SUBMITTAL COVER SHEET

From: Gustavo Carvajal **Attn:** Tim Brown

Company: Piazza, Inc.

Phone/Fax #: (914)741-4435

Project: Dutchess Stadium

Project #: RFB-DCB-18-22

C&S Companies
499 Col. Eileen Collins Blvd.
Syracuse, NY 13212
(315) 455-2000; Fax: 455-9577

Reference: CSI Code: 260923 Dwg No: _____

Paragraph: _____ Other: _____

Description: Lighting Control product data and shop drawings

Supplier: _____

Manufacturer: _____

Item Type:

X Product Data _____ Manf. Cert/Warranty

X Shop Drawings _____ Samples

_____ Other: _____

Contractor's Approval:

_____ Reviewed for general compliance of specifications.

_____ This submittal is a ***substitute*** to the specified product.

_____ For Architects / Engineers Approval

This is our _____ submittal for this item.

We are submitting _____ copies.

Contractor Submittal Review Stamp

THE ATTACHED MATERIAL HAS BEEN REVIEWED BY THE UNDERSIGNED AND IS BELIEVED TO COMPLY WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE UNDERSIGNED UNDERSTANDS VERIFICATION OF FIELD DIMENSIONS, AND COORDINATION WITH OTHER TRADES, REMAINS THE RESPONSIBILITY OF THE CONTRACTOR.

Submitted by: Piazza, Inc. Digitally signed by Piazza, Inc. DN: C=US, E=julianna@piazzabrothers.com, OU=Piazza, Inc.", O="Piazza, Inc.", CN="Piazza, Inc." Date: 2023.03.15 15:04:38-04'00'

Date: 06/08/23

C&S Companies Approval:

☐ (A) Approved

☐ (A/N) Approved As Noted

☐ (R) Reviewed for General Conformance

☐ (RR) Revise and Resubmit

☐ (REJ) Rejected

☐ (SUB) Submit Specified Item

Checking is only for general compliance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for dimensions which shall be confirmed and correlated at the jobsite; fabrication processes and techniques of construction; coordination of his work with that of all other trades; and the satisfactory performance of his work.

Reviewed by: _____

Date: _____

***Note: Provide one cover sheet for each copy of the submittal.**

SUBMITTAL COVER SHEET

Contractor: *Piazza Inc*

Address: *3 W. Stevens Ave - Hawthorne NY 10532* **Telephone:** *(914)741 4435*

TYPE OF SUBMITTAL:

Owner: Dutchess County of Public Works

Name of Project: Rebid Dutchess Stadium New Left Field Clubhouse, Seating Bowl, & Restroom Building

[X] ShopDrawings	[ ] Schedule	[ ] Physical Sample
[X] TechnicalData	[ ] Certificate	[ ] Color Sample
[ ] Test Report	[ ] Warranty	[ ] _____

Submission #: 1st, 2nd, 3rd, 4th (circle one)

Description:

Product Identification: Lighting Controls

Manufacturer:

Subcontractor/Supplier: Upstate Electric

DOCUMENT REFERENCES: (Must be fully filled out)

Spec Section No.: 260923 Drawing No(s):

Paragraph: Rm. Or Det. No(s):

Contractor Remarks:

These documents have been checked for accuracy and coordination with job conditions and contract requirements by Piazza, Inc. and have been found to comply with the provisions of the contract documents. - PIAZZA INC.

Contractor Submittal Review Stamp

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DATE:_____ BY (SIGN): *Piazza Inc*

Consultant use below this line:

Architect Submittal Review Stamp

[ ] NO EXCEPTIONS	[ ] MAKE CORRECTIONS NOTED
[ ] REJECTED	[ ] REVISE AND RESUBMIT
[ ] EXAMINED	[ ] SUBMIT SPECIFIED ITEM

CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS & SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED & CORRELATED AT THE JOB SITE; FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES & THE SATISFACTORY PERFORMANCE OF HIS WORK.
BBS Architects Landscape Architects Engineers

DATE_____ BY_____

DLRGROUP

Submittal Review

Project Name:	Dutchess Stadium Left Field Building
Project Number:	57-21113-01
Submittal ID:	260923-1
Received On:	6/8/2023
Reviewed On:	6/20/2023
Reviewed By:	Collin Wheeler
Action:	Rejected

This review is for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review of submittals is not for the purpose of determining the accuracy and completeness of other information such as dimensions, quantities, and installation or performance of equipment or systems, which are the Contractor's responsibility. The Architect's review shall not constitute approval of safety precautions or construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component. The Architect's comments, notes or corrections are not an authorization to proceed with Work involving a change in the Contract Sum, the Contract Time or both. If any portion of this review requires a change to the Work, an appropriate change instrument must be executed in accordance with the Contract Documents.

*** Not approved manufacturer. Provide lighting control system from one of the approved manufacturers listed in specs.**

Catalog Number: Date: Project:

WALL SWITCH OCCUPANCY SENSOR

LINE VOLTAGE

SENSORWORX®

OVERVIEW

The **SENSOR**WORX family of wall switch occupancy sensors provides a simple yet cost effective lighting control solution for many retrofit applications. Designed with contractors in mind, the **SENSOR**WORX wall switch sensor is significantly shallower than typical sensors, resulting in less crowed wall boxes. Additionally, versatile wiring enables usage with or without a neutral and allows reversal of line and load connections. **SENSOR**WORX products utilize the latest passive infrared technology and digital signal processing techniques to provide unmatched motion detection performance. These units are also available with an integrated microphone to provide overlapping passive acoustic occupancy detection for rooms with obstructions or where occupant motion is limited.

BASIC OPERATION

Sensors detect movement in the infrared energy that radiates from occupants as they move within the devices field-of-view. Once occupancy is identified, the sensor's internal relay switches power on to the connected lighting. Units can also be configured to operate in Vacancy Mode (e.g., require lights be manually switched on). Once lights are on and if equipped with passive dual technology (PIR/Acoustic), the unit's microphone is enabled to further enhance detection. An internal timer is set to keep lights on during brief periods of inactivity, and is reset every time occupancy is signaled by either the passive infrared or acoustic detection technologies. Ambient daylight detection can also be enabled in equipped units so that lights are held off in rooms with sufficient light contribution from windows or skylights.

MADE IN THE USA · TAA COMPLIANT · BAA COMPLIANT · RoHS · c UL us LISTED

SPECIFICATIONS

ELECTRICAL

OPERATING VOLTAGE
120/277 VAC, 50/60 Hz

LOAD RATINGS
MAX: 800W @ 120VAC
1200W @ 277VAC
MIN: None

LOAD TYPES
LED Driver/Lamps
CFL, Electronic/Magnetic Ballasts (Fluorescent)
Tungsten (Incandescent)

ENVIRONMENTAL

OPERATING TEMP
32°F to 122°F (0°C to 50°C) - Standard
-40° F/C (with **-HE** Option)

RELATIVE HUMIDITY
0-95% Non-Condensing,
Indoor Use Only

PHYSICAL*

SIZE
2.74"H x 1.68"W x 1.39"D
(6.96 x 4.27 x 3.53 cm)
Not Including Mounting Strap

WEIGHT
4.5 oz

MOUNTING
Single Gang Switch Box

*2-POLE SOLUTION INCLUDES TWO UNITS
(e.g., 2X SIZE, WEIGHT, MOUNTING)

FEATURES

ELECTRICAL FEATURES

- **Interchangeable Line & Load Wires - Impossible to Wire Backwards**
- **Accommodates Neutral (3-Wire) and No-Neutral (2-Wire) Installation**
- **Electronically Timed Switching Ensures Long Relay Life**
- **Compatible with LED, Fluorescent and Incandescent Lighting**
- **Meets NEC 404.2(c) & 404.22 Guidelines Regarding Powering Over Ground & Current Leakage**

PHYSICAL FEATURES

- **Enclosure is 25-40% Shallower than Other Sensors (< 1" Depth into Wallbox)**
- **Unique Bat-Wing Shaped Lens Provides Enhanced Peripheral Detection**
- **Self-Grounding Mounting Strap**
- **Modern Look and Intuitive Easy-Tap Button**
- **Rugged Vandal Resistant Lens**
- **Settings are Adjustable Without Removing Cover Plate**

OPERATIONAL FEATURES

- **Wall-To-Wall Passive Infrared Small Motion Detection**
- **Passive Acoustic Detection (Optional) - Prevents False Offs when No Motion is Present**
- **100% Passive Detection Methods - No Interference Potential from External Devices**
- **Ambient Daylight Override Mode Increases Energy Savings (Optional)**
- **Configurable Time Delays and Operating Modes**
- **Blue Locator LED when Lights are Off**

COVERAGE PATTERNS

- 30" to 48" (0.76 - 1.22 m) recommended mounting height
- Wall to wall (~180 degree) coverage
- Small motion (e.g., hand movement) detection up to 20 ft (6.10 m), ~625 ft^2
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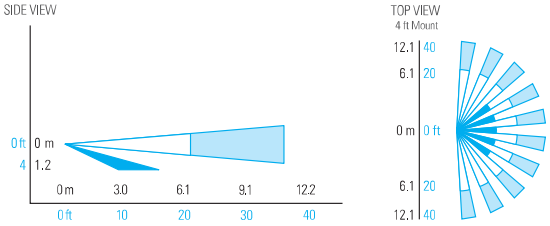
- Overlapping acoustic detection of occupants over entire coverage area
- Advanced signal processing filters out nuisance noises while not effecting overall sensitivity



APPLICATIONS

A wall switch sensor is typically used to retrofit an existing wall switch in a small room or enclosed space. A Passive Infrared (PIR) only sensor is sufficient for spaces where line of site is maintained and occupants are periodically moving (e.g., copy rooms, storage rooms). Dual technology sensors are necessary where occupants may be partially blocked from the sensor's direct view or where they may be stationary (e.g., private offices or restrooms with stalls).

- Private Restrooms
- Copy Rooms
- Restroom with Stalls
- Small Meeting Room
- Small Office
- Vestibule
- Storage Room
- Break Room

CODE COMPLIANCE

Wall Switch sensors can be used to meet many requirements of ASHRAE 90.1, IECC, and Title 24.

COMMON ENERGY CODE DEFINITIONS:

- Occupancy Operation: Auto On/Auto Off
- Vacancy Operation: Manual On/Auto Off
- Partial On Operation:
  - 1st Pole Auto On / 2nd Pole Manual On
  - Auto On to 50% / Manual On to 100%
  - All Poles Auto Off

ASHRAE® STANDARD 90.1

IECC® STANDARD

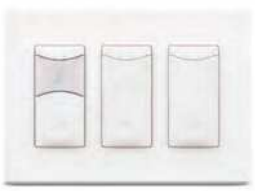
TITLE 20 LISTED TITLE 24 COMPLIANT

MULTI-GANG SWITCH REPLACEMENT

Many residential and commercial building spaces contain multi-gang switch locations (i.e. locations on the wall that have more than one single-gang switch devices in the same wall box). The **SENSOR**WORX solution for these applications utilizes a wall switch occupancy sensor and one or more added "sidecar" wall switches that receives necessary occupancy information from the adjacent sensor. Each unit can be configured separately for Auto On or Manual On (Vacancy) operation and time delay. Most conveniently, this solution enables adding a standard multi-gang decorator switch plate in order to provide an aesthetically pleasing appearance without any awkward and conspicuous blank wall plate sections. Additional sidecar switches can also be added to create 3-pole (or greater) solutions.

INBOARD / OUTBOARD SWITCH REPLACEMENT

Many older buildings have fluorescent light fixtures wired for inboard/outboard control by a pair of wall switches. Retrofitting these wall switches with code-compliant controls is attractively done with a **SENSOR**WORX 2-pole solution (model: #SWX-102 or SWX-122). These two unit kits contain an Auto On occupancy sensor and a Manual On sidecar switch that work together to meet the required partial on energy code requirements.



BATHROOM LIGHTS & FAN

Bathrooms often have separate switches for lights and ventilation fans. In some cases two switches for lights (e.g. vanity and shower) and the fan are all contained in the same 3-gang wall box along the entry wall. Retrofitting these switches with a **SENSOR**WORX wall switch sensor and two sidecar switches is an attractive and energy efficient solution for providing occupancy control of all three loads.

ORDERING INFO

SAMPLE MODEL # SWX-101-WH

	PRODUCT		DETECTION		# of POLES / DEFAULT OPERATION		COLOR*		ADDITIONAL OPTIONS	
SWX	Wall Switch Sensor	1	Passive Infrared (PIR)	0	1-Pole: Auto On (Occupancy)	1	White	- WH	None	Blank
			Passive Infrared (PIR) + Daylight	1	2-Pole: Partial On†	2	Ivory	- IV	Humid Environment	- HE
			Passive Dual Technology (PIR/Acoustic)	2	1-Pole: Manual On (Vacancy)	3	Light Almond	- LA	10 Pack**	- J10
			Passive Dual Technology (PIR/Acoustic) + Daylight	3			Gray	- GY		
							Black	- BK		
							Red	- RD		

*WALLPLATE NOT INCLUDED

** THE CONTRACTOR PACK OPTION (-J10) REDUCES JOB SITE WASTE AND INVENTORY TIME (AVAILABLE FOR SINGLE POLE MODELS ONLY)

† 2-POLE SOLUTION INCLUDES A SINGLE POLE OCCUPANCY SENSOR AND A CONNECTED "SIDECAR" SWITCH UNIT FOR SECOND POLE (REQUIRES TWO GANG BOX)

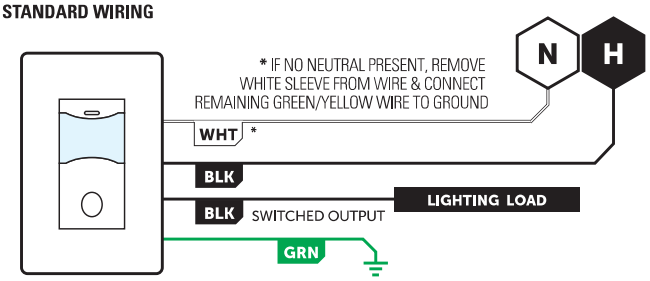
ACCESSORY	
SWX-831-SC	Additional Sidecar Switch Unit (for use with SWX-1x2 Kits)
SWX-199	Single Gang Wall Plate
SWX-199-FACE	Sensor Face Color Change Kit

COLOR	
White	- WH
Ivory	- IV
Light Almond	- LA
Gray	- GY
Black	- BK
Red	- RD

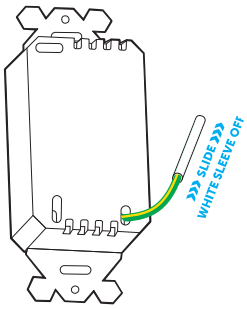
WIRING

- Unit works both in installations where neutral connection is available as well as installations where only ground connection is present.
- If no neutral is present, remove the white sleeve from the wire & connect the now Green/Yellow wire to ground (see diagram below).
- The White wire (or Green/Yellow wire underneath the removable sleeve) MUST be connected to neutral (or Ground if sleeve is removed) for the unit to operate.
- The all Green wire is just for safety.
- The unit's two black wires are interchangeable (e.g., one connects to line power, one connects to load).

STANDARD WIRING



NEUTRAL TO GROUND WIRE CONVERSION DETAIL

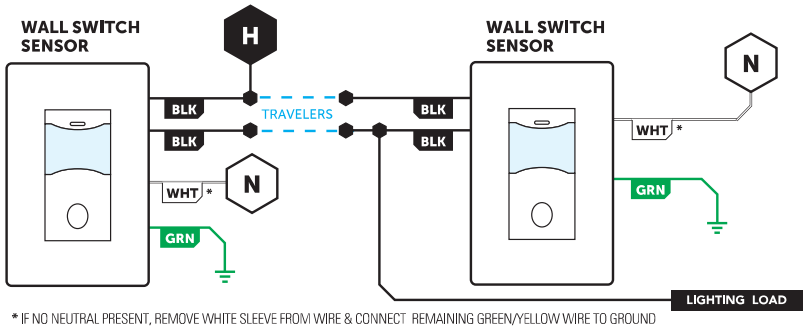


NOTE: This product is UL listed and meets NEC 404.2(c) & 404.22 guidelines regarding powering over ground & current leakage. Powering over ground is permitted for replacement / retrofit only.

3-WAY WIRING

TWO SENSORS IN PARALLEL

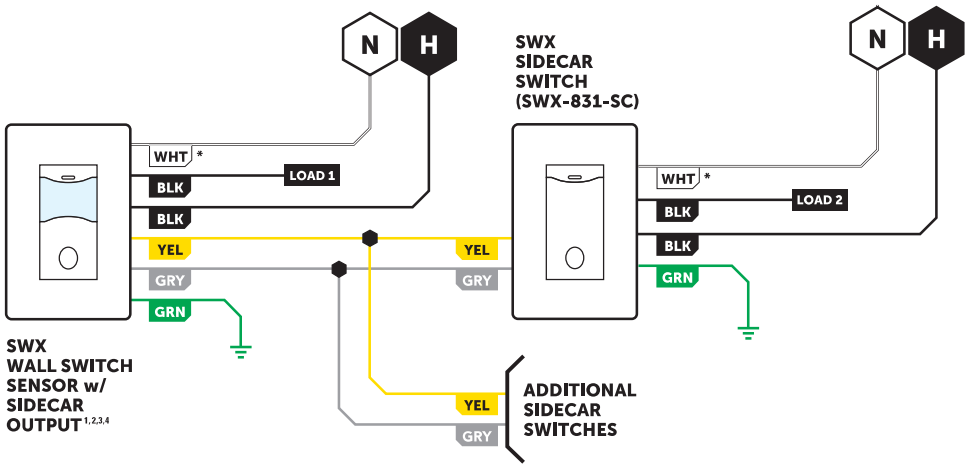
- Both sensors must time out for lights to turn off (or both buttons must be switched)
- Recommended for Automatic On (Occupancy) applications only



* IF NO NEUTRAL PRESENT, REMOVE WHITE SLEEVE FROM WIRE & CONNECT REMAINING GREEN/YELLOW WIRE TO GROUND

2-POLE WIRING

- 2-Pole solution includes a single pole occupancy sensor and a connected "sidecar" switch unit for second pole
- Requires two-gang box and decorator wall plate.
- Units can be powered from same or different circuits/voltages.

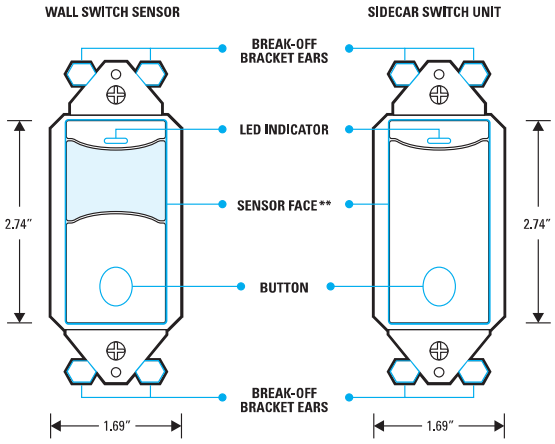


* IF NO NEUTRAL PRESENT, REMOVE WHITE SLEEVE FROM WIRE & CONNECT REMAINING GREEN/YELLOW WIRE TO GROUND

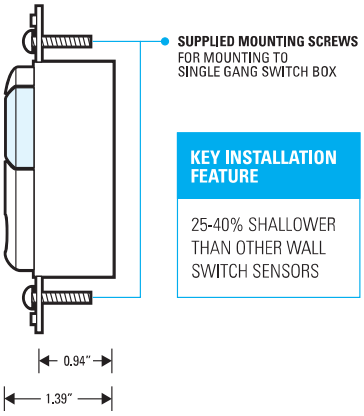
[1] MODEL NUMBER SWX-102 INCLUDES UNIT SWX-101-SC AND SWX-831-SC
[2] MODEL NUMBER SWX-112 INCLUDES UNIT SWX-111-SC AND SWX-831-SC
[3] MODEL NUMBER SWX-122 INCLUDES UNIT SWX-121-SC AND SWX-831-SC
[3] MODEL NUMBER SWX-132 INCLUDES UNIT SWX-131-SC AND SWX-831-SC

INSTALLATION

FRONT



SIDE



KEY INSTALLATION FEATURE

25-40% SHALLOWER THAN OTHER WALL SWITCH SENSORS

** SENSOR FACE IS FIELD REMOVABLE IN ORDER TO CHANGE COLORS. CONTACT FACTORY FOR ADDITIONAL FACES

OPERATION SETTINGS

TIME DELAY

- Test Mode, 30 sec, 5-30 min.
- Both master wall switch sensor unit and sidecar switch unit in 2-Pole solution have independent time delay

AMBIENT LIGHT (DAYLIGHT) DETECTION

- Sensor holds lights off when ambient light is present
- Manual threshold levels or auto-selection of threshold level
- Disabled when in Vacancy (Manual On) mode

TURN-ON SENSITIVITY

- When enabled, this setting reduces the sensor's PIR sensitivity for initial turn-ons in order to eliminate false on caused by reflective surfaces like windows
- Unit returns to full sensitivity after initial turn-on

LED FUNCTIONALITY

- White LED blinks upon occupancy detection
- Blue LED serves as a switch locator when lights are off
- LED functionality can be disabled

OPERATIONAL MODES

SENSORWORX wall switch sensors are intelligent devices that provide both excellent energy savings and enhanced user convenience. Users can choose from several pre-programmed operational modes that best fit their preferences and applicable energy codes. Note that both the master wall switch sensor unit and sidecar switch unit in 2-Pole solution (SWX-102, SWX-122) have independent operational modes.

Vacancy Mode
Manual On / Automatic Off operation. Lights can also be switched off manually. This mode provides increased energy savings but requires the user to initially turn on the lights. Models SWX-103 and SWX-123 default to Vacancy modes. Sidecar switch units (SWX-831-SC) in 2-Pole kits also default to Vacancy mode.

Occupancy Mode
Automatic On and Automatic Off operation. If lights are switched off manually, the Automatic On functionality is disabled for ~10 seconds to allow the occupant time to leave the room before returning to Automatic On operation. The LED will blink white during this period. If during the last 5 seconds of this period the sensor detects that the occupant remained in the space, the unit will stay in a manual on state until the switch is pressed again. Otherwise the unit will return to Automatic On operation and the blue locator LED will turn on. This mode is the default operation of SWX-101, SWX-111, SWX-121, and SWX-131 models. Not available for models SWX-104 and SWX-124.

Automatic On w/ Exit Time Mode
Automatic On and Automatic Off operation. If lights are switched off manually, the Automatic On functionality is disabled for a fixed 30 seconds to allow a person time to leave the room.

Override Off Mode
Automatic On and Automatic Off operation until lights are switched off manually, at which point Automatic On functionality is disabled until the switch is pressed again.

Disabled Switch Mode
Automatic On and Automatic Off operation only. Switch functionality to manually turn on/off lights is disabled.

Presentation Mode
If lights are switched off manually, the Automatic On functionality is disabled until the space becomes unoccupied and the sensor's time delay expires.

Disable Sensor (Toggle Switch Mode)
The unit will not automatically turn on or off connected lighting. Lighting is toggled only when button is pushed.

Catalog Number: Date: Project:

WALL SWITCH OCCUPANCY SENSOR

LINE VOLTAGE

SENSORWORX®

OVERVIEW

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BASIC OPERATION

Sensors detect movement in the infrared energy that radiates from occupants as they move within the devices field-of-view. Once occupancy is identified, the sensor's internal relay switches power on to the connected lighting. Units can also be configured to operate in Vacancy Mode (e.g., require lights be manually switched on). Once lights are on and if equipped with passive dual technology (PIR/Acoustic), the unit's microphone is enabled to further enhance detection. An internal timer is set to keep lights on during brief periods of inactivity, and is reset every time occupancy is signaled by either the passive infrared or acoustic detection technologies. Ambient daylight detection can also be enabled in equipped units so that lights are held off in rooms with sufficient light contribution from windows or skylights.

SPECIFICATIONS

ELECTRICAL

OPERATING VOLTAGE
120/277 VAC, 50/60 Hz

LOAD RATINGS
MAX: 800W @ 120VAC
1200W @ 277VAC
MIN: None

LOAD TYPES
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CFL, Electronic/Magnetic Ballasts (Fluorescent)
Tungsten (Incandescent)

ENVIRONMENTAL

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32°F to 122°F (0°C to 50°C) - Standard
-40° F/C (with **-HE** Option)

RELATIVE HUMIDITY
0-95% Non-Condensing,
Indoor Use Only

PHYSICAL*

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(6.96 x 4.27 x 3.53 cm)
Not Including Mounting Strap

WEIGHT
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MOUNTING
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(e.g., 2X SIZE, WEIGHT, MOUNTING)

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ELECTRICAL FEATURES

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- **Electronically Timed Switching Ensures Long Relay Life**
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- 30" to 48" (0.76 - 1.22 m) recommended mounting height
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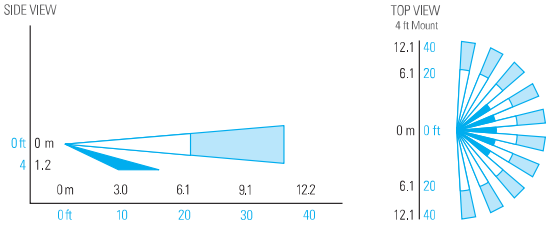

APPLICATIONS

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- Private Restrooms
- Copy Rooms
- Restroom with Stalls
- Small Meeting Room
- Small Office
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- Storage Room
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CODE COMPLIANCE

Wall Switch sensors can be used to meet many requirements of ASHRAE 90.1, IECC, and Title 24.

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- Vacancy Operation: Manual On/Auto Off
- Partial On Operation:
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  - Auto On to 50% / Manual On to 100%
  - All Poles Auto Off

ASHRAE®
STANDARD 90.1

IECC®
STANDARD

TITLE 20 LISTED TITLE 24 COMPLIANT

MULTI-GANG SWITCH REPLACEMENT

Many residential and commercial building spaces contain multi-gang switch locations (i.e. locations on the wall that have more than one single-gang switch devices in the same wall box). The **SENSOR**WORX solution for these applications utilizes a wall switch occupancy sensor and one or more added "sidecar" wall switches that receives necessary occupancy information from the adjacent sensor. Each unit can be configured separately for Auto On or Manual On (Vacancy) operation and time delay. Most conveniently, this solution enables adding a standard multi-gang decorator switch plate in order to provide an aesthetically pleasing appearance without any awkward and conspicuous blank wall plate sections. Additional sidecar switches can also be added to create 3-pole (or greater) solutions.

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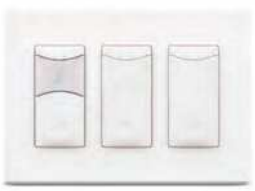


BATHROOM LIGHTS & FAN
Bathrooms often have separate switches for lights and ventilation fans. In some cases two switches for lights (e.g. vanity and shower) and the fan are all contained in the same 3-gang wall box along the entry wall. Retrofitting these switches with a **SENSOR**WORX wall switch sensor and two sidecar switches is an attractive and energy efficient solution for providing occupancy control of all three loads.

ORDERING INFO

SAMPLE MODEL # SWX-101-WH

	PRODUCT		DETECTION		# of POLES / DEFAULT OPERATION		COLOR*		ADDITIONAL OPTIONS	
SWX	Wall Switch Sensor	1	Passive Infrared (PIR)	0	1-Pole: Auto On (Occupancy)	1	White	- WH	None	Blank
			Passive Infrared (PIR) + Daylight	1	2-Pole: Partial On†	2	Ivory	- IV	Humid Environment	- HE
			Passive Dual Technology (PIR/Acoustic)	2	1-Pole: Manual On (Vacancy)	3	Light Almond	- LA	10 Pack**	- J10
			Passive Dual Technology (PIR/Acoustic) + Daylight	3			Gray	- GY		
							Black	- BK		
							Red	- RD		

*WALLPLATE NOT INCLUDED

** THE CONTRACTOR PACK OPTION (-J10) REDUCES JOB SITE WASTE AND INVENTORY TIME (AVAILABLE FOR SINGLE POLE MODELS ONLY)

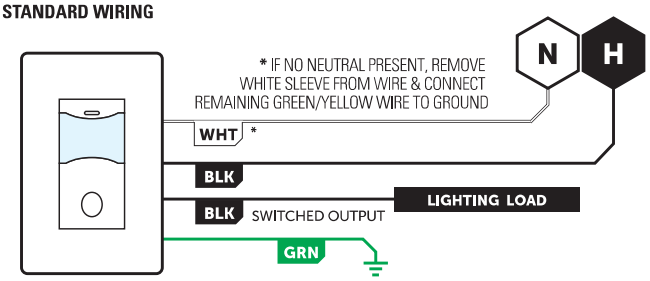
† 2-POLE SOLUTION INCLUDES A SINGLE POLE OCCUPANCY SENSOR AND A CONNECTED "SIDECAR" SWITCH UNIT FOR SECOND POLE (REQUIRES TWO GANG BOX)

ACCESSORY		COLOR	
SWX-831-SC	Additional Sidecar Switch Unit (for use with SWX-1x2 Kits)	White	- WH
SWX-199	Single Gang Wall Plate	Ivory	- IV
SWX-199-FACE	Sensor Face Color Change Kit	Light Almond	- LA
		Gray	- GY
		Black	- BK
		Red	- RD

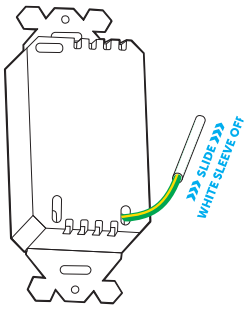
WIRING

- Unit works both in installations where neutral connection is available as well as installations where only ground connection is present.
- If no neutral is present, remove the white sleeve from the wire & connect the now Green/Yellow wire to ground (see diagram below).
- The White wire (or Green/Yellow wire underneath the removable sleeve) MUST be connected to neutral (or Ground if sleeve is removed) for the unit to operate.
- The all Green wire is just for safety.
- The unit's two black wires are interchangeable (e.g., one connects to line power, one connects to load).

STANDARD WIRING



NEUTRAL TO GROUND WIRE CONVERSION DETAIL

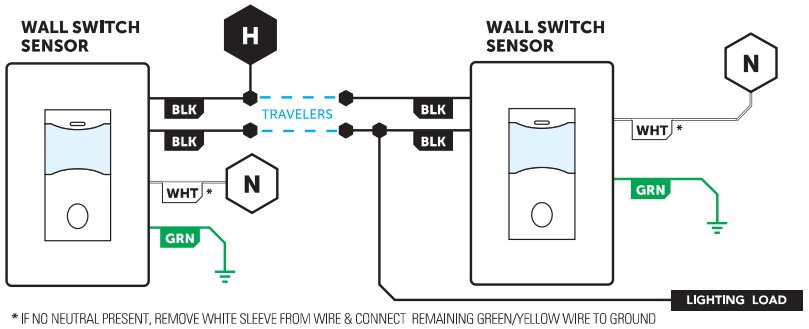


NOTE: This product is UL listed and meets NEC 404.2(c) & 404.22 guidelines regarding powering over ground & current leakage. Powering over ground is permitted for replacement / retrofit only.

3-WAY WIRING

TWO SENSORS IN PARALLEL

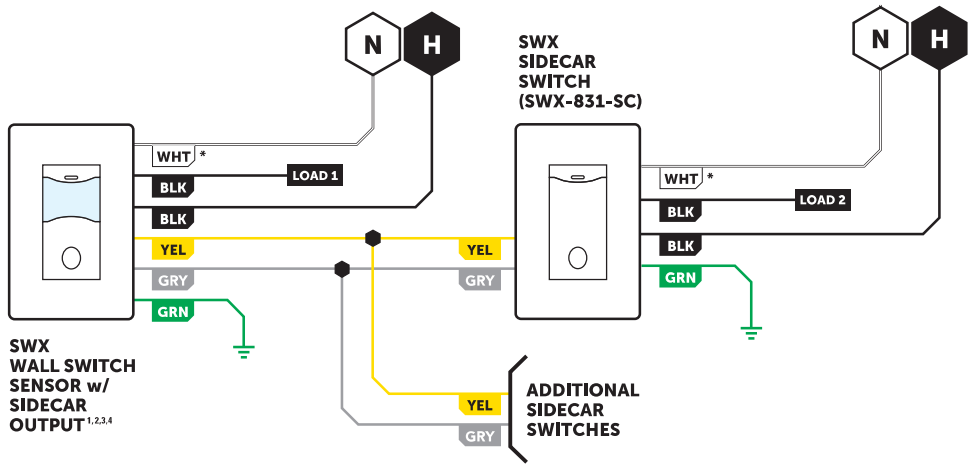
- Both sensors must time out for lights to turn off (or both buttons must be switched)
- Recommended for Automatic On (Occupancy) applications only



* IF NO NEUTRAL PRESENT, REMOVE WHITE SLEEVE FROM WIRE & CONNECT REMAINING GREEN/YELLOW WIRE TO GROUND

2-POLE WIRING

- 2-Pole solution includes a single pole occupancy sensor and a connected "sidecar" switch unit for second pole
- Requires two-gang box and decorator wall plate.
- Units can be powered from same or different circuits/voltages.

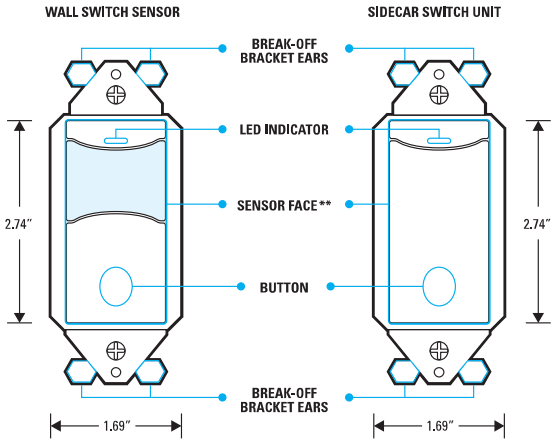


* IF NO NEUTRAL PRESENT, REMOVE WHITE SLEEVE FROM WIRE & CONNECT REMAINING GREEN/YELLOW WIRE TO GROUND

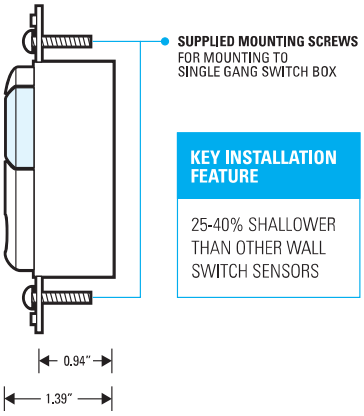
[1] MODEL NUMBER SWX-102 INCLUDES UNIT SWX-101-SC AND SWX-831-SC
[2] MODEL NUMBER SWX-112 INCLUDES UNIT SWX-111-SC AND SWX-831-SC
[3] MODEL NUMBER SWX-122 INCLUDES UNIT SWX-121-SC AND SWX-831-SC
[3] MODEL NUMBER SWX-132 INCLUDES UNIT SWX-131-SC AND SWX-831-SC

INSTALLATION

FRONT



SIDE



KEY INSTALLATION FEATURE

25-40% SHALLOWER THAN OTHER WALL SWITCH SENSORS

** SENSOR FACE IS FIELD REMOVABLE IN ORDER TO CHANGE COLORS. CONTACT FACTORY FOR ADDITIONAL FACES

OPERATION SETTINGS

TIME DELAY

- Test Mode, 30 sec, 5-30 min.
- Both master wall switch sensor unit and sidecar switch unit in 2-Pole solution have independent time delay

AMBIENT LIGHT (DAYLIGHT) DETECTION

- Sensor holds lights off when ambient light is present
- Manual threshold levels or auto-selection of threshold level
- Disabled when in Vacancy (Manual On) mode

TURN-ON SENSITIVITY

- When enabled, this setting reduces the sensor's PIR sensitivity for initial turn-ons in order to eliminate false on caused by reflective surfaces like windows
- Unit returns to full sensitivity after initial turn-on

LED FUNCTIONALITY

- White LED blinks upon occupancy detection
- Blue LED serves as a switch locator when lights are off
- LED functionality can be disabled

OPERATIONAL MODES

SENSORWORX wall switch sensors are intelligent devices that provide both excellent energy savings and enhanced user convenience. Users can choose from several pre-programmed operational modes that best fit their preferences and applicable energy codes. Note that both the master wall switch sensor unit and sidecar switch unit in 2-Pole solution (SWX-102, SWX-122) have independent operational modes.

Vacancy Mode
Manual On / Automatic Off operation. Lights can also be switched off manually. This mode provides increased energy savings but requires the user to initially turn on the lights. Models SWX-103 and SWX-123 default to Vacancy modes. Sidecar switch units (SWX-831-SC) in 2-Pole kits also default to Vacancy mode.

Occupancy Mode
Automatic On and Automatic Off operation. If lights are switched off manually, the Automatic On functionality is disabled for ~10 seconds to allow the occupant time to leave the room before returning to Automatic On operation. The LED will blink white during this period. If during the last 5 seconds of this period the sensor detects that the occupant remained in the space, the unit will stay in a manual on state until the switch is pressed again. Otherwise the unit will return to Automatic On operation and the blue locator LED will turn on. This mode is the default operation of SWX-101, SWX-111, SWX-121, and SWX-131 models. Not available for models SWX-104 and SWX-124.

Automatic On w/ Exit Time Mode
Automatic On and Automatic Off operation. If lights are switched off manually, the Automatic On functionality is disabled for a fixed 30 seconds to allow a person time to leave the room.

Override Off Mode
Automatic On and Automatic Off operation until lights are switched off manually, at which point Automatic On functionality is disabled until the switch is pressed again.

Disabled Switch Mode
Automatic On and Automatic Off operation only. Switch functionality to manually turn on/off lights is disabled.

Presentation Mode
If lights are switched off manually, the Automatic On functionality is disabled until the space becomes unoccupied and the sensor's time delay expires.

Disable Sensor (Toggle Switch Mode)
The unit will not automatically turn on or off connected lighting. Lighting is toggled only when button is pushed.

Catalog Number: Date: Project:

SENSORWORX®

CEILING MOUNT OCCUPANCY SENSOR

LOW VOLTAGE

OVERVIEW

The **SENSOR**WORX® family of ceiling mount occupancy sensors provides a range of control solutions for spaces with finished ceilings (e.g., tiles, sheetrock, and plaster). Preferred by contractors for their simple, yet flexible, mounting methods, **SENSOR**WORX sensors reduce installation time and fuss. **SENSOR**WORX products utilize the latest passive infrared technology and digital signal processing techniques to provide unmatched detection performance. Additionally, **SENSOR**WORX units are available with an integrated microphone to provide overlapping passive acoustic occupancy detection for rooms with obstructions or where occupant motion will be limited. Enhanced options for this sensor family include a photocell that will override lights off if sufficient ambient light is present, active daylight harvesting for 0-10V lighting, and an isolated relay for interfacing external systems (e.g., HVAC/BAS).

BASIC OPERATION

Sensors detect movement in the infrared energy that radiates from occupants as they move within the devices field-of-view. Once occupancy is identified, the sensor signals a connected power/relay pack to switch on the connected lighting. If equipped with passive dual technology (PIR/Acoustic), the unit's microphone is then also enabled to further enhance detection while the lights are on. An internal timer is set to keep lights on during brief periods of inactivity, and is reset every time occupancy is signaled by either the passive infrared or acoustic detection technologies.

APPLICATIONS

A single sensor can be used in small spaces like a private office, however, multiple low voltage sensors can be easily wired together to provide coverage for larger spaces like an open office.

- Classrooms
- Open Areas
- Conference Rooms
- Hallways
- Small Offices
- Copy Rooms
- Private Restrooms
- Break Rooms

FEATURES

- **Digital Passive Infrared (PIR) Detection**
- **Passive Acoustic Detection (Optional)**
- **360° Coverage Patterns**
- **Compact Size and Matte Finish**
- **Four Contractor Friendly Mounting Methods**
- **Mounting Nipple Attachment with Integrated Hole Saw**
- **Convenient Test Mode and Adjustable Time Delays**
- **Optional Photocell, Daylight Harvesting, & Isolated Relay**

SPECIFICATIONS

ELECTRICAL

OPERATING VOLTAGE
12-24 VAC/VDC

CURRENT DRAW
4mA (PIR models)
16mA (Dual Tech. models)
18mA (Dual Tech. w/ Photocell units)

OUTPUT
Logic High VDC (Occupied Mode)

RECOMMENDED POWER PACK
SWX-900 Series (**SENSOR**WORX)

DIMMING CAPACITY (-D OPTION)
50mA

DIMMING COMPATIBILITY
0-10 VDC Ballasts or Drivers
Compliant with IEC 60929 Annex E.2

ISOLATED RELAY RATING
1A @ 30 VDC/VAC

ENVIRONMENTAL

OPERATING TEMP
32°F to 122°F (0°C to 50°C) - Standard
-40° F/C (with **-HE** Option)

RELATIVE HUMIDITY
0-95% Non-Condensing,
Indoor Use Only

PHYSICAL

SIZE
4.00" Diameter x 1.25" H
(10.16 x 3.17 cm)

WEIGHT
4.75 oz

COLOR
White

OPERATION

TIME DELAYS
30 sec to 30 min (typical)
10 minute default
5 sec test mode

CODE COMPLIANCE

Sensors can be used to meet ASHRAE 90.1, IECC, & Title 24 energy code requirements

c UL US LISTED

BAA COMPLIANT · TAA COMPLIANT · MADE IN THE USA · RoHS

ORDERING INFO

SAMPLE MODEL # SWX-222-1

PRODUCT		DETECTION		COVERAGE		VOLTAGE		OPTIONS	
SWX	Ceiling Mount Sensor 2	Passive Infrared (PIR)	0	Small Motion 360"	1	Low Voltage	-1	Daylight Harvesting (0-10V)	- D [2]
		Passive Infrared (PIR) + Photocell	1	Large Motion 360"	2			Isolated Auxiliary Relay	- AR
		Passive Dual Technology (PIR/Acoustic)	2	High Bay 360"	3 [1]			High Humidity Environment	- HE
		Passive Dual Technology (PIR/Acoustic) + Photocell	3						

Note 1: Not available on Dual Tech. units

Note 2: Only available on units w/ Photocells

ACCESSORIES

SWX-299-JP - Ceiling Sensor Trim Ring for Mounting to Single Gang Mudring, Handy Box, or 4" Octagon Box

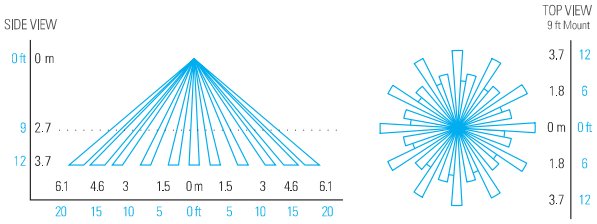
COVERAGE

PASSIVE INFRARED (PIR)

- 8 to 15 ft (2.44 to 4.57 m) mounting height recommended for small and large motion lenses. For 15 to 40 ft (2.44 to 12.20 m) mounting heights use high bay lens.
- Detection range improves when walking across beams as compared to into beams
- Lenses can be swapped in field if necessary, contact technical support for assistance

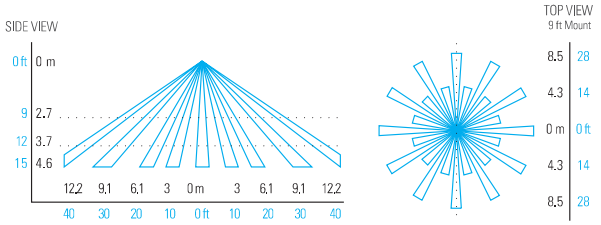
SMALL MOTION 360°

- Best choice for detection of small motions from sitting occupants (e.g., hand motion)
- ~500 ft² of coverage



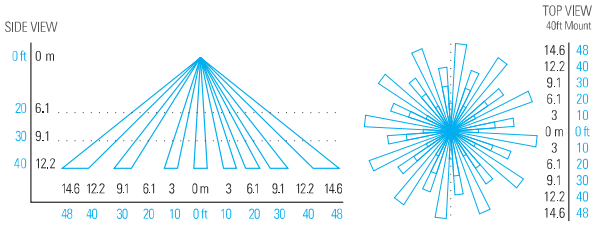
LARGE MOTION 360°

- Best choice for detection of larger motion (e.g., walking)
- ~2000 ft² of coverage
- One of the longer segments of the coverage pattern aligns with the screw hole axis on the sensor (shown as dotted line on Top View diagram below)



HIGH BAY 360°

- Best choice for mounting heights above 15ft
- Recommended for gyms, warehouses, and other high ceiling areas where multiple sensor coverage is required
- Not recommended for areas where occupants are sitting
- Gaps between outer segments get larger as mounting height increases
- Not available with acoustic (dual technology)



DUAL TECHNOLOGY (PIR/ACOUSTIC)

- Units with dual technology (SWX-221-1 and SWX-222-1) have overlapping acoustic detection of the complete PIR coverage area
- A PIR event is required to initially enable acoustic detection
- Sounds indicating occupancy reset the sensor's time delay while non-occupant noises are filtered out
- Occupant sounds alone will not keep lights on indefinitely, PIR motion must be periodically detected for lights to remain on for an extended time
- After sensor time out expires, acoustic detection remains enabled for 15 seconds to enable voice reactivation of lights for additional convenience and safety

DAYLIGHT HARVESTING & PHOTOCELL OPERATION

Units with the integrated photocell option can provide on/off or inhibit only control of lighting. Units with the daylight harvesting option can also directly dim 0-10V lighting.

DAYLIGHT HARVESTING

- Lights will gradually dim in order to maximize energy savings while maintaining desired overall lighting level.
- Recommend for spaces where it is important to not distract occupants (e.g., offices, classrooms).
- Option to dim to low trim or turn lighting off.

ON/OFF PHOTOCELL CONTROL

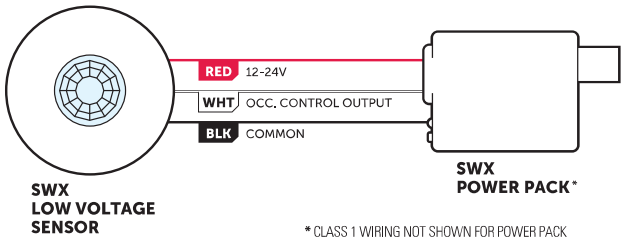
- Lights are switched off if ambient light level surpasses threshold and back on if level drops.
- Recommended for public spaces (hallways, entryways, etc) where fully switching of lighting off and on will not cause distraction of occupants.

INHIBIT ONLY PHOTOCELL CONTROL

- Lighting is held off if sufficient ambient light level is present upon initial occupancy.
- Lighting will turn on if light level drops below setpoint.
- Once on, lighting will only turn off from vacancy or a manual switch, never from daylight.

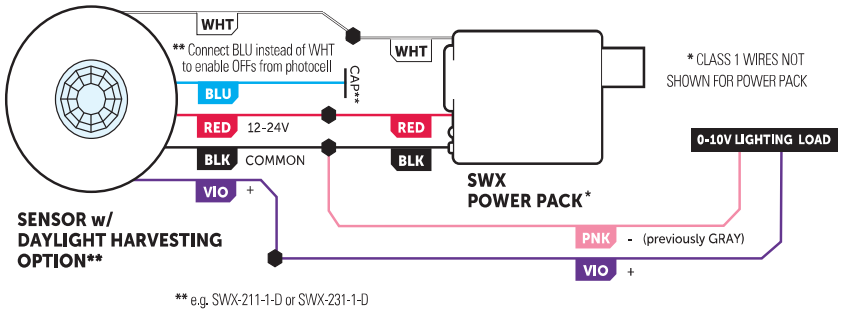
WIRING

STANDARD WIRING



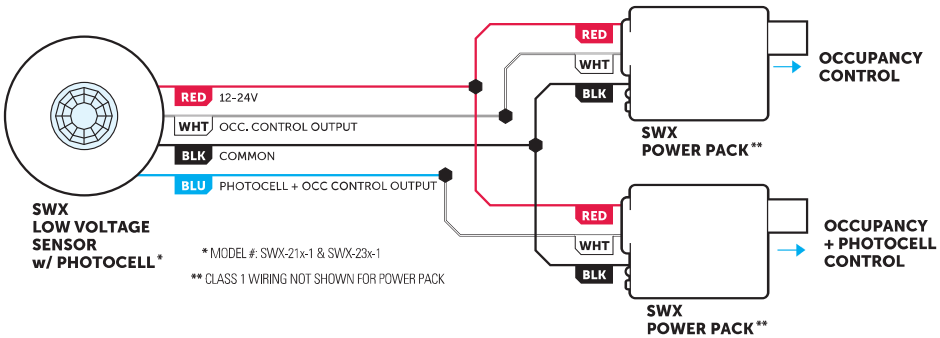
OCCUPANCY + DAYLIGHT HARVESTING

- Lights will gradually dim in order to maximize energy savings while maintaining desired overall lighting level.
- Lights will dim only to low trim if white wire is connected to power pack. Connect blue wire to power pack to switch lighting completely off from daylight.



SEPARATE OCCUPANCY ZONE & OCCUPANCY + ON/OFF PHOTOCELL ZONE

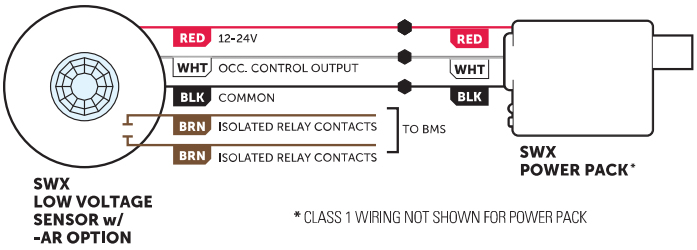
- During occupied state, photocell output (blue wire) will turn lights off if ambient light level surpasses threshold and back on if level drops.
- Also configurable to prevent lights from initially turning on, but not to turn them off once lights are on (i.e. Inhibit Only operation).



WIRING CONT.

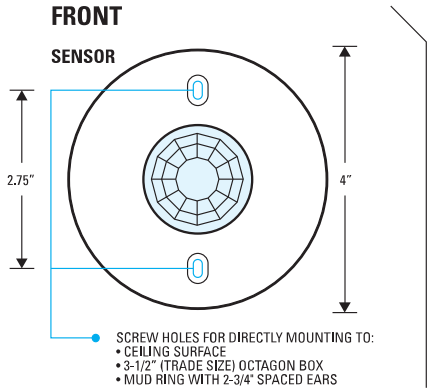
SENSOR INTERFACE TO BMS

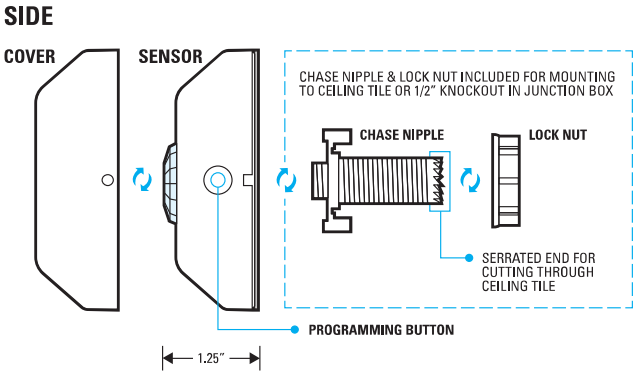
- The auxiliary output relay (model option -AR) is designed to interface with many types of BMS, VAV units, and relay panels
- Operation of relay (brown wires) is configurable:
  - By default the relay latches closed when occupancy is detected (white wire goes high)
  - Relay can be configured to alternatively follow the occupancy + photocell (blue wire) output
  - Relay polarity (open vs closed) can also be reversed



* CLASS 1 WIRING NOT SHOWN FOR POWER PACK

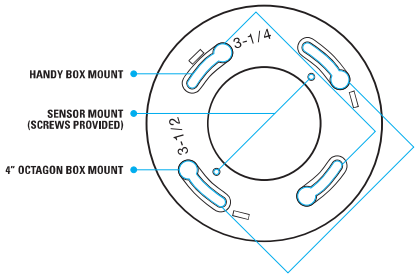
INSTALLATION OPTIONS

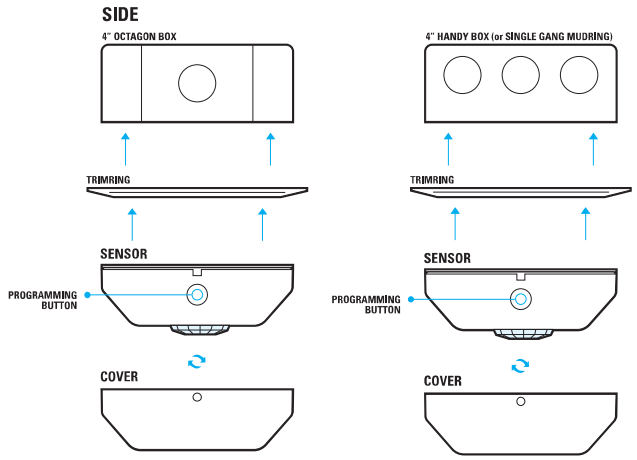




Note: If mounting to a Single Gang Mudring, Handy Box, or 4" Octagon Box, a trim ring is required. Part Number: **SWX-299-JP.**

ADDITIONAL MOUNTING OPTIONS USING SWX-299-JP TRIM RING





Catalog Number: Date: Project:

SENSORWORX®

CEILING MOUNT OCCUPANCY SENSOR

LOW VOLTAGE

OVERVIEW

The **SENSOR**WORX® family of ceiling mount occupancy sensors provides a range of control solutions for spaces with finished ceilings (e.g., tiles, sheetrock, and plaster). Preferred by contractors for their simple, yet flexible, mounting methods, **SENSOR**WORX sensors reduce installation time and fuss. **SENSOR**WORX products utilize the latest passive infrared technology and digital signal processing techniques to provide unmatched detection performance. Additionally, **SENSOR**WORX units are available with an integrated microphone to provide overlapping passive acoustic occupancy detection for rooms with obstructions or where occupant motion will be limited. Enhanced options for this sensor family include a photocell that will override lights off if sufficient ambient light is present, active daylight harvesting for 0-10V lighting, and an isolated relay for interfacing external systems (e.g., HVAC/BAS).

BASIC OPERATION

Sensors detect movement in the infrared energy that radiates from occupants as they move within the devices field-of-view. Once occupancy is identified, the sensor signals a connected power/relay pack to switch on the connected lighting. If equipped with passive dual technology (PIR/Acoustic), the unit's microphone is then also enabled to further enhance detection while the lights are on. An internal timer is set to keep lights on during brief periods of inactivity, and is reset every time occupancy is signaled by either the passive infrared or acoustic detection technologies.

APPLICATIONS

A single sensor can be used in small spaces like a private office, however, multiple low voltage sensors can be easily wired together to provide coverage for larger spaces like an open office.

- Classrooms
- Open Areas
- Conference Rooms
- Hallways
- Small Offices
- Copy Rooms
- Private Restrooms
- Break Rooms

FEATURES

- **Digital Passive Infrared (PIR) Detection**
- **Passive Acoustic Detection (Optional)**
- **360° Coverage Patterns**
- **Compact Size and Matte Finish**
- **Four Contractor Friendly Mounting Methods**
- **Mounting Nipple Attachment with Integrated Hole Saw**
- **Convenient Test Mode and Adjustable Time Delays**
- **Optional Photocell, Daylight Harvesting, & Isolated Relay**

SPECIFICATIONS

ELECTRICAL

OPERATING VOLTAGE
12-24 VAC/VDC

CURRENT DRAW
4mA (PIR models)
16mA (Dual Tech. models)
18mA (Dual Tech. w/ Photocell units)

OUTPUT
Logic High VDC (Occupied Mode)

RECOMMENDED POWER PACK
SWX-900 Series (**SENSOR**WORX)

DIMMING CAPACITY (-D OPTION)
50mA

DIMMING COMPATIBILITY
0-10 VDC Ballasts or Drivers
Compliant with IEC 60929 Annex E.2

ISOLATED RELAY RATING
1A @ 30 VDC/VAC

ENVIRONMENTAL

OPERATING TEMP
32°F to 122°F (0°C to 50°C) - Standard
-40° F/C (with **-HE** Option)

RELATIVE HUMIDITY
0-95% Non-Condensing,
Indoor Use Only

PHYSICAL

SIZE
4.00" Diameter x 1.25" H
(10.16 x 3.17 cm)

WEIGHT
4.75 oz

COLOR
White

OPERATION

TIME DELAYS
30 sec to 30 min (typical)
10 minute default
5 sec test mode

CODE COMPLIANCE

Sensors can be used to meet ASHRAE 90.1, IECC, & Title 24 energy code requirements

c UL US LISTED

BAA COMPLIANT · TAA COMPLIANT · MADE IN THE USA · RoHS

ORDERING INFO

SAMPLE MODEL # SWX-222-1

PRODUCT		DETECTION		COVERAGE		VOLTAGE		OPTIONS	
SWX	Ceiling Mount Sensor 2	Passive Infrared (PIR)	0	Small Motion 360"	1	Low Voltage	-1	Daylight Harvesting (0-10V)	- D [2]
		Passive Infrared (PIR) + Photocell	1	Large Motion 360"	2			Isolated Auxiliary Relay	- AR
		Passive Dual Technology (PIR/Acoustic)	2	High Bay 360"	3 [1]			High Humidity Environment	- HE
		Passive Dual Technology (PIR/Acoustic) + Photocell	3						

Note 1: Not available on Dual Tech. units

Note 2: Only available on units w/ Photocells

ACCESSORIES

SWX-299-JP - Ceiling Sensor Trim Ring for Mounting to Single Gang Mudring, Handy Box, or 4" Octagon Box

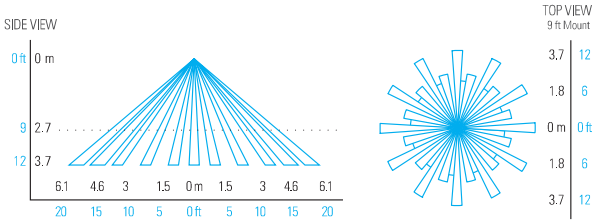
COVERAGE

PASSIVE INFRARED (PIR)

- 8 to 15 ft (2.44 to 4.57 m) mounting height recommended for small and large motion lenses. For 15 to 40 ft (2.44 to 12.20 m) mounting heights use high bay lens.
- Detection range improves when walking across beams as compared to into beams
- Lenses can be swapped in field if necessary, contact technical support for assistance

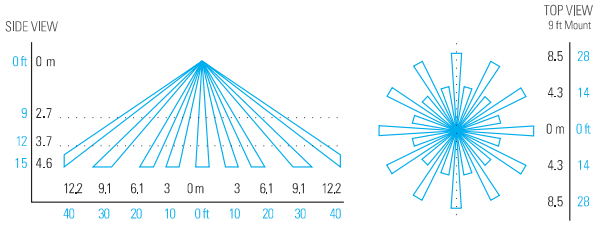
SMALL MOTION 360°

- Best choice for detection of small motions from sitting occupants (e.g., hand motion)
- ~500 ft² of coverage



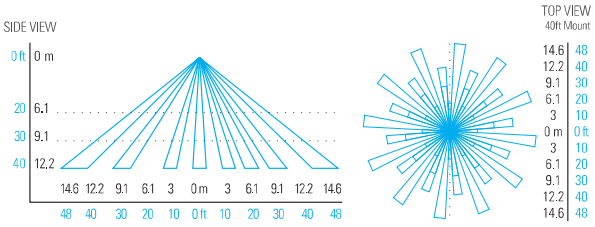
LARGE MOTION 360°

- Best choice for detection of larger motion (e.g., walking)
- ~2000 ft² of coverage
- One of the longer segments of the coverage pattern aligns with the screw hole axis on the sensor (shown as dotted line on Top View diagram below)



HIGH BAY 360°

- Best choice for mounting heights above 15ft
- Recommended for gyms, warehouses, and other high ceiling areas where multiple sensor coverage is required
- Not recommended for areas where occupants are sitting
- Gaps between outer segments get larger as mounting height increases
- Not available with acoustic (dual technology)



DUAL TECHNOLOGY (PIR/ACOUSTIC)

- Units with dual technology (SWX-221-1 and SWX-222-1) have overlapping acoustic detection of the complete PIR coverage area
- A PIR event is required to initially enable acoustic detection
- Sounds indicating occupancy reset the sensor's time delay while non-occupant noises are filtered out
- Occupant sounds alone will not keep lights on indefinitely, PIR motion must be periodically detected for lights to remain on for an extended time
- After sensor time out expires, acoustic detection remains enabled for 15 seconds to enable voice reactivation of lights for additional convenience and safety

DAYLIGHT HARVESTING & PHOTOCELL OPERATION

Units with the integrated photocell option can provide on/off or inhibit only control of lighting. Units with the daylight harvesting option can also directly dim 0-10V lighting.

DAYLIGHT HARVESTING

- Lights will gradually dim in order to maximize energy savings while maintaining desired overall lighting level.
- Recommend for spaces where it is important to not distract occupants (e.g., offices, classrooms).
- Option to dim to low trim or turn lighting off.

ON/OFF PHOTOCELL CONTROL

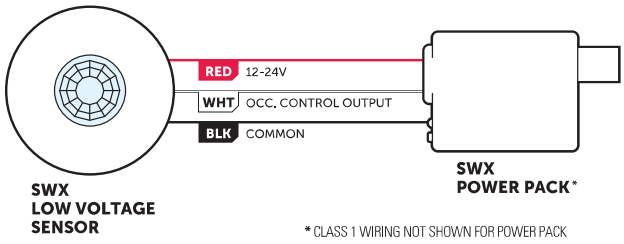
- Lights are switched off if ambient light level surpasses threshold and back on if level drops.
- Recommended for public spaces (hallways, entryways, etc) where fully switching of lighting off and on will not cause distraction of occupants.

INHIBIT ONLY PHOTOCELL CONTROL

- Lighting is held off if sufficient ambient light level is present upon initial occupancy.
- Lighting will turn on if light level drops below setpoint.
- Once on, lighting will only turn off from vacancy or a manual switch, never from daylight.

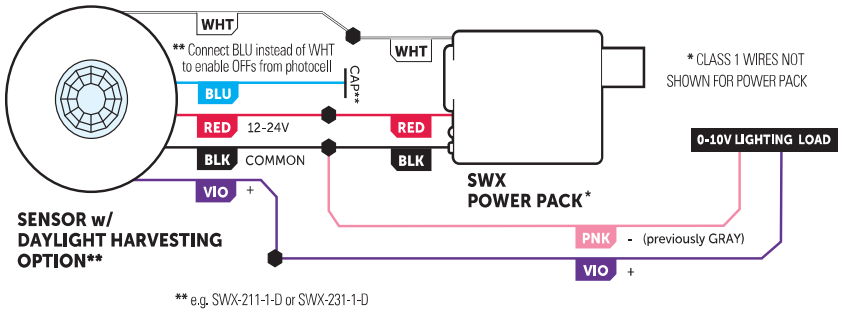
WIRING

STANDARD WIRING



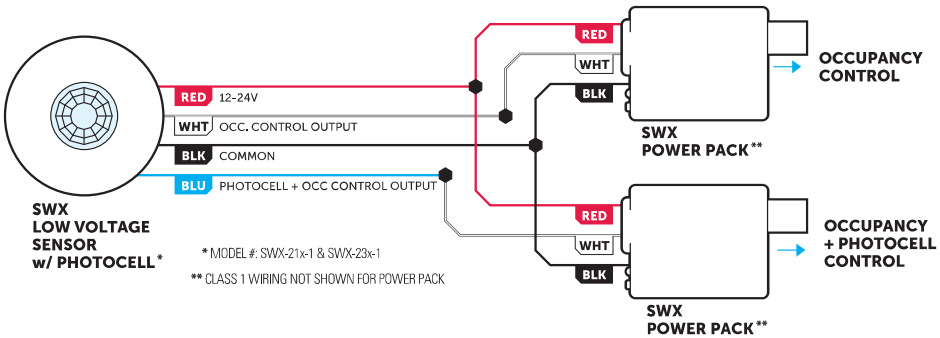
OCCUPANCY + DAYLIGHT HARVESTING

- Lights will gradually dim in order to maximize energy savings while maintaining desired overall lighting level.
- Lights will dim only to low trim if white wire is connected to power pack. Connect blue wire to power pack to switch lighting completely off from daylight.



SEPARATE OCCUPANCY ZONE & OCCUPANCY + ON/OFF PHOTOCELL ZONE

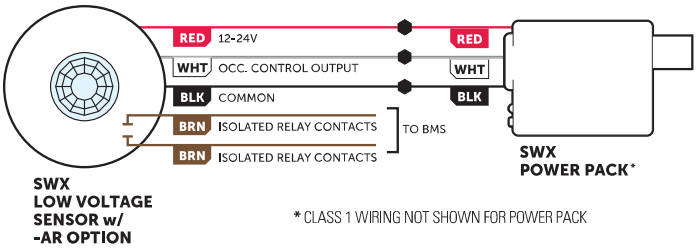
- During occupied state, photocell output (blue wire) will turn lights off if ambient light level surpasses threshold and back on if level drops.
- Also configurable to prevent lights from initially turning on, but not to turn them off once lights are on (i.e. Inhibit Only operation).



WIRING CONT.

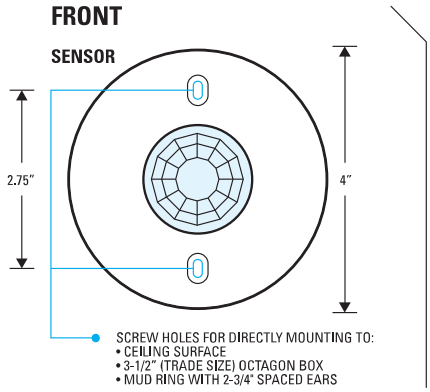
SENSOR INTERFACE TO BMS

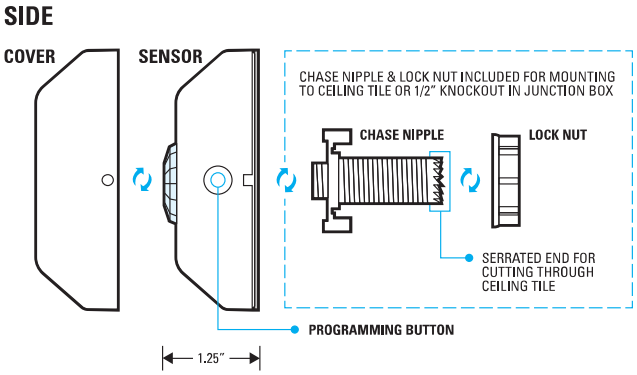
- The auxiliary output relay (model option -AR) is designed to interface with many types of BMS, VAV units, and relay panels
- Operation of relay (brown wires) is configurable:
  - By default the relay latches closed when occupancy is detected (white wire goes high)
  - Relay can be configured to alternatively follow the occupancy + photocell (blue wire) output
  - Relay polarity (open vs closed) can also be reversed



* CLASS 1 WIRING NOT SHOWN FOR POWER PACK

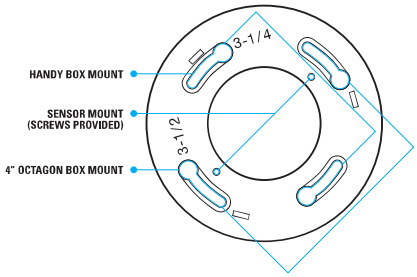
INSTALLATION OPTIONS

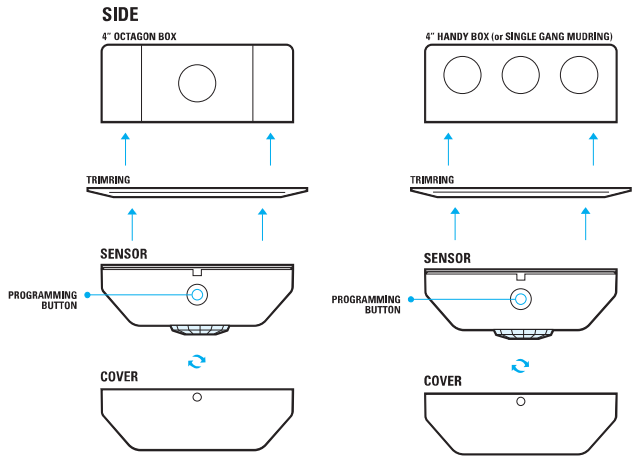




Note: If mounting to a Single Gang Mudring, Handy Box, or 4" Octagon Box, a trim ring is required. Part Number: **SWX-299-JP.**

ADDITIONAL MOUNTING OPTIONS USING SWX-299-JP TRIM RING





Catalog Number: Date: Project:

DECORATOR SWITCH & DIMMER

LOW VOLTAGE

MOMENTARY OPERATION

SENSORWORX®

OVERVIEW

The **SENSOR**WORX low voltage decorator wall switch provides an attractive companion wall station for a low voltage sensor system. Many spaces now require by code (e.g., ASHRAE 90.1, IECC, Title 24) manual on, partial-on, or full range dimming user operation in addition to an occupancy sensor providing automatic off control. The simplest way of achieving this is by adding a low voltage wall station that interfaces with the power pack controlling the rooms lighting. Adding a switch to a low voltage sensor system also enables users to override a space's lighting off if necessary. Functioning as a momentary switch, this one button wall station is intuitive to use and provides pleasant tactile feedback. Visually, the unit matches the **SENSOR**WORX line of wall switch sensors, ensuring a consistent style across multiple spaces on a project. Additionally, the single button switch has an integrated locator LED with multiple color and intensity settings. Three button dimming units have an integrated 0-10V output, intuitive raise/lower buttons, and a five LED level indicator.

BASIC OPERATION

The **SENSOR**WORX low voltage decorator wall station functions as a momentary switch with a pulse length of 250 msec. Typically, it is utilized along with any **SENSOR**WORX power pack with the auxiliary switch input option (e.g. model SWX-900-AX). Using a four-conductor low voltage wire (typically 18 AWG), low voltage power, common, and relay status is wired from the power pack to the switch. The switch output is then wired back to the power pack's auxiliary switch input. For applications requiring Vacancy (e.g., Manual On) operation, the switch signals the power pack to turn on lighting after the unit's button is pressed. To achieve multi-way switching, two or more single button units can be wired in parallel.

For three button units with integrated dimming, an additional 0-10V output wire is provided to connect directly to fixtures. By default, the lights will always come on to the last dim level, however the unit can be programmed to turn-on to a preset level in order to accommodate partial-on applications.

APPLICATIONS

A wall station can be added to any space where a low voltage control system is used. Energy codes require either Manual On or Partial On to 50% for many spaces such as:

- Private Office
- Open Office
- Conference Room
- Classroom
- Storage Room
- Break Room

FEATURES

- **Decorator Style Fits Common Wall Plates (not included)**
- **Less than 1" Depth in Wall**
- **Multiway Switching Capable (e.g., 3-way, 4-way)**
- **Intuitive Operation**
- **LED Location Aid**
- **Matches Styling of SWX Wall Switch Sensor**
- **Five Segment LED Indication of Dim Level**

SPECIFICATIONS

ELECTRICAL

OPERATING VOLTAGE
5-24 VDC

CURRENT DRAW
< 5 mA (SWX-801)
< 12 mA (SWX-803)

DIMMING LOAD (Model # SWX-803 only)
50mA, (0-10 VDC ballasts or drivers compliant with IEC 60929 Annex E.2)

MOMENTARY PULSE LENGTH
250 msec

ENVIRONMENTAL

OPERATING TEMP
32°F to 122°F (0°C to 50°C) - Standard
-40° F/C (with -HE Option)

RELATIVE HUMIDITY
0-95% Non-Condensing, Indoor Use Only

PHYSICAL

SIZE
2.74"H x 1.68"W x 1.39"D
(6.96 x 4.27 x 3.53 cm)
Fits Decorator Switch Plate Opening

DEPTH IN WALL
0.94" (23.88 mm)

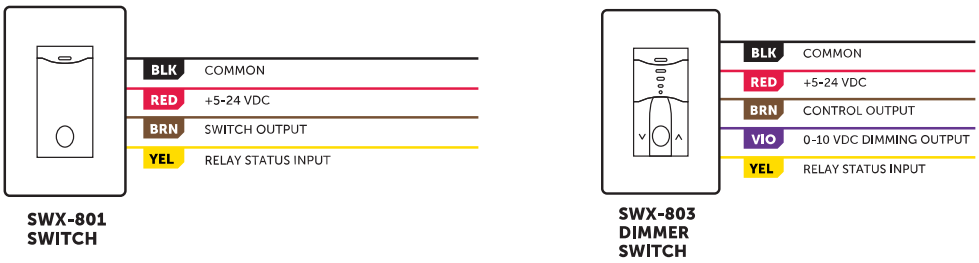
WEIGHT
2.5 oz

MOUNTING
Single Gang Switch Box

MADE IN THE USA · TAA COMPLIANT · BAA COMPLIANT · RoHS · TITLE 24 COMPLIANT · c UL US LISTED

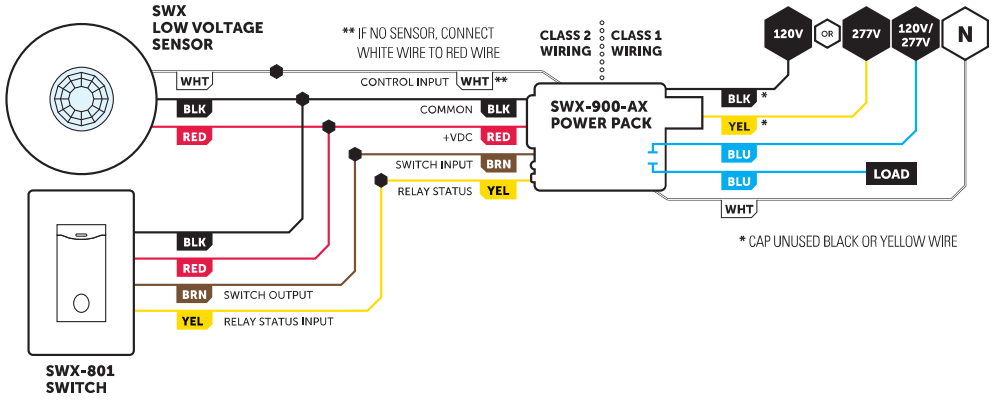
WIRING

STANDARD WIRING



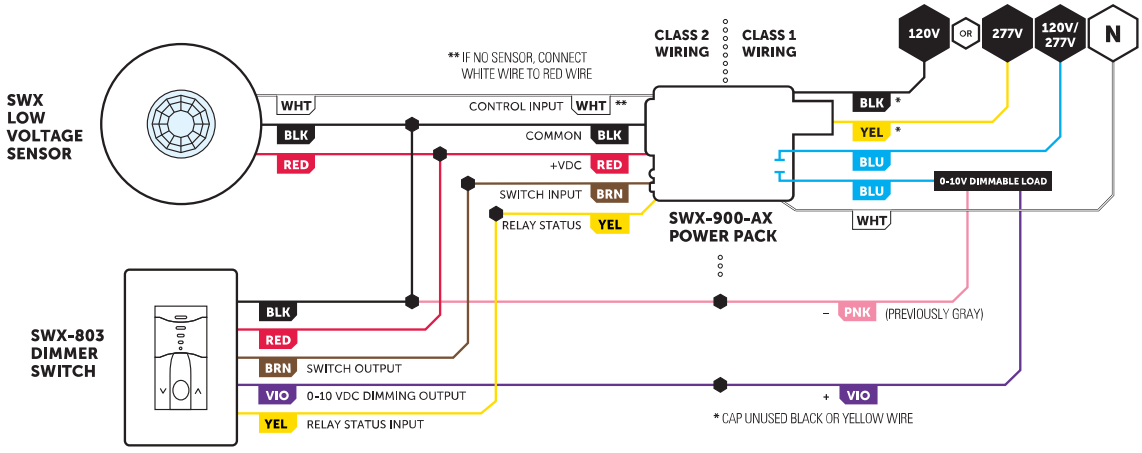
MANUAL ON APPLICATION (VACANCY)

- Default operation of the SWX-900-AX is Automatic On (Occupancy) operation. For proper vacancy operation, the SWX-900-AX's OPERATIONAL MODE setting needs to be configured for MANUAL ON (VACANCY).
- Additional SWX-801 switches can be wired in parallel to achieve 3-way (or more) operation.
- If no sensor is present, tie power pack low voltage red to low voltage white wire.



MANUAL ON (VACANCY) OR PARTIAL-ON w/ FULL DIMMING CONTROL

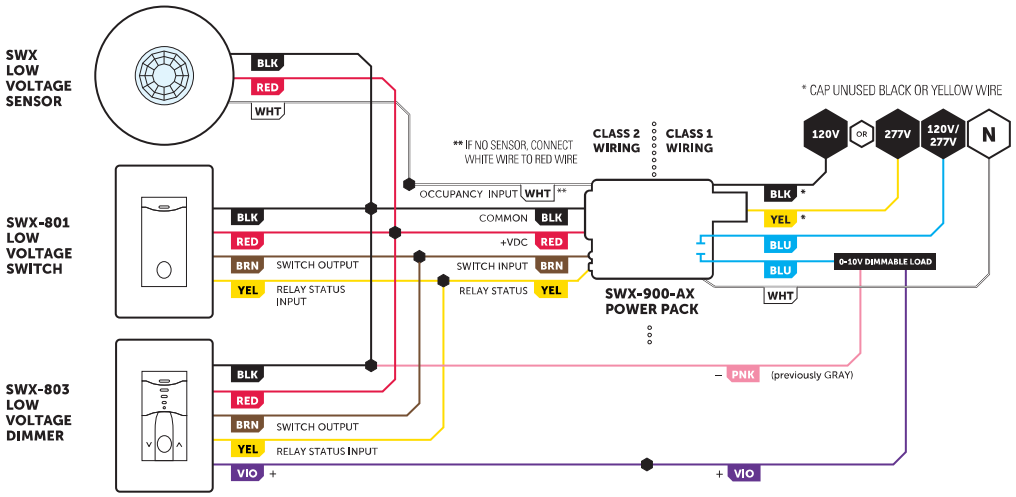
- Lights turn on to last selected level (default) or to preset level (e.g., partial on).
- If no sensor is present, tie power pack low voltage red to low voltage white wire.
- Default operation of the SWX-900-AX is Automatic On (Occupancy) operation. For proper vacancy or partial-on operation, the SWX-900-AX's OPERATIONAL MODE setting needs to be configured for MANUAL ON (VACANCY).



WIRING CONT.

3-WAY, MANUAL ON (VACANCY) OR PARTIAL-ON w/ FULL DIMMING CONTROL

- Lights turn on to last selected level (default) or to preset level (e.g., partial on).
- If no sensor is present, tie power pack low voltage red to low voltage white wire.
- Default operation of the SWX-900-AX is Automatic On (Occupancy) operation. For proper vacancy or partial-on operation, the SWX-900-AX's OPERATIONAL MODE setting needs to be configured for MANUAL ON (VACANCY).
- Only one SWX-803 dimmer can be included in 3-way configuration



OPERATION SETTINGS

The one button switch has configurable settings for its LED operation. The three button switch also has several dimming parameters that can be adjusted to accommodate different applications or user preferences.

LED FUNCTIONALITY

- Single button switch (SWX-801) has an LED that is white when lights are on and is a blue locator LED when lights are off.
- Dimming switch (SWX-803) has five white LEDs that indicate the current dim level
- Locator LED can also be programmed to be be white and/or more intense
- Locator LED can also be disabled

HIGH-END & LOW-END TRIM

- High-end trim enables energy saving task tuning by setting a maximum level (100%-50%) that which users are allowed to raise lights
- Low-end trim enables minimum user level of dimmer to be raised

TURN ON/TURN OFF DIMMING OPERATION

- Sensor turns on lighting to last user level or can be programmed to a preset level (100%, 50%, or custom)
- Sensor can turn off lighting by switching off power (by opening relay) or dimming below electronic off level
- Lighting can also be held at low-end trim level during unoccupied/off state

FADE ON/FADE OFF TIMES

- Adjustable time for level to ramp up to turn-on level (0.75 sec, 1.5 sec, 3 sec, 5 sec, or 15 sec)
- Adjustable time interval for level to ramp down to off (0.75 sec, 1.5 sec, 3 sec, 5 sec, or 15 sec)

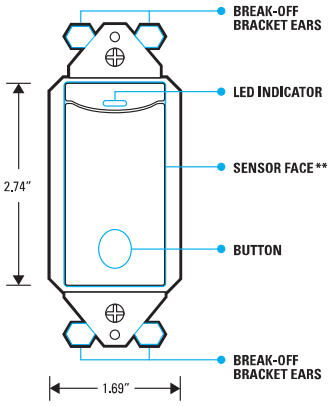
DIMMING CURVE

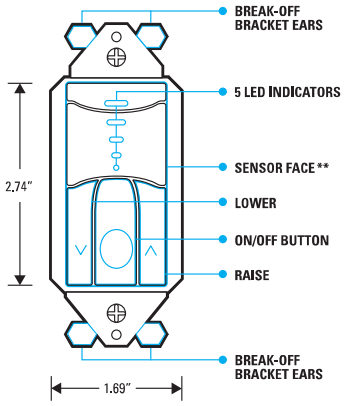
- The dimming curve defines how the dimmer unit adjust its voltage output in response to button commands
- Linear (default), Square Log

INSTALLATION

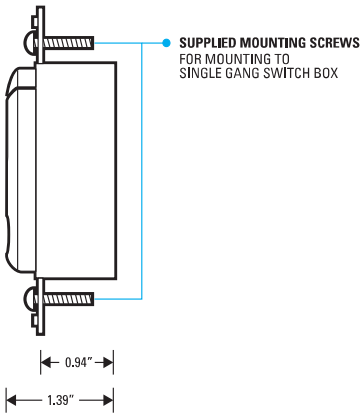
Designed to mount in 1-gang wall box with 3.28" hole spacing. Units can also share multiple gang wall boxes with other devices.

FRONT





SIDE



** SENSOR FACE IS FIELD REMOVABLE IN ORDER TO CHANGE COLORS. CONTACT FACTORY FOR ADDITIONAL FACES

ORDERING INFO

SAMPLE MODEL # SWX-801-WH

		COLOR *		ADDITIONAL OPTIONS	
SWX-801	Low Voltage Decorator Switch - Momentary On/Off	White	**- WH**	High Humidity Environment	**- HE**
SWX-803	Low Voltage Decorator Switch & Dimmer (0-10V)	Ivory	**- IV**	10 Pack**	**-J10**
		Light Almond	**- LA**		
		Gray	**- GY**		
		Black	**- BK**		
		Red	**- RD**		

*WALLPLATE NOT INCLUDED
** THE CONTRACTOR PACK OPTION (-J10) REDUCES JOB SITE WASTE AND INVENTORY TIME

ACCESSORY		COLOR	
SWX-199	Single Gang Wall Plate	White	**- WH**
SWX-899-FACE	Color Change Kit for SWX-801 Switch	Ivory	**- IV**
SWX-899-D-FACE	Color Change Kit for SWX-803 Dimmer	Light Almond	**- LA**
		Gray	**- GY**
		Black	**- BK**
		Red	**- RD**

SENSORWORX | 2a Research Parkway, Wallingford, CT 06492
203.678.4224 | www.sensorworx.com

Five-Year Limited Warranty.
Complete Warranty Terms Located at: sensorworx.com/warranty
DATA800 | REV 001–220123

Catalog Number: / Date: / Project:

SENSORWORX®

POWER PACK CONTROLLER

LINE VOLTAGE

OVERVIEW

SENSORWORX power pack controllers transform incoming line voltage power to Class 2 low voltage as needed by sensors or other control devices. Additionally, they switch on/off power to the connected lighting load as directed by the sensors and controls. **SENSOR**WORX power packs utilize a powerful microprocessor to optimize its switching timing in order to ensure long relay life even when controlling high-inrush LEDs and ballast loads. As with all **SENSOR**WORX products, these power packs are easy to install and incorporate features which reduce contractor labor time. An elongated chase nipple with snaps for quick installation and an optional snap-on low voltage wire chamber make for a hassle free contractor experience. All **SENSOR**WORX products are proudly made in the USA.

BASIC OPERATION

An input signal indicating occupancy from one or more connected sensors will signal the pack's integrated relay to close. Once closed, line voltage will flow through the relay and turn on the connected lighting load. When the input signal indicates the occupied period has ended, the relay will open and lighting will switch off. This pack is also available with an auxiliary switch input to enable manual on, hold on, and hold off configurations. Partial off (e.g. auto off to 50%) and partial on (e.g., auto on to 50%) operation can also be achieved using the optional 0-10V stepped dimming output.

FEATURES

- **Powers Low Voltage Sensors**
- **Switches Line Voltage Loads**
- **Electronically Timed Switching Ensures Long Relay Life**
- **Integrated Test/Programming Button**
- **Plenum Rated (UL 2043)**
- **Optional Snap-On Attachment Provides Chamber for Low Voltage Wire Connections**
- **Optional Switch Input for Manual On, Hold On, or Hold Off Operation**
- **Optional 0-10V Stepped Dimming Ouput for Partial Off or Partial On Operation**

SPECIFICATIONS

ELECTRICAL

OPERATING VOLTAGE
120/277 VAC

CLASS 2 OUTPUT RATINGS
18 VDC, 150 mA
(SWX-900-AX / SWX-920 only)
Connected device power: 80 mA

LOAD RATINGS (SWX-900 / SWX-900-AX / SWX-910 only)
20A @ 120 V -
General Purpose Plug Load

20A @ 120/277 VAC -
General Purpose, Tungsten, Magnetic Ballast

16A @ 120/277 VAC -
Electronic Ballast, LED Driver

DC LOAD RATINGS
20A @ 28 VDC (MAX)
1A @ 5 VDC (MIN)

DIMMING LOAD
(Models with -D2 option only)
50mA, (0-10 VDC ballasts or drivers compliant with IEC 60929 Annex E.2)

MOTOR LOAD
1 HP

ENVIRONMENTAL

OPERATING TEMP
32°F to 122°F (0°C to 50°C) Std.
-40° F/C (with -HE Option)

RELATIVE HUMIDITY
0-95% Non-Condensing, Indoor Use Only

ROHS COMPLIANT

PHYSICAL

SIZE
3.00" H x 2.25" W x 1.88" D
(7.62 cm x 5.72 cm x 4.78 cm)

WEIGHT
6.00 oz.

COLOR
Blue

MOUNTING
1/2" Knockout

RELAY TEST BUTTON

LED STATUS INDICATOR
Bi-color White & Blue

OTHER

LISTINGS
UL/CUL

US LISTED

MADE IN THE USA

TAA COMPLIANT

BAA COMPLIANT

ORDERING INFO

SAMPLE MODEL # SWX-900-AX

	PRODUCT		FUNCTIONALITY		VOLTAGE		AUX SWITCH INPUT		ADDITIONAL OPTIONS	
SWX	Power Pack	9	Single Relay + 150 mA Supply	0	120/277 V	0	None	Blank	Partial Off / On Control*	
			Secondary Relay 150 mA Supply	1			Auxiliary Switch Input	-AX	(Stepped Dimming (0-10V)	-D2*
				2					High Humididty Environment	-HE
									Auxiliary Contact Closure Relay**	-AR**

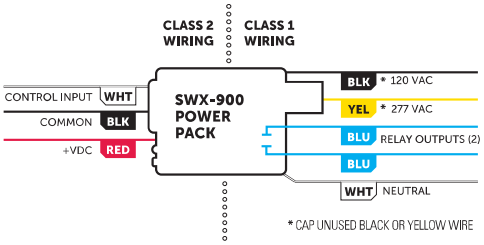
*Requires -AX option **Available with SWX-910 only

ACCESSORY	DESCRIPTION
SWX-999	Snap-On Low Voltage Wiring Chamber

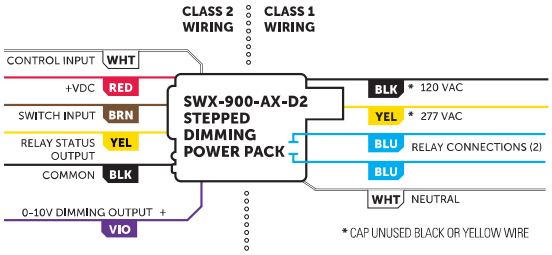
WIRING

BASIC SENSOR WIRING

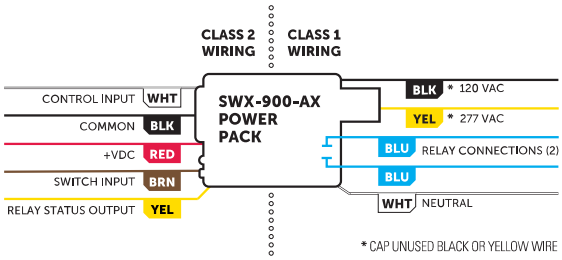
MODEL #: SWX-900



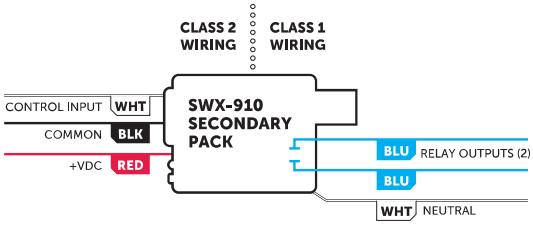
MODEL #: SWX-900-AX-D2



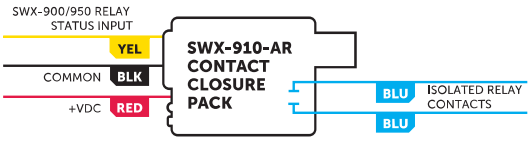
MODEL #: SWX-900-AX



MODEL #: SWX-910

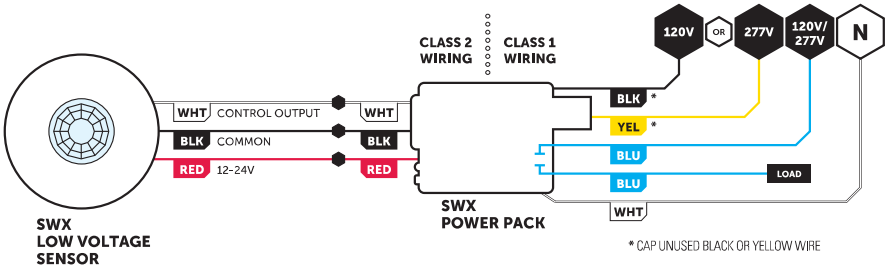


MODEL #: SWX-910-AR

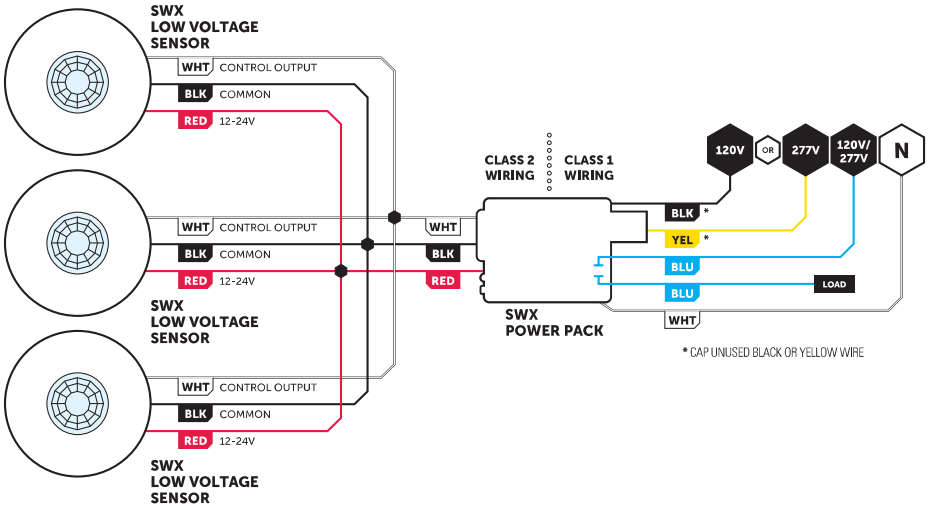


COMMON WIRING CONFIGURATIONS

SINGLE SENSOR

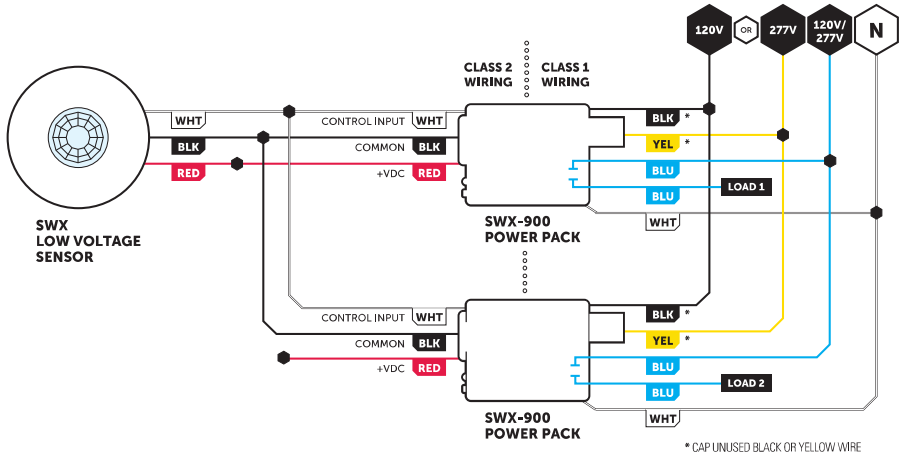


MULTIPLE SENSOR

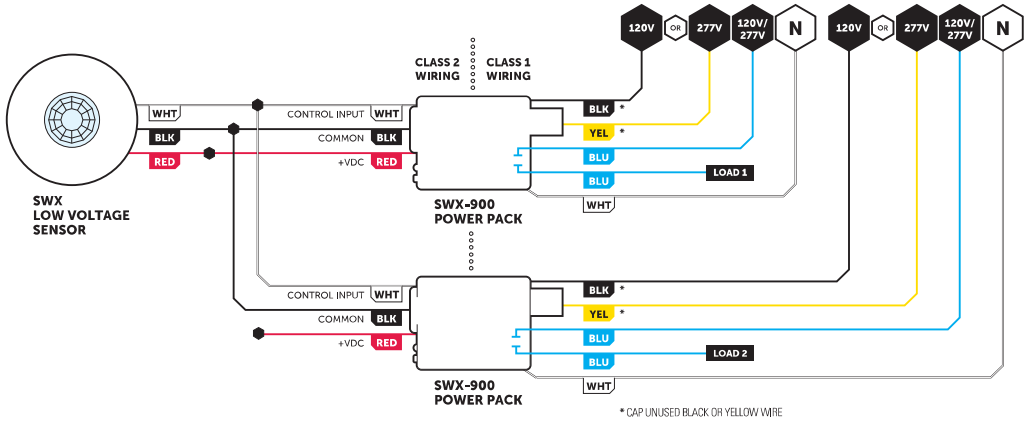


WIRING CONT.

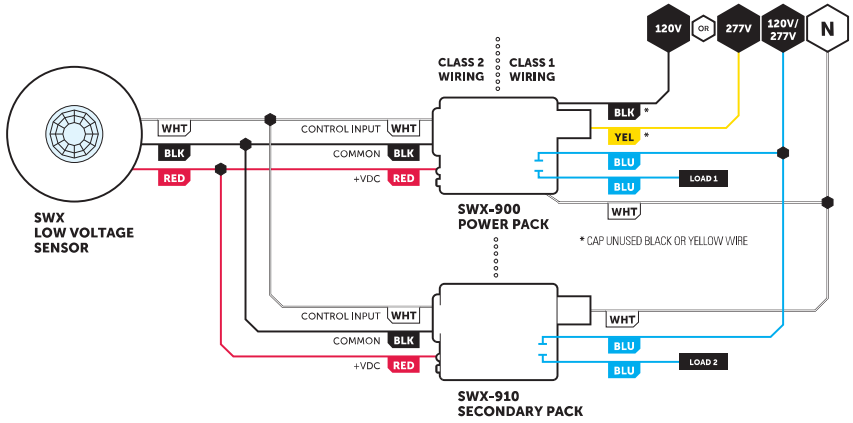
MULTIPLE POWER PACKS WITH COMMON LINE FEEDS



MULTIPLE POWER PACKS WITH SEPARATE LINE FEEDS



POWER PACK w/ SECONDARY RELAY PACK

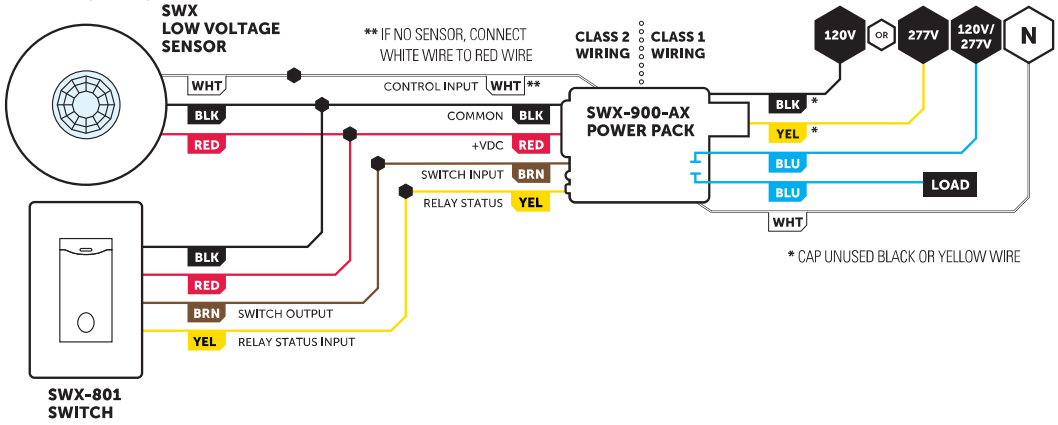


WIRING CONT.

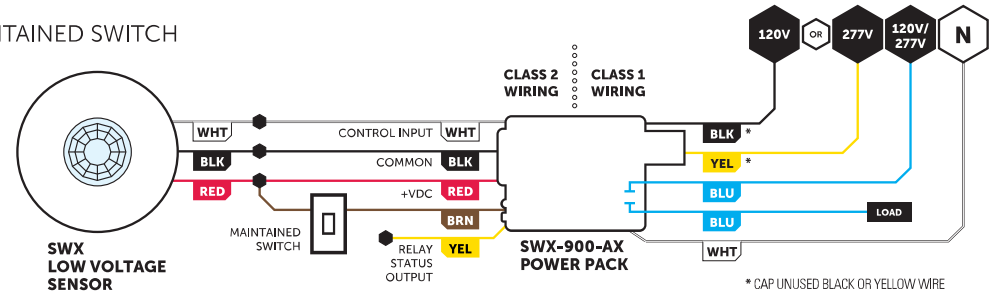
POWER PACK CONNECTED TO SWITCH (requires -AX option)

- Some energy codes require **Manual On** (also called **Vacancy**) operation where an occupant is required to initially switch on lighting. The sensor then ensures lights are turned off once the space is unoccupied
- Interfacing momentary switches such as the SWX-801-xx or SWX-803-xx are recommended, however maintained switches can also be utilized
- For momentary switches, the power pack will react on the leading edge of a pulse on the brown input wire
- For maintained switches, any change of state on the brown wire that lasts longer than 0.5 seconds will be read by the power pack as one action
- If no sensor is present, tie power pack low voltage white wire to low voltage red wire

MOMENTARY SWITCH

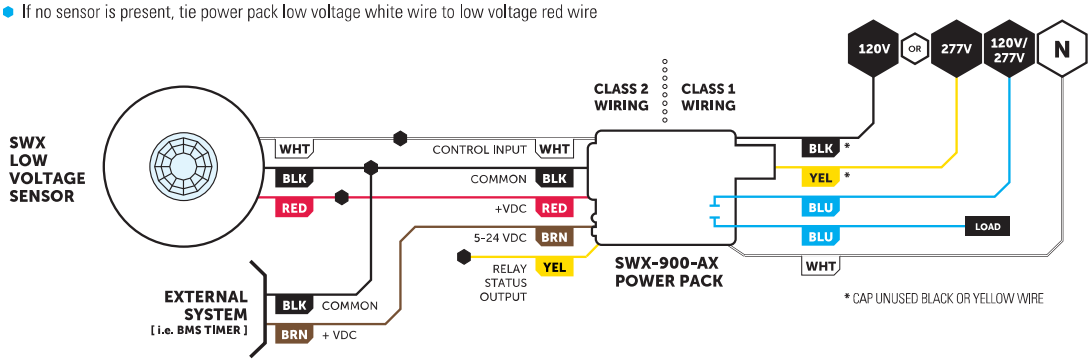


MAINTAINED SWITCH



POWER PACK w/ SWITCH SIGNAL FROM EXTERNAL SYSTEM

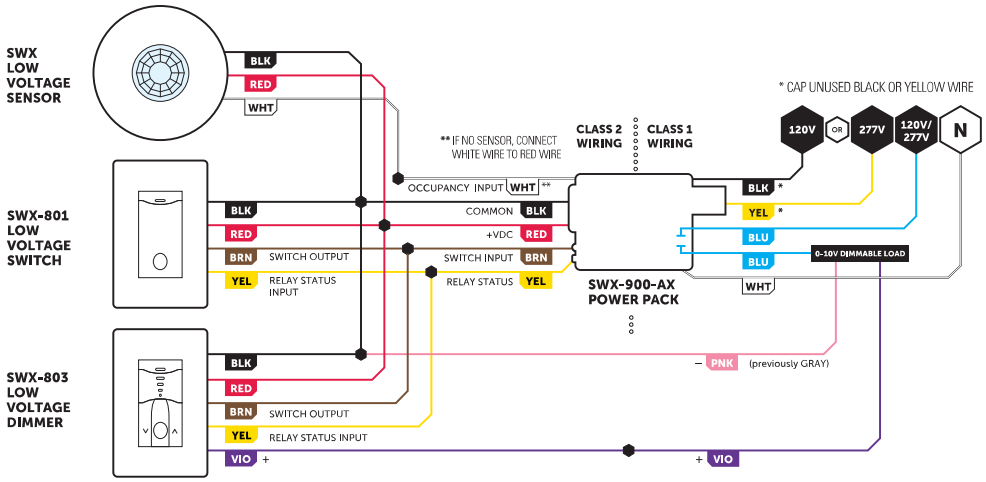
- Typical for Hold On and Hold Off applications
- BROWN switch input can be activated by external signals +5VDC or higher (i.e. logic high)
- For hold on and hold off applications, switch input can also be configured to activate on logic low
- If no sensor is present, tie power pack low voltage white wire to low voltage red wire



WIRING CONT.

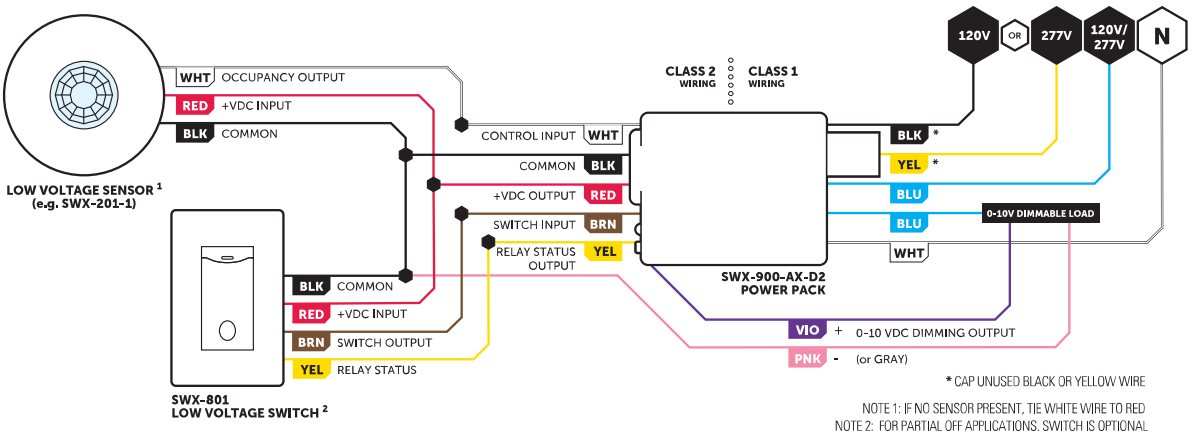
MULTI-WAY SWITCHING (requires -AX option)

- Switching a powerpack from multiple locations (i.e., 3-way, 4-way switching) can be achieved using multiple **SENSORWORX** model# **SWX-801-xx** switches or a combination of one model# **SWX-803-xx** dimmer and one or more model# **SWX-801-xx** switches.
- Note that only one dimmer should be used per multi-way application.
- If no sensor is present, tie power pack low voltage white wire to low voltage red wire



PARTIAL OFF or PARTIAL ON OPERATION (requires -AX-D2 options)

- For areas such as stairwells, the **SWX-900-AX-D2** unit can be used to achieve **Partial Off** operation where lighting is at the full bright level when occupied and dropped to the 50% level during unoccupied periods.
- **Partial On** operation is also enabled by the **SWX-900-AX-D2** unit. In this configuration lighting is only allowed to automatically turn on to a 50% level. Once on, an occupant may step lighting to the 100% level by pressing a wall switch. The sensor then ensures lights are turned off once the space is unoccupied.
- When in partial on mode the **SWX-900-AX-D2** unit will turn on connected 0-10V lighting to 50% (level is user configurable) once initially triggered from an occupancy sensor or manual switch. The unit will then step lighting up to 100% (level is user configurable) when the connected switch is pressed. Lighting will turn off if another switch press is detected or when all connected sensors go to their unoccupied state.
- Additional configurable parameters include; Turn On Dim Level, Turn Off Scheme, Fade On/Fade Off Rates, and High/Low Dimming Trim Levels.
- Using the **SENSORWORX** model# **SWX-801-xx** momentary switch is recommended for this application, however other manufacturers switches may also be utilized.

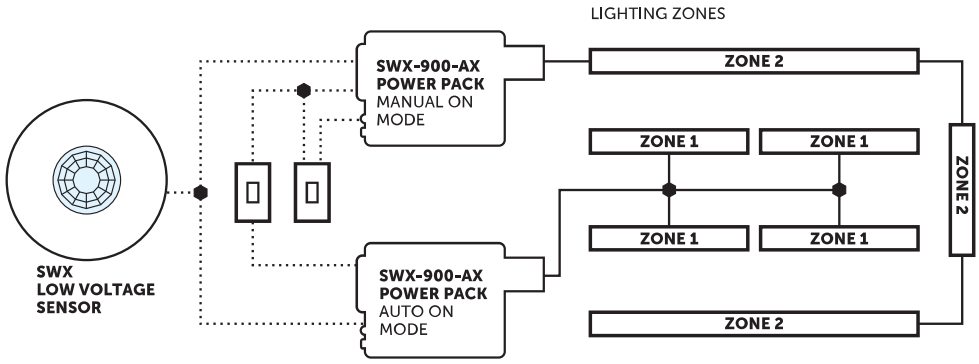


NOTE 1: IF NO SENSOR PRESENT, TIE WHITE WIRE TO RED
NOTE 2: FOR PARTIAL OFF APPLICATIONS. SWITCH IS OPTIONAL

APPLICATION NOTES

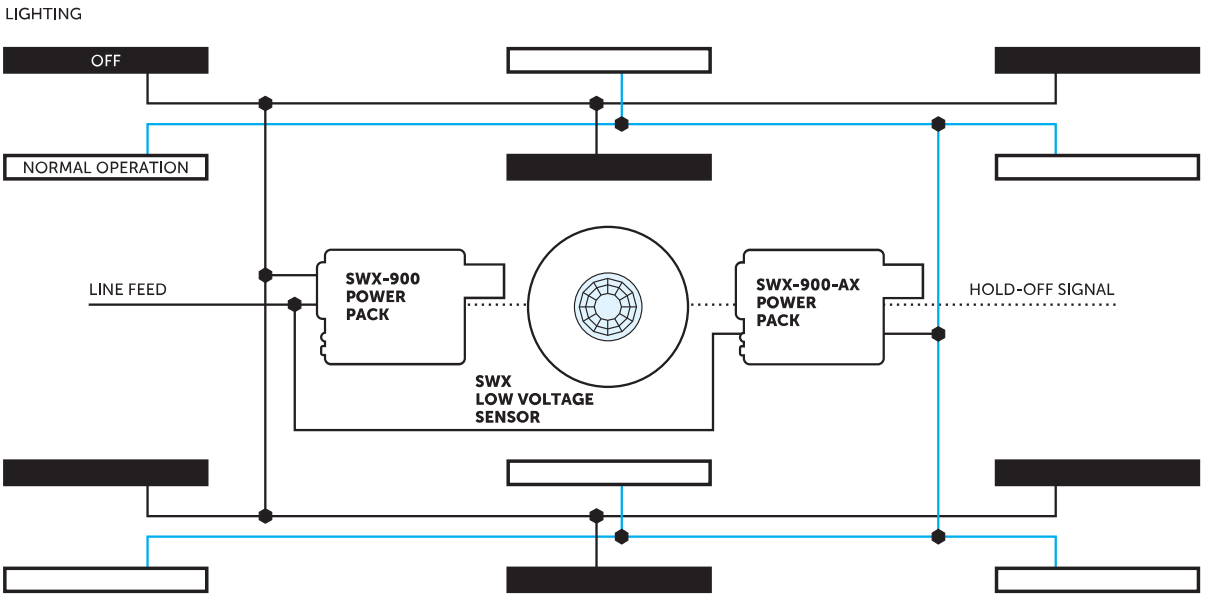
MULTI-ZONE AND BI-LEVEL SWITCHING

Rooms with multiple lighting zones or bi-level lighting often want one zone/level to switch on automatically, with the occupant able to manually switch on the additional zone/level if desired. Both zones/levels are then switched off automatically by the sensor once unoccupied. Two **SWX-900-AX** power packs are wired to switches, however one unit is set to Automatic On mode while the other is set to Manual On mode. In this configuration, lighting can be switched off manually or automatically via the occupancy sensor.



LOAD SHED / HOLD OFF APPLICATION (e.g. OPEN OFFICES)

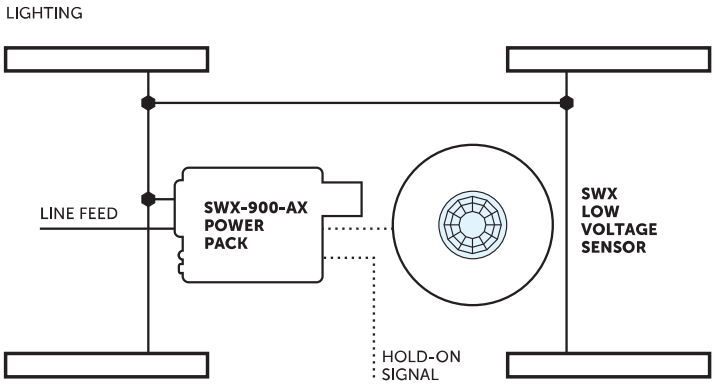
The occupancy sensor connected to both power packs normally keeps all lights on when the space is occupied. When a load shed (override off) command is given (by BMS, utility meter, etc.), lights connected to **SWX-900-AX** are held off. Remaining lights connected to **SWX-900** are still controlled by the sensor.



APPLICATION NOTES CONT.

SENSOR OVERRIDE / HOLD ON APPLICATION (e.g. RETAIL)

During open hours, a signal from a time clock (connected to the BROWN switch input on the **SWX-900-AX**) holds lights on, regardless of occupancy. After hours, the clock's schedule releases the hold on signal enabling the occupancy sensor to take over.



POWER PACK CAPACITY

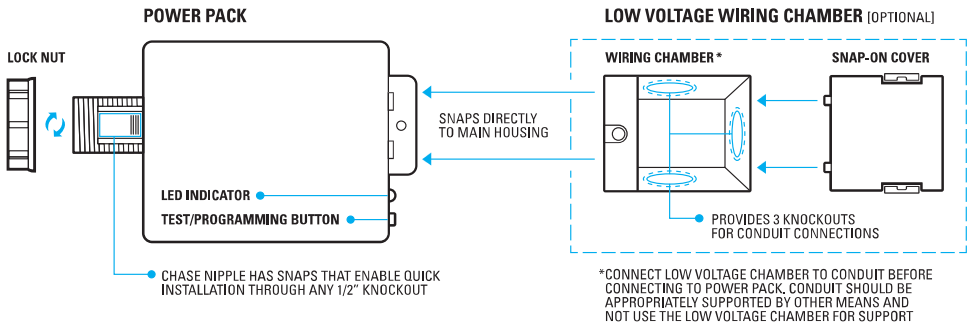
SWX-900 series power packs can supply power to several occupancy sensors and additional secondary relay packs. Following the below formula ensures adequate power will be available. Note the **SWX-900's** relay has already been factored into the formula.

[(# of PIR SENSORS*) x4mA] + [(# of DUAL TECH SENSORS) x16mA] + [(# of SWX-910) x70mA] < [(# of SWX-900) x80 mA]

EXAMPLE COMBINATIONS

PIR SENSORS		+	DUAL TECH SENSORS		+	SECONDARY PACKS SWX-910		=	TOTAL POWER REQUIRED	<	POWER SUPPLIED BY ONE SWX-900
#	POWER REQUIRED		#	POWER REQUIRED		#	POWER REQUIRED				
10	40mA	+	0	0	+	0	0	=	40mA	<	80mA
2	8mA	+	0	0	+	1	70mA	=	78mA	<	80mA
0	0	+	4	64mA	+	0	0	=	64mA	<	80mA
3	12mA	+	3	48mA	+	0	0	=	60mA	<	80mA

INSTALLATION OPTIONS



ILC
LIGHTING CONTROL SYSTEM

DUTCHESS STADIUM IMPROVEMENTS

LIGHTSPEC

Submittal for Approval

GO#: 22304171

PO#: 040723KD01
Prepared By: VICTOR WHONG

Submittal Date: 6/7/2023

TABLE OF CONTENTS:

LIGHTING CONTROL

Optional Submittal Approval Form

ILC's Optional Submittal Approval Form can be used in lieu of Engineers Stamp

Project Name: _____

Project # _____

P.O. # _____

ILC GO # _____

Submittal Date: _____

Review Date: _____

REVIEW CHECKLIST	APPROVED	COMMENTS	RESUBMIT
☐ System Riser			
☐ Relay Panel Schedules			
☐ Detail Sheets			
☐ Switch Stations			
☐ Quantity			
☐ Button Count			
☐ Labeling			
☐ Color			

Comments _____

- Approval of material for conformance to design concept of the project and compliance with the information given in the contract documents.
- Contractor is responsible for quantities and types of material provided, equipment to be installed per manufacturer's recommendations and NEC code requirements.
- Approval does not relieve Contractor from full compliance with Contract Documents.

Signature Date
☐ Engineer ☐ Architect ☐ Designer

Print Name

Company

Address

Email Phone

Signature Date
☐ Engineer ☐ Architect ☐ Designer

Print Name

Company

Address

Email Phone

Energy Saving Lighting Controls

INTELLIGENT LIGHTING CONTROLS, INC.

5229 Edina Industrial Boulevard
Minneapolis. Minnesota 55439
Phone 952 829 1900
FAX 952 829 1901
www.ilc-usa.com

ILC Product Warranty

Project Name:

ILC GO #

Intelligent Lighting Controls (which will be referred to as ILC in this document) shall comply with the terms and provisions of the customer's purchase order, unless ILC's terms and conditions differ from the customer's, then ILC's will apply. Any variation to the ILC standard terms and conditions that we accept will be set forth on the face of the acknowledgement and invoice.

ILC will replace or repair, at its option, any material found to be defective from workmanship within the warranty period listed below unless otherwise noted in quotation/ submittal documentation. Warranty periods begin at the date of shipment. Extended warranty periods can be purchased at additional cost. This warranty is exclusive to parts manufactured by ILC. Any product that is supplied as resale will be subject to that manufacturer's standard warranty. ILC is not responsible for damage due to improper installation, physical damage, poor operating practice, or other matters outside of ILC's control such as lightning, flood, tornado, earthquake or hurricane.

Product Warranty Period:

LightLEEDer System and Relays.....6 Years

All Other Relays .....6 Years

Apprentice Panel.....1 Year

All Other Products.....6 Years

Charges will be invoiced to the distributor if ILC is called upon to make a system functional because of incorrect field assembly of products. ILC shall not be liable for consequential damage in case of any failure to meet the conditions of any warranty of Shipping Schedule, nor will claims of labor, loss of profits, repairs or other expenses incidental to replacement be allowed.

No representative, person, agent or dealer is authorized to give any warranties on behalf of ILC, or to assume for ILC any other ruling in connection with any of its products unless made in writing and signed by an officer of ILC.

The above warranty applies only to products purchased directly from ILC and for which payment has been received in full accordance with the terms and conditions stated herein.

Energy Saving Lighting Controls

INTELLIGENT LIGHTING CONTROLS, INC.

5229 Edina Industrial Boulevard
Minneapolis. Minnesota 55439
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www.ilc-usa.com

Bill of Materials

Line	Catalog	Part Description	Order Qty
1	EPC-A-2	Emergency Power Control Relay with Fire Alarm Input - Nipple Mount - UL924 Rated - 120/277V	7
3	LL30-EM	LightLEEDer Panel - Capacity for 30 R40-1 Relays - Emergency UL924 Rated	1
4	LLEVO-TC	LightLEEDer EVO Distributed Control Panel - with Time Clock	9
5	LLNC-P	LightLEEDer Network Controller - Panel Mount (Typically Shipped Installed in Panel)	1
6	LLSI-BACIP-N	LightLEEDer Serial Interface - BACnet IP - Network Gateway (Typically Shipped Installed in Panel)	1
7	LSDM-P	LightSync Dimming Module - Panel Mount (Typically Shipped Installed in Panel)	8
8	LSG3-WH-1	LightSync G3 Switch - White - 1 Zone	17
9	LSG3-WH-1-MZD	LightSync G3 Switch - White - 1 Multi-Zone-Dim	19
10	LSG3-WH-4-MZD	LightSync G3 Switch - White - 4 Multi-Zone-Dim	1
11	LSIM-R	LightSync Input Module - Remote Mount	1
12	LSOSM-R	LightSync Occupancy Sensor Module - Remote Mount	1
13	LSPSC-OUT-R	LightSync Photocell Sensor Controller - with Outdoor Sensor Head - Remote Mount	1
14	LSPSR-R	LightSync Power Supply Repeater - Remote Mount	2
15	R20D	Remote Relay with 0-10V Dimming - 120/277/347V	16
16	R40-1	Reliant40 Amp Relay - 1 Pole - 120/277/347V (Typically Shipped Installed in Panel)	30
18	FSP1	Factory Submittal Package (Under 75K)	1
19	FSU1	Factory Start-Up 1 Day	1
21	R20D-EM	Remote 20A Emergency Bypass Relay with 0-10V Dimming - 120/277VAC	10
22	LSPSR6-R	LightSync Power Supply Repeater 6 Output Module - Remote Mount	1
23	LSPSR6-P	LightSync Power Supply Repeater 6 Outputs - Panel Mount (Typically Shipped Installed in Panel)	1

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GENERAL NOTES

A. ELECTRICAL CONTRACTOR TO PROVIDE CAT-5 DATA CABLE. SEE CAT-5 REQUIREMENTS SHEET & RJ45 CONNECTOR DETAIL. TEST ALL CABLE LENGTHS AND TERMINATION'S W/CAT-5 TESTER.

B. ALL LOW VOLTAGE COMMUNICATION CABLE & HARDWIRE LOW VOLTAGE CONTROL WIRING TO BE INSTALLED PER NATIONAL ELECTRICAL CODE FOR CLASS-2 LOW VOLTAGE WIRING.

C. CLASS-2 LOW VOLTAGE WIRING SHALL NOT BE MIXED WITH OR RUN IN LINE VOLTAGE RACEWAYS. SEPARATE LOW VOLTAGE RUNS FROM LINE VOLTAGE BY A MINIMUM DISTANCE OF 1-FOOT.

D. CAT-5 DATA CABLE RUNS TO BE INSTALLED IN A DAISY CHAIN FROM ONE PANEL OR DEVICE TO THE NEXT. NO "STAR" OR "T" CONFIGURATIONS ALLOWED WITHOUT POWER SUPPLY REPEATERS.

E. ALL CLASS-2 & CAT-5 DATA CABLE RUNS TO BE PROVIDED AND INSTALLED WITH THE APPROPRIATE JACKET TYPE OR CONDUIT FOR THE INSTALLATION ENVIRONMENT OR CONDITIONS ON SITE.

F. EACH LIGHTING RELAY PANEL REQUIRES A DEDICATED 120V. OR 277V. CIRCUIT FOR CONTROL POWER TRANSFORMERS.

G. ADDITIONAL ILC POWER OR DATA REPEATING DEVICES MAY BE REQUIRED FOR PROPER SYSTEM OPERATION, BASED ON THE ACTUAL NUMBER AND DISTANCE OF LightSync DEVICES TO BE INSTALLED ON CAT-5 DATA LINE. SEE SHEET TB1408 FOR DETAILS. CONTACT ILC TECHNICAL SUPPORT AT 1-800-922-8004 FOR FURTHER ASSISTANCE.

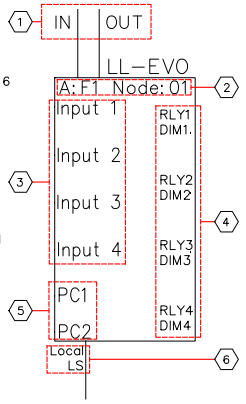
H. ANY UNDERGROUND DATA CABLE RUNS MUST BE RAN WITH FIBER OPTIC CABLE & RS485 CONVERTERS OR THE WARRANTY WILL VOID.

I. LightSync DEVICES MAY COME UNIQUELY PRE-ADDRESSED AND ARE LOCATION SPECIFIC. IT'S THE CONTRACTORS RESPONSIBILITY TO PROPERLY PLACE DEVICES.

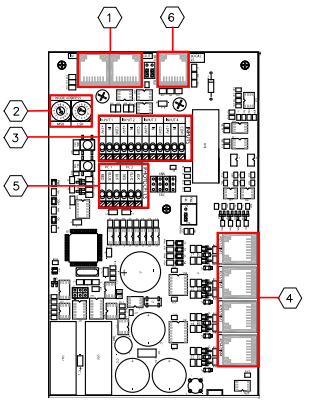
J. ASSUME ALL CABLING WITHOUT CONDUCTOR SLASHES IS TO BE CAT5/5e/6 UNLESS OTHERWISE NOTED ON THE RISER OR PRODUCT INFORMATION SHEETS.

1. RJ-45 IN/OUT PORTS FOR NETWORK CONNECTIONS BETWEEN PANELS
2. NODE ADDRESS: USED TO SET UNIQUE NODE ADDRESS FOR NETWORKED SYSTEMS APPLICATION MODE: USED TO SELECT 1 OF 16 PRE-PROGRAMS FOR STANDALONE LIGHTING APPLICATIONS
3. INPUTS 1-4: PROVIDES CONNECTIONS AND POWER FOR 3-WIRE MOTION SENSORS OR HARDWIRE SWITCHES
4. RJ-45 PORTS FOR CAT-5 CONNECTION TO REMOTE R20D RELAYS
5. PHOTOCELL INPUTS FOR 3-WIRE CONNECTION TO ILC DIGITAL PHOTO SENSOR HEADS
6. RJ-45 PORT FOR CAT-5 CONNECTION TO LOCAL LIGHTSYNC DEVICES

LL-EVO Internal Addressing:
In4=LS: 03.04 PC2=LS: 02
In3=LS: 03.03 PC1=LS: 01
In2=LS: 03.02
In1=LS: 03.01



TYPICAL EVO PANEL AS SHOWN ON RISER



EVO CONTROLLER ENLARGED DETAIL

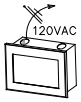
RISER SYMBOLS

LightSync Devices

LS-G2-MZD: LightSync MULTI-ZONE DIMMER STATION, SEE SHEETS: ,IDXXXX IDXXXX PDXXXX, TBXXXX & TBXXXX. PLEASE VERIFY QUANTITY AND LOCATION.

LS-G2: LightSync G2 DATALINE SWITCH DEVICE, SEE SHEETS: ID0612, ID0613, PD0614, TB1408 & TB1412. PLEASE VERIFY QUANTITY AND LOCATION.

LS-KS: LightSync KEY SWITCH. DATALINE KEY SWITCH STATION. PLEASE VERIFY QUANTITY AND LOCATION. SEE PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS



LightLEEDer TOUCH SCREEN CONTROLLER. REQUIRES LINE VOLTAGE SUPPLY CONNECTION, SEE INSTALLATION DETAILS.

LSIDM-R: LightSync DIMMING MODULE. CONTROLS 0-10V DIMMABLE BALLASTS SEE PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

LS-PSC4: DIGITAL PHOTO SENSOR CONTROLLER FOR UP TO 4 HEADS SEE PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

LS-PSC: DIGITAL PHOTO SENSOR CONTROLLER FOR A SINGLE HEAD SEE PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

LS-OS8I: OCCUPANCY SENSOR 8 INPUT MODULE. PROVIDES POWER & INPUTS FOR OCCUPANCY SENSORS. SEE PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

LS-COS8I: CONDITIONAL OCCUPANCY SENSOR 8 INPUT MODULE. PROVIDES POWER & INPUTS FOR OCCUPANCY SENSORS. SEE PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

PSR/PS, POWER SUPPLY REPEATER, SEE ID0607, PD0608, ID0608, PD0609 & TB1408. PLEASE VERIFY QUANTITY AND LOCATION.

LS-IM: LIGHTSYNC INPUT MODULE. PROVIDES HARDWIRED INPUTS AND ACCEPTS DRY CONTACT CLOSURES OR 12-24 VDC SIGNALS. SEE PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

Miscellaneous

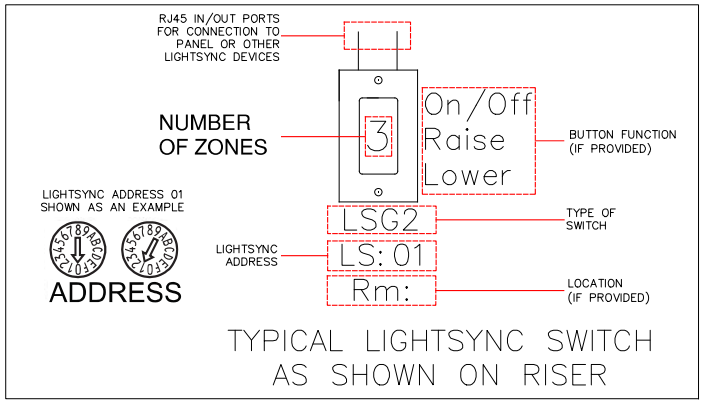
DESKTOP COMPUTER (PC) w/WINDOWS OS (BY OTHERS). ILC PROVIDED LLWIN-PRO SOFTWARE FOR SYSTEM PROGRAMMING.

PE100-1: LEVITON PE100-1 POWER EXTENDER. SEE PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

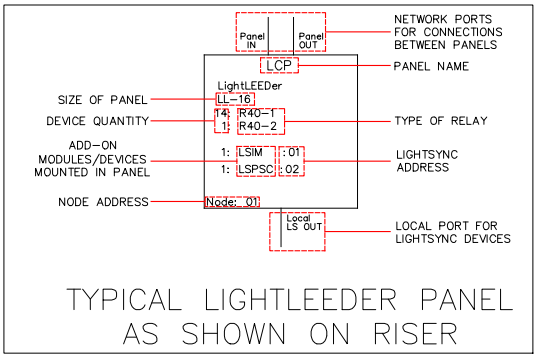
R20D: REMOTE 20 DIMMING RELAY. 16 AMP RELAY WITH GALVANIACALLY ISOLATED 0-10V DIMMING THAT IS REMOTE CONTROLLED VIA CAT5/5e/6 FROM AN LL-EVO

LDCM-PL: ECOSPEC LINEAR DIMMING CONTROL MODULE - PLENUM RATED. SEE PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

18AWG WITH TYPICAL CONNECTORS. CONDUCTOR SLASHES INDICATE NUMBER OF WIRES NEEDED. ALL CABLING WITHOUT SLASHES IS CAT5/5E/6 UNLESS OTHERWISE NOTED ON RISER OR PRODUCT INFORMATION SHEETS.



TYPICAL LIGHTSYNC SWITCH AS SHOWN ON RISER



TYPICAL LIGHTLEEDER PANEL AS SHOWN ON RISER

Sensors

PC-OUT: LIGHTSYNC OUTDOOR PHOTO SENSOR HEAD. CONNECTS TO PHOTO SENSOR CONTROLLER OR LL-EVO. SEE PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

PC-IND: LIGHTSYNC INDOOR PHOTO SENSOR HEAD. CONNECTS TO PHOTO SENSOR CONTROLLER OR LL-EVO. SEE PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

CEILING MOUNTED MOTION SENSOR PIR/ULTRASONIC. SEE RISER FOR EXACT MODEL AND PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

CEILING MOUNTED MOTION SENSOR ULTRASONIC. SEE RISER FOR EXACT MODEL AND PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

CEILING MOUNTED MOTION SENSOR PIR. SEE RISER FOR EXACT MODEL AND PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

WALL/CORNER MOUNTED MOTION SENSOR PIR/ULTRASONIC. SEE RISER FOR EXACT MODEL AND PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

WALL/CORNER MOUNTED MOTION SENSOR PIR. SEE RISER FOR EXACT MODEL AND PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

HIGH BAY PIR MOTION SENSOR. SEE RISER FOR EXACT MODEL AND PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

ROOM PARTITION THRU-BEAM SENSOR TRANSMITTER AND RECEIVER. SEE PDF SHEETS FOR PRODUCT & INSTALLATION DETAILS

INTELLIGENT LIGHTING CONTROLS, INC.
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Ph: 952.829.1500 Fax: 952.829.1901
1.800.922.8004
www.ilc-usa.com

ONE LINE RISER TYPICAL SYMBOLS LIST

Sheet:
R0

GENERAL NOTES

A. ELECTRICAL CONTRACTOR TO PROVIDE CAT-5 DATA CABLE. SEE CAT-5 REQUIREMENTS SHEET & RJ45 CONNECTOR DETAIL. TEST ALL CABLE LENGTHS AND TERMINATION'S W/CAT-5 TESTER.

B. ALL LOW VOLTAGE COMMUNICATION CABLE & HARDWIRE LOW VOLTAGE CONTROL WIRING TO BE INSTALLED PER NATIONAL ELECTRICAL CODE FOR CLASS-2 LOW VOLTAGE WIRING.

C. CLASS-2 LOW VOLTAGE WIRING SHALL NOT BE MIXED WITH OR RUN IN LINE VOLTAGE RACEWAYS. SEPARATE LOW VOLTAGE RUNS FROM LINE VOLTAGE BY A MINIMUM DISTANCE OF 1-FOOT.

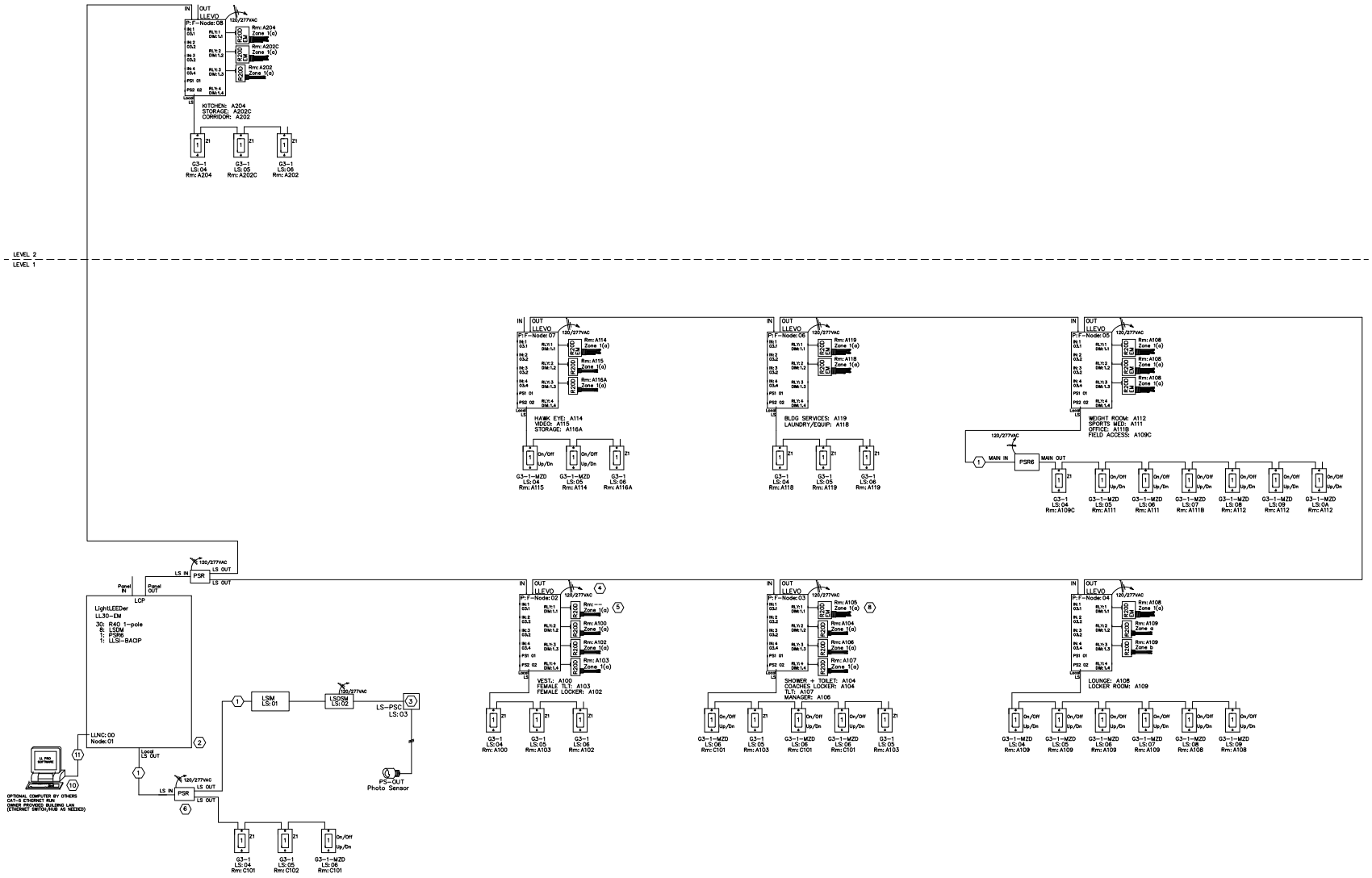
D. CAT-5 DATA CABLE RUNS TO BE INSTALLED IN A DAISY CHAIN FROM ONE PANEL OR DEVICE TO THE NEXT, NO "STAR" OR "T" CONFIGURATIONS ALLOWED WITHOUT POWER SUPPLY REPEATERS.

E. ALL CLASS-2 & CAT-5 DATA CABLE RUNS TO BE PROVIDED AND INSTALLED WITH THE APPROPRIATE JACKET TYPE OR CONDUIT FOR THE INSTALLATION ENVIRONMENT OR CONDITIONS ON SITE.

F. EACH LIGHTING RELAY PANEL REQUIRES A DEDICATED 120V. OR 277V. CIRCUIT FOR CONTROL POWER TRANSFORMERS.

KEY NOTES

1. CAT-5e DATA CABLE, REFER TO SHEETS: PD0011, ID0006, ID0009 & TB1408 FOR INSTALLATION REQUIREMENTS & DETAILS.
2. LightLEEDer RELAY CONTROL PANEL, UL-924 RATED. R40-1,2&3 POLE RELAY AS LISTED.
3. LightSync PHOTOCELL CONTROLLER & REMOTELY MOUNTED SENSOR HEAD. PROVIDE 3-#18 AWG MIN. FROM SENSOR TO CONTROLLER.
4. LightLEEDer EVO CONTROLLER PANEL. R20D RELAYS AS LISTED
5. R20D REMOTE RELAY W/0-10VDC DIMING CONTROL CAT-5e CONNECTED FROM EVO, EVO4X/8X CONTROLLER
6. PSR6/PSR, POWER SUPPLY REPEATER, SEE DO#07, PD0608, ID0608, PD0609 & TB1408. PLEASE VERIFY QUANTITY AND LOCATION.
7. CEILING MOUNTED MOTION SENSOR PIR/MICROFONIC ILC-SWV-221-1 W/HBAWG TO 24VDC POWERED INPUT IN PANEL OR LS0SM MODULE
8. R20D-EM REMOTE 20A DIMMING RELAY WITH UL924 EMERGENCY BYPASS CAT-5e CONNECTED FROM EVO, EVO4X/8X CONTROLLER
10. DESKTOP COMPUTER (PC) w/WINDOWS OS (BY OTHERS). ILC PROVIDED LLMN-PRO SOFTWARE FOR SYSTEM PROGRAMMING.
11. LL-IP; LightLEEDer IP INTERFACE CONNECTION USING TCP/IP ADDRESS ON A 10/100 BASE-T ETHERNET NETWORK. OWNER PROVIDED NETWORK



intelligent lighting controls

5229 Edina Industrial Blvd.
Minneapolis, MN 55439
952.829.1900 | ilc-usa.com

#	REVISIONS	DATE

SHEET INFORMATION

DATE: 06/06/2023

SCALE: NONE

DRAWN BY: VW

Project:

DUTCHESS STADIUM IMPROVEMENTS

Title:

ONE LINE RISER & TYPICALS

GO#: 22304171

Sheet: R1

ILC Controls

Description	Quantity	Unit
LL30-EM	1	Count
LLEVO-TC	6	Count
LLNC-P	1	Count
LLSI-BACIP-N	1	Count
LSDM-P	8	Count
LSG3-WH-1	11	Count
LSG3-WH-1-MZD	19	Count
LSG3-WH-4-MZD	1	Count
LSIM-R	1	Count
LSOSM-R	1	Count
LSPSC-OUT-R	1	Count
LSPSR-R	2	Count
LSPSR6-P	1	Count
LSPSR6-R	1	Count
R20D-EM	8	Count
R20D	12	Count

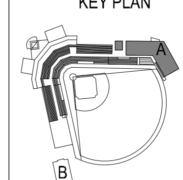
LIGHTING PLAN - AREA A - LEVEL 1 - ALTERNATE

SCALE: 1/8" = 1'-0"

SHEET NOTES

- L13 RIGIDLY SUSPEND LIGHT FIXTURES IN THIS SPACE TIGHT TO UNDERSIDE OF STRUCTURE. INSTALL FIXTURES OUTSIDE OF BATTING TUNNEL NETTING. COORDINATE WITH TUNNEL NETTING INSTALLER.
- L15 PENDANT MOUNT LIGHT FIXTURES IN THIS SPACE SUCH THAT BOTTOM OF LIGHT FIXTURE IS 12'-0" AFF.
- L31 PROVIDE CLEAR IMPACT-RESISTANT COVER FOR SENSOR.

KEY PLAN



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- NOT FOR CONSTRUCTION -

DUTCHESS STADIUM IMPROVEMENTS PHASE II & III

OWNER: DUTCHESS COUNTY, 22 MARKET STREET POUGHKEEPSIE, NY 12601
COUNTY PROJECT #RFB-DCB-22-21
1500 ROUTE 9D, FISHKILL, NY 12590

BID SET
11.10.21
REVISIONS

57-21113-00

LIGHTING PLAN - AREA A - LEVEL 1 - ALTERNATE

E1.1A-ALT

ILC Controls

Description	Quantity	Unit
EPC-A-2	5	Count
LLEVO-TC	1	Count
LSG3-WH-1	3	Count
R20D	1	Count
R20D-EM	2	Count

LIGHTING PLAN - AREA A - LEVEL 2

SCALE: 1/8" = 1'-0"

GENERAL NOTES

A SAMPLE NOTE 1
B SAMPLE NOTE 2

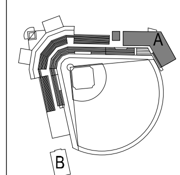
SHEET NOTES

L32 PROVIDE CONTINUOUSLY LIT CORNERS.

L34 INSTALL EXIT SIGN LOW ON RAILING FACE. PROVIDE MOUNTING EQUIPMENT AS REQUIRED FOR SECURE INSTALLATION. STUB POWER UP FROM BELOW TO EXIT SIGN.

L35 INSTALL FIXTURES ON TOP OF STRUCTURAL BEAM. PROVIDE CLAMP AND OTHER ACCESSORIES AS REQUIRED TO MOUNT FIXTURES SECURELY TO BEAM WHILE PERMITTING FIXTURE TO BE ADJUSTED FOR AIMING. COORDINATE AIMING OF EACH FIXTURE WITH OWNER.

KEY PLAN



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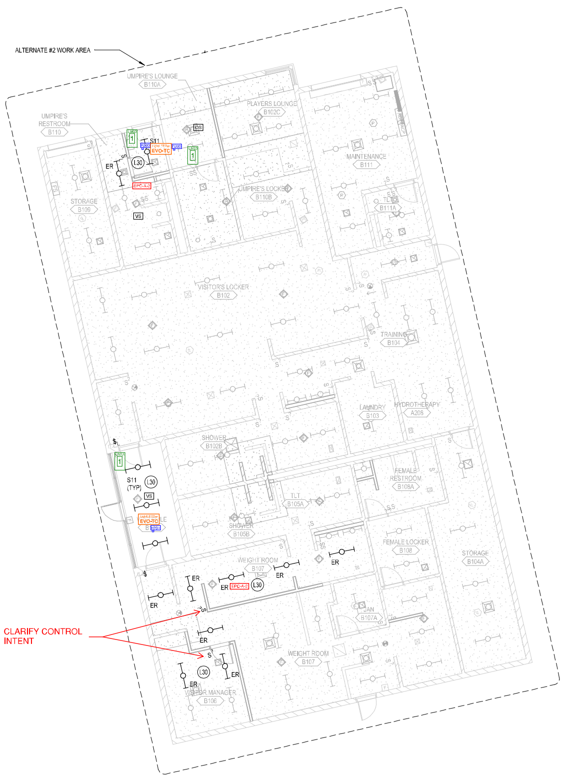
DUTCHESS STADIUM IMPROVEMENTS
PHASE II & III
OWNER: DUTCHESS COUNTY, 22 MARKET STREET POUGHKEEPSIE, NY 12601
COUNTY PROJECT #RFB-DCB-22-21
1500 ROUTE 9D, FISHKILL, NY 12590

BID SET
11.10.21
REVISIONS

57-21113-00

LIGHTING PLAN - AREA A - LEVEL 2

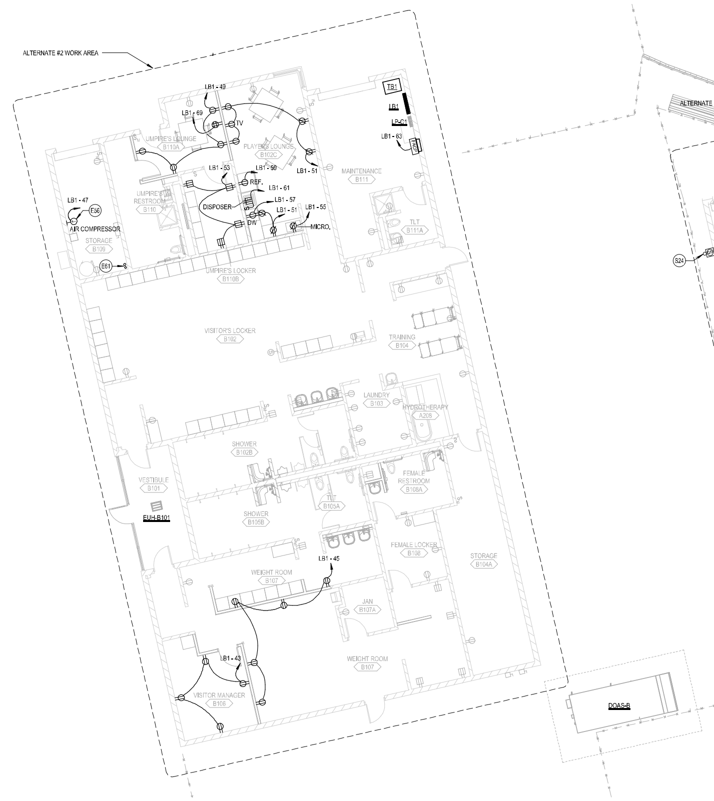
E1.2A



LIGHTING PLAN - AREA B - LEVEL 1 - ALTERNATE #2

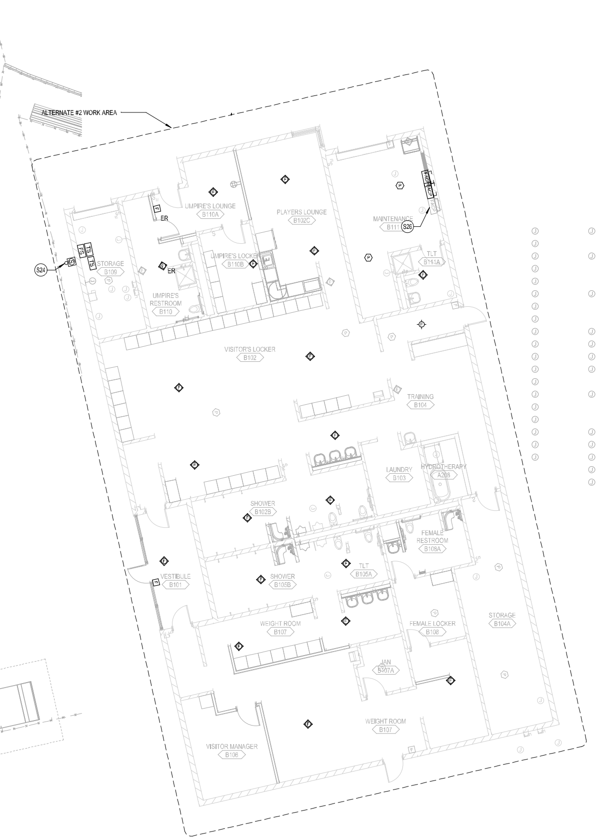
SCALE: 1/8" = 1'-0"

ILC Controls		
Description	Quantity	Unit
EPC-A-2	2	Count
LLEVO-TC	2	Count
LSG3-WH-1	3	Count
R20D	3	Count



POWER PLAN - AREA B - LEVEL 1 - ALTERNATE #2

SCALE: 1/8" = 1'-0"



SPECIAL SYSTEMS PLAN - AREA B - LEVEL 1 - ALTERNATE #2

SCALE: 1/8" = 1'-0"

GENERAL NOTES

A ALTERNATE #2: REMOVE THE WORK ASSOCIATED WITH THE IMPROVEMENTS TO THE EXISTING RIGHT FIELD CLUBHOUSE AS INDICATED ON THE DRAWINGS ("ALTERNATE #2 WORK AREA").

SHEET NOTES

E56 COORDINATE EXACT LOCATION OF AIR COMPRESSOR WITH AIR COMPRESSOR INSTALLER. PROVIDE 20/1 MOTOR-RATED TOGGLE SWITCH MOUNTED ADJACENT TO AIR COMPRESSOR TO SERVE AS LOCAL DISCONNECT.

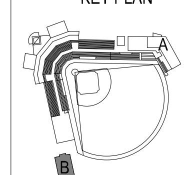
E61 ROUTE (2) EMPTY 4-INCH CONDUITS WITH PULLSTRING TO EXTERIOR HANDHOLE. REFER TO SHEET ES1.1.

L30 CIRCUIT LIGHT FIXTURE(S) TO EXISTING CIRCUIT SERVING THIS SPACE.

S24 PROVIDE THRU-WALL SLEEVE AT MOUNTING PLATE FOR SURFACE MOUNT SPRINKLER ALARM. DEVICE AND CABLING BY OTHERS. COORDINATE LOCATION AT FIRE PROTECTION SYSTEM SERVICE CONNECTION WITH OTHER TRADES. PROVIDE CONNECTION TO FIRE ALARM SYSTEM.

S26 CIRCUIT EXISTING FIRE ALARM DEVICES TO FIRE ALARM CONTROL PANEL.

KEY PLAN



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- NOT FOR CONSTRUCTION -

DUTCHESS STADIUM IMPROVEMENTS PHASE II & III

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BID SET
11.10.21
REVISIONS

57-21113-00

ELECTRICAL PLANS - AREA B - LEVEL 1

E2.1B

LIGHTING CONTROL ZONE SCHEDULE

ZONE	PANEL	-	CKT	DESCRIPTION	CONTROL SEQUENCES	SPECIFIC NOTES
z01	H1A1	-	3	EXTERIOR SITE LIGHTING	10	3
z02	H1A1	-	1	LEFT FIELD BLDG EXTERIOR WALLPACKS	10	3
z02	H1A1	-	1	LEFT FIELD BLDG EXTERIOR WALLPACKS - EM	10	3
z03	CBA1	-	1	LEFT FIELD BLDG ENTRY CANOPY - EM	10,11	3
z03	CBA1	-	1	LF BLDG SEATING BOWL STEP LIGHTS - EM	10,11	3
z03	H1A1	-	1	LEFT FIELD BLDG ENTRY CANOPY	10,11	3
z03	H1A1	-	1	LF BLDG SEATING BOWL STEP LIGHTS	10,11	3
z05	CBA1	-	4	LF BLDG DECK POLE LIGHTING - EM	10,11	3
z05	H1A1	-	21	LF BLDG DECK POLE LIGHTING	10,11	3
z06	H1A1	-	21	LF BLDG DECK BACK ACCENT LIGHTING	10,11	3
z07	CBA1	-	4	LF BLDG DECK CANOPY DOWNLIGHTS - EM	10,11	3
z07	H2A1	-	1	LF BLDG DECK CANOPY DOWNLIGHTS	10,11	3
z08	CBA1	-	2	LF BLDG FIRST FLOOR CORRIDORS - EM	1	1,2
z08	H1A1	-	7	LF BLDG FIRST FLOOR CORRIDORS	1	1,2
z08	H1A1	-	9	LF BLDG FIRST FLOOR CORRIDORS	1	1,2
z09	CBA1	-	2	LF BLDG BATTING TUNNEL - EM	3,4,8	1,2
z09	H1A1	-	15	LF BLDG BATTING TUNNEL	3,4,8	1,2
z09	H1A1	-	17	LF BLDG BATTING TUNNEL	3,4,8	1,2
z09	H1A1	-	19	LF BLDG BATTING TUNNEL	3,4,8	1,2
z10	CBA1	-	3	LF BLDG SECOND FLOOR CORRIDOR CYLINDERS - EM	1,8	1
z10	H2A1	-	3	LF BLDG SECOND FLOOR CORRIDOR CYLINDERS	1	1
z11	CBA1	-	3	LF BLDG SECOND FLOOR CORRIDOR LINEARS - EM	1	1
z11	H2A1	-	3	LF BLDG SECOND FLOOR CORRIDOR LINEARS	1	1
z11	H2A1	-	9	LF BLDG SECOND FLOOR CORRIDOR LINEARS	1	1
z12	CBA1	-	3	LF BLDG CLUB RM SUSPENDED LINEARS - EM	2,4,5,7	1
z12	H2A1	-	7	LF BLDG CLUB RM SUSPENDED LINEARS	2,4,5,7	1
z13	H2A1	-	9	LF BLDG CLUB RM DECORATIVE PENDANTS	2,4,5,7	1
z14	H2A1	-	9	LF BLDG CLUB RM BAR DOWNLIGHTS	2,4,5,7	1

LIGHTING CONTROL DEVICES IN SPACE	CONTROL SEQUENCES
S_O	#1
S_L + OS	#1
$\$_L$ + OS	#1
S_V	#2
S_{VD}	#2, #4
S_{AD}	#3, #4
S_{PD} + VS	#2, #5
S_{PD} + VS + PC	#2, #5, #7
S_{TD} + VS	#2, #5, #6
S_{TD} + VS + PC	#2, #5, #6, #7
S_L + VS	#2
S_{TD} + VS	#2, #5, #6, #7

GENERAL NOTES:

A. PROVIDE COMPLETE LOW VOLTAGE CONTROL SYSTEM FOR EACH CONTROL TYPE, INCLUDING SWITCHES, SENSORS, POWER PACKS, CONTROLLERS,RELAYS, ENCLOSURES, CABLING, RACEWAY, AND PROGRAMMING AS REQUIRED TO FULFILL DESIGN INTENT. CONTRACTOR TO SELECT SOLUTION THAT MEETS CONTROL INTENT.
B. PROVIDE CONNECTION BETWEEN BAS AND TIME-BASED LIGHTING CONTROL SYSTEM IN ELECTRICAL ROOM B125. PROVIDE ACCESSORIES AS REQUIRED TO FACILITATE TWO-WAY COMMUNICATION.
C. PROVIDE NETWORK CONNECTION FOR TIME-BASED CONTROL SYSTEM IN ELECTRICAL ROOM B125. COORDINATE WITH TELECOM INSTALLER FOR OUTLET LOCATION.
D. OCCUPANCY SENSOR [OS] = AUTO-ON/AUTO-OFF, VACANCY SENSOR [VS] = MANUAL-ON/AUTO-OFF.
E. CONTROL TYPE AND KEYS DO NOT INDICATE QUANTITIES. SEE PLANS FOR SWITCH QUANTITIES AND PROPOSED SENSOR QUANTITIES. REFER TO SPECIFCATIONS FOR MODIFICATIONS TO SENSOR QUANTITIES.
F. DAYLIGHT HARVESTING: APPLY TO ALL FIXTURES WITHIN DAYLIGHT HARVESTING ZONES INDICATED BY DASHED-IN AREAS ON PLANS.
G. SWITCH LABELING: ALL MULTI-BUTTON SWITCHES SHALL HAVE FACTORY-ENGRAVED LABELING ACCORDING TO SWITCH DETAILS. BUTTONS WITH NO LABELS OR FACTORY DEFAULT ENGRAVINGS (ZONE1, ZONE 2) ARE NOT ACCEPTABLE.
H. GENERATOR-FED EMERGENCY FIXTURES: PROVIDE UL 924 EMERGENCY BYPASS CONTROL DEVICES TO BRING ALL EMERGENCY FIXTURES TO FULL ON DURING POWER LOSS. EMERGENCY BYPASS CONTROL DEVICE SHALL ALSO ALLOW LIGHTING CONTROLS (ON/OFF/DIMMING/TUNING) FOR NON-EMERGENCY LIGHTING LOADS IN SAME SPACE / CONTROL ZONE TO ALSO CONTROL EMERGENCY FIXTURES UNDER NORMAL POWER AND BE OVERRIDEN DURING POWER LOSS.
I. MANUAL DIMMING: MANUAL DIMMING FUNCTION SHALL BE PRESS-AND-HOLD. FADE RATE SHALL BE FIVE SECONDS. DIMMING DEVICES CAN BE CONFIGURED WITH OR WITHOUT A NEUTRAL.
J. PRESET DIMMING: DIMMING FUNCTION SHALL BE VIA INDIVIDUAL BUTTONS PROGRAMMED WITH STATIC PRESET VALUES DEPICED IN SWITCH DETAILS.
K. CONCEAL ALL CONTROL DEVICES AND CABLING IN PAINTED AREAS OF EXPOSED STRUCTURE IN BOXES AND CONDUIT. SEE TYPICAL ROOM LIGHTING CONTROL ELEVATION.
L. CONTROLS SIGNALS SHALL BE VIA CLASS II LOW VOLTAGE CABLING (0-10VDC FOR DIMMING, 12/24VDC FOR LOCAL DEVICE NETWORK CONTROLS) UNLESS INDICATED AS LINE VOLTAGE. MAINTAIN PHYSICAL SEPARATION BETWEEN CLASS 2 LINE VOLTAGE (120/277V) AND LOW VOLTAGE (0-24VDC) CABLING.
M. WHERE MULTIPLE CONTROL DEVICES ARE NETWORKED LOCALLY OR TIME-BASED CONTROLS ARE REQUIRED, PROVIDE ALL SEGMENT MANAGERS, BRIDGES, GATEWAYS, NETWORK CABLING, BAS INTERFACE COMPONENTS, AND CABLING (WHERE REQUIRED).
N. BAS SYSTEM INTERFACE: DIV 23 CONTROLS PROVIDER SHALL PROGRAM EACH ROOM, SPACE OR RELAY AS A CONTROL POINT.
O. WHERE DIMMING DEVICES CONTROL MULTIPLE FIXTURE TYPES, PROVIDE SEPARATE (MULTI-ZONE) CONTROL RELAY AND 0-10VDC SIGNAL CABLING TO EACH FIXTURE TYPE.

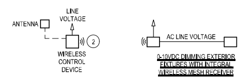
SPECIFIC NOTES:

1. SEE PLANS FOR MANUAL OR KEYED SWITCH(ES).
2. SEE PLANS FOR SPACES WITH PARTIAL SENSOR CONTROL AND PARTIAL TIME-BASED CONTROL (MAIN CORRIDORS).
3. EXTERIOR LIGHTING SHALL BE CONTROLLED VIA WIRELESS CONTROL SYSTEM. PROGRAM ALL CONTROL SEQUENCES AS NOTED.

CONTROL SEQUENCE:

1. OCCUPANCY SENSING (AUTO-ON TO 100%): LOADS TURN ON AUTOMATICALLY UPON OCCUPANT DETECTION. LOADS SHUT OFF WHEN SENSOR TIMES OUT.
2. VACANCY SENSING (MANUAL-ON TO 100%): LOCAL SWITCH(ES) TURN LOADS ON. LOADS SHUT OFF WHEN SENSOR TIMES OUT.
3. OCCUPANCY SENSING (AUTO ON TO 50%): LOADS TURN ON TO 50% OUTPUT AUTOMATICALLY UPON OCCUPANT DETECTION. MANUAL SWITCH ADJUSTS LOADS TO FULL OUTPUT. LOADS SHUT OFF WHEN SENSOR TIMES OUT.
4. MANUAL DIMMING: AUTO OR MANUAL-ON DEVICES TURN LOADS ON IN SPACE. PRESS-TO-HOLD DIMMING BUTTONS ADJUST LIGHT LEVELS THRU 0-10V RANGE. LOAD SHUTS OFF WHEN SENSOR TIMES OUT. LOADS RETURN TO PREVIOUS LIGHT LEVEL WHEN TURNED ON.
5. PRESET DIMMING: AUTO OR MANUAL-ON DEVICES TURN LOADS ON IN SPACE. PROGRAM PRESET DIMMING BUTTONS TO LIGHT LEVELS INDICATED. LOAD SHUTS OFF WHEN SENSOR TIMES OUT (WHERE APPLICABLE). LOADS RETURN TO FULL BRIGHTNESS WHEN TURNED ON.
6. PRESET TUNABLE CONTROL: PROGRAM PRESET TUNABLE CONTROL BUTTONS TO COLOR TEMPERATURES INDICATED.
7. DAYLIGHT HARVESTING ZONES (WHERE APPLICABLE): PROVIDE AUTO-DIMMING OF ZONE PER AVAILABLE DAYLIGHT. MANUAL ON/OFF/DIMMING CONTROL OF DAYLIGHT AND NON-DAYLIGHT FIXTURES SHALL BE SYNCHRONIZED.
8. TIME-BASED CONTROLS: CONTROLS SHALL KEEP LIGHTS IN SPACE ON DURING TIMES DESIGNATED BY OWNER. PROGRAM INTERIOR CONTROLS WITH MANUAL TWO-HOUR OVERRIDE VIA KEYED LOW-VOLTAGE SWITCHES.
9. OCCUPANCY SENSING (AUTO-ON TO 100%) FOR OFF-HOURS: WHEN OUTSIDE OF TIME-BASED ON-PERIOD (AS DESIGNATED BY OWNER), LOADS TURN ON AUTOMATICALLY UPON OCCUPANT DETECTION AND SHUT OFF WHEN SENSOR TIMES OUT.
10. EXTERIOR LIGHTING CONTROL SEQUENCE: BAS SYSTEM ASTRONOMIC TIMECLOCK SHALL PERFORM BASIC ON-AT-DUSK/OFF-AT DAWN FUNCTION FOR ALL EXTERIOR LIGHT FIXTURES, INCLUDING AREA LIGHTING, BOLLARDS (IF APPLICABLE), CANOPY FIXTURES (SURFACEMOUNT OR RECESSED CANS) AND FLOODLIGHTS.
11. TIME-BASED CONTROLS: CONTROLS SHALL PROVIDE ON/OFF SWEEPS AT TIMES DESIGNATED BY OWNER. PROGRAM INTERIOR CONTROLS WITH FIVE MINUTE 'BLINK WARNING' PRIOR TO OFF-SWEEP AND MANUAL TWO-HOUR OVERRIDE VIA KEYED LOW-VOLTAGE SWITCHES.

3A / E6.1 LIGHTING CONTROL SUMMARY AND KEY
NO SCALE



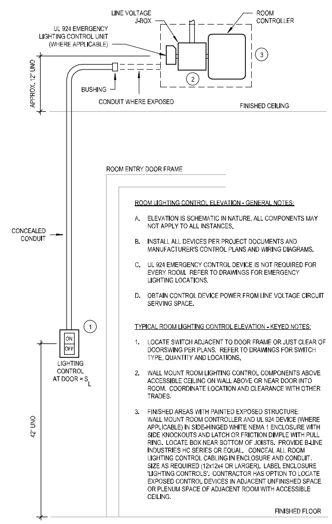
EXTERIOR LIGHTNG CONTROL GENERAL NOTES:

A. SEE LIGHTING CONTROL SCHEDULE FOR CONTROL SEQUENCES.
B. DIAGRAM IS SCHEMATIC IN NATURE. REFER TO CONTROL DEVICE MANUFACTURER'S WIRING DIAGRAMS DEPICTING ALL REQUIRED COMPONENTS, LINE AND LOW VOLTAGE INTERCONNECTIONS, CABLING TYPES AND CONTROL DEVICES. SEE LIGHT FIXTURE SCHEDULE FOR CONTROL COMPONENTS INTEGRAL TO FIXTURES. PROVIDE ALL LINE AND LOW VOLTAGE CONNECTIONS.
C. QUANTITY AND LOCATION OF CONTROL DEVICES WILL VARY BASED ON SYSTEM BEING PROVIDED.
D. CONSULT MANUFACTURER FOR SIZING OF 0-10VDC CONTROL WIRING FROM DEVICES TO FIXTURES BASED ON PROPOSED CABLE ROUTING.

EXTERIOR LIGHTING CONTROL KEYED NOTES:

1. LOCATE CONTROL DEVICE IN ELECTRICAL ROOM AT PANEL SERVING EXTERIOR LIGHTING CIRCUIT(S). PROVIDE ENGRAVED 'EXTERIOR LIGHTING CONTROLS' LABEL AT CONTROL DEVICE OR ENCLOSURE.
2. PROVIDE QUANTITY OF WIRELESS CONTROL DEVICES REQUIRED FOR COMPLETE WIRELESS CONTROL COVERAGE AS SHOWN IN DRAWINGS.

2D / E6.1 EXTERIOR LIGHTING CONTROL
NO SCALE



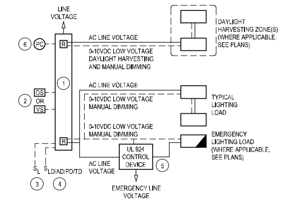
ROOM LIGHTING CONTROL ELEVATION - GENERAL NOTES:

A. ELEVATION IS SCHEMATIC IN NATURE, ALL COMPONENTS MAY NOT APPLY TO ALL INSTANCES.
B. INSTALL ALL DEVICES PER PROJECT DOCUMENTS AND MANUFACTURER'S CONTROL PLANS AND WIRING DIAGRAMS.
C. UL 924 EMERGENCY CONTROL DEVICE IS NOT REQUIRED FOR EVERY ROOM. REFER TO DRAWINGS FOR EMERGENCY LIGHTING LOCATIONS.
D. OBTAIN CONTROL DEVICE POWER FROM LINE VOLTAGE CIRCUIT SERVING SPACE.

TYPICAL ROOM LIGHTING CONTROL ELEVATION - KEYED NOTES:

1. LOCATE SWITCH ADJACENT TO DOOR FRAME OR JUST CLEAR OF DOORSWING PER PLANS. REFER TO DRAWINGS FOR SWITCH TYPE, QUANTITY AND LOCATIONS.
2. WALL MOUNT ROOM LIGHTING CONTROL COMPONENTS ABOVE ACCESSIBLE CEILING ON WALL ABOVE OR NEAR DOOR INTO ROOM. COORDINATE LOCATION AND CLEARANCE WITH OTHER TRADES.
3. FINISHED AREAS WITH PAINTED EXPOSED STRUCTURE: WALL MOUNT ROOM CONTROLLER AND UL 924 DEVICE (WHERE APPLICABLE) IN SIDE-HINGED WHITE NEMA 1 ENCLOSURE WITH SIDE KNOCKOUTS AND LATCH OR FRICTION DIMPLE WITH PULL RING. LOCATE BOX NEAR BOTTOM OF JOISTS. PROVIDE B-LINE INDUSTRIES HC SERIES OR EQUAL. CONCEAL ALL ROOM LIGHTING CONTROL CABLING IN ENCLOSURE AND CONDUIT. SIZE AS REQUIRED (12x12x4 OR LARGER). LABEL ENCLOSURE 'LIGHTING CONTROLS'. CONTRACTOR HAS OPTION TO LOCATE EXPOSED CONTROL DEVICES IN ADJACENT UNFINISHED SPACE OR PLENUM SPACE OF ADJACENT ROOM WITH ACCESSIBLE CEILING.

2E / E6.1 ROOM LIGHTING CONTROL ELEVATION
NO SCALE



ROOM LIGHTNG CONTROL GENERAL NOTES:

A. SEE LIGHTING CONTROL SCHEDULE FOR CONTROL SEQUENCES.
B. DIAGRAM IS SCHEMATIC IN NATURE. REFER TO CONTROL DEVICE MANUFACTURER'S WIRING DIAGRAMS DEPICTING ALL REQUIRED COMPONENTS, LINE AND LOW VOLTAGE INTERCONNECTIONS, CABLING TYPES AND CONTROL DEVICES, BOTH STAND-ALONE AND INTEGRAL TO FIXTURES (OPTIONAL). PROVIDE ALL LINE AND LOW VOLTAGE CONNECTIONS.
C. QUANTITY, TYPES AND LOCATIONS OF CONTROL DEVICES WILL VARY BASED ON CONTROL SYSTEM BEING PROVIDED AND INDIVIDUAL SPACE REQUIREMENTS. SEE PLANS FOR SWITCH LOCATIONS AND QUANTITIES WITHIN EACH SPACE.
D. SEE PLANS FOR INDIVIDUAL SPACES WITH EMERGENCY LIGHTING. PROVIDE UL 924 CONTROL DEVICE FOR EACH SPACE.
E. SEE PLANS FOR DAYLIGHT HARVESTING ZONES WITHIN EACH SPACE (FIXTURES ENCLOSED IN DASHED LINES).

ROOM LIGHTING CONTROL KEYED NOTES:

1. LIGHTING CONTROL DEVICES MAY INCLUDE ROOM CONTROLLER(S), POWER PACKS AND RELAYS.
2. LOW VOLTAGE OCCUPANCY (AUTO ON/OFF) OR VACANCY (MANUAL ON/AUTO OFF) SENSOR-BASED CONTROL DEVICES. SEE LIGHTING CONTROL SCHEDULE FOR TYPE. QUANTITY, TECHNOLOGY, TYPE AND LOCATION SHALL BE PER CONTROL SYSTEM PROVIDER'S PREPARED DRAWING SUBMITTALS. DEVICES SHOWN ON PLANS AND CONTROL SCHEDULE DEPICT GENERAL DESIGN INTENT.
3. LOW VOLTAGE ON/OFF CONTROL SWITCHES: PROVIDE CONNECTION BETWEEN SWITCHES OR FROM SWITCHES TO CONTROL DEVICES PER MANUFACTURER' RECOMMENDATION.
4. LOW VOLTAGE ON/OFF/DIMMING/TUNABLE LIGHTING CONTROL SWITCHES: PROVIDE CONNECTION FROM SWITCHES TO CONTROL DEVICES AND FROM CONTROL DEVICES TO DIMMING/TUNABLE LOADS AS REQUIRED.
5. UL 924 CONTROL DEVICE SHALL SENSE SWITCHING SIGNAL SUCH THAT EMERGENCY LIGHTING LOAD OPERATES THE SAME AS ALL OTHER FIXTURES IN ADJACENT SPACE OR ZONE. UPON SENSING POWER LOSS, EMERGENCY FIXTURES SHALL TURN ON TO FULL BRIGHTNESS.
6. DAYLIGHT HARVESTING PHOTOCELL SHALL SENSE AMBIENT LIGHT LEVELS AND ADJUST FIXTURE OUTPUT TO MAINTAIN DAYLIGHT TARGET FOOTCANDLE LEVEL. MANUAL DIMMING SIGNAL SHALL TAKE PRECEDENCE OVER PHOTOCELL INPUT.

2F / E6.1 GENERAL ROOM LIGHTING CONTROL
NO SCALE

ILC Lighting Controls Quotation and Layout Notes:

Quotation based on ILC layout only. Any changes will require a revised quotation. All efforts were made to meet the design intent of the lighting controls for the project.

LightLEEDer EVO-TC Controllers provided will control switched loads or 0-10V dimmable drivers & ballasts only. Other types of dimming controls are available at additional cost and will require a revised quotation.

EVO-TC Controllers shared between rooms where feasible.

LightSync G3 1 - 7 Button switches, LSG3 1 - 6 Zone MZD (Multi Zone Dimmer) switches and LSG3 1 - 5 scene switches are all available at the same cost. Please review and revise button / zone requirements prior to placing order.

Stainless steel faceplates and / or multi-gang faceplates, if required, are provided by others.

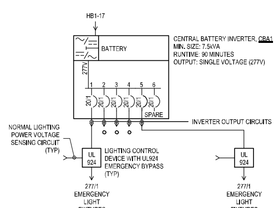
PC / Laptop / Server for lighting control software is provided by others.

Cat5/5e/6 cables with RJ-45 connectors are provided by others.

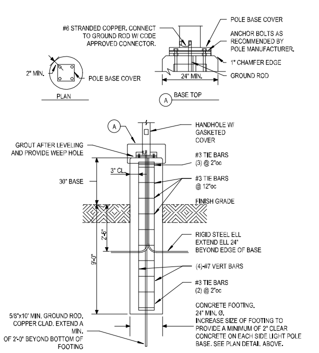
All line voltage switches are provided by others.

Occupancy sensor adjustments are the responsibility of the Electrical Contractor.

One man, one trip, one day by a factory trained technician is provided for start-up and user training. Additional days / trips are available at additional cost.



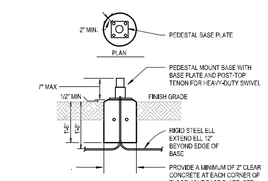
4B / E6.1 CENTRAL BATTERY INVERTER W/ VFD & MD'S
NO SCALE



LIGHT POLE BASE GENERAL NOTES :

1. MAINTAIN 3" CLEARANCE BETWEEN GROUND ROD & REBARS AND/OR TIES.
2. EARTH-FORM BASE FROM 12" BELOW FINISH GRADE.
3. FEEDER CONDUITS SHALL BE CENTERED IN BOLT CIRCLE AND EXTEND 2" ABOVE CONCRETE BASE TOP.
4. GROUND ROD SHALL BE LOCATED ADJACENT TO CONDUIT AND EXTEND 2 1/2" ABOVE CONCRETE BASE TOP.
5. EXPOSED THREADS OF ANCHOR BOLTS AND ENDS OF CONDUITS SHALL BE CLEAN AND FREE OF CONCRETE.
6. BASE TOP SHALL BE LEVEL.
7. WIDTH OF CONCRETE BASE SHALL BE AS SHOWN IN PLAN DETAIL ABOVE. DIMENSION SHOWN (18") IS MINIMUM AND MAY INCREASE WITH THE ACTUAL POLE SELECTED. VERIFY THE POLE BASE DIMENSION BEFORE FORMING BASE.

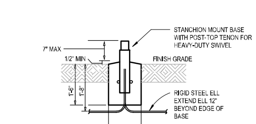
5A / E6.1 LIGHT POLE BASE
NO SCALE



FLOODLIGHT PEDESTAL BASE GENERAL NOTES:

A. FEEDER CONDUITS AND PEDESTAL BASE SHALL BE CENTERED IN CONCRETE BASE.
B. CONCRETE TOP SHALL BE LEVEL.
C. VERIFY DIMENSIONS WITH FIXTURE MANUFACTURER.

(A) PEDESTAL SECTION

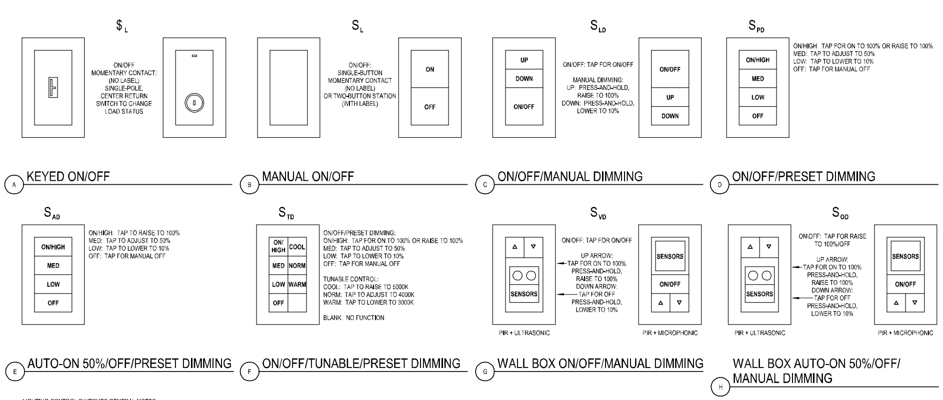


FLOODLIGHT STANCHION MOUNT GENERAL NOTES:

A. FEEDER CONDUITS AND STANCHION MOUNT SHALL BE CENTERED IN CONCRETE BASE.
B. CONCRETE TOP SHALL SLOPE AWAY FROM STANCHION FOR DRAINAGE.

(B) STANCHION SECTION

5B / E6.1 FLOODLIGHT BASE
NO SCALE



LIGHTING CONTROL SWITCHES GENERAL NOTES:

A. SWITCHES SHALL BE MANUAL-ON/AUTO-OFF UNLESS NOTED AS AUTO-ON.
B. ALL LABELING SHALL BE FACTORY ENGRAVED. SYSTEM SUPPLIER SHALL PROVIDE ENGRAVING FORM FOR EACH APPLICABLE SWITCH CONFIGURATION.
C. ALL SENSORS SHALL BE CONFIGURED FOR 20-MINUTE DELAY TO OFF UNLESS DIRECTED OTHERWISE BY OWNER.
D. WALL PLATES SHALL BE 302SS WITH OPENING SIZED FOR SWITCH. DISCARD VINYL WALL PLATES FURNISHED WITH DEVICE.
E. DETAILS SHOWING TWO CONFIGURATIONS REPRESENT DIFFERENT MANUFACTURER'S METHODS FOR PROVIDING REQUIRED FUNCTIONS.
F. NON-DIMMING WALL BOX SENSORS (NOT SHOWN): PROVIDE MANUFACTURER'S STANDARD SINGLE-BUTTON LINE VOLTAGE CONFIGURATION WITH APPLICABLE SENSORS.

5D / E6.1 LIGHTING CONTROL SWITCHES
NO SCALE

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- NOT FOR CONSTRUCTION -

DUTCHESS STADIUM IMPROVEMENTS PHASE II & III
OWNER: DUTCHESS COUNTY, 22 MARKET STREET POUGHKEEPSIE, NY 12601
COUNTY PROJECT #RFB-DCB-22-21
1500 ROUTE 9D, FISHKILL, NY 12590

BID SET
11.10.21
REVISIONS
1 ADDENDUM 04 01/06/21

57-21113-00

ELECTRICAL DETAILS

E6.1

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	KEY PARAMETERS	VOLT	DIMMING / CONTROL	MOUNTING	DESCRIPTION	SPEC. NOTES
E13	ACUITY (LITHONIA) COOPER (McGRAW EDISON) HUBBELL (BEACON) SIGNIFY (GARDCO)	DSX0 LED * GLEON-AF-* VP-S-* ECF-S-*	COLOR TEMP.: 4000K CRI (MIN.): 70 LUMENS (MIN): 6,700 LPW (MIN): 100 VA (MAX): 75	UNV	0-10V TO 10% INTEGRAL WIRELESS CONTROL DEVICE	POLE 15' ROUND STRAIGHT STEEL	AREA LIGHT - PEDESTRIAN SCALE DISTRIBUTION: E12=TYPE II, E13=TYPE III, E14=TYPE IV DIE-CAST ALUMINUM FRAME AND HEAT SINK, IP65 RATED MAX. BUG RATINGS: TYPE II/III/IV = B2-U0-G2 USEFUL LIFE 50,000 HRS @L70 FINISH: BLACK	4
E23	ACUITY (LITHONIA) COOPER (McGRAW EDISON) HUBBELL (BEACON) SIGNIFY (GARDCO)	DSX2 LED * GLEON-AF-* VP-L-* ECF-S-*	COLOR TEMP.: 4000K CRI (MIN.): 70 LUMENS (MIN): 19,500 LPW (MIN): 100 VA (MAX): 225	UNV	0-10V TO 10% INTEGRAL WIRELESS CONTROL DEVICE	POLE 25' ROUND STRAIGHT STEEL W/ VIBRATION DAMPENER W = WALL-MOUNT HARDWARE	AREA LIGHT DISTRIBUTION: E22=TYPE II, E23=TYPE III, E24=TYPE IV, E25=TYPE V DIE-CAST ALUMINUM FRAME AND HEAT SINK, IP65 RATED MAX. BUG RATINGS: TYPE II = B3-U0-G4, TYPE III/IV/V = B3-U0-G5 USEFUL LIFE 50,000 HRS @L70 FINISH: BLACK	4
E34	LUMENPULSE EQUAL	LQS-* EQUAL	COLOR TEMP.: 4000K CRI (MIN.): 70 LUMENS (MIN): 1,050 LPW (MIN): 70 VA (MAX): 15	UNV	NON-DIM	WALL (BEAM) ADJUSTABLE KNUCKLE FOR AIMING	EXTERIOR LOW PROFILE RECTANGULAR WALL PACK WITH ROUNDED CORNER DIE-CAST ALUMINUM HOUSING AND DOOR FRAME, IP66 RATING IMPACT-RESISTANT CLEAR TEMPERED GLASS LENS FLOOD-TYPE DISTRIBUTION (40-DEGREE BEAM SPREAD), ADJUSTABLE AIMING KNUCKLE USEFUL LIFE 250,000 HRS @L70 FINISH: BLACK	
E43 E43X E44 E44X	ACUITY (LITHONIA) COOPER (McGRAW EDISON) HUBBELL (BEACON) SIGNIFY (GARDCO)	DSXW1 LED * GWC * TRV-D * PWS *	COLOR TEMP.: 4000K CRI (MIN.): 70 LUMENS (MIN): 5,300 LPW (MIN): 100 VA (MAX): 60	UNV	0-10V TO 10%	WALL 12' AFF UNO ON PLANS X= BATTERY	EXTERIOR WALL PACK DISTRIBUTION E42=TYPE II, E43=TYPE III, E44=TYPE IV DIE-CAST ALUMINUM FRAME AND HEAT SINK, IP65 RATED MAX. BUG RATINGS: TYPE II = B2-U0-G2, TYPE III/IV = B1-U0-G2 USEFUL LIFE 50,000 HRS @L70 FINISH: BLACK	
E81	BEGA FC LIGHTING LIGMAN LIGHTING USA	33 165 * FCSL101-* ULE-40721-*	COLOR TEMP.: 4000K CRI (MIN.): 80 LUMENS (MIN): 400 LPW (MIN): 35 VA (MAX): 15	UNV	NON-DIM	RECESSED CONCRETE POUR	STEP LIGHT DIE-CAST ALUMINUM MARINE GRADE HOUSING, IP 65 RATED FINISH: BLACK FROSTED OR OPAL GLASS LENS USEFUL LIFE 50,000 HRS @L70	3
E104	STRUCTURA EQUAL	LINW-* EQUAL	COLOR TEMP.: 4000K CRI (MIN.): 70 LUMENS (MIN): 2,950 LPW (MIN): 70 VA (MAX): 40	UNV	0-10V TO 10% INTEGRAL WIRELESS CONTROL DEVICE	WALL (COLUMN)	RECTANGULAR WALL-MOUNTED AREA LIGHT DISTRIBUTION: E104 = TYPE IV DIE-CAST ALUMINUM FRAME, WET LOCATION LISTED MAX. BUG RATING: TYPE IV = B1-U0-G1 USEFUL LIFE 90,000 HRS @L70 FINISH: BLACK	
E114	ACUITY (LITHONIA) COOPER (McGRAW EDISON) HUBBELL (BEACON) SIGNIFY (GARDCO)	DSX2 LED * GLEON-AF-* VP-L-* ECF-S-*	COLOR TEMP.: 5000K CRI (MIN.): 80 LUMENS (MIN): 70,000 LPW (MIN): 110 VA (MAX): 600	UNV	0-10V TO 10% INTEGRAL WIRELESS CONTROL DEVICE	POLE 15' ROUND STRAIGHT STEEL	AREA LIGHT DISTRIBUTION: E22=TYPE II, E23=TYPE III, E24=TYPE IV, E25=TYPE V DIE-CAST ALUMINUM FRAME AND HEAT SINK, IP65 RATED MAX. BUG RATINGS: TYPE II = B3-U0-G4, TYPE III/IV/V = B3-U0-G5 USEFUL LIFE 50,000 HRS @L70 FINISH: BLACK	4
E115	LSI INDUSTRIES EQUAL	OPS * (DRIVE DOWN TO 1000 DELIVERED LUMENS) EQUAL	COLOR TEMP.: 4000K CRI (MIN.): 70 LUMENS (MIN): 1,000 LPW (MIN): 125 VA (MAX): 10	UNV	NON-DIM	SURFACE	16-INCH OUTDOOR CIRCULAR PUCK DOWNLIGHT - MEDIUM DISTRIBUTION: E115 = TYPE V DIE-CAST ALUMINUM HOUSING, IP66 RATED MAX. BUG RATINGS: TYPE V = B1-U0-G1 USEFUL LIFE 50,000 HRS @L70 FINISH: BLACK	
P62	ACUITY (GOTHAM) COOPER (PORTFOLIO) SIGNIFY (LIGHTOLIER)	EVO CYL * LSR* C6*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 2,400 LPW (MIN): 85 VA (MAX): 35	UNV	0-10V TO 10%	PENDANT	6-INCH PENDANT CYLINDER - MEDIUM ALUMINUM HOUSING, MATTE WHITE FINISH FROSTED ACRYLIC LENS RIGID STEM MOUNTING, FIELD CUT TO LENGTH PER PLANS SM/H RATIO OF 1.0 MIN. USEFUL LIFE 50,000 HRS @L70	
P110	DELRAY LIGHTING EQUAL	BG67543/CR * EQUAL	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 2,000 LPW (MIN): 80 VA (MAX): 150	UNV	0-10V TO 10%	PENDANT	DECORATIVE BOWL PENDANT SCREW-IN LED LAMP FINISH: BRONZE	
P111	DELRAY LIGHTING EQUAL	BG67543/CR * EQUAL	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 1,000 LPW (MIN): 80 VA (MAX): 100	UNV	0-10V TO 10%	PENDANT	PENDANT CONE SCREW-IN LED LAMP FINISH: BRONZE	
P200	TURF EQUAL	BEAM LED-* EQUAL	COLOR TEMP.: 3500K CRI (MIN.): 70 LUMENS/FT: 500 LPW (MIN): 110 VA/FT (MAX): 20	UNV	0-10V TO 10%	PENDANT	8-INCH DEEP, 3-INCH WIDE CEILING BAFFLE LINEAR DIRECT PENDANT, LENGTH PER PLAN POLYESTER FELT HOUSING FINISH TO MATCH SURROUNDING BAFFLES AS SHOWN ON PLANS SATIN OR FROSTED FLUSH ACRYLIC LENS AIRCRAFT CABLE SUSPENSION USEFUL LIFE 50,000 HRS @L80	
P201	TURF EQUAL	BEAM LED-* EQUAL	COLOR TEMP.: 3500K CRI (MIN.): 70 LUMENS/FT: 1,000 LPW (MIN): 100 VA/FT (MAX): 40	UNV	0-10V TO 10%	PENDANT	8-INCH DEEP, 3-INCH WIDE CEILING BAFFLE LINEAR DIRECT PENDANT, LENGTH PER PLAN POLYESTER FELT HOUSING FINISH TO MATCH SURROUNDING BAFFLES AS SHOWN ON PLANS SATIN OR FROSTED FLUSH ACRYLIC LENS AIRCRAFT CABLE SUSPENSION USEFUL LIFE 50,000 HRS @L80	
R31	ACUITY (LITHONIA) COOPER (METALUX) HUBBELL (COLUMBIA) SIGNIFY (DAY-BRITE) WILLIAMS	EPANL * 24FP* CFP* 2FPZ* LP-*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 4,000 LPW (MIN): 100 VA (MAX): 45	UNV	0-10V TO 10%	RECESS GRID	2x4 FLAT PANEL EXTRUDED ALUMINUM HOUSING / REFLECTOR MATTE WHITE FINISH FROSTED ACRYLIC OR PMMA LENS USEFUL LIFE 50,000 HRS @L70	
R35	ACUITY (LITHONIA) COOPER (METALUX) HUBBELL (COLUMBIA) SIGNIFY (DAY-BRITE) WILLIAMS	EPANL * 22FP* CFP22* 2FXP* (UNDER DRIVE TO 3000 LUMENS) LP-* (UNDER DRIVE TO 3000 LUMENS)	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 3,000 LPW (MIN): 105 VA (MAX): 40	UNV	0-10V TO 10%	RECESS GRID	2x2 FLAT PANEL EXTRUDED ALUMINUM HOUSING / REFLECTOR MATTE WHITE FINISH FROSTED ACRYLIC OR PMMA LENS USEFUL LIFE 50,000 HRS @L70	
R36	ACUITY (LITHONIA) COOPER (METALUX) HUBBELL (COLUMBIA) SIGNIFY (DAY-BRITE) WILLIAMS	EPANL * 22FP* CFP22* (UNDER DRIVE TO 4000 LUMENS) 2FXP* LP-*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 4,000 LPW (MIN): 105 VA (MAX): 45	UNV	0-10V TO 10%	RECESS GRID	2x2 FLAT PANEL EXTRUDED ALUMINUM HOUSING / REFLECTOR MATTE WHITE FINISH FROSTED ACRYLIC OR PMMA LENS USEFUL LIFE 50,000 HRS @L70	
R40	A-LIGHT ARCHITECTURAL LIGHTING WORKS AXIS FINELITE LUMENWERX METALUMEN	D5-* LP3.5R*-*-EXT-* (UNDER DRIVE TO 400 LUMENS/FT) BBRLED-* HP-4-R-* VIARF-* RM4D-*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS/FT (MIN): 400 LPW (MIN): 85 VA/FT (MAX): 5	UNV	0-10V TO 10%	RECESS GRID TYPE	4" WIDE RECESSED LED FIXTURE, LENGTH PER PLAN EXTRUDED ALUMINUM RAILS, BACK CHANNELS, AND END CAPS MATTE WHITE FINISH SATIN OR FROSTED FLUSH ACRYLIC LENS USEFUL LIFE 50,000 HRS @L70	
R42	A-LIGHT ARCHITECTURAL LIGHTING WORKS AXIS FINELITE LUMENWERX METALUMEN	D5-* LP3.5R*-*-EXT-* BBRLED-* HP-4-R-* VIARF-* RM4D-*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS/FT (MIN): 900 LPW (MIN): 85 VA/FT (MAX): 15	UNV	0-10V TO 10%	RECESS GRID TYPE	4" WIDE RECESSED LED FIXTURE, LENGTH PER PLAN EXTRUDED ALUMINUM RAILS, BACK CHANNELS, AND END CAPS MATTE WHITE FINISH SATIN OR FROSTED FLUSH ACRYLIC LENS USEFUL LIFE 50,000 HRS @L70	
R60	ACUITY (GOTHAM) COOPER (PORTFOLIO) SIGNIFY (LIGHTOLIER)	EVO* LD6B* C6RN*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 1,000 LPW (MIN): 90 VA (MAX): 15	UNV	0-10V TO 10%	RECESS	6-INCH DOWNLIGHT - MEDIUM SELF-FLANGED SEMI-SPECULAR FINISHING TRIM SM/H RATIO OF 1.0 MIN. USEFUL LIFE 60,000 HRS @L70	
R61	ACUITY (GOTHAM) COOPER (PORTFOLIO) SIGNIFY (LIGHTOLIER)	EVO* LD6B* C6RN*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 1,500 LPW (MIN): 85 VA (MAX): 25	UNV	0-10V TO 10%	RECESS	6-INCH DOWNLIGHT - MEDIUM SELF-FLANGED SEMI-SPECULAR FINISHING TRIM SM/H RATIO OF 1.0 MIN. USEFUL LIFE 60,000 HRS @L70	
R62	ACUITY (GOTHAM) COOPER (PORTFOLIO) SIGNIFY (LIGHTOLIER)	EVO* LD6B* C6RN*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 2,400 LPW (MIN): 85 VA (MAX): 30	UNV	0-10V TO 10%	RECESS	6-INCH DOWNLIGHT - MEDIUM SELF-FLANGED SEMI-SPECULAR FINISHING TRIM SM/H RATIO OF 1.0 MIN. USEFUL LIFE 60,000 HRS @L70	
R63	ACUITY (GOTHAM) COOPER (PORTFOLIO) SIGNIFY (LIGHTOLIER)	EVO* LD6B* (UNDER DRIVE TO 3500 LUMENS) C6RN* (UNDER DRIVE TO 3500 LUMENS)	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 3,500 LPW (MIN): 85 VA (MAX): 45	UNV	0-10V TO 10%	RECESS	6-INCH DOWNLIGHT - MEDIUM SELF-FLANGED SEMI-SPECULAR FINISHING TRIM SM/H RATIO OF 1.0 MIN. USEFUL LIFE 60,000 HRS @L70	
R64	ACUITY (GOTHAM) COOPER (PORTFOLIO) SIGNIFY (LIGHTOLIER)	EVO* LD4B* C4RN*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 1,000 LPW (MIN): 90 VA (MAX): 15	UNV	0-10V TO 10%	RECESS	4-INCH DOWNLIGHT - MEDIUM SELF-FLANGED SEMI-SPECULAR FINISHING TRIM SM/H RATIO OF 1.0 MIN. USEFUL LIFE 60,000 HRS @L70	
R200F	A-LIGHT ARCHITECTURAL LIGHTING WORKS AXIS FINELITE LUMENWERX METALUMEN	D5-* LP3.5R*-*-EXT-* BBRLED-* HP-4-R-* VIARF-* RM4D-*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS/FT (MIN): 700 LPW (MIN): 80 VA/FT (MAX): 10	UNV	0-10V TO 10%	RECESS GRID TYPE F = FLANGE TYPE	4" WIDE RECESSED LED FIXTURE, LENGTH PER PLAN, CUSTOM CONFIGURATION PER PLAN EXTRUDED ALUMINUM RAILS, BACK CHANNELS, AND END CAPS MATTE WHITE FINISH SATIN OR FROSTED FLUSH ACRYLIC LENS USEFUL LIFE 50,000 HRS @L70	

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	KEY PARAMETERS	VOLT	DIMMING / CONTROL	MOUNTING	DESCRIPTION	SPEC. NOTES
S10	ACUITY (LITHONIA) COOPER (METALUX) HUBBELL (COLUMBIA) SIGNIFY (DAY-BRITE)	ZL1D-* 2SNLED-* LCL* FSS*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 2,700 LPW (MIN): 110 VA (MAX): 25	UNV	NON-DIM	SURFACE MTD IN ROOMS WITH CLGS CHAIN HANG AT 9-FT IN ROOMS W/O CLGS UNLESS NOTED OTHERWISE C = CHAIN-HANG	2-FT STRIP STEEL CHANNEL HOUSING MATTE WHITE FINISH WRAP AROUND FROSTED LENS, WIDE DISTRIBUTION. USEFUL LIFE 50,000 HRS @L70	
S11	ACUITY (LITHONIA) COOPER (METALUX) HUBBELL (COLUMBIA) SIGNIFY (DAY-BRITE)	ZL1D-* 4SNLED-* LCL* FSS*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 3,800 LPW (MIN): 120 VA (MAX): 45	UNV	NON-DIM	SURFACE MTD IN ROOMS WITH CLGS CHAIN HANG AT 9-FT IN ROOMS W/O CLGS UNLESS NOTED OTHERWISE C = CHAIN-HANG	4-FT STRIP STEEL CHANNEL HOUSING MATTE WHITE FINISH WRAP AROUND FROSTED LENS, WIDE DISTRIBUTION. USEFUL LIFE 50,000 HRS @L70	
S12 S12X	ACUITY (LITHONIA) COOPER (METALUX) HUBBELL (COLUMBIA) SIGNIFY (DAY-BRITE)	ZL1D-* 4SNLED-* LCL* FSS*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 5,500 LPW (MIN): 110 VA (MAX): 55	UNV	NON-DIM	SURFACE MTD IN ROOMS WITH CLGS CHAIN HANG AT 9-FT IN ROOMS W/O CLGS UNLESS NOTED OTHERWISE X = BATTERY	4-FT STRIP STEEL CHANNEL HOUSING MATTE WHITE FINISH WRAP AROUND FROSTED LENS, WIDE DISTRIBUTION. USEFUL LIFE 50,000 HRS @L70	
S30 S30X	COOPER (FAIL-SAFE) KENALL NEW STAR LC DOANE VISCOR (LEVITON)	HVL8-* (UNDER DRIVE TO 2800 LUMENS) MLHA8-* (UNDER DRIVE TO 2800 LUMENS) VIC-4N-* VSA-4-* (UNDER DRIVE TO 2800 LUMENS) VRSE-3556-*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 2,800 LPW (MIN): 100 VA (MAX): 35	UNV	NON-DIM	SURFACE X = BATTERY	4-FT WET LOCATION WRAP MARINE GRADE ALUMINUM HOUSING W/ DIE CAST END CAPS MATTE WHITE FINISH UV-STABILIZED HIGH IMPACT PEARLESCENT POLYCARBONATE LENS USEFUL LIFE 80,000 HRS @L70	
S31	COOPER (FAIL-SAFE) KENALL NEW STAR LC DOANE VISCOR (LEVITON)	HVL8-* MLHA8-* VIC-4N-* VSA-4-* VRSE-3556-*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 4,500 LPW (MIN): 95 VA (MAX): 55	UNV	NON-DIM	SURFACE	4-FT WET LOCATION WRAP MARINE GRADE ALUMINUM HOUSING W/ DIE CAST END CAPS MATTE WHITE FINISH UV-STABILIZED HIGH IMPACT PEARLESCENT POLYCARBONATE LENS USEFUL LIFE 80,000 HRS @L70	
S33	KENALL COOPER (FAIL-SAFE) LC DOANE VISCOR (LEVITON)	MLHA8-* HVL8-* VSA-4-* VRSE-3556-*	COLOR TEMP.: 3500K CRI (MIN.): 80 LUMENS (MIN): 9,000 LPW (MIN): 70 VA (MAX): 100	UNV	NON-DIM	SURFACE	4-FT WET LOCATION WRAP MARINE GRADE ALUMINUM HOUSING W/ DIE CAST END CAPS MATTE WHITE FINISH UV-STABILIZED HIGH IMPACT PEARLESCENT POLYCARBONATE LENS USEFUL LIFE 80,000 HRS @L70	
X1	ACUITY (LITHONIA) COOPER (SURE-LITES) HUBBELL (DUAL LITE) SIGNIFY (CHLORIDE)	LES W 1 R CX 6 1 WH R SE S R W 55L 1 W R	VA (MAX): 5	UNV	NON-DIM	WALL OR CLG AS INDICATED ON DRAWINGS	EXIT SIGN - ONE-SIDED WITH DIRECTIONAL CHEVRON ARROWS AS INDICATED ON DRAWINGS DIE CAST ALUMINUM HOUSING WHITE HOUSING, WHITE FACE, RED LETTERS UNIVERSAL MOUNT AC ONLY (NO BATTERY)	2
X2	ACUITY (LITHONIA) COOPER (SURE-LITES) HUBBELL (DUAL LITE) SIGNIFY (CHLORIDE)	LES W 2 R CX 6 2 WH R SE D R W 55L 2 W R	VA (MAX): 5	UNV	NON-DIM	WALL OR CLG AS INDICATED ON DRAWINGS	EXIT SIGN - TWO-SIDED WITH DIRECTIONAL CHEVRON ARROWS AS INDICATED ON DRAWINGS DIE CAST ALUMINUM HOUSING WHITE HOUSING, WHITE FACE, RED LETTERS UNIVERSAL MOUNT AC ONLY (NO BATTERY)	2
X3	ACUITY (LITHONIA) COOPER (SURE-LITES) HUBBELL (DUAL LITE) SIGNIFY (CHLORIDE)	LV S W 1 R 120/UNV UX6 1 R WH SEWL S R W 60MLA 1 R W	VA (MAX): 5	UNV	NON-DIM	WALL	EXIT SIGN - HIGH ABUSE - ONE-SIDED DIE CAST ALUMINUM HOUSING, CLEAR POLYCARBONATE LENS WHITE HOUSING, WHITE FACE, RED LETTERS ACCESSIBLE TEST SWITCH, MAGNETIC TEST SWITCH, OR KEY CHAIN LASER FOR REMOTE TESTING AC ONLY (NO BATTERY)	2
X4	ACUITY (LITHONIA) COOPER (SURE-LITES) HUBBELL (DUAL LITE) SIGNIFY (CHLORIDE)	LV S W 2 R 120/UNV UX6 2 R WH SEWL D R W 60MLA 3 R W	VA (MAX): 5	UNV	NON-DIM	CLG	EXIT SIGN - HIGH ABUSE - TWO-SIDED WITH DIRECTIONAL CHEVRON ARROWS AS INDICATED ON DRAWINGS DIE CAST ALUMINUM HOUSING, CLEAR POLYCARBONATE LENS WHITE HOUSING, WHITE FACE, RED LETTERS ACCESSIBLE TEST SWITCH, MAGNETIC TEST SWITCH, OR KEY CHAIN LASER FOR REMOTE TESTING AC ONLY (NO BATTERY)	2

LIGHT FIXTURE SCHEDULE NOTES

ABBREVIATIONS:

AC:ALTERNATING CURRENT
CLG:CEILING
CRI:COLOR RENDERING INDEX
ETD:EMERGENCY TRANSFER DEVICE
FC:FOOTCANDLES
FT:FOOT
INC.:INCANDESCENT
LPW:LUMENS PER WATT
M.H.:MOUNTING HEIGHT
MTD:MOUNTED
O.C.:ON-CENTER
PAF:PAINT AFTER FABRICATION
SM/H:SURFACE-TO-MOUNTING-HEIGHT RATIO
UNV:UNIVERSAL VOLTAGE
VA:VOLT-AMPERE
W/:WITH
W/O:WITHOUT

GENERAL NOTES:

A. FIXTURE MANUFACTURERS ARE LISTED ALPHABETICALLY AND NOT ACCORDING TO BASIS OF DESIGN.
B. PROVIDE UNITS MEETING FIXTURE SCHEDULE DESCRIPTION AND SPECIFICATION REQUIREMENTS. THE FIXTURE CATALOG NUMBER IS NOT COMPLETE; USE ONLY AS A GUIDELINE.
C. LUMEN VALUES IN KEY PARAMETERS COLUMN ARE MINIMUM DELIVERED LUMENS, INCLUDING OPTIONS AND ACCESSORIES.
D. DELIVERED LUMENS SHALL NOT EXCEED 25% OF MINIMUM VALUES.
E. ALL FIXTURES SHALL BE PAINTED AFTER FABRICATION.
F. PROVIDE METALLIC POLE BASE COVER, FINISH TO MATCH POLE AND FIXTURE HEADS.

SPECIFIC NOTES:

1. CIRCUIT FOR CONTINUOUS POWER UNLESS NOTED OTHERWISE (DO NOT TAP OFF SWITCHLEGS), WALL OR CEILING MOUNT AS INDICATED ON PLANS. PROVIDE DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS.
2. WALL MOUNTING HEIGHT SHALL BE 6" ABOVE TOP OF ADJACENT DOOR FRAME OR 7'-10" WHERE NO DOOR OR SOFFIT IS BELOW SIGN, UNLESS NOTED OTHERWISE ON DRAWINGS.
3. SEE LIGHTING CONTROL DETAILS AND/OR SCHEDULES AND RELAY PANEL SCHEDULES (WHERE APPLICABLE) FOR CONTROL REQUIREMENTS.
4. PEDESTAL (PREFERRED) OR STANCHION MOUNT ON CONCRETE BASE PER MANUFACTURER'S RECOMMENDATION.
5. PROVIDE MOUNTING HARDWARE AS REQUIRED TO RIGIDLY PENDANT MOUNT FIXTURE ACCORDING TO MANUFACTURER RECOMMENDATIONS. MOUNT SUCH THAT BOTTOM OF FIXTURE = BOTTOM OF JOISTS. NO HOOKS.
6. LOCATE REMOTE DRIVER (IF REQUIRED) IN NEAREST ACCESSIBLE PLENUM SPACE. DEVICE SHALL BE PLENUM-RATED OR IN NEMA 1 ENCLOSURE, LABEL DEVICE OR ENCLOSURE ACCORDING TO LOAD SERVED (I.E. 'DISPLAY CASE').
7. DALI/DMX TUNABLE DRIVER IS ACCEPTABLE. PROVIDE COMPATIBLE TUNABLE DIMMING CONTROL DEVICE IN LIEU OF SWITCH TYPES INDICATED ON PLANS. COORDINATE DEVICE ROUGH-IN.

INVERTER: CBA1

LOCATION: ELEC A119C | VOLTAGE: 277 1-PH
MIN SIZE: 7.5KVA | PHASES: 1
MAIN BREAKER: 40/1 | WIRES: 2
RUN TIME: 90 MINUTES | SCCR: 14K
FED FROM: H1A1

CKT	CIRCUIT DESCRIPTION	BKR TRIP	P	BKR TYPE	LOAD TYPE	LOAD (VA)	NOTES
1	L - EMERGENCY - EXTERIOR, CANOPY	20.0 A	1		L	215	
2	L - EMERGENCY - AREA A - LEVEL 1	20.0 A	1		L	2,565	
3	L - EMERGENCY - AREA A - LEVEL 2	20.0 A	1		L	1,095	
4	L - EMERGENCY - DECK	20.0 A	1		L	315	
5	(ALTERNATE #1) L - EMERGENCY - DECK	20.0 A	1		L	200	
6	SPARE	20.0 A	1		–	0	
					TOTAL LOAD:	4,385 VA	
					TOTAL AMPS:	16 A	

LOAD TYPE	LOAD DESCRIPTION	CONNECTED LOAD (VA)	DEMAND FACTOR	ESTIMATED DEMAND (VA)	PANEL TOTALS	
L	LIGHTING	4385 VA	125.00%	5481 VA	CONNECTED LOAD:	4 kVA
M	MOTOR	0 VA	0.00%	0 VA	ESTIMATED DEMAND:	5 kVA
O	OTHER	0 VA	0.00%	0 VA	CONNECTED CURRENT:	16 A
					EMD CURRENT:	19.8 A

NOTES:

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- NOT FOR CONSTRUCTION -

DUTCHESS STADIUM IMPROVEMENTS PHASE II & III

OWNER: DUTCHESS COUNTY, 22 MARKET STREET POUGHKEEPSIE, NY 12601
COUNTY PROJECT #RFB-DCB-22-21
1500 ROUTE 9D, FISHKILL, NY 12590

BID SET
11.10.21
REVISIONS

57-21113-00

ELECTRICAL SCHEDULES

E7.1

Lighting Control

Product Cut Sheets, Details, Installation, and Wiring Documents

INTELLIGENT LIGHTING CONTROLS, INC.

Energy Saving Lighting Controls

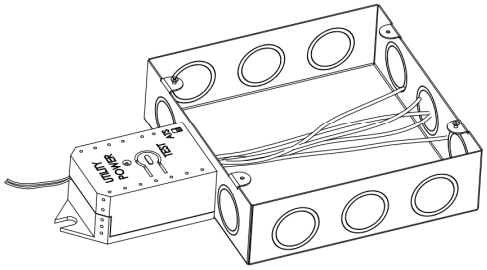
5229 Edina Industrial Boulevard
Minneapolis. Minnesota 55439
Phone 952 829 1900
FAX 952 829 1901
www.ilc-usa.com

EPC-A-2

UL924 Listed Emergency Power Control

Intended for Use with Switching Controls

*Mounting ears can be quickly removed with pliers to permit mounting using threaded hub.



2-1/2"(L) x 1-5/8"(W) x 1-3/8"(H)
(excluding ears/hub)

Field wiring leads: 7.5"

APPLICATION

In the past, emergency lights were kept on 24 hours a day to meet life safety codes. Now, you can use a UL 924 listed Emergency Power Control, Model EPC-A-2, to convert normal light fixtures into approved emergency lights. The EPC-A-2 saves energy and money while ensuring compliance with both life safety and energy codes.

During normal operation, the same switch, occupancy sensor, relay panel, or lighting control can switch normal and emergency fixtures on and off simultaneously.

During a utility power interruption, the EPC-A-2 automatically bypasses the normal lighting controls, turning the emergency lights ON, regardless of switch position.

The EPC-A-2 boasts a universal mount design with ears; allowing the device to be nipple, fixture, panel or box mounted. This enables the EPC-A-2 to adapt to the application requirements.

FEATURES

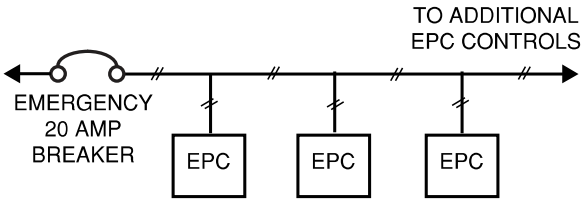
- Fire Alarm Override/Remote Test Switch input
- Utility Power Indicator LED
- Universal Mount Design:
  Contractor friendly design hub design similar to industry standard power packs for quick and easy installation.
- Unique, Patented Automatic Diagnostic
  When the room switch is turned off, the EPC-A-2 will run a 2.5 self-test routine, verifying that the emergency power source was available and that the EPC-A-2, ballast, and lamp(s) are all functioning correctly. This feature eliminates the need for time-consuming and costly manual monthly testing and is approved for this purpose. This also allows the unit to be installed in remote or inaccessible locations, because the unit does not rely on access to its manual test switch.Field selectable via "ATS" slider switch.

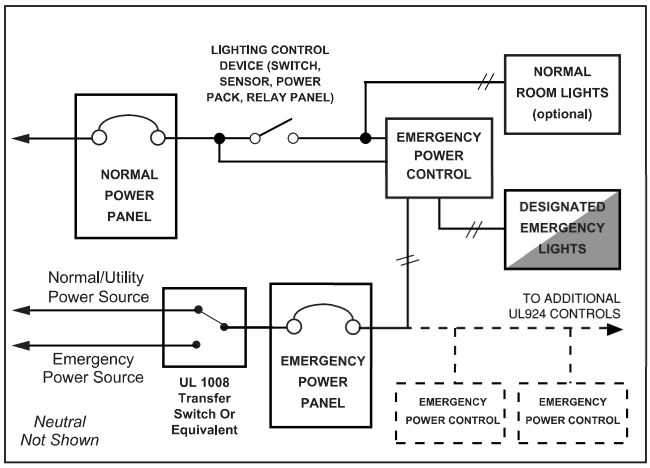
15007 Wicks Blvd. San Leandro, CA 94577 | 1-800-982-4587
techsupport@lvscontrols.com | www.lvscontrols.com
Specifications subject to change without notice.

5 YEAR WARRANTY | LED COMPATIBILE | UL924 LISTED

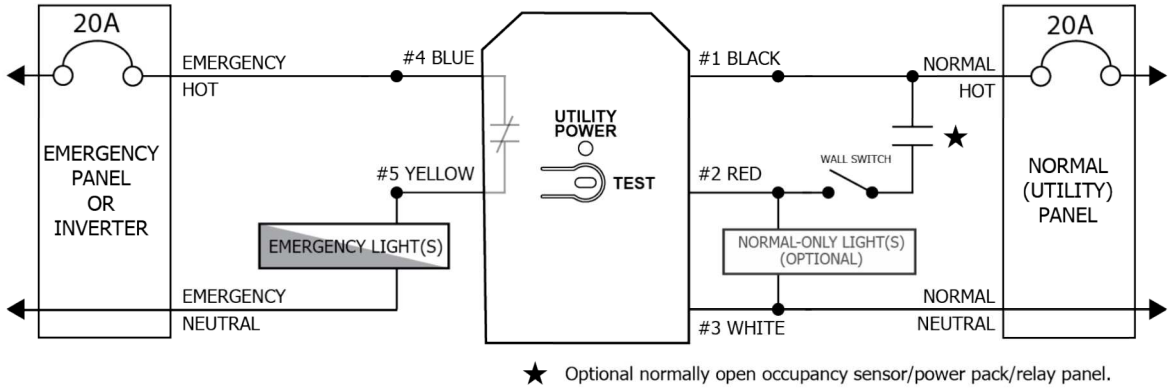
SINGLE LINE DRAWING

On a 20 Amp circuit, 1 emergency power control (EPC) can control up to 16 Amp of emergency lighting load, or 20 EPC's can each control 1 Amp of emergency lighting load. One EPC is required per switch leg or zone.





WIRING DIAGRAM



★ Optional normally open occupancy sensor/power pack/relay panel.

Contact factory for fire alarm override wiring detail.

SPECIFICATIONS

ELECTRICAL RATINGS	MODEL NUMBER	EPC-A-2
	SENSING VOLTAGE	120-240/277V
	LOAD VOLTAGE	120-277V
	BALLAST/DRIVER LOAD	16 Amp Electronic Ballast/LED Driver/General Use 5 Amp Magnetic Ballast
	INCANDESCENT LOAD	1800W (120V) / 3000W (277V) Normally Closed Output Contact
	WARRANTY	5 Year Limited Warranty

MECHANICAL	MOUNTING	Nipples on 1/2" KO
	PLENUM RATING	Plenum Rated. Tested to UL2043. UL94-5VA.
	SHIPPING WEIGHT/COLOR	4 oz. / Black
	TEMPERATURE	-40°C - 60°C (40°F - 140°F)
	BODY SIZE (without Hub/Ears)	2-1/2" x 1-5/8" x 1-3/8"
	BODY SIZE (with Hub/Ears)	3-5/8" x 1-5/8" x 1-3/8"

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Catalog Number:	Date:	Project:

intelligent lighting controls
A Cooper Lighting Solutions business

www.ilc-usa.com
952.829.1900

LightLEEDer **EVO**

Overview

The LightLEEDer EVO is a distributed lighting controller that simplifies installation. The LLEVO comes pre-programmed for 16 common lighting applications that can be selected by turning a dial. The LLEVO can operate as stand-alone or networked, reverting to stand-alone automatically if the network is interrupted. Easily connect up to 4 R20D relays, via CAT-5 or -6 cable, the R20D relay can control lighting loads with 0-10V dimming or receptacles. Programming can be easily modified using the ILC Pro Bluetooth app or LightLEEDer Pro software. The LLEVO can be expanded up to 20 zones by adding an LSEVO-RC, LSEVO-INT-2-RC, LSEVO-4X/8X or LSLVD.

Features

- **Made in the USA**
- **RJ45 Outputs** for up to 4 R20 relays
- **Plug-load** compatible
- **Remote** mounted relay for direct connection to loads
- **Galvanically Isolated** 0-10 dimming for 4 zones
- **Status LED and Override** buttons for remote relay control
- **Daylight Control** for up to two spaces by adding PC-IND sensors
- **Standalone** or networked with any LightLEEDer controller
- **Time clock** includes 7/365-day calendar, Daylight Savings Time, Astronomic, Open/Close
- **200mA** power provided for occupancy or vacancy sensors inputs
- **RJ45 connectors** for networking and CAT-5 devices
- **Enclosure**, suitable for plenum mounting

Warranty

Five-year limited warranty

Ordering

Controller

LLEVO-TC - ☐

Series: LightLEEDer EVO Distributed Control Panel - Time Clock

(Blank) = 120/277VAC
347 = 120/347VAC

LLEVO-TC-xx Rev.B

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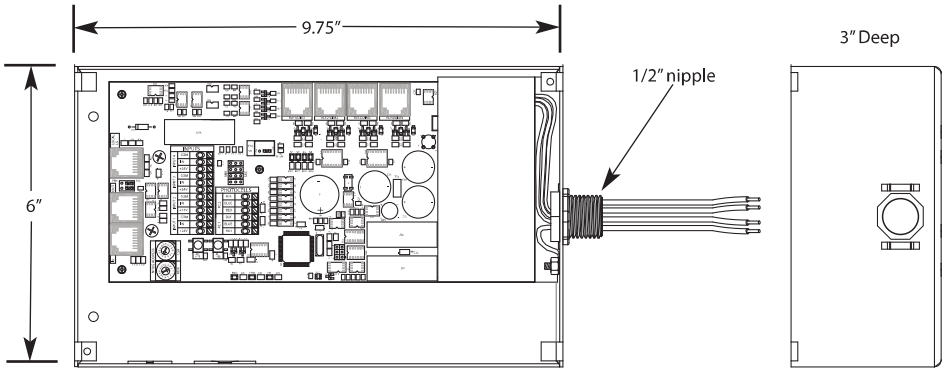
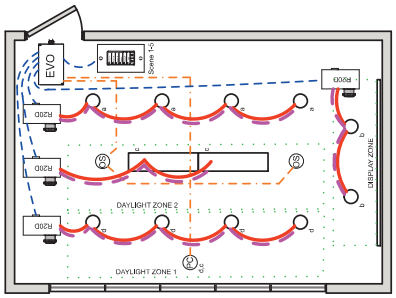
LightLEEDer | EVO

Physical





LLEVO Lighting Application: FC

WIRE LEGEND
- Line voltage
- 0-10V Dimming
- CAT-5e Data cable
- 3-Wire Occupancy Sensor or Photo Cell

Bill Of Material:

Qt:	Product:	Description:
1	LL-EVO	EVO Controller
4	R20D	Remote 20Amp Dimming relay
1	LSG3-WH-5-S	LightSync G3 5-Scene dimming digital switch station.
1	PC-IND	Photo Cell - Indoor.
2	ILC-SWX-221-1	Occupancy sensor Celling Dual Tech - 500sf

Specifications

Safeguards:
- Power surge and spike suppression up to 123 volts on the 20VAC power input to controller
- Memory retention for firmware and programming up to 200 years and electrostatic discharge to 4kv
- Real time clock retention 45 days or greater without power
- Galvanically isolation to 1500V for the 0-10VDC dimmer outputs, with revert to 100% on power loss

Physical:
- Enclosure: 9-3/4"x 6"x 3" NEMA 1
- Galvanized steel enclosure and screw cover
- Provided with pre-drilled mounting holes
- High voltage barrier separates Class 2 wiring
- ½" nipple for mounting to electrical box
- 6" wire leads for high voltage connections
- Push to connect low voltage terminals
- Color coded labels for easy terminal identification
- RJ45 connectors provide for easy connection
- Enclosure, suitable for plenum mounting

Integrated Interfaces:
- 4 inputs for hardwire switches or occupancy sensors
- Photocell controller for 2 sensor heads or zones
- RJ-45 port for up to 61 ILC CAT-5 devices
- 4 RJ-45 ports for R20 remote relays

Electrical:
- 120/277VAC @.6 amps (120/347VAC Optional)
- Input: 24 VDC (See below for details)
- Dimming: 100mA sink

Powered Devices/Distance/Input Power Draw:
4 CAT-5 devices, 400' accumulative feet, 200mA occupancy sensor power
5 CAT-5 devices, 500' accumulative feet, 160mA occupancy sensor power
6 CAT-5 devices, 600' accumulative feet, 120mA occupancy sensor power
7 CAT-5 devices, 700' accumulative feet, 90mA occupancy sensor power
8 CAT-5 devices, 800' accumulative feet, 60mA occupancy sensor power
Additional LightSync devices can be supported by adding a PSR.

Operating Environment:
- Location: Interior space
- Operating Temperature: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications and Approvals:
- UL and CUL listed
- FCC Part 15
- Title 24
- ASHRAE compliant
- IECC compliant

LLEVO-TC-xx Rev.B

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LightLEEDer | Network Controller

Overview

The LightLEEDer Network Controller module manages network activities including syncing panel clocks, and data between panels. It also manages communication between up to 254 panels, allows up to 254 LightSync devices on the panel network, and provides USB connection to a PC. In addition, it includes high-speed LightSync device scanning with data line power, single point gateway options, and TCP/IP to host communications. The LLNC can double stack on top of a processor in any panel, or is available in a NEMA 1 enclosure with a hinged locking door. This provides a remote panel with room for Gateways, PSR's, and other required devices.

Network Controller

Remote Network Controller W/ Hinged Locking Door

Features

- **Made in the USA**
- **Digital CAT-5 Ready**
- **Network** up to 254 panels
- **Communications** are controlled across the network
- **254 LightSync devices** permitted on the panel network
- **USB connection** throughout the network for programming and control
- **Installs directly** into any panel
- **Ribbon connectors** for easy installation into any panel
- **High speed LightSync device** scanner for fast communications
- **Ethernet port** for TCP/IP connection for programming and control
- **4 Gateways** ports for single point connections to the BAS system
- **Powers data line** for LightSync devices

Remote Network Controller Panel General Information:

- **Provided** with a NEMA 1 enclosure w/ hinged locking door
- **Segregates** Network Controller from lighting controller
- **Localizes** network access point to any control room
- **Mounts** anywhere on the LightSync network
- **Customize** with any of the available Gateways, PSR boards, or other devices. Contact ILC for more information

Warranty

Five-Year limited warranty

Ordering

Network Controller

LLNC - [ ] - [ ] - [ ]

Series: LightLEEDer Network Controller

WI = Web Access
Note: Not available in panel mount configurations

Type:
P = Panel
HLD = Hinged Locking Door)

(Blank) = 120/277VAC
347 = 120/347VAC

LLNC-xx Rev.B

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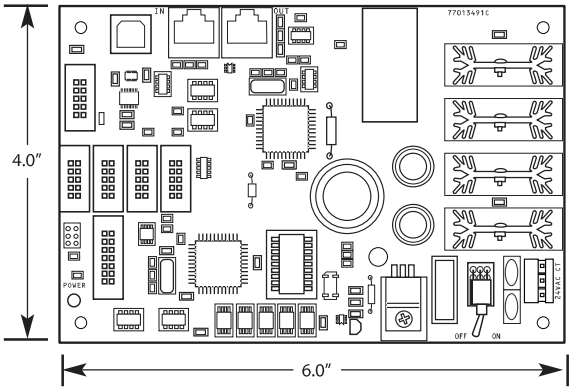
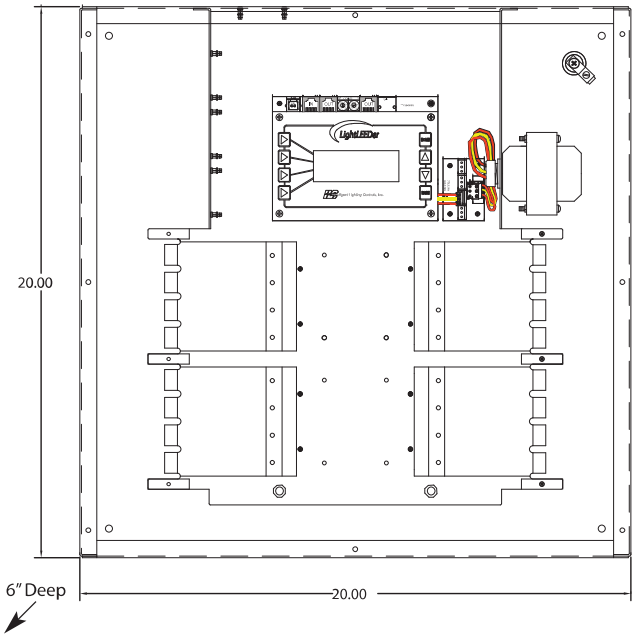
LightLEEDer | **Network Controller**

Physical

Network Controller (panel mount)



Remote Hinged Locking Door Enclosure



Specifications

Panel Mount:
- 6"Wide X 4"High
- Removable power connector
- USB connector
- RJ45 Ethernet connector

Advanced Remote Panel:
- 12" Wide X 18" High X 4" Deep
- ANSI 61 gray finish
- Mounting holes provided
- High voltage divider
- NEMA1 enclosure
- Knockouts provided
- Surface mount hinge locking door

Electrical:
- Panel Mount: Powered from panel
- Remote Panel: 120/277 VAC @ 1Amp, or optional 120/347 VAC

Configuration:
- Software programming
- Directly through keypad

Operating Environment:
- Location: Interior space
- Operating Temp: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications and Approvals:
- UL
- CUL
- FCC Part 15

Catalog Number:	Date:	Project:

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LightLEEDer | **Serial Interface Control**

Overview

The LightLEEDer Serial Interface Module can be added to any panel to provide control from any building automation system using BACnet IP, BACnet MSTP, Modbus RTU, Modbus ASCII, Modbus TCP or Metasys N2. With the panel module, commands can be sent to the panel to force relays ON and OFF, force relays On and OFF with a timer option (blink, double blink, HID delay, Alarm ON, Alarm OFF, Pulse ON, and Pulse OFF), monitor relay status, monitor input status, and enable/disable inputs. A single point gateway is available for control and status of relays, groups, and presets on the network.

BACnet model shown

Features

- **Made in the USA**
- **Direct communications** for BAS control of lighting panel
- **Direct control** of any relay output giving complete control
- **True status** of relays in the lighting panel
- **Timer option** commands available for blink alerts and alarms
- **Allows enable/disable** commands for switch inputs
- **Installs directly** into any panel
- **Extractable files** from BACnet modules
- **Bacnet-IP modules** support HTTPS which use TLS/SSL certification

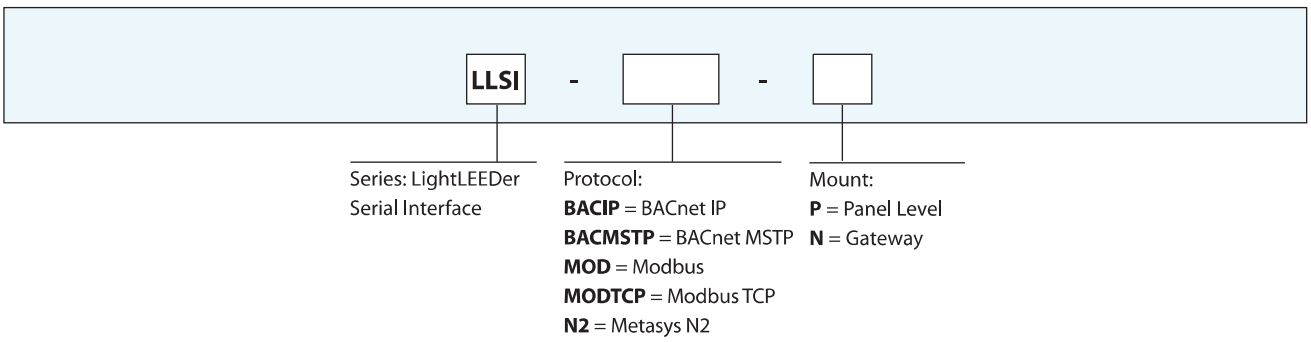
Protocols

- **BACnet IP**– an ASHRAE protocol communicating on a TCP/IP network
- **BACnet MSTP**– an ASHRAE protocol communicating on a RS485 network
- **Modbus RTU**– a Modicon protocol communicating on RS485/RS232 in a binary coded format
- **Modbus ASCII**– a Modicon protocol communicating on RS485/RS232 in an ASCII coded format
- **Modbus TCP**– a Modicon protocol communicating on a TCP/IP network
- **Metasys N2**– a Johnson Controls protocol communicating on RS485

Warranty

Five-year limited warranty

Ordering



LLSI-xxx-x Rev.C

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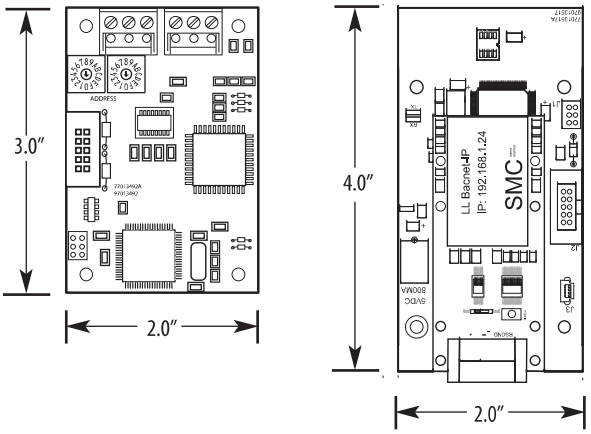
LightLEEDer

Serial Interface Control

Physical



NOTE: Physical appearance varies between protocols.

Specifications

Physical:
- Dimensions: 2″ Wide X 3″ High or 2" Wide x 4" Long
- RJ45 connectors for Ethernet based communications
- Removable screw connectors for data line communications
- Panel Level (P) modules connect to LightLEEDer panel
- Gateway (N) modules connect to the Network Controller

Electrical:
- Powered from the panel

Operating Environment:
- Location: Interior space
- Operating Temp.: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications and Approvals:
- FCC Part 15

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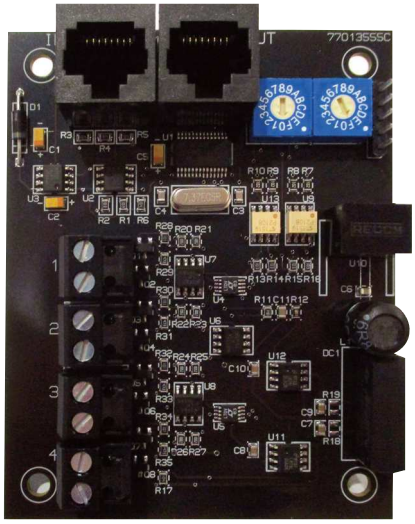
LightSync Digital

Dimming Module

Overview

The LightSync Digital Dimming Module is designed for 0 -10V device control. This dimmer is galvanically isolated up to 1500V and designed to be used with MC luminary style cable. This module can be installed in the lighting control panel or remotely mounted on the panel local CAT-5 network. Each of the 4 independent channels can control up to100 ballasts with 256 steps between 0 and 10V. Outputs are designed to sink voltage up to 100mA per channel. Each output may be programmed to respond to 16 inputs per channel. Upon loss of power, the dimmer outputs will go to 10V or full brightness. The intuitive software provided makes it easy to program and adjust the settings.



Features

- **Made in the USA**
- **Digital CAT-5 Ready**
- **4 independent channels** per module provide the flexibility to control up to 4 zones
- **Each output** can control up to 100 typical ballast at .5mA each (sink voltage)
- **Galvanically** isolated up to 1500V
- **Power-On level settings** allows each output to be configured for 0 to 100% levels upon power-up
- **Power loss** to dimmer module sets dimming to full brightness
- **LightSync photocell** tracking programmed directly to output point(s)
- **Each output may be programmed** to respond to 16 Light-Sync or hardwire inputs. Each input can be programmed to force the output to a preset level, raise or lower at 10% increments and can work in conjunction with a photocell. Inputs can be set to "revert to photocell control" after a period of time that can range from 5 to 600 minutes in 5 minute increments.
- **Fade rate** of 0 to 300 seconds can be programmed for each output
- **Minimum and maximum output** levels can be configured for each output
- **With a DMX512 serial interface,** each output can be controlled by any of the 512 DMX512 signal channels
- **Panel mount** (P) option for mounting with relay driver module
- **Remote mounting** (R) provided with 4-11/16" J-box
- **RJ45 connectors** for connection to LightSync network using CAT-5 cable
- **Removable connectors** for easy installation
- **Digitally** addressable
- **12 dimmer modules** supported for a maximum of 48 channels

Warranty

Five-year limited warranty

Ordering

LightSync Dimmer Module

LSDM	-	

Series: LightSync Dimming Module

Module Options:
P = Panel
R = Remote

LSDM-xx Rev.B

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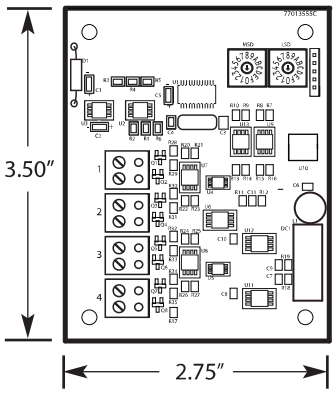
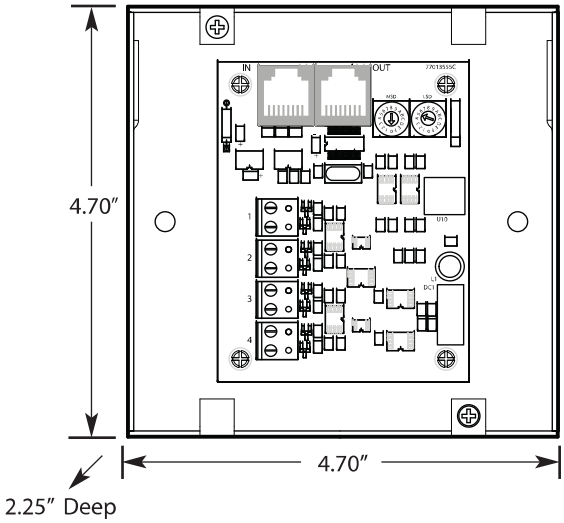
LightSync Digital | **Dimming Module**

Physical

Panel Mount



Remote Mount



Specifications

Physical:
- 2.75″ Wide X 3.5″ High
- Removable output connectors
- Digital addressing switches
- RJ45 connectors for CAT-5 to the panel local port

Electrical:
- Powered from the panel or from the LightSync network
- 100mA sink per channel
- 0-10VDC

Configuration:
- Software programming
- Directly through keypad

Operating Environment:
- Location: Interior space
- Operating Temp.: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications:
- FCC Part 15

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LightSync Digital | **G3 Switch**

Overview

The LightSync Digital G3 Switch Station is a modern, versatile and easy to use CAT-5 or 6 device. The G3 comes pre-configured as a Multi-Zone Dimmer, Scene Switch, Scene Multi-Zone Dimmer switch combination or a Non-Dim switch. The MZD supports 1-6 zone, Scene have 1-5 Scenes, Scene MZD stations support a 2S/4Z, 3S/3Z or 4S/2Z combo, the Non-Dim has 1-7 buttons. The dimming buttons allow Press-and-Hold Ramp-Up/Ramp-Down operation, holding a zone button on an MZD will select that zone for individual dimming. All scene buttons support capture of dimming levels to a scene by holding the scene button. G3 digital switches can control and display status for relays, groups, presets or scenes. Stations are also available with Bluetooth for programming and control from the ILC Pro app.

Features

- **Made in the USA**
- **Bluetooth** option for programming and control from EVO-BT app
- **Field Configurable** between multi-zone switches, scene switches and non-dim switches
- **1 to 7 button** zone control configurations
- **Multi-Zone Dimming** for up to 6 zones and All-Off
- **Scene Station** with dimming for up to 5 scenes and All-Off
- **Scene Multi-Zone** with dimming combo for up to 4 Scene or Zones (2S/4Z, 3S/3Z or 4S/2Z) option
- **Scene Capture** operation for all stations with scene buttons
- **Raise and Lower Buttons** for ramp up and ramp down feature
- **Press and Hold** dimming operation
- **Status LEDs** indicate true state of relay, group, last scene or preset
- **Switch Locator** LED helps find the switch in a dark room
- **Laser engraving** is provided, and custom engraving is available, Black and Red buttons are pad-printed
- **Color Change Kit** available for White, Ivory, Gray, Red and Black
- **Addressable** rotary switches
- **Decora®** style single-gang switch plate available upon request

Warranty

Five-year limited warranty

Ordering

Switch

LSG3 - [ ] - [ ] - [ ] - [ ]

Series:	Insert color:	Button Count:	Switch Type:	Bluetooth Option:
LightSync G3 Switch	**IV** = Ivory **WH** = White **GY** = Gray **BK** = Black **RD** = Red	**1-7** = Non-Dim **1-6** = Zone **1-5** = Scenes **4/2, 3/3, 2/4** = Scene/Zone	**(Blank)** = Non-Dim **MZD** = MZD **S** = Scene **SMZD** = Scene MZD	**(Blank)** = None **BT** = Bluetooth

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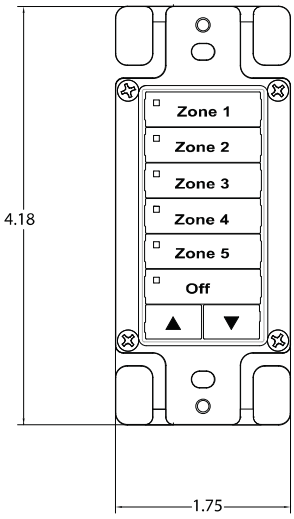
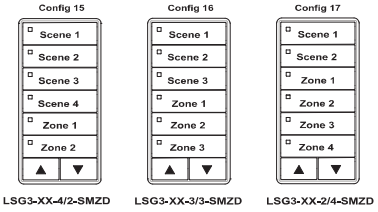
LightSync Digital | G3 Switch

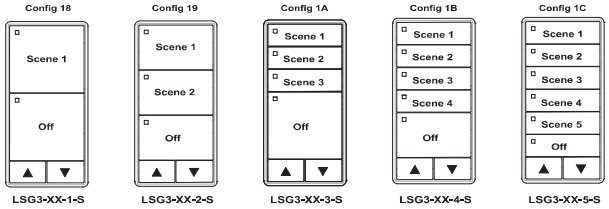
Physical



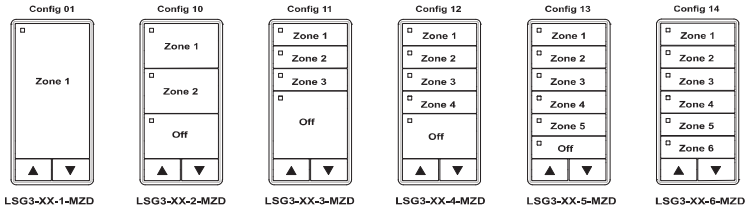
G3 Scene MZD Stations



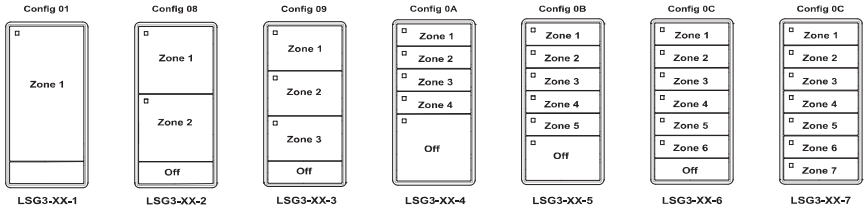
G3 Scene Stations



G3 MZD Stations



G3 Non-Dim Stations



Specifications

Physical:
- Standard single gang mounting
- Digital addressing switches
- RJ45 connectors provided for easy connection
- Mounting screws provided
- Laser engraving standard as shown, Black and Red buttons are pad-printed
- Custom engraving available

Electrical:
- Powered from the panel or LightSync network

Operating Environment:
- Location: Interior space
- Operating Temp.: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications and Approvals:
- UL CUL
- FCC Part 15

Catalog Number:	Date:	Project:

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LightSync Digital | **G3 Switch**

Overview

The LightSync Digital G3 Switch Station is a modern, versatile and easy to use CAT-5 or 6 device. The G3 comes pre-configured as a Multi-Zone Dimmer, Scene Switch, Scene Multi-Zone Dimmer switch combination or a Non-Dim switch. The MZD supports 1-6 zone, Scene have 1-5 Scenes, Scene MZD stations support a 2S/4Z, 3S/3Z or 4S/2Z combo, the Non-Dim has 1-7 buttons. The dimming buttons allow Press-and-Hold Ramp-Up/Ramp-Down operation, holding a zone button on an MZD will select that zone for individual dimming. All scene buttons support capture of dimming levels to a scene by holding the scene button. G3 digital switches can control and display status for relays, groups, presets or scenes. Stations are also available with Bluetooth for programming and control from the ILC Pro app.

Features

- **Made in the USA**
- **Bluetooth** option for programming and control from EVO-BT app
- **Field Configurable** between multi-zone switches, scene switches and non-dim switches
- **1 to 7 button** zone control configurations
- **Multi-Zone Dimming** for up to 6 zones and All-Off
- **Scene Station** with dimming for up to 5 scenes and All-Off
- **Scene Multi-Zone** with dimming combo for up to 4 Scene or Zones (2S/4Z, 3S/3Z or 4S/2Z) option
- **Scene Capture** operation for all stations with scene buttons
- **Raise and Lower Buttons** for ramp up and ramp down feature
- **Press and Hold** dimming operation
- **Status LEDs** indicate true state of relay, group, last scene or preset
- **Switch Locator** LED helps find the switch in a dark room
- **Laser engraving** is provided, and custom engraving is available, Black and Red buttons are pad-printed
- **Color Change Kit** available for White, Ivory, Gray, Red and Black
- **Addressable** rotary switches
- **Decora®** style single-gang switch plate available upon request

Warranty

Five-year limited warranty

Ordering

Switch

LSG3 - [ ] - [ ] - [ ] - [ ]

Series:	Insert color:	Button Count:	Switch Type:	Bluetooth Option:
LightSync G3 Switch	**IV** = Ivory **WH** = White **GY** = Gray **BK** = Black **RD** = Red	**1-7** = Non-Dim **1-6** = Zone **1-5** = Scenes **4/2, 3/3, 2/4** = Scene/Zone	**(Blank)** = Non-Dim **MZD** = MZD **S** = Scene **SMZD** = Scene MZD	**(Blank)** = None **BT** = Bluetooth

Catalog Number: | Date: | Project:

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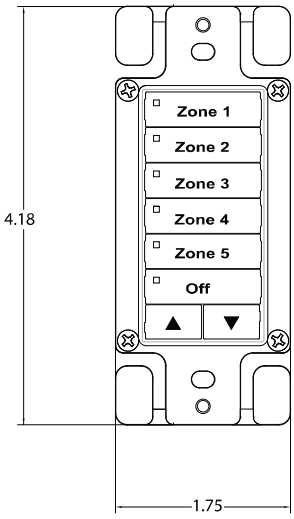
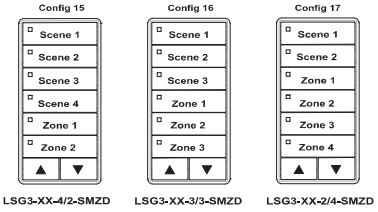
LightSync Digital | G3 Switch

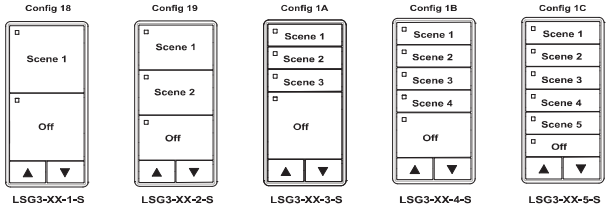
Physical



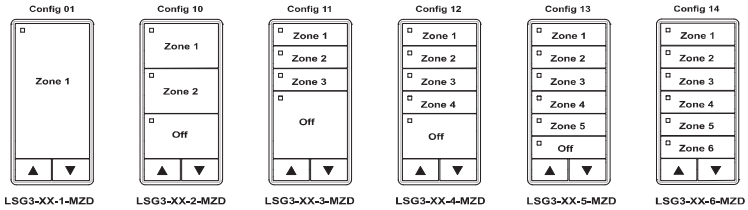
G3 Scene MZD Stations



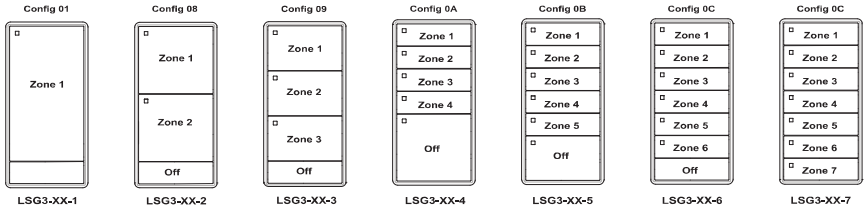
G3 Scene Stations



G3 MZD Stations



G3 Non-Dim Stations



Specifications

Physical:
- Standard single gang mounting
- Digital addressing switches
- RJ45 connectors provided for easy connection
- Mounting screws provided
- Laser engraving standard as shown, Black and Red buttons are pad-printed
- Custom engraving available

Electrical:
- Powered from the panel or LightSync network

Operating Environment:
- Location: Interior space
- Operating Temp.: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications and Approvals:
- UL CUL
- FCC Part 15

Catalog Number:	Date:	Project:

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LightSync Digital | **G3 Switch**

Overview

The LightSync Digital G3 Switch Station is a modern, versatile and easy to use CAT-5 or 6 device. The G3 comes pre-configured as a Multi-Zone Dimmer, Scene Switch, Scene Multi-Zone Dimmer switch combination or a Non-Dim switch. The MZD supports 1-6 zone, Scene have 1-5 Scenes, Scene MZD stations support a 2S/4Z, 3S/3Z or 4S/2Z combo, the Non-Dim has 1-7 buttons. The dimming buttons allow Press-and-Hold Ramp-Up/Ramp-Down operation, holding a zone button on an MZD will select that zone for individual dimming. All scene buttons support capture of dimming levels to a scene by holding the scene button. G3 digital switches can control and display status for relays, groups, presets or scenes. Stations are also available with Bluetooth for programming and control from the ILC Pro app.

Features

- **Made in the USA**
- **Bluetooth** option for programming and control from EVO-BT app
- **Field Configurable** between multi-zone switches, scene switches and non-dim switches
- **1 to 7 button** zone control configurations
- **Multi-Zone Dimming** for up to 6 zones and All-Off
- **Scene Station** with dimming for up to 5 scenes and All-Off
- **Scene Multi-Zone** with dimming combo for up to 4 Scene or Zones (2S/4Z, 3S/3Z or 4S/2Z) option
- **Scene Capture** operation for all stations with scene buttons
- **Raise and Lower Buttons** for ramp up and ramp down feature
- **Press and Hold** dimming operation
- **Status LEDs** indicate true state of relay, group, last scene or preset
- **Switch Locator** LED helps find the switch in a dark room
- **Laser engraving** is provided, and custom engraving is available, Black and Red buttons are pad-printed
- **Color Change Kit** available for White, Ivory, Gray, Red and Black
- **Addressable** rotary switches
- **Decora®** style single-gang switch plate available upon request

Warranty

Five-year limited warranty

Ordering

Switch

LSG3 - [ ] - [ ] - [ ] - [ ]

Series:	Insert color:	Button Count:	Switch Type:	Bluetooth Option:
LightSync G3 Switch	**IV** = Ivory **WH** = White **GY** = Gray **BK** = Black **RD** = Red	**1-7** = Non-Dim **1-6** = Zone **1-5** = Scenes **4/2, 3/3, 2/4** = Scene/Zone	**(Blank)** = Non-Dim **MZD** = MZD **S** = Scene **SMZD** = Scene MZD	**(Blank)** = None **BT** = Bluetooth

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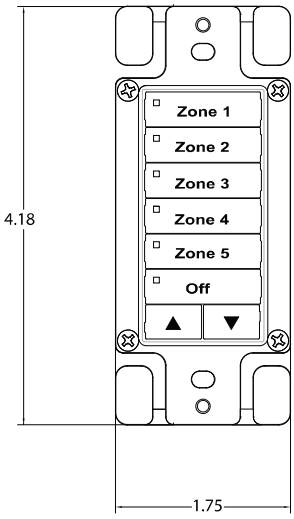
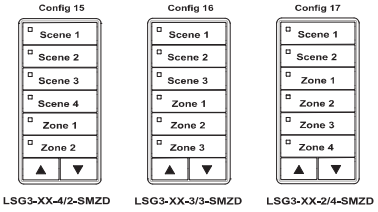
LightSync Digital | G3 Switch

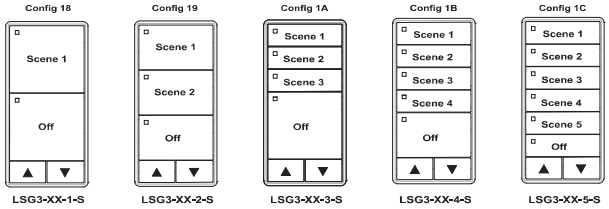
Physical



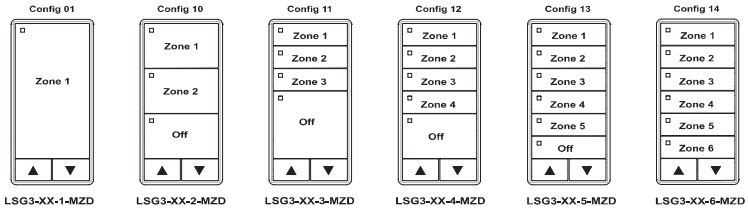
G3 Scene MZD Stations



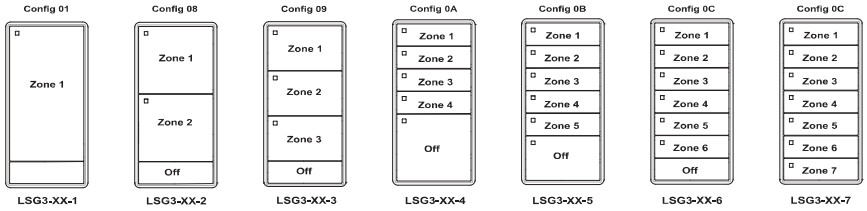
G3 Scene Stations



G3 MZD Stations



G3 Non-Dim Stations



Specifications

Physical:
- Standard single gang mounting
- Digital addressing switches
- RJ45 connectors provided for easy connection
- Mounting screws provided
- Laser engraving standard as shown, Black and Red buttons are pad-printed
- Custom engraving available

Electrical:
- Powered from the panel or LightSync network

Operating Environment:
- Location: Interior space
- Operating Temp.: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications and Approvals:
- UL CUL
- FCC Part 15

Catalog Number: | Date: | Project:

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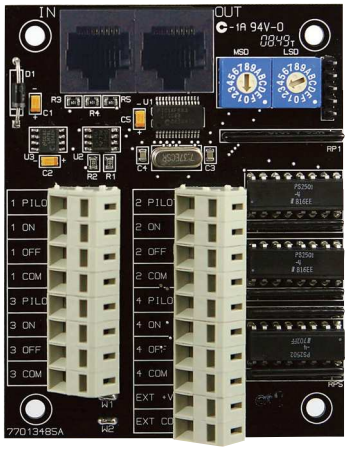
LightSync Digital | **Input Module**

Overview

The LightSync Digital Input Module is designed to accept up to 4 hardwired switch inputs. Each input accepts a 2 or 3 wire dry contact switch closure or an equivalent open collect signal from any source. Each input module can also be configured to accept a 12-24 VDC signal from security or BAS systems. Any input can be programmed to control any relay(s), group(s), or preset(s) in any or all panels. Each input has an associated pilot status LED output that indicates the true status of any relay, group, or preset. It may also be programmed to a reverse status (LED is ON if the relay is OFF) or ON always. Inputs have a time-of-day or open/close time of action function which could disable the input or change the input type.



Features

- **Made in the USA**
- **Digital CAT-5 Ready**
- **4 hardwire** inputs and status outputs per module
- **Digitally addressable** device for a unique address
- **Terminals** are an easy non-screw push-to-connect type
- **Optically isolated** inputs that protect the electronics
- **Accepts** dry contact closures or open collector outputs
- **Configurable** to accept 12-24 VDC signals
- **Accepts** 2 or 3 wire momentary or maintained switches
- **Associated LED pilot output** is provided for each input
- **True status pilot** for relay, group, or presets
- **Panel mount (P)** installs directly in the panel
- **Remote mount (R)** provided with 4-11/16" J- box
- **Self powered** from the network
- **Remote mount** anywhere on the LightSync network
- **RJ45 connectors** provided for easy connection
- **Great choice** for a central switch control station. Eliminates wiring individual switches to panels - only a data line required

Warranty

Five-year limited warranty

Ordering

LightSync Input Module

LSIM - [ ] - [ ]

Series:	Module Option:	Module Type:
LightSync Input Module	**P** = Panel **R** = Remote	(Blank) = Dry Contact **V** = VDC Input

Catalog Number: | Date: | Project:

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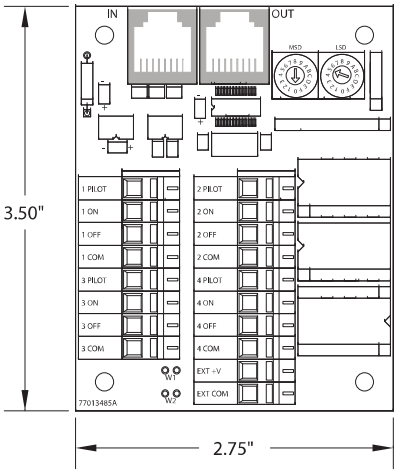
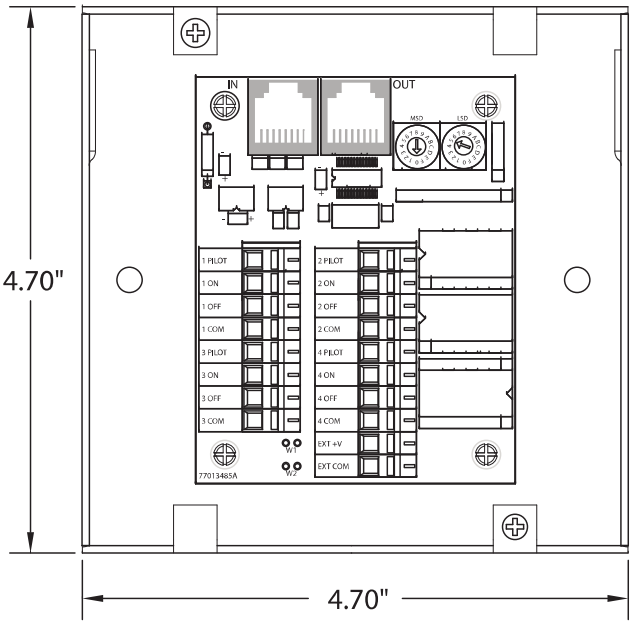
LightSync Digital | **Input Module**

Physical



Panel Mount



Remote Mount

Specifications

Safeguards:
- Optically isolated inputs eliminate connection issues

Physical:
- 2.75" Wide X 3.5" High
- Easy non-screw push-to-connect terminals
- Digital addressing switches
- RJ45 connectors for data line connection
- R option provided with 4-11/16" junction box

Electrical:
- Powered from the panel or from the LightSync network

Operating Environment:
- Location: Interior space
- Operating Temp.: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications and Approvals:
- FCC Part 15

Catalog Number:	Date:	Project:

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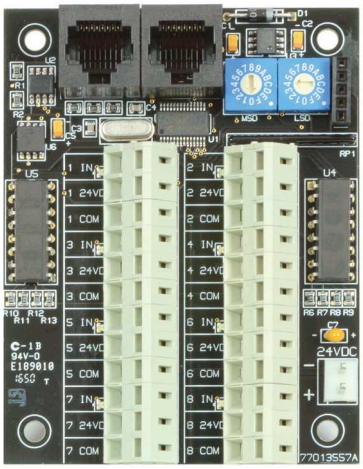
LightSync Digital

Occupancy Sensor Module

Overview

The LightSync Digital Occupancy Sensor module is designed with 8 occupancy sensor inputs that provides power for multiple occupancy sensors. The LSOSM comes pre-configured as a standard occupancy sensor, and contain programmable conditionals for each Input. This allows you to utilize "AND"/"OR" logic schemes for any combination of inputs and pilots. Any input can be programmed to control any relay(s), group(s), or preset(s) in any or all panels. Each input has an associated LED on the board that activates when the input is closed.



Features

- **Made in the USA**
- **Digital CAT-5 Ready**
- **8 Conditional** occupancy sensor inputs per module
- **Provides Power** and inputs for occupancy sensors
- **Programmable** conditional logic
- **Accepts 2 wire** maintained or momentary closures
- **Connectors** are non-screw push-to-connect type
- **Switch closure LED** status for each input
- **Optically isolated** inputs to protect electronics
- **Panel mount (P)** installs directly in the panel
- **Remote mount (R)** provided with electrical enclosure
- **Power** from 120/277VAC power supply
- **Software** logic programming provided

Warranty

Five-year limited warranty

Ordering

LightSync Occupancy Sensor Module

LSOSM - [ ]

Series: LightSync Occupancy Sensor Module

Module Option:
P = Panel
R = Remote

Catalog Number: | Date: | Project:

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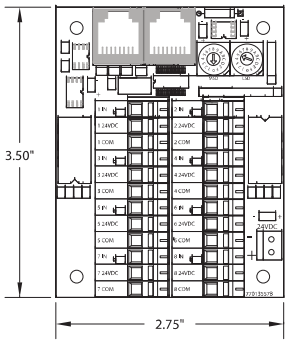
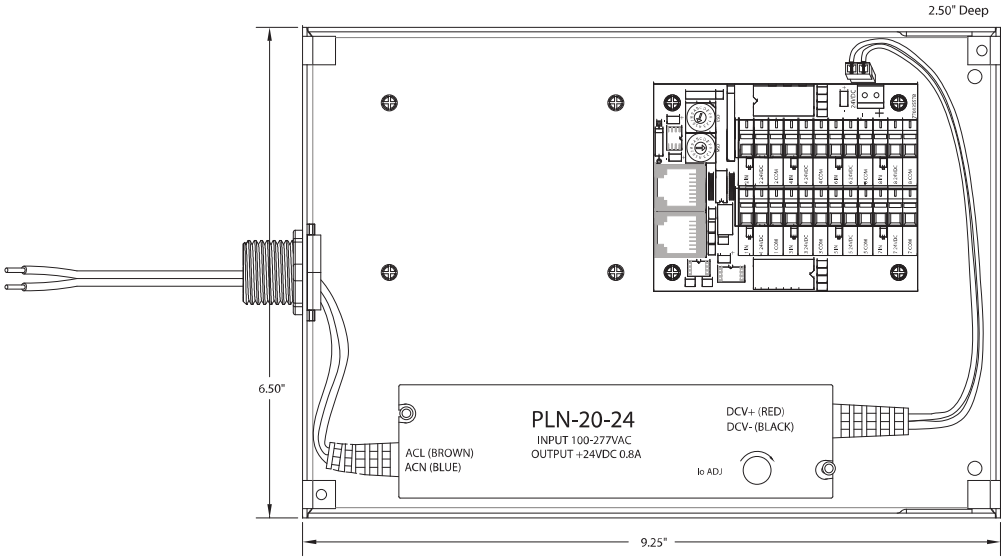
LightSync Digital

Occupancy Sensor Module

Panel Mount



Remote Mount



Specifications

Safeguards:
- Optically isolated inputs protect electronics

Physical:
- 2.75″Wide X 3.5″ High
- Easy non-screw push-to-connect terminals
- Digital addressing switches
- RJ45 connectors for data line connection
- Remote (R) option provided in a 6.5"x9.25"x2.50" enclosure with 1/2" connector and screw cover.

Electrical:
- Electronics powered from LightSync data line
- Input: 120/277VAC @ 400mA
- Output: 24VDC @ 800mA
- Current limited circuit

Operating Environment:
- Location: Interior space
- Operating Temp.: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications and Approvals:
- FCC Part 15
- UL
- CUL

Catalog Number:	Date:	Project:

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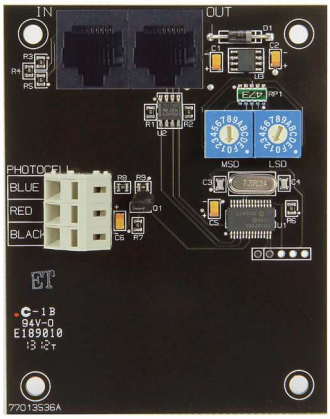
LightSync Digital

Photo Sensor Controller

Overview

The LightSync Photo Sensor Controller monitors light levels and transmits data across the LightSync network to the lighting control panels. Each sensor has 8 individual set points for on or off control with a selectable dead-band and is programmable to control any or all relays, groups, or presets. Each sensor has a built-in adjustable filter to eliminate false triggering from lightning or other light sources. This sensor can be used for daylight harvesting to shed lighting loads or used with a dimming module to dim loads. The indoor and outdoor photo sensor heads convert the analog light levels to a digital form and are UV and weather resistant.



Features

- **Made in the USA**
- **Digital CAT 5** ready
- **Light levels** monitored indoors or outdoors to 1800 foot candles
- **Control points** consist of 8 individual On and Off inputs
- **Dead-band** for each control point
- **Analog to digital** photocell heads
- **Photocell filter** to eliminate false triggering of loads
- **Digitally addressable** device for a unique address
- **Panel mount (P)** installs directly in the panel
- **Remote mount (R)** provided with 4-11/16" J- box
- **UV resistant** photocell heads
- **Encased photocell head** protects sensor from the elements
- **Connectors** are push-to-connect

Warranty

Five-year limited warranty

Ordering

LightSync Photo Sensor Controller

LSPSC		
Series: LightSync Photo Sensor Controller	Photocell Head: **IND** = Indoor **OUT** = Outdoor	Module Option: **P** = Panel **R** = Remote

Catalog Number: | Date: | Project:

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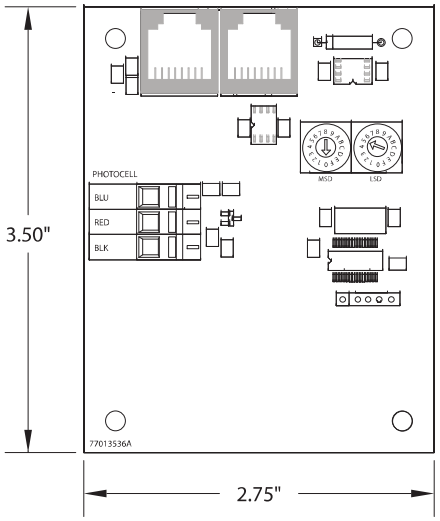
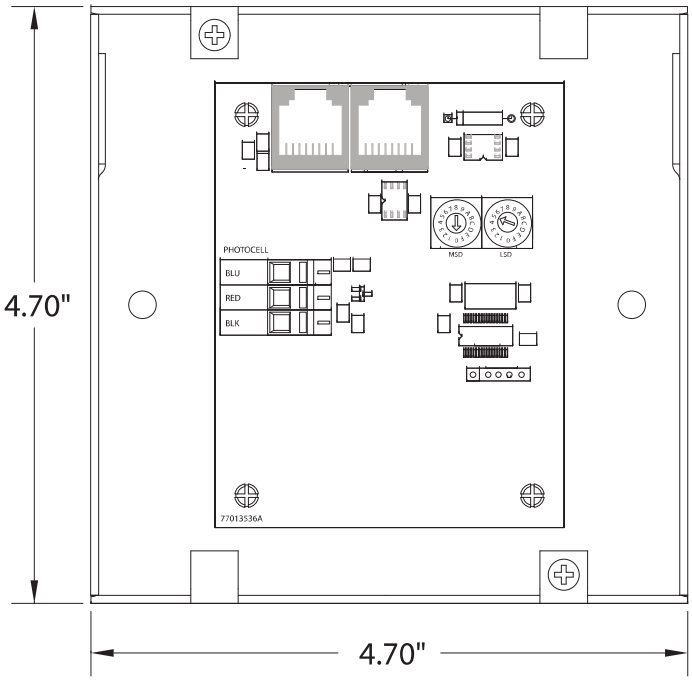
LightSync Digital

Photo Sensor Controller

Physical



Panel Mount



Remote Mount

Specifications

Physical:
- 2.75" Wide X 3.5" High
- Easy non-screw push-to-connect terminals
- Digital addressing switches
- RJ45 connectors for data line connection
- R option provided with 4-11/16" junction box

Electrical:
- Powered from the panel or the LightSync network

Photocell Heads:
- Outdoor photocell mounts in a 1/2" LB type fitting or junction box
- Indoor photocell mounts to ceiling tile or other structure

Controller Operating Environment:
- Location: Interior Space
- Operating Temp.: 0° to 50° C
- Humidity: 10% to 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Photocell Operating Environment:
- Location: Interior/Exterior Space
- Operating Temp.: -35° to 50° C
- Humidity: 10% to 100% Condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications:
- UL CUL
- FCC Part 15

Catalog Number: | Date: | Project:

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LightSync Digital

Power Supply Repeater

Overview

The LightSync Digital Power Supply Repeater operates on the LightSync data line and is both a power supply and data repeater. Its primary purpose is to repeat data (3000 feet combined end to end per each of 2 ports) and provide a bridge to another data line run. This device has one incoming and two outgoing RJ45 ports, enabling the data line to be split into two different directions. The PSR will also power up to 20 LightSync devices for an additional 3000 cumulative feet.

Features

- **Made in the USA**
- **Digital CAT 5** ready

General Information

- UL Listed
- Mounted in standard NEMA enclosure
- Operates in any position

Characteristics

- Adds power for up to 20 additional LightSync control devices to LightSync network run an additional 3000 cumulative feet
- CAT-5 connectivity
- Extend network data length by 3000 feet combined output (2) end to end
- Allows “T” splitting of CAT-5 cable path
- No Programming Required

Warranty

Five-year limited warranty

Ordering

LightSync Power Supply Repeater

LSPSR - [ ] - [ ]

Series: LightSync Power Supply Repeater

P = Panel
R = Remote

(Blank) = 120/277VAC
347 = 120/347VAC

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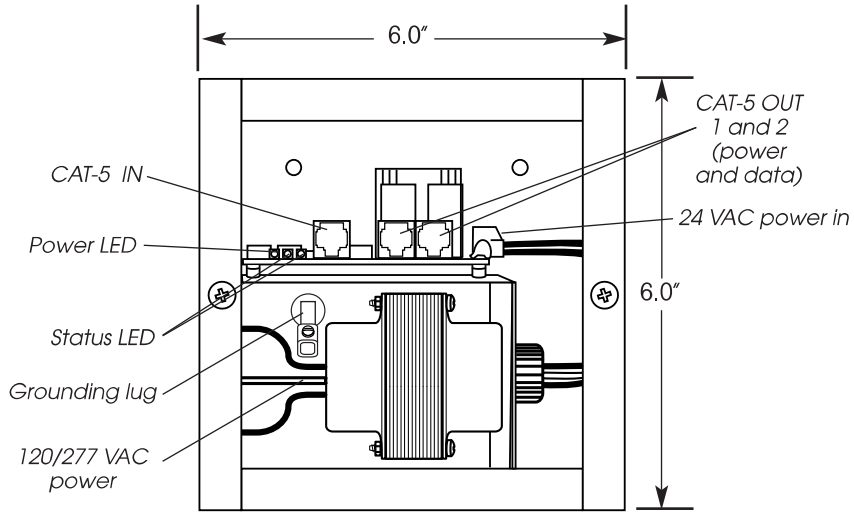
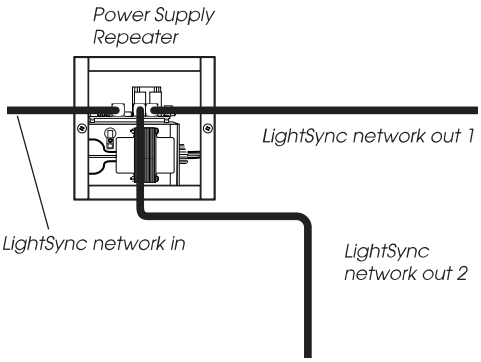
LightSync Digital

Power Supply Repeater

Physical





Standard 24 gauge CAT-5 Cable throughout

Specifications

Physical:
- Mounted in 6″ x 6″ x 4″ standard NEMA-1 enclosure
- Operates in any position

Electrical:
- 120/277 VAC transformer
- Optional 120/347 VAC

Capacities:
- Powers up to 20 additional LightSync devices and additional 3000 cumulative feet
- Refer to ILC Technical Bulletin #TB 1408 for LightSync cable run distance details

Operating Environment:
- Location: Interior space
- Operating Temp.: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications and Approvals:
- UL CUL

Catalog Number: | Date: | Project:

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LightLEEDer | Remote20 Relays

Overview

The ILC Remote 20 (R20) and Remote 20 Dimming (R20D) relays are designed to be mounted at the power junction box or lighting fixture for direct control of the lighting load. Relays are controlled from the EVO panel using a standard CAT-5 cable connection to the R20 relay RJ-45 jack. The R20 series relay uses oversized contacts designed to handle LED inrush current. Tested at 16 Amps electronic driver that can commonly exceed 200% of running current of the R20D latching relay load. The R20D has galvanically isolated 0-10V dimming which allows for class 1 wiring of the low voltage dimming. Loss of power to the LLEVO panel will force dimmer output level to 100%.

Features

- **Made in the USA**
- **Digital Cat-5 Ready**
- **Remote R20** controlled form LLEVO panel up to 100 feet
- **16 Amp** rating for LED lighting loads
- **Plug-load** compatible
- **Latching** relay holds position without presence of power, saving energy
- **Direct mounting** at power junction box or light fixture with 1/2" K.O.
- **RJ-45** connector for Cat-5 cable to EVO panel
- **6" Wire leads** for line/load and dimming connections
- **600V rated wire** allows 0-10V in high voltage compartment
- **Galvanically Isolated** 0-10 dimming control
- **100% Dim level** when the LLEVO loses power
- **UL and CUL listed**
- **Plenum rated**

Warranty

Five-year limited warranty

Ordering

Remote R20 Relay [ ]

Series:
R20 = No Dimming
R20D = With Dimming

R20x Rev.C

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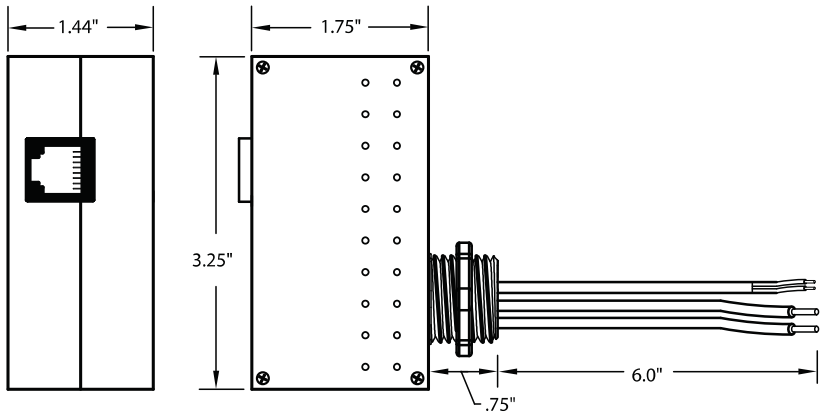
Remote20 Relays

Physical



Specifications

Safeguards:
- Oversized contacts to extend relay life
- 600VAC rated 0-10V leads
- Galvanically isolation to1500V for the 0-10VDC dimmer outputs, with revert to 100% on power loss

Physical:
- Dimensions 3.25" x 1.75" x 1.44"
- Black glass-filled ABS plastic enclosure
- 1/2" nipple for mounting to electrical box
- 6" wire leads for connections provided
- RJ45 connectors provide for easy connection

Low Voltage Control:
- 100' operational distance from controller over CAT-5
- Isolated 0-10V dimming control for R20D relay

Electrical:
- 16Amps, 120/277/347 VAC resistive
- 16Amps, 120/277/347 VAC general loads
- 16Amps, 120/277/347 VAC HID and ballast
- 16Amps, 120/277/347 VAC electronic ballast (LED)
- 1/2HP @120VAC motor load
- 100mA sink for 0-10V dimming
- Plug-load compatible

Operating Environment:
- Location: Interior Space
- Operating Temp.: 0° to 50° C
- Humidity: 10% to 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications:
- UL and CUL Listed
- FCC
- Plenum rated

Catalog Number:	Date:	Project:

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LightLEEDer | **Reliant40 Relays**

Overview

The Reliant40 relay is designed for durability, flexibility, and ease of use. This relay is a superior relay that employs 4 latching nickel-silver contacts. The relay is available in 1, 2, or 3 pole configurations for controlling 120 VAC to 480 VAC loads. It is UL and C-UL listed and is rated for 120 VAC to 347 VAC per pole with a current rating of up to 40 Amps. This relay carries a high fault SCCR rating of 18,000 Amps @ 347 VAC. It also features a manual toggle switch for ON/OFF activation and a Lock-ON/OFF switch to disable control from the panel electronics. Installation is easy with 1 screw and 1 push-on ribbon connector.

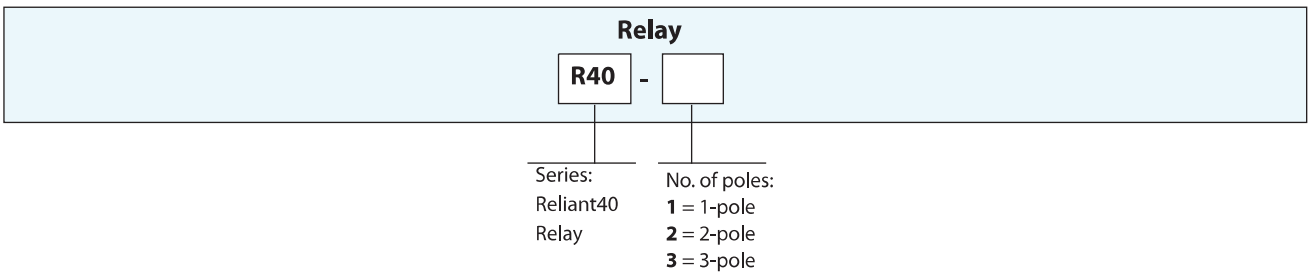
Features

- **Made in the USA**
- **UL and CUL listed**
- **Suitable** for controlling all lighting loads
- **Electronic ballast** high current inrush load rating
- **Relay contacts** consist of 4 nickel-silver contacts designed for high currents
- **Latching** relay holds position without the presence of power, saving energy
- **Plug-load compatible**
- **Relay configurations** available in 1-, 2-, or 3-pole ganged assemblies
- **Manual lever override switch** with highly visible indicator
- **Lock-ON/Lock-OFF** feature disables On or OFF control from the electronics
- **Terminals** consist of 2 line and 2 load connections
- **Screw-actuated wire clamps** for use with 10-12 AWG solid or 8-12 AWG stranded copper wire
- **Easily mounted** - as easy as interfacing a tab and securing with a screw
- **Operates in any position**
- **Wire strip guide** located on the side of the relay

Warranty

Five-year limited warranty

Ordering



R40-x Rev.B

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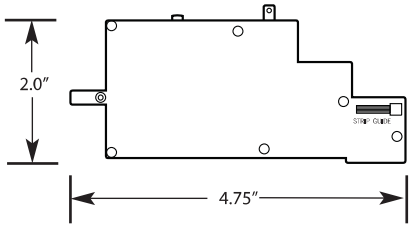
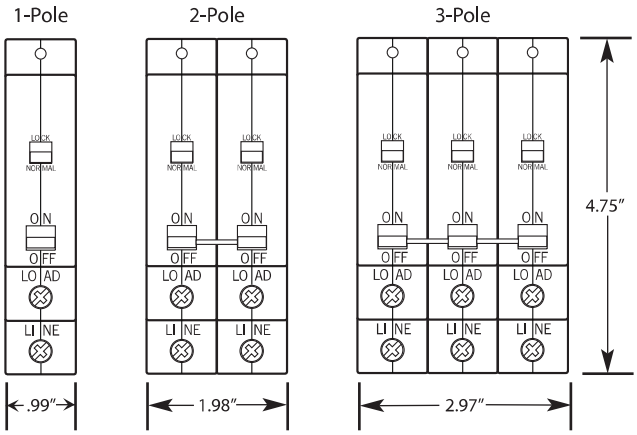
LightLEEDer | Reliant40 Relays

Physical

Side View



Top View



Specifications

Physical:
- .99″ Wide x 2.0″ High x 4.75″ Long (1 pole)
- Accepts 8-12 AWG stranded Cu wire or 10-12 AWG Solid Cu wire
- Easy installation into any panel
- Removable ribbon connector interface
- Clearly marked connection designations

Low Voltage Control:
- 18 to 24 VDC
- Momentary duty rating
- 50 milliseconds minimum activation time
- 50 to 55 Ω coil resistance
- 100mA @ 5 VDC status & disable contacts

Electrical:
- 120, 277 or 347 VAC per pole (controls 208/240/480 loads)
- 40 Amps HID and ballast loads
- 40 Amp resistive loads
- 16 Amp electronic ballast loads (UL's limit)
- 1.5 Hp @120VAC motor loads
- 18,000 Symmetrical Amp SCCR @347 VAC
- Plug-load compatible

Operating Environment:
- Location: Interior Space
- Operating Temp.: 0° to 60° C
- Humidity: 10% to 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications:
- UL and CUL Listed
- FCC

Catalog Number:	Date:	Project:

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LightLEEDer

Remote 20 Amp Dimming Relay with Emergency Bypass

Overview

The ILC Remote 20 Amp, Emergency Bypass Relay combines normal relay operation with a UL 924 bypass relay in one convenient package. Relays are available in both a wired (R20D-EM) and wireless (WR20D-EM) version that uses the 915MHz radio frequency for communication to ILC wireless devices. When normal power is lost the EM relay will automatically force ON the EM load and send dimming to 100%. When normal power is restored the device will return to normal control. The R20D-EM and WR20D-EM have a relay test button, and a wired input that can be used for a remote test switch or as an override connection from a fire alarm system.

Features

- **Made in the USA**
- **Emergency and Normal** power control combined in one device
- **UL 924** rated
- **EM Relay** rated up to 20 Amp @120/277VAC
- **Normal Relay** rated up to 20 Amp @120/277VAC
- **EM Load follow** operation of normal load control
- **Test button** for local Test operation
- **Override Input** for remote Emergency test switch or fire alarm system override
- **Plenum rated**
- **Direct mounting** at power junction box or light fixture with 1/2" K.O.
- **Digital CAT-5** ready control from LLEVO controller up to 100 feet
- **Wireless Control** up to 100 feet line-of-sight from LLEVO-W wireless controller or wireless-direct-linked to LightSync digital wireless devices

Warranty

Five-year limited warranty

Ordering

Remote 20 Amp Dimming Relay with Emergency Bypass [ ]

Series:
R20D-EM = Remote 20 Amp Dimming Relay with EM load
WR20D-EM = Wireless Remote 20 Amp Dimming Relay with EM load

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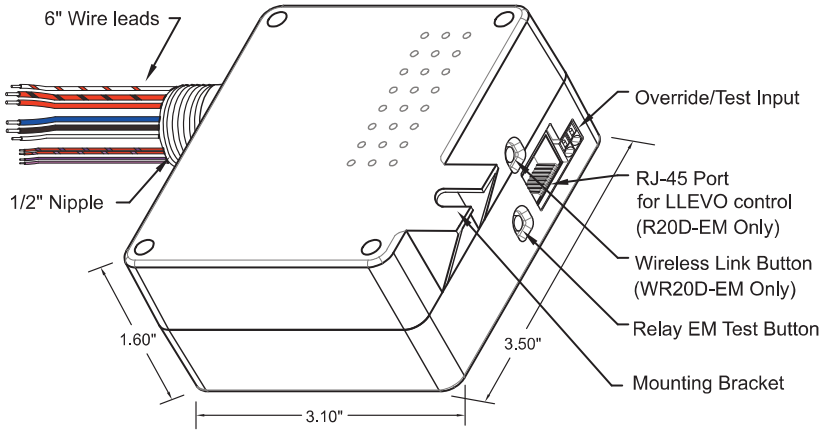
Remote 20 Amp Dimming relay with Emergency Bypass

Physical



R20D-EM / WR20D-EM

Specifications

Safeguards:
- LED electronic load inrush rated
- 600VAC rated wire leads including 0-10V leads
- 4000V Isolation 0-10VDC dimming

Physical:
- Dimensions 3.50" x 3.10" x 1.60"
- Polycarbonate plastic enclosure
- 6" wire leads for connections provided
- Color coded leads for easy wiring
- ½" nipple for mounting to electrical box
- Conduit nut provided

Electrical:
- 20 Amps, 120/277VAC tungsten
- 16 Amps, 120/277VAC electronic ballast, LED, CFL
- 1/4HP @ 120VAC motor load
- Plug-load compatible
- 100mA Sink 0-10V dimming loads combined
- SCCR: 5kA

Wireless Control:
- 915MHz radio transceiver
- 100 foot line-of-sight communication
- Wireless-direct-link to Wireless G3 switches and sensors
- Link to LLEVO-W wireless controller for network control
- Secure wireless encrypted communication between devices

Wired Control:
- RJ-45 connector for control from any LLEVO panel

Override Test Input:
- 10-28VAC/DC 5mA input current
- Test button on relay

Operating Environment:
- Location: Interior space
- Operating Temperature: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications:
- UL CUL 916/924
- Plenum Rated UL 2043

Catalog Number:	Date:	Project:

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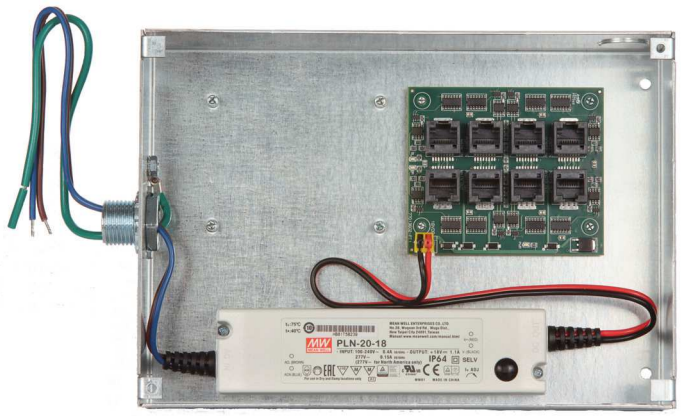
LightSync Digital

Power Supply Repeater 6

Overview

The LightSync Digital Power Supply Repeater 6 (LSPSR6) makes branch networking easy. It provides repeated data for 6 outputs supporting both panel and switch communications as well as power for devices. It has a main in and out port for passing network communications through to panels with minimal data loss. This module is ideal for large network data distribution applications.



Features

- **Made in the USA**
- **Digital CAT-5 Ready**
- **6 output ports** of repeated data
- **Main CAT-5** run in and out ports for direct pass through of data
- **Extend network data** length by 3000 feet combined distance end to end for each of the 3 branch output pairs
- **Additional power** for up to 20 CAT-5 devices to the 3 branch output runs combined at a cumulative distance of 3000 feet total
- **No programming** required

Warranty

Five-year limited warranty

Ordering

LightSync Power Supply Repeater 6

LSPSR6 - [ ]

Series:
LightSync Power Supply Repeater 6

Module Option:
P = Panel
R = Remote

Catalog Number: | Date: | Project:

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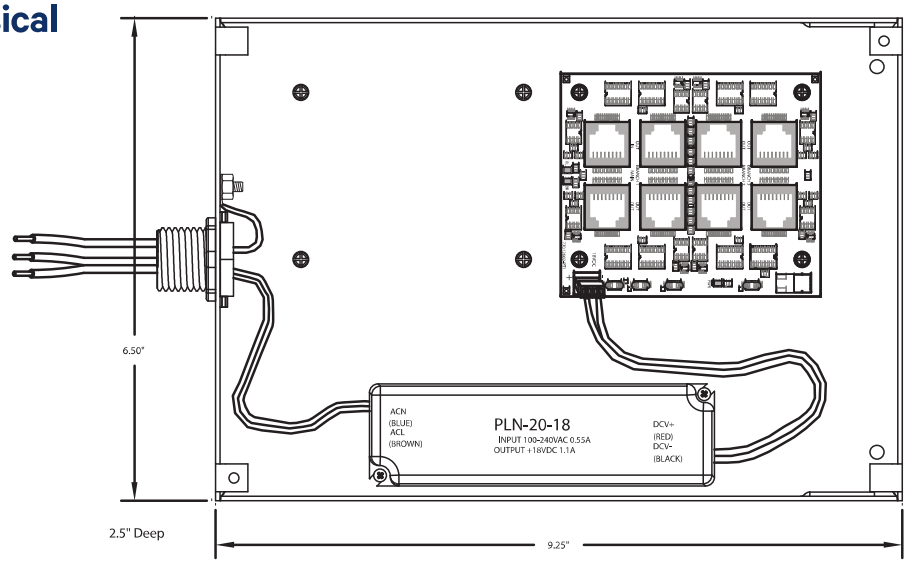
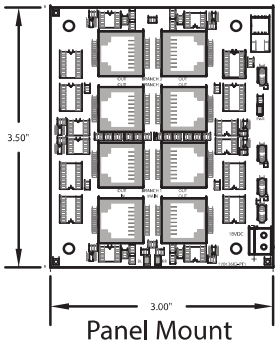
LightSync Digital

Power Supply Repeater 6

Physical



Remote Mount



Panel Mount

Specifications

Physical:
- Panel mount module 3.0" x 3.5"
- Remote mounted in 9.25" x 6.50" x 2.50" standard NEMA-1 enclosure
- Operates in any position

Electrical:
- 120/277VAC power supply
- 0.4 Amp at 120VAC

Capacities:
- Powers up to 20 additional CAT-5 devices at a cumulative distance of 3000 feet across the three branch output pairs combined
- Main CAT-5 in and out ports for pass through of data
- Data repeater provide additional 3000 feet end to end per branch output pair
- Refer to ILC Technical Bulletin #TB 1408 for details on calculating CAT-5 cable run distance

Operating Environment:
- Location: Interior space
- Operating Temp.: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications and Approvals:
- FCC Part 15
- UL CUL

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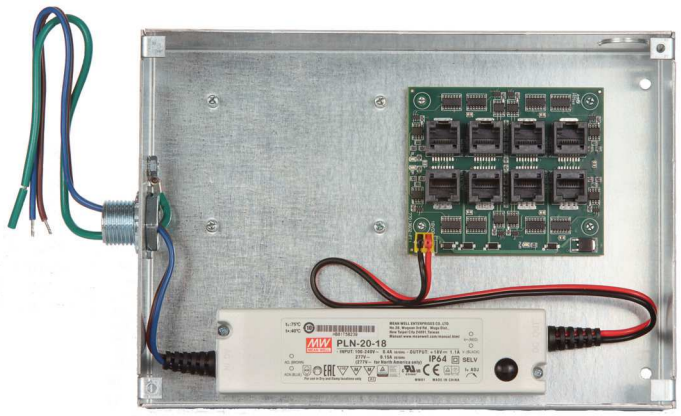
LightSync Digital

Power Supply Repeater 6

Overview

The LightSync Digital Power Supply Repeater 6 (LSPSR6) makes branch networking easy. It provides repeated data for 6 outputs supporting both panel and switch communications as well as power for devices. It has a main in and out port for passing network communications through to panels with minimal data loss. This module is ideal for large network data distribution applications.



Features

- **Made in the USA**
- **Digital CAT-5 Ready**
- **6 output ports** of repeated data
- **Main CAT-5** run in and out ports for direct pass through of data
- **Extend network data** length by 3000 feet combined distance end to end for each of the 3 branch output pairs
- **Additional power** for up to 20 CAT-5 devices to the 3 branch output runs combined at a cumulative distance of 3000 feet total
- **No programming** required

Warranty

Five-year limited warranty

Ordering

LightSync Power Supply Repeater 6

LSPSR6 - [ ]

Series:
LightSync Power Supply Repeater 6

Module Option:
P = Panel
R = Remote

Catalog Number: | Date: | Project:

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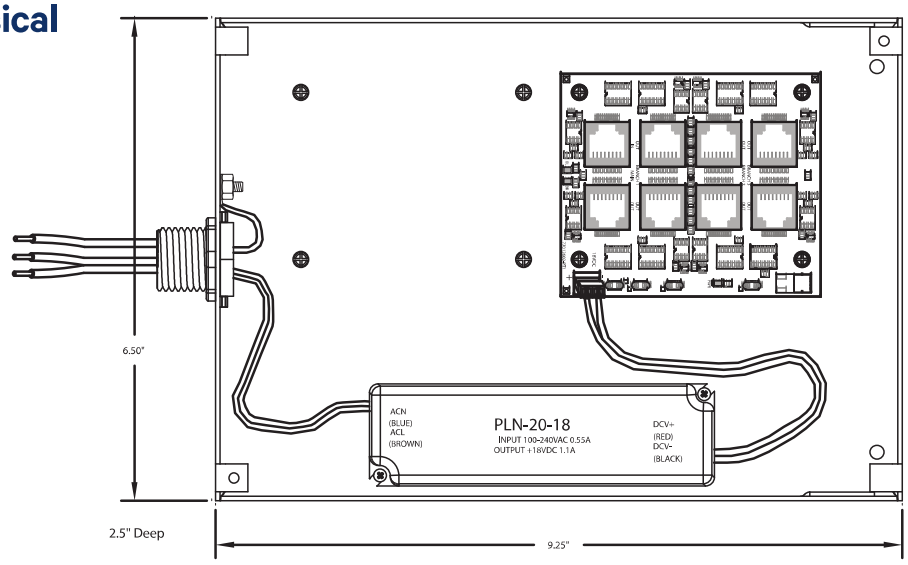
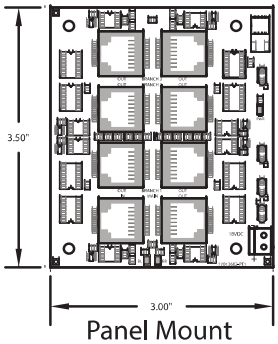
LightSync Digital

Power Supply Repeater 6

Physical



Remote Mount



Panel Mount

Specifications

Physical:
- Panel mount module 3.0" x 3.5"
- Remote mounted in 9.25" x 6.50" x 2.50" standard NEMA-1 enclosure
- Operates in any position

Electrical:
- 120/277VAC power supply
- 0.4 Amp at 120VAC

Capacities:
- Powers up to 20 additional CAT-5 devices at a cumulative distance of 3000 feet across the three branch output pairs combined
- Main CAT-5 in and out ports for pass through of data
- Data repeater provide additional 3000 feet end to end per branch output pair
- Refer to ILC Technical Bulletin #TB 1408 for details on calculating CAT-5 cable run distance

Operating Environment:
- Location: Interior space
- Operating Temp.: 0° to 50° C
- Humidity: 10% - 90% Non-condensing
- Atmosphere: Non-explosive/corrosive
- Vibration: Stationary

Certifications and Approvals:
- FCC Part 15
- UL CUL

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