications wire provides communications between panels and signaling devices

Low voltage component wire connects switches, sensors, and other low voltage devices to panels

Custom cut to specified lengths

Distance markings in foot increments

Color-coded for streamlined installation



PROJECT
LOCATION/TYPE

Product Overview

Description

The proper wire must be installed for connecting devices to Lighting Integrator (LI) panels, and for networking panels. Types include low voltage component wire, and data communications wire.

Low Voltage Wire

This type of wire connects low voltage devices (i.e., switches, occupancy sensors, photocells) to panels. It is #20 AWG wire that meets UL and NEC standards for Class 2 applications. Plenum rated wire meets plenum and riser requirements. Several types of multi-conductor low voltage wires are available for standard, pilot, locator, and multilevel switching or for connecting photocells to the LI control panels. This wire can also be used to wire relays remotely.

Data Communications Wire

Data communications wire (also referred to as dataline wire) is used between LI panels and digital devices. To ensure error-free communications in networked LI panel systems, users **must use** the right communications wire. Communications quality is critical for reliable operation of a lighting control system. Using the proper wire and following recommended installation practices ensures trouble-free start-up and operation of an LI system.

4-Conductor Data Communications Wire

HDLW4 4-conductor data communications wire is unshielded dual twisted pair wire. This wire is used for LICA and LIDA systems. It provides the local dataline for connecting panels to dataline switches. This panel-to-device connection (i.e., "local" dataline) requires the use of both twisted pairs, one pair for supplying power to the Dataline Switches, and the other pair for data communications.

2-Conductor Data Communications Wire

HDLW2 2-conductor data communications wire is shielded single twisted pair wire. It connects LIC panels. This panel-to-panel connection (i.e., "global" dataline) supports up to 500 panels in a single network whose maximum length does not exceed 4000 feet. If longer distances are needed or more devices are required, users can add dataline repeaters.



Specifications

Low Voltage Component Wire

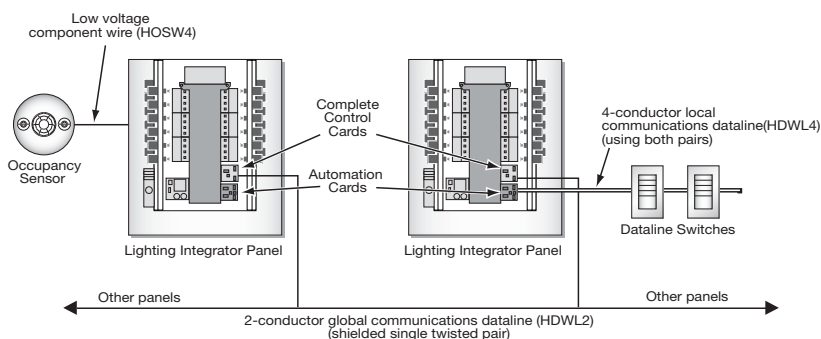
- Color-coded wires to match relay and switch terminations
- Component wire includes switch wire (for standard, pilot, locator, or multi-button switches), sensor wire, and remote relay wire
- Conductors are #20 AWG, stranded and jacketed
- Operating temperature range: -4 - 302°F (-20°- 150°C)
- UL and CUL listed

Data Communications Wire

- HDLW4 is 18 AWG (7 strands x 26 AWG), 2 independent twisted pairs, unshielded copper conductors. Capacitance is 30 pF/foot max.
- HDLW4 supports up to 12 panels and 1500 feet per network without repeater
- HDLW2 is 18/2 AWG twisted pair with shield
- HDLW2 supports up to 500 panels and 4000 feet per network without repeater
- Color-coded wires to match power and data terminations
- Operating temperature range: -4 - 302°F (-20°- 150°C)
- UL and CUL listed

Application Examples

Wiring Requirements for Networks of LIC Panels with optional automation cards



Ordering Information

Catalog No.	Description	Conductors	Color Code	Diameter
<input type="checkbox"/> HSSW3	Standard switch wire	3	Red/Black/White	0.210"
<input type="checkbox"/> HSSW3P	Standard switch plenum rated wire	3	Red/Black/White	0.150"
<input type="checkbox"/> HPSW4	Pilot switch wire	4	Red/Black/White/Yellow	0.230"
<input type="checkbox"/> HPSW4P	Pilot switch plenum rated wire	4	Red/Black/White/Yellow	0.275"
<input type="checkbox"/> HDLW2	Global Complete Control Dataline. Shielded single twisted pair data communications wire	2 + shield	Red/Black/Shield	0.185"
<input type="checkbox"/> HDLW2P	Global Complete Control Dataline. Shielded single twisted pair data communications plenum rated wire.	2 + shield	Red/Black/Shield	0.185"
<input type="checkbox"/> HDLW4	Local Dataline Switch Dataline. Unshielded dual twisted pair data communications wire.	4	Black/Red (data) Blue/White (power)	0.230"
<input type="checkbox"/> HDLW4P	Local Dataline Switch Dataline. Unshielded dual twisted pair data communications plenum rated wire.	4	Black/Red (data) Blue/White (power)	0.230"
<input type="checkbox"/> LM-MSTP	Digital Lighting Management segment network plenum rated wire	3 + shield	white/black/green	0.185"



CONTRACTOR PANELS

WattStopper offers LP Series and LC8 panels for small stand alone applications.

LP Series panels offer multi-voltage options as well as multi-phase control with contactors. LC8 panels offer off-the-shelf versatility with snap-in relay modules available in single-relay double-pole or double-relay single-pole configurations.



LIGHTING CONTROL PANEL SYSTEMS



LP8 Peanut Lighting Control Panels

Simple and effective interior and exterior lighting control

Controls up to eight single-pole lighting circuits

Easy user interface with on-screen help



Compatible with AS-100 Automatic Control Switches for local override control

System clock provides time scheduled or astronomic control

PROJECT
LOCATION/TYPE

Product Overview

Description

WattStopper's LP8 Peanut Lighting Control Panels provide simple, effective zone-based control of exterior and interior lighting in small applications. Panels control up to eight channels or zones of lighting. Zones respond to control signals from the system clock (or other signalling device) to turn lighting on and off. LP8 Panels ship pre-assembled in easy-to-install compact packages available for surface and flush mounting. They consist of relays, a system clock, panel intelligence, power supply, tub and cover. The standard enclosure is NEMA 1-rated.

Operation

For exterior applications, the system clock provides astronomic control (based on sunrise and sunset), or an optional EM Photocell can be added for light-level control. For interior applications, AS-100 Automatic Control Switches or low voltage switches can automate after-hours lighting shutoff while providing manual override control.

System Clock

The LP8 system clock provides automation and features a seven-day format with holiday scheduling. Set-up and programming is simple with an easy-to-navigate keypad, backlit LCD and user-friendly help menus. Preprogrammed control scenarios include: scheduled-on/off and manual-on/scheduled-off. Manual-on/sweep-off is available with an AS-100 switch. Astronomic or photocell on/off, and astronomic or photocell with schedule on/off available by adding an EM Photocell.

Applications

LP8 Panels save energy by turning lights off when not needed, while providing a secure illuminated space when occupants are present. They are ideal for areas with less than eight loads and a small amount of zones in both interior (i.e., small offices or retail facilities and elevator lobbies) and exterior (i.e., small parking lots, courtyards and driveways) applications. LP8 Panels integrate with a wide range of control devices, such as switches and occupancy sensors to create a flexible lighting shutoff strategy.

Features

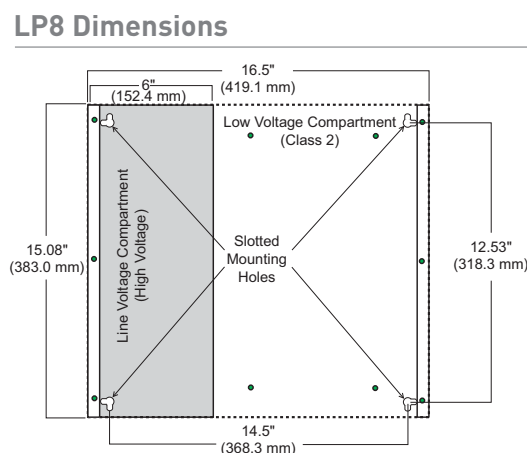
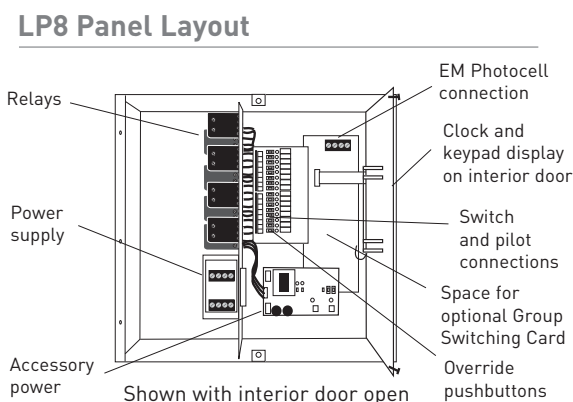
- Preprogrammed control scenarios; seven-day format with holiday scheduling, astronomic control and automatic daylight savings
- Time retained during power outage; nonvolatile program memory
- Eight universal switch inputs for low voltage switches, occupancy sensors, photocells or other devices to directly control each relay
- Pushbuttons for manual override of each relay
- Uses individually replaceable HDR5P Mechanically Latching Relay with integral manual override
- Optional group of eight switch inputs for pushbutton grouping of relays (Smartwiring™)
- LED for visual indication of relay status
- Accepts most types of switch inputs
- Separate high voltage and low voltage sections for user protection



Specifications

- Multiple power supplies available: 115/277 VAC, 220-240 VAC, 115/347 VAC; 50/60 Hz
- Relay: Mechanically latching
 - Integral manual override
 - Individually replaceable
 - Ratings: 20 Amp tungsten @ 120 VAC
 - 30 Amp ballast @ 277 VAC
 - 20 Amp ballast @ 347 VAC
 - 30 Amp resistive @ 347 VAC
 - 1.5 hp @ 120 VAC
- Accessory power 800 mA at 24 VDC/VAC/VACR
- Eight universal switch inputs; compatible with 3-wire momentary or maintained, 2-wire momentary or maintained, or 24 VDC input
- Eight universal group switch inputs that allow pushbutton grouping of relays (optional)
- Ambient temperature 32-139°F (0-60°C); 5-95% RH noncondensing
- Dimensions: 15.08" x 16.5" x 4.62" (383.0mm x 419.1mm x 117.3mm) L x W x D
- UL and CUL listed; one-year warranty

Wiring & Installation



Ordering Information

Catalog No.	Description	Door Mounting	# Relays	Group Switching Card	Voltage
<input type="checkbox"/> LP8S-8-115	LP8 Peanut Lighting Control Panel	Surface	8 Relays	none	115/277 VAC
<input type="checkbox"/> LP8S-8-G-115	LP8 Peanut Lighting Control Panel	Surface	8 Relays	included	115/277 VAC
<input type="checkbox"/> LP8F-8-115	LP8 Peanut Lighting Control Panel	Flush	8 Relays	none	115/277 VAC
<input type="checkbox"/> LP8F-8-G-115	LP8 Peanut Lighting Control Panel	Flush	8 Relays	included	115/277 VAC
<input type="checkbox"/> LP8S-4-115	LP8 Peanut Lighting Control Panel	Surface	4 Relays	none	115/277 VAC
<input type="checkbox"/> LP8F-4-115	LP8 Peanut Lighting Control Panel	Flush	4 Relays	none	115/277 VAC
<input type="checkbox"/> LP8S-8-347	LP8 Peanut Lighting Control Panel	Surface	8 Relays	none	115/347 VAC
<input type="checkbox"/> LP8S-8-G-347	LP8 Peanut Lighting Control Panel	Surface	8 Relays	included	115/347 VAC
<input type="checkbox"/> LP8F-8-347	LP8 Peanut Lighting Control Panel	Flush	8 Relays	none	115/347 VAC
<input type="checkbox"/> LP8F-8-G-347	LP8 Peanut Lighting Control Panel	Flush	8 Relays	included	115/347 VAC
<input type="checkbox"/> LP8S-8-240	LP8 Peanut Lighting Control Panel	Surface	8 Relays	none	240 VAC
<input type="checkbox"/> LP8S-8-G-240	LP8 Peanut Lighting Control Panel	Surface	8 Relays	included	240 VAC
<input type="checkbox"/> LP8F-8-240	LP8 Peanut Lighting Control Panel	Flush	8 Relays	none	240 VAC
<input type="checkbox"/> LP8F-8-G-240	LP8 Peanut Lighting Control Panel	Flush	8 Relays	included	240 VAC
Optional system enhancements:					
<input type="checkbox"/> EM-24A2	Exterior Photocell, low voltage				24VAC
<input type="checkbox"/> AS-100-W	Automatic Control Switch, White				120/277 VAC, 50/60 Hz
<input type="checkbox"/> AS-100-A	Automatic Control Switch, Light Almond				120/277 VAC, 50/60 Hz
<input type="checkbox"/> AS-100-I	Automatic Control Switch, Ivory				120/277 VAC, 50/60 Hz

LP24 Peanut Plus Lighting Control Panels

Simple and effective interior and exterior lighting control

Controls up to eight zones

System clock provides time scheduled or astronomic control



Compatible with AS-100 Automatic Control Switches for local override control

DIN rail accommodates up to 12 four-pole contactors

PROJECT

LOCATION/TYPE

Product Overview

Description

WattStopper's LP24 Peanut Plus Lighting Control Panels provide simple, effective zone-based control of exterior and interior lighting in small applications. Panels control up to eight channels or zones of lighting. Zones respond to control signals from the system clock (or other signalling device) to turn lighting on and off. LP24 Panels ship pre-assembled in easy-to-install packages. They consist of relays, a system clock, panel intelligence, power supply, large tub with DIN rails for mounting up to twelve contactors (shipped separately) and cover.

Operation

For exterior applications, the system clock provides astronomic control (based on sunrise and sunset), or an optional EM Photocell can be added for light-level control. For interior applications, AS-100 Automatic Control Switches or other low voltage switches can automate after-hours lighting shutoff while providing manual override control.

System Clock

The LP24 system clock provides automation and features a seven-day format with holiday scheduling. Set-up and programming is simple with an easy-to-navigate keypad, backlit LCD and user-friendly help menus. Preprogrammed control scenarios include: scheduled-on/off and manual-on/scheduled-off. Manual-on/sweep-off is available with an AS-100 switch. Astronomic or photocell on/off, and astronomic or photocell with schedule on/off available by adding an EM Photocell.

Applications

LP24 Panels save energy by turning lights off when not needed, while providing a secure illuminated space when occupants are present. They are ideal for areas with two-pole loads and a small amount of zones in both interior (i.e., gymnasiums, elevator lobbies, commercial warehouses and parking garages) and exterior (i.e., parking lots, courtyards, sports fields and driveways) applications. LP24 Panels integrate with a wide range of control devices such as switches and occupancy sensors to create a flexible lighting shutoff strategy.

Features

- Preprogrammed control scenarios; seven-day scheduling with holiday, astronomic control and automatic daylight savings
- Time retained during power outage; nonvolatile program memory
- Eight universal switch inputs for low voltage switches, occupancy sensors, photocells or other devices to directly control each relay
- Uses individually replaceable HDR5P Mechanically Latching Relay with integral manual override
- Controls single and multiphase loads
- Optional group of eight universal switch inputs for pushbutton grouping of relays (Smartwiring™)
- Pushbuttons for manual override of each relay
- LED for visual indication of relay status
- Accepts most types of switch inputs
- Separate high and low voltage sectors for user protection
- DIN rail accepts up to 12 four-pole contactors

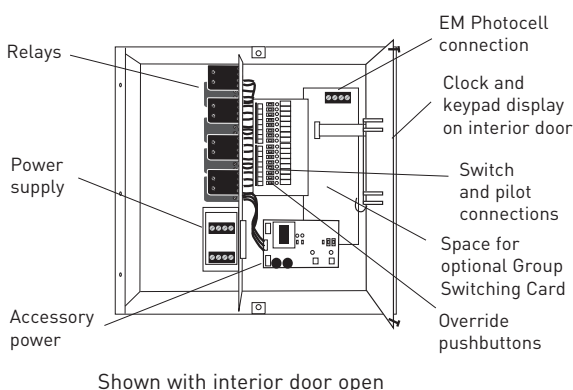


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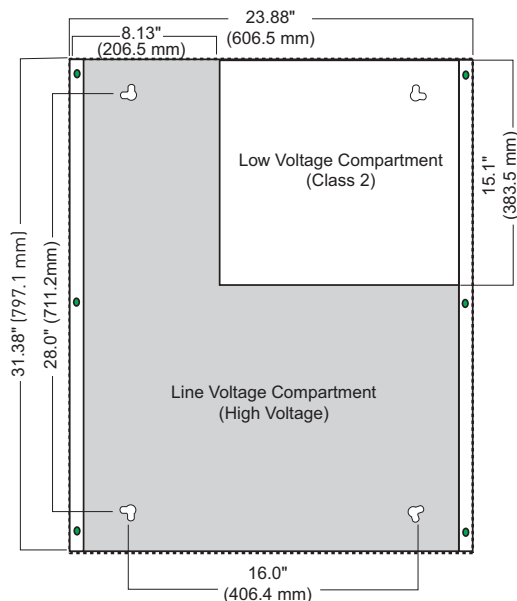
- Multiple power supplies available: 115/277 VAC, 220-240 VAC, 115/347 VAC; 50/60 Hz
- Relay: Mechanically latching
Integral manual override
Individually replaceable
Ratings: 20 Amp tungsten @ 120 VAC
30 Amp ballast @ 277 VAC
20 Amp ballast @ 347 VAC
30 Amp resistive @ 347 VAC
1.5 hp @ 120 VAC
- Eight universal switch inputs; compatible with 3-wire momentary or maintained, 2-wire momentary or maintained, or 24 VDC input
- Contactor Ratings for LP24: Ballast load 30Amp @ 600 V (magnetic, electronic, HID ballasts); Tungsten load 20 Amp @ 277 V; Resistive load 30 Amp @ 480 V; Motor load 5 hp @ 460 V, 3 phase
- Accessory power 800 mA at 24 VDC/VAC/VACR
- Four universal group switch inputs; allows pushbutton grouping of relays
- Ambient temperature 32-139°F (0-60°C); 5-95% RH noncondensing
- Dimensions: 31.38" x 23.88" x 4.62" (797.1mm x 605.5mm x 117.3mm) L x W x D
- UL and CUL listed; one-year warranty

Wiring & Installation

LP24 Panel Layout



LP24 Dimensions



Ordering Information

Catalog No.	Description	Door Mounting	# Relays	Group Switching Card	Voltage
<input type="checkbox"/> LP24S-8-115	LP24 Peanut Plus Lighting Control Panel	Surface	8 Relays	none	115/277 VAC
<input type="checkbox"/> LP24S-8-G-115	LP24 Peanut Plus Lighting Control Panel	Surface	8 Relays	included	115/277 VAC
<input type="checkbox"/> LP24S-8-347	LP24 Peanut Plus Lighting Control Panel	Surface	8 Relays	none	347 VAC
<input type="checkbox"/> LP24S-8-G-347	LP24 Peanut Plus Lighting Control Panel	Surface	4 Relays	included	347 VAC
<input type="checkbox"/> LP24F-8-115	LP24 Peanut Plus Lighting Control Panel	Flush	4 Relays	none	115/277 VAC
<input type="checkbox"/> LP24F-8-G-115	LP24 Peanut Plus Lighting Control Panel	Flush	8 Relays	included	115/277 VAC
<input type="checkbox"/> LP24F-8-347	LP24 Peanut Plus Lighting Control Panel	Flush	8 Relays	none	347 VAC
<input type="checkbox"/> LP24F-8-G-347	LP24 Peanut Plus Lighting Control Panel	Flush	8 Relays	included	347 VAC
<input type="checkbox"/> LP24S-4-115	LP24 Peanut Plus Lighting Control Panel	Surface	4 Relays	none	115/277 VAC
<input type="checkbox"/> LP24S-4-347	LP24 Peanut Plus Lighting Control Panel	Surface	4 Relays	none	347 VAC
<input type="checkbox"/> LP24F-4-115	LP24 Peanut Plus Lighting Control Panel	Flush	4 Relays	none	115/277 VAC
<input type="checkbox"/> LP24F-4-347	LP24 Peanut Plus Lighting Control Panel	Flush	4 Relays	none	347 VAC
Optional system enhancements:					
<input type="checkbox"/> EM-24A2	Exterior Photocell, low voltage				24VAC
<input type="checkbox"/> AS-100	Automatic Control Switch				120/277VAC
<input type="checkbox"/> DCC2	Decorator Low Voltage Momentary Switch				12 VAC/VDC, 24 V Rectified, 24 VAC/VDC

LC8-120/277 Volt Modular Contractor Panel

Versatile panel for simple control of indoor and outdoor lighting

Easy-to-use touchscreen interface with onscreen help

Accommodates single-pole and two-pole relay modules



Astronomic system clock with 16 schedules for flexibility

Compatible with low voltage switches, occupancy sensors and photocells

PROJECT

LOCATION/TYPE

Product Overview

Description

The LC8 panel provides zone-based control of up to eight channels, or zones, of interior and exterior lighting. Zones respond to control signals from the system clock, or an accessory photocell, to automatically turn lighting on and off. The LC8 panel uses interchangeable relay modules, available separately, that can be selected to suit project needs. Relay options include the LCSP-2 dual single-pole module and LCDP-1 double-pole module.

Operation

The LC8 features a touchscreen interface for all programming and status feedback, and unique pre-programmed scenarios simplify setup. Exterior lighting can be controlled based on sunrise and sunset via the astronomic clock, or based on ambient light with an optional EM24-D2 photocell. Interior lighting can be configured for manual-on/auto-off to maximize energy savings. Accessory switches provide manual control or after-hours override in conjunction with a blink warn feature.

System Clock

Users can setup and program the LC8 for up to 16 unique seven-day schedules, plus a holiday schedule, via the backlit touchscreen interface that offers context-sensitive on-screen help. Pre-programmed control scenarios include: schedule- and/or astronomic-on/off, or manual-on/schedule-off. Manual-on/sweep-off is available using the optional AS-100 automatic wall switch. Photocell- and/or schedule-on/off are also available with the optional EM24-D2 photocell.

Applications

LC8 lighting control panels save energy by turning lighting off when it is not required, yet providing secure illumination when people are present. The LC8 is ideal for smaller applications with eight circuits of lighting, or less, such as small free-standing retail, library or bank buildings, or lobbies, corridors, public spaces or exteriors of larger buildings. LC8 panels integrate with a range of accessory control devices including low voltage switches, occupancy sensors or photocells to create a flexible lighting shutoff strategy.

Features

- Nonvolatile program memory retains all programming during power outages
- Interchangeable single-pole and double-pole relay modules
- Manual override of relays and channels via touchscreen interface
- Eight universal switch inputs for low voltage switches, occupancy sensors or other devices to directly control each relay
- Pilot light output for each switch input
- Accepts most types of switch inputs
- Compatible with LVSW-100 Series Low Voltage Switches and AS-100 Automatic Wall Switch

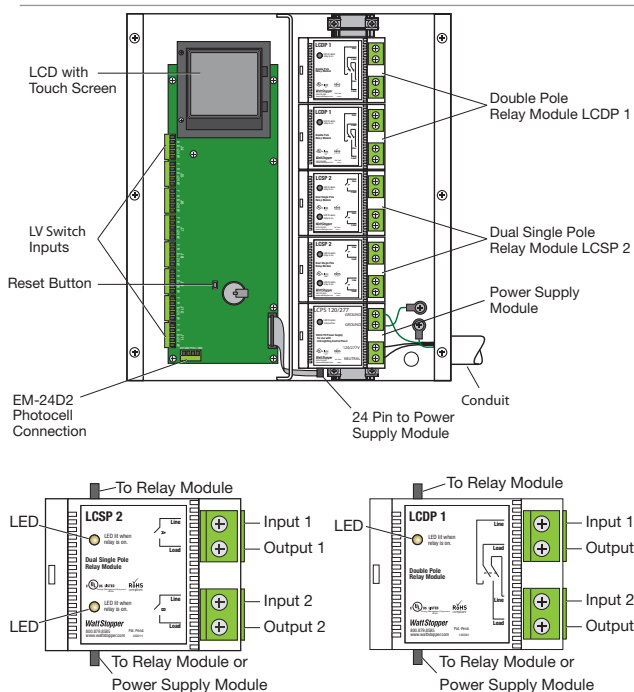


Specifications

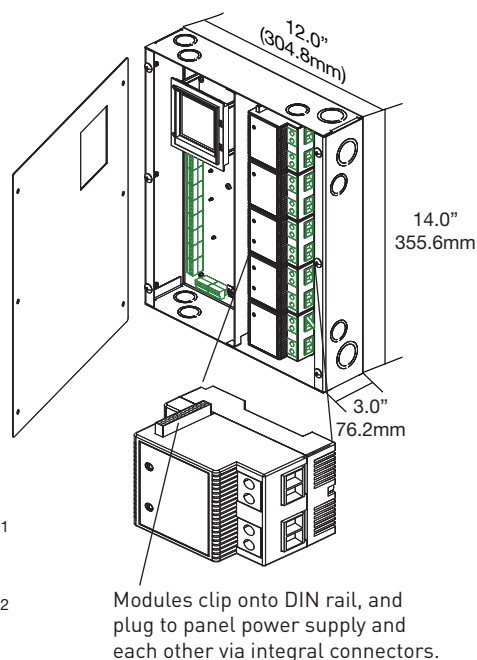
- Power input: 120/277 VAC; 50/60 Hz
- Accessory power: 500 mA at 24 VDC
- Switch inputs with screw terminals; compatible with 3-wire momentary, 2-wire momentary or maintained with pilot light output
- Relay grouping: configurable to switches through touchscreen user interface
- Panel weight: 8.1 lbs. (without relays)
- Relays: modular; dual 1-pole or single 2-pole
- Relay weight (module):
 - LCDP-1: 0.49 lbs.
 - LCSP-2: 0.37 lbs.
- LCSP-2 module relay ratings:
 - 20 amp tungsten @ 120 VAC
 - 20 amp ballast @ 120 or 277 VAC
 - 0.5 hp @ 120 VAC
- LCDP-1 module relay ratings:
 - 20 amp ballast @ 208, 240 or 480 VAC
 - 1 hp @ 208, 240 or 480 VAC
- SCCR (short circuit current rating): 14,000 amps
- Operating conditions: for indoor use only; 32-139°F (0-60°C); 5-95% RH noncondensing
- UL and CUL listed
- One year warranty

Panel Layout & Wiring

LC8 Panel and Relay Modules



LC8 Dimensions



Relay modules can be mixed and matched to configure the LC8 for a variety of single-pole and double-pole lighting control applications.

Ordering Information

Catalog No.	Description	Voltage
<input type="checkbox"/> LC8-120/277	LC8 panel with LCPS-120/277 volt power supply, space for 4 relay modules	120/277 VAC
<input type="checkbox"/> LCSP-2	Dual single-pole relay module, two 20 amp relays	120/277 VAC
<input type="checkbox"/> LCDP-1	Double-pole relay module, one 20 amp relay	208, 240 or 480 VAC
Optional system enhancements:		
<input type="checkbox"/> EM-24D2	Exterior photocell with integral lens shade light adjustment	24 VDC



EMERGENCY LIGHTING CONTROLS

Controlling emergency lighting in a coordinated way with normal lighting provides additional opportunities for energy savings. WattStopper offers a range of emergency lighting controls, from integrated, panel-based control to standalone control devices that work with occupancy sensors and other control devices.





ELCU-100 Emergency Lighting Control Unit

Guarantees emergency lighting remains ON or is turned on when power to the control device is lost

“Watchdog” feature allows emergency loads to be controlled in tandem with normal power loads

Interfaces with fire alarm panel or security system



Integrated push-to-test button

UL listed for use in emergency circuits

PROJECT
LOCATION/TYPE

Product Overview

Description

WattStopper's Emergency Lighting Control Unit (ELCU) is a self-contained, emergency lighting control device. The ELCU provides all required functionality to allow any standard lighting control device to control emergency lighting in conjunction with normal lighting in any area within a building.

Mounting

The ELCU is equipped with an integral DIN rail mounting groove and retaining clip mechanism. It can be installed on the DIN rail track provided within a WattStopper enclosure (i.e., LS-E8, LS-E12), or in a WattStopper lighting control panel.

Operation

The ELCU monitors a single circuit that provides normal lighting to an area. As long as normal power is present, the ELCU permits lighting control devices (i.e., occupancy sensors, panels, dimmers, or wall switches) to control the emergency lighting fixtures as well as the general lighting. If power is lost for any reason, including the tripping of a single branch circuit breaker, the ELCU will force the emergency fixtures for that area on. The ELCU can be wired either as a control device, so that emergency lighting follows the control of normal lighting, or as a bypass device to shunt emergency power around a control device when normal power fails.

Applications

The ELCU is designed to control lighting in areas where emergency lighting fixtures are connected on dedicated emergency lighting circuits that are typically on 24 hours per day. The ELCU allows normal control of emergency lighting for energy savings and/or task related reasons while strictly adhering to National Electric Code requirements. It is suitable for any application where enhanced energy saving is desired.

Features

- Eliminates energy waste caused by “always ON” emergency lighting
- Integral push-to-test button activates emergency mode for a true test condition
- Connects to remote test switch or other input to activate emergency ON from a remote location
- Operates as a control device or as a shunt
- Senses local single circuit power failure
- Zero cross switching technology for reliability and increased product life
- Compatible with WattStopper occupancy sensors, daylighting controls, lighting control panels, and dimmers
- LED indication for emergency and normal power
- Half-second delayed ON positively identifies emergency fixtures for required maintenance
- Provides absolute fail-to-on emergency lighting
- UL924 listed, meets NEC, OSHA and NFPA safety codes

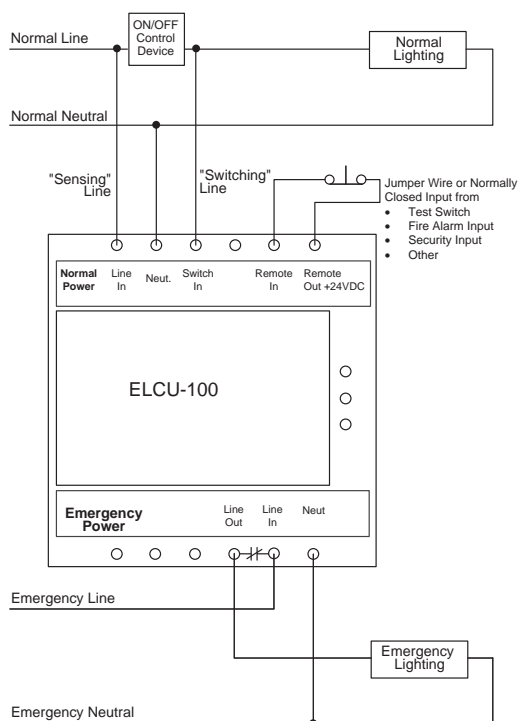


Specifications

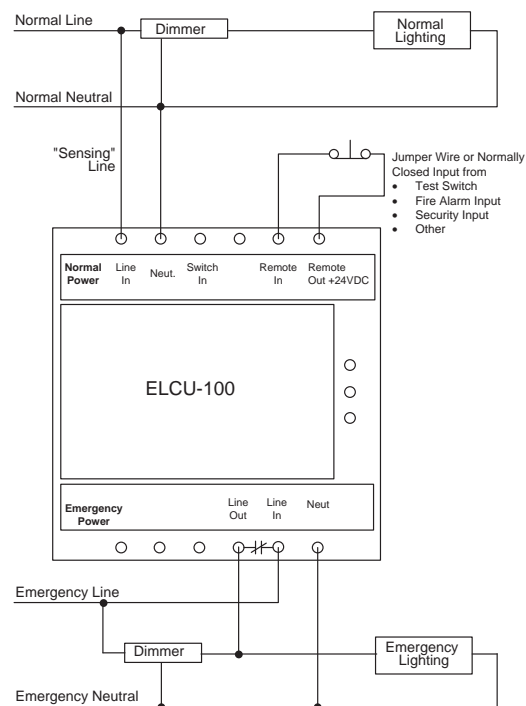
- 120/277 VAC; 60Hz
- Maximum load:
 - Ballast 20A @ 120/277 VAC
 - Incandescent 10A @ 120/277 VAC
 - Motor 1HP @ 120 VAC
- Remote activation: supplies 24 VDC source for dry contact closure
- Integral control: push-to-test button on unit
- Housing: fire rated V-0, 176°F (80°C)
- Terminal torque: 4/428 inch pound-force (0.5Nm)
- Dimensions: 2.78" x 3.44" x 2.63" (71mm x 87mm x 67mm) L x W x D
- UL, cUL listed Emergency Lighting and Power Equipment; five year warranty

System Wiring

ELCU Wiring Diagrams



When wired as a control device, the ELCU receives a switching signal from the output of the control device (relay, switch, power pack, etc.)



When wired as a shunt, the switching line is not used.

Note: Use with Watt Stopper universal dimmers or contact dimmer manufacturer to determine the suitability of the specified dimmer for shunt operation.

Ordering Information

Catalog No.	Description	Voltage
<input type="checkbox"/> ELCU-100	Emergency Lighting Control Unit	120/277 VAC; 60Hz
<input type="checkbox"/> EMTS-100	Remote test switch on single gang plate	24VDC, normally closed contact
<input type="checkbox"/> LS-E8	Surface Mount Enclosure for 1 or 2 ELCU units*	N/A
<input type="checkbox"/> LS-E12	Surface Mount Enclosure for up to 6 ELCU units*	N/A

*LS-E8 and LS-E12 enclosures include screw cover and DIN rail

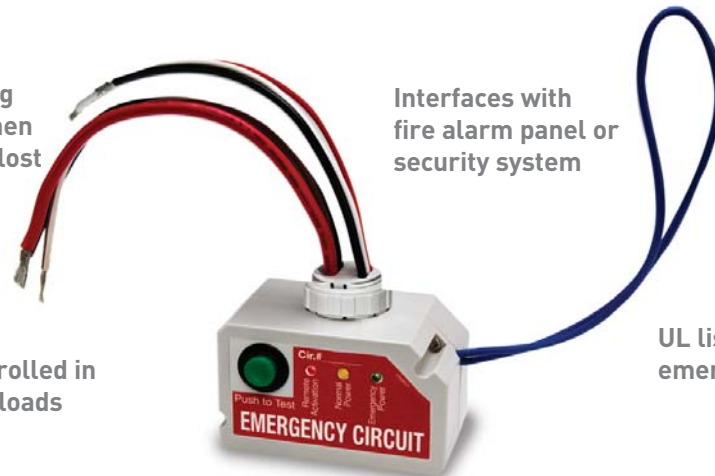
ELCU-200 Emergency Lighting Control Unit

Guarantees emergency lighting remains ON or is turned on when power to the control device is lost

Interfaces with fire alarm panel or security system

“Watchdog” feature allows emergency loads to be controlled in tandem with normal power loads

UL listed for use in emergency circuits



Integrated push-to-test button

PROJECT

LOCATION/TYPE

Product Overview

Description

WattStopper's ELCU-200 Emergency Lighting Control Unit is a self-contained device that allows any standard lighting control device to control emergency lighting in conjunction with normal lighting in any area within a building.

Operation

The ELCU-200 monitors a single circuit that provides normal lighting to an area. As long as normal power is present, the ELCU-200 permits lighting control devices (e.g., occupancy sensors, panels, dimmers, or wall switches) to control the emergency lighting fixtures as well as the general lighting. If power is lost for any reason, including the tripping of a single branch circuit breaker, the ELCU-200 will force on the emergency fixtures for that area. The ELCU-200 can be wired either as a control device, so that emergency lighting follows the control of normal lighting, or as a bypass device to shunt emergency power around a control device (e.g., a dimmer) when normal power fails.

Features

- Eliminates energy waste caused by emergency lighting that is always on
- Integral push-to-test button activates emergency mode for a true test condition
- Connects to EMTS-100 Remote Test Switch or other input to activate emergency on from a remote location
- Operates as a control device or as a shunt
- Senses local single circuit power failure
- Zero cross switching technology for reliability and increased product life
- Compatible with WattStopper occupancy sensors, daylighting controls, lighting control panels, and dimmers
- LED indication for emergency and normal power
- Half-second delayed on positively identifies emergency fixtures for required maintenance
- Provides absolute fail-to-on emergency lighting
- UL924 listed, meets NEC, OSHA and NFPA safety codes; UL2043 plenum rated
- Qualifies for use on ARRA-funded projects

Mounting

The ELCU-200 mounts directly to a junction box or electrical enclosure that has a standard 1/2" knockout. It is compatible with all WattStopper occupancy sensors, daylighting controllers and power packs.

Applications

The ELCU-200 is designed to control lighting in areas where emergency lighting fixtures are connected on dedicated emergency lighting circuits that are typically on 24 hours per day. The ELCU-200 allows normal control of emergency lighting for energy savings and/or task related reasons while strictly adhering to National Electric Code (NEC) requirements. It is suitable for any application where enhanced energy saving of emergency lighting is desired.

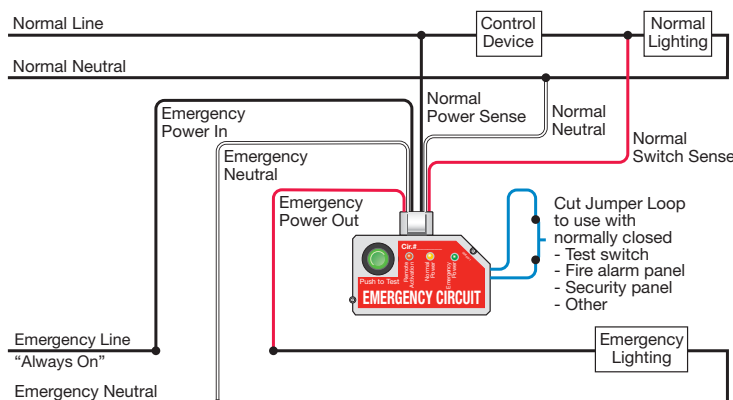


Specifications

- 120/277 VAC; 60Hz
- Maximum load:
 - Ballast 20 A @ 120/277 VAC
 - Incandescent 10 A @ 120 VAC
 - Motor 1HP @ 120 VAC
- Remote activation: supplies 24 VDC source for dry contact closure
- Integral control: push-to-test button on unit
- Housing: fire rated V-0, 176° F (80°C)
- Operating temperature range: 32 to 131°F (0 to 55°C)
- Relative humidity range: 5 to 95%, noncondensing
- Dimensions: 1.7" x 2.97" x 1.64" [43.2mm x 75.4mm x 41.7mm] H x W x D with a 1/2" (12.7mm) threaded nipple
- UL, cUL listed Emergency Lighting and Power Equipment; five year warranty

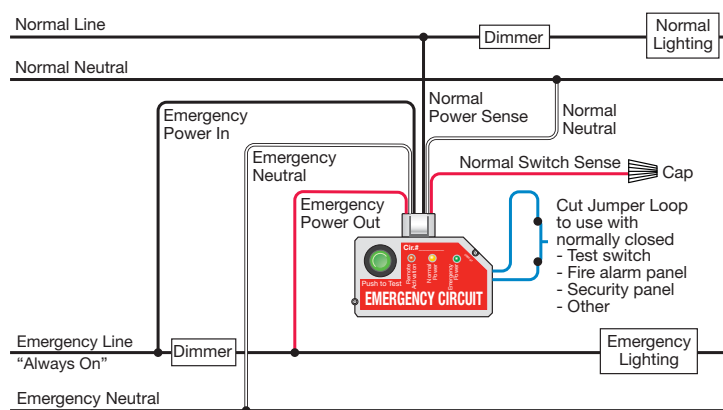
Installation and System Wiring

ELCU Wired As a Control Device



When wired as a control device, the ELCU-200 receives a switching signal from the output of the control device (relay, switch, power pack, etc.)

ELCU Wired As a Shunt, or Bypass, Device



When wired as a shunt, the switching line is not used.

Note: Use with WattStopper universal dimmers or contact dimmer manufacturer to determine the suitability of the specified dimmer for shunt operation.

Ordering Information

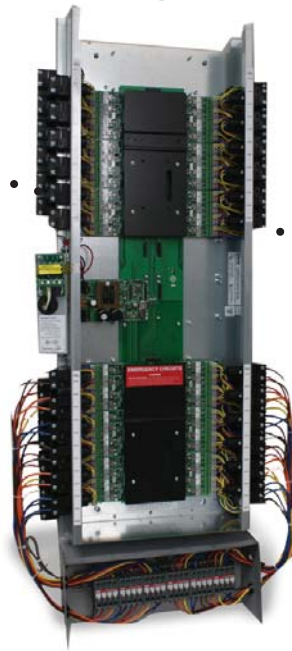
Catalog No.	Description	Voltage
<input type="checkbox"/> ELCU-200	Emergency Lighting Control Unit	120/277 VAC; 60Hz
<input type="checkbox"/> ELCU-200-U	Emergency Lighting Control Unit, ARRA-compliant	120/277 VAC; 60Hz
<input type="checkbox"/> EMTS-100	Remote Test Switch on single gang plate	24VDC, normally closed contact

Lighting Integrator Emergency Relay Panel Option

UL924 listed for use on emergency circuits

Factory-assembled interior mounts in standard LI enclosure, ships completely wired

Meets NEC (NFPA70) UL 924 requirements for emergency lighting control



Allows normal control of emergency circuits via schedule, switch, photocell or other device

Guarantees that emergency lighting will turn on upon loss of normal power

PROJECT
LOCATION/TYPE

Product Overview

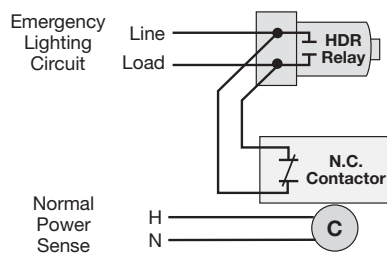
Description

The Lighting Integrator Emergency Relay Panel option provides certified fail-safe operation of lighting control circuits controlled by HDR relays in an LI lighting control panel. The option is available with any 24 or 48 size LI panel.

Operation

A dedicated normal power sense connection monitors the presence of normal power and allows the HDR relays to control the emergency lighting circuits based on ordinary control schedules and devices, such as switches, occupancy sensors, and daylighting control devices. When normal power is lost for any reason, all HDR relays controlling emergency circuits are each individually bypassed automatically by a set of normally closed contacts. The HDR relays do not change state during a power outage so lighting is restored when normal power is restored.

Wiring



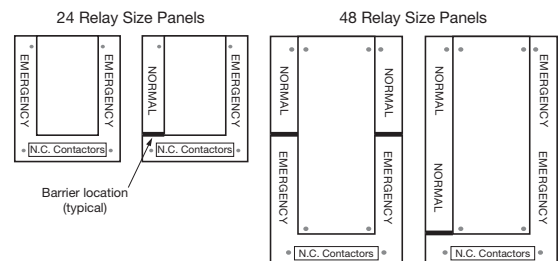
Applications

The Lighting Integrator emergency lighting control panel option is ideal for applications where always-hot emergency lighting circuits need to be controlled along with the normal lighting circuits. Because the lighting control panel with integrated yet dedicated emergency relays operates normally based on the type of intelligence card installed in the panel, this is suitable for virtually any type of application. These panels can be used reliably for fail safe emergency lighting operation in schools, office buildings, libraries, airports, industrial plants, warehouses, and auditoriums.

Specifications

- 30 Amp normally closed contactors used for shunt operation
- One to 24 emergency relays per panel, 24 or 48 size enclosure only
- Emergency relay rating: same as HDR
- Normal power sense input, 120, 277 or 347 volts, voltage specific
- UL listed for use on emergency circuits

Emergency Relay Panel Configurations



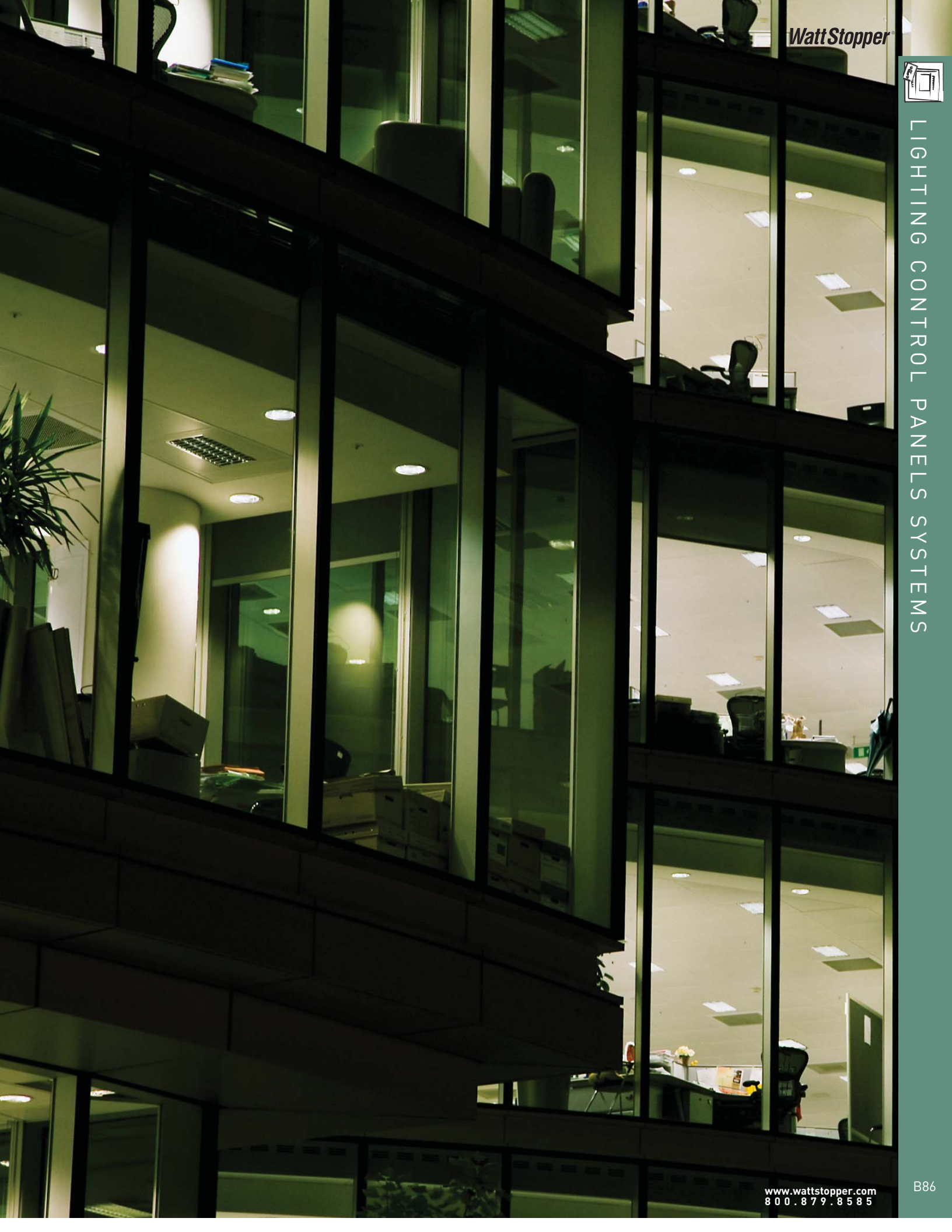
Description

Order LI Emergency Relay Panel option using the ordering section on the LI level panel cut sheet.

Pub. No. 29702 rev 10/2009

Ordering Information

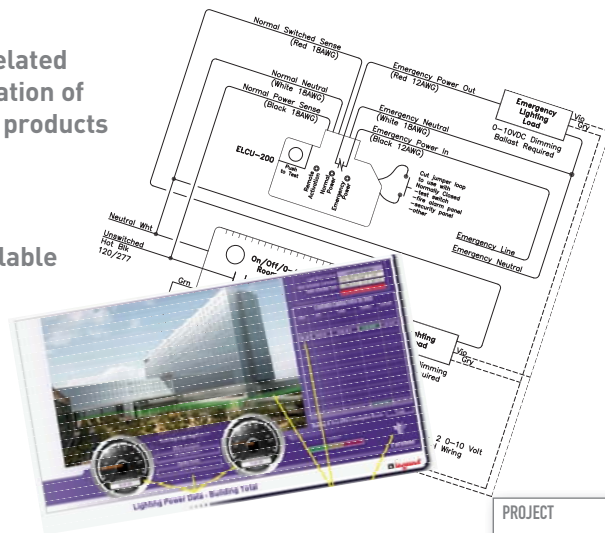
WattStopper®
www.wattstopper.com
800.879.8585



Lighting Control System Services

Technical services related to design and installation of WattStopper control products

Extended warranties available



Free telephone technical support for purchased product(s)

Complete project assistance

Startup and training services

PROJECT

LOCATION/TYPE

Product Overview

Description

Comprehensive services include design, startup, onsite training and troubleshooting as necessary.

Project Engineering

Engineering services provide complete design and implementation using WattStopper products. The (SDRAWSYS) services include submittal packages with system one-line diagram (or reflected ceiling plan when applicable) showing system components and quantities for all products. Drawings can include system riser diagrams, individual panel and room controls to show hardware configuration, panel numbering and wiring schedules showing circuit/relay/load relationships as well as occupant overrides, sensors, wiring diagrams for each component, installation instructions and testing procedures for each component. SDRAWSYS provides ongoing Project Management support throughout the installation phase, through to the final startup and project acceptance.

Programming

Programming Services (SPROGSYS) provide custom programming for special applications requiring advanced logic and customized control solutions including BACnet integration.

Graphical interface screens are customizable to enhance efficiency and provide user friendly control of the system (WCGRSCRN).

Startup

Highly qualified technicians are available for onsite services and maintenance assistance. Comprehensive startup service (SCOM) includes a WattStopper factory-trained technician to verify that all WattStopper system hardware on the bill of material (including standalone occupancy sensors) is installed and configured in accordance with product documentation and project requirements. The service tests and verifies systems are operating as intended, implements sequences of operation (SOO) as directed, or provides a basic starting program configuration. SCOM also includes owner training to review programming, operation and maintenance.

Alternate startup service (SCOMEXSEN) provides a WattStopper factory-trained technician to verify all WattStopper system hardware **except** standalone occupancy sensors as described above.

Other services are available to assist commissioning agents with testing, provide system troubleshooting and repair, implement system upgrades or energy optimization, and perform auditing.

Training

Additional training services (STRAIN) include a WattStopper factory-trained technician to provide additional and separate site visits to conduct system training to review all system hardware, software, and adjustments.

Sample Project Engineering Documents

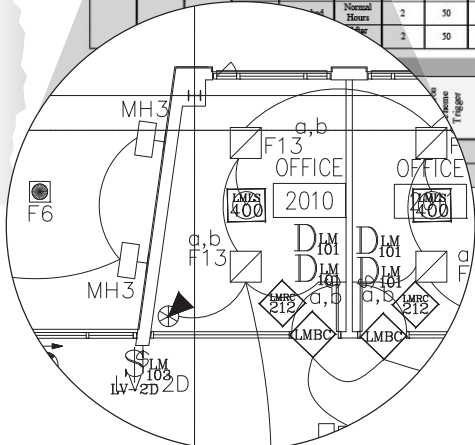
WattStopper®

Room Summary for JHS Office Building - 2010 WDE TURBOENCABULATOR OFFICE in WS-CSF-3.2

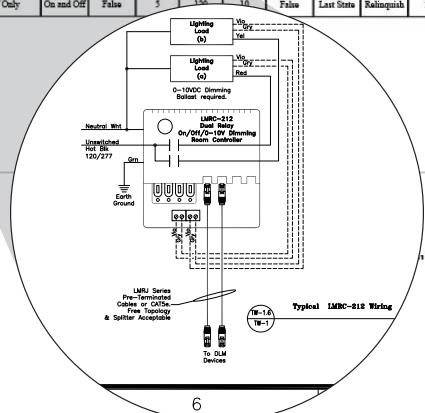
Room: JHS/WS-CSF-3.2: 2010 WDE TURBOENCABULATOR OFFICE
 After Hours Enabled: Network Bridge Present Number of Profiles: 1

Schedule and Control			
Device	TW Sheet	TW Detail	Control Sequence
LMRC-212	1	1.6	LMLS-400 Zone 1; LMPX-100; LMDM-101 Rocker; LMDM-101 Rocker;
01[A]: Load a			LMLS-400 Zone 1; LMPX-100; LMDM-101 Rocker; LMDM-101 Rocker;
02[B]: Load b			LMLS-400 Zone 1; LMPX-100; LMDM-101 Rocker; LMDM-101 Rocker;
LMLS-400	2	2.3	Zone 1: Load 01[A]; Load a; Load 02[B]; Load b;
LMPX-100	2	2.1	Load 01[A]; Load a; Load 02[B]; Load b;
LMDM-101	1	1.8	Load 01[A]; Load a; Load 02[B]; Load b;
Rocker - Rocker			Load 01[A]; Load a; Load 02[B]; Load b;
LMDM-101	1	1.8	Load 01[A]; Load a; Load 02[B]; Load b;
Rocker - Rocker			Load 01[A]; Load a; Load 02[B]; Load b;
LNBC-300 [2010 WDE TURBOENCABULATOR OFF	1	1.3	

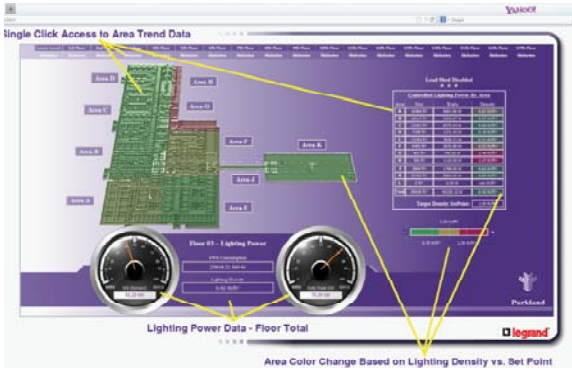
Controller																					
Controller	Circuit	Line Voltage (Volts)	Load	Load Type	Operating Mode	Fade Time (Sec)	Fade Rate	Fade Trip Point Up (%)	Fade Trip Point Down (%)	High Trim Level (%)	Low Trim Level (%)	Sensor Mode	Exition Mode	Blank Warm	Grace Period (Min)	On/Off Delay (Min)	Temporary Auto-On (Sec)	Blank User Override	Power Up Mode	Transition State	Transition Level
LMRC-212			01[A] Load a	Switched	Normal Hours	2	50	1	0	100	0	Follow On and Off	On and Off	False	5	0	10	False	Last State	Nothing	25
					After Hours	2	50	1	0	100	0	Follow Off Only	On and Off	False	5	120	10	False	Last State	Relinquish	25
					Normal Hours	2	50	1	0	100	0	Follow Off Only	On and Off	False	5	0	10	False	Last State	Nothing	25
					After Hours	2	50	1	0	100	0	Follow Off Only	On and Off	False	5	120	10	False	Last State	Relinquish	25



Direction	Through Mode
N/A	False
N/A	True



Sample Graphic Interface Screens



Ordering Information

Catalog No.	Description
<input type="checkbox"/> SDRAWSYS	Factory project engineering services
<input type="checkbox"/> SPROGSYS	Custom factory programming
<input type="checkbox"/> WSGRSCRN	Custom graphic interface screen(s)
<input type="checkbox"/> SCOM	Onsite startup/training for all WattStopper products
<input type="checkbox"/> SCOMXSEN	Onsite startup/training excluding occupancy sensors
<input type="checkbox"/> STRAIN	Day(s) Onsite training for WattStopper control products
<input type="checkbox"/> SERVICE	On-site support for commissioning assistance, system optimization, troubleshooting and repair
<input type="checkbox"/> HWARRANTY-1	Year(s) extended warranty for hardware