

Module Specifications

1-, 2-, and 4-Output Dimming Modules (LP-RPM-4U-120, LP-RPM-2U-120, LP-RPM-1U-120)

Load Types

Incandescent; magnetic low-voltage; neon/cold cathode; Lutron Tu-Wire® and Advance Mark X® fluorescent dimming ballasts; Lutron Hi-lume® and Eco-10™ fluorescent dimming ballasts (using GRX-FDBI-16A-120 or PHPM-3F interfaces)
Outputs are compatible with Lutron PHPM-PA and HP 2•4•6 power boosters for higher wattage applications

Maximum Loads

20 A branch circuit:

- 16 A continuous total load per module
- 16 A continuous total load per switch leg

15 A branch circuit:

- 12 A continuous total load per module
- 12 A continuous total load per switch leg

4-Output Adaptive Dimming Module (LP-RPM-4A-120)

Load Types

Incandescent; magnetic low-voltage; electronic low-voltage; neon/cold cathode; Lutron Tu-Wire® and Advance Mark X fluorescent dimming ballasts

Maximum Loads

20 A branch circuit:

- 16 A continuous total load per module
- 10 A continuous total load per switch leg

15 A branch circuit:

- 12 A continuous total load per module
- 10 A continuous total load per switch leg

4-Output Switching Module (120 - 347 V \sim) (XP2)

Load Types

Non-dim lighting loads

Maximum Loads

20 A branch circuit:

- 16 A continuous total load per circuit
- 1/3 HP total load per switch leg

15 A branch circuit:

- 12 A continuous total load per module
- 1/3 HP total load per switch leg

Job Name:	Model Numbers:
Job Number:	

Module Specifications (continued):

4-Output Quiet Fan Speed Control Module (LP-RPM-4SQ-120)
Load Types
Ceiling fan
Maximum Loads
2 A (single ceiling fan) per output

4-Output Motor Module (LP-RPM-4M-120)
Load Types
Bi-directional three-wire 120 V \sim motor loads; incandescent non-dim loads <i>Outputs are not rated for switching electronic low-voltage or electronic ballasts</i>
Maximum Loads
20 A branch circuit: 1/2 HP per circuit 5 A maximum per circuit for motor loads 3 A maximum per circuit for tungsten loads

Job Name:	Model Numbers:
Job Number:	

Specifications

Standards

- UL Listed (Reference: UL File 42071).
- Complies with CSA, NOM (where appropriate).

Power

- Input power: 100-127 V \sim phase-to-neutral.
- Branch Circuit Capacity:
 - 120-127 V \sim : up to 2000 W/VA
- Branch circuit breakers (if applicable): UL-rated thermal magnetic.
- AIC rating:
 - 100 –127 V \sim : 10,000 A

NOTE: See page 6 for SCCR ratings.
- Lightning strike protection: meets ANSI/IEEE standard 62.41-1980. Can withstand surges of up to 6000 V \sim and up to 3000 A.
- 10-year power failure memory: automatically restores lighting to scene selected prior to power interruption.
- RTISS® filter circuit technology compensates for incoming line voltage variations: no visible flicker with +/-2% change in RMS voltage/cycle and +/-2% Hz change in frequency/second.
- Softswitch™ arcless relay technology featured in every 16 A switched circuit.

Lighting Sources/Load Types

- Operates these sources with a smooth continuous Square Law dimming curve or on a full conduction non-dim basis:
- Incandescent (tungsten)/halogen.
 - Magnetic low-voltage transformer.
 - Lutron Tu-Wire®.
 - Advance Mark X®.
 - Neon.
 - HID (full-conduction non-dim basis only).
 - Switched lighting loads.
 - DSI, DALI, and 0-10 V \equiv dimming ballasts using 10-volt modules in the panel.
 - Fan
 - Motor
 - Electronic low-voltage transformer.
 - Lutron Hi-Lume® and Eco-10® fluorescent dimming ballasts are controlled or via power interfaces.

Physical Design

- Enclosure: NEMA-Type 1, IP-20 protection (Type 2 available upon request); #16 U.S. gauge steel. Indoors only.
- Panel weight:
 - Mini: 30 lb. (14 kg)
 - Standard-size: 80 lb. (37 kg)

Mounting

- Mini and standard-size panels surface mount or recess mount between 16 in. (40 cm) studs.

Environment

- 32 - 104 °F (0 - 40 °C).
- Relative humidity less than 90% non-condensing.

Heat Dissipation

- Panels cool by convection. No fans.

Wiring

- Internal: prewired by Lutron.
- System communications: low-voltage PELV (Class 2: USA) wiring connects dimming panels to other components.
- Line (mains) voltage: feed and load wiring only. No other wiring or assembly required.

LCP128 Controller

- Configures entire LCP128 system.
- Two low-voltage (15-24 V \equiv) contact closure inputs, momentary or maintained, pull-up or pull-down.
- Emergency sensing.
- Astronomical time clock.
- Digital control link.
- Mounted inside LCP128 panel.

Job Name:	Model Numbers:
Job Number:	

Specifications (continued)

Dimming Modules (mini and standard-size panels)

4-Output Dimming Modules:

- Each dimming module can control a fully loaded electrical circuit (16 A max.), with four dimming outputs per Module.

2-Output Dimming Modules:

- Each dimming module can control a fully loaded electrical circuit (16 A max.), with two dimming outputs per module.

1-Output Dimming Modules:

- Each dimming module can control a fully loaded electrical circuit (16 A max.), with one dimming output per module.

All Module Types:

- Single output and/or all outputs combined not to exceed 16 A per module.

Switching Modules (mini and standard-size panels)

- 4 switched circuits (relays) per module.
- *Softswitch*™ relay is rated for 16 A continuous use, which is the maximum continuous load for a 20 A overcurrent protection device (branch breaker).
- Patented *Softswitch* circuit eliminates arcing at mechanical contacts when loads are switched. Extends relay life to an average of 1,000,000 cycles (on/off) for resistive, capacitive or inductive sources.
- Relay is mechanically held.

Astronomical Time Clock

- Capable of up to 500 events.
- 7 daily schedules and 40 holiday schedules are available.
- 25 events per day.
- Holiday events are programmable one year in advance.
- Holiday schedules are programmable to run for up to 90 days.
- ATC location programmable by built-in city database or by entering latitude and longitude, plus a sunrise or sunset offset to adjust for local geography.

Control Station Devices

- One- to seven-button seeTouch® wallstations.
- Buttons are programmable to select scenes or patterns, toggle circuits, or activate delay-to-off.
- Buttons are programmed at the *LCP128* controller.
- Key switch control is also available.
- Controls are powered by and communicate via the *LCP128* low-voltage communication link.
- OMX-CCO-8 integrates third party motorized window treatments or A/V equipment.
- OMX-AV interfaces with occupant or photo sensors.
- OMX-RS232 interfaces the *LCP128* system to a PC, touchscreen, or building management system.
- ODMX-512 interfaces to theatrical stageboards.
- See specific product specification sheets for further details.

LCP Panels Short Circuit Current Ratings (other ratings available)

Panel Type	Voltage	Std. SCCR Rating
LCP Main Lug Panels (all sizes)	120	25,000 A
LCP Feed Through Panels (all sizes)	120	25,000 A

Job Name:	Model Numbers:
Job Number:	

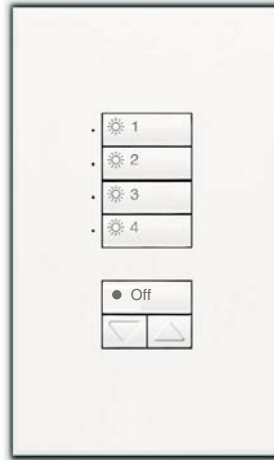
seeTouch® Wallstations

Description

- Each *seeTouch* wallstation features engraved, backlit buttons allowing quick and easy recall of lighting presets, even in low light conditions.
- Button functionality is fully programmable.

Specifications

- Low-voltage type PELV (Class 2: USA)
Operating voltage: 24 V_{DC}.
- Meets IEC 801-2. Tested to withstand 15 kV electrostatic discharge without damage or memory loss.
- Faceplate snaps on with no visible means of attachment.
- Terminals accept up to two #18 AWG (1.0 mm²) wires typical.
- Environment: 32 - 104 °F (0 - 40 °C). Relative humidity less than 90% non-condensing.



seeTouch Wallstation
(SO-4SN-WH-EGN)

seeTouch® Models

- Models available with one to seven buttons, with or without raise/lower.
- Use SO series model numbers.
- Available with all standard colors and engraving.
- Available with built-in contact closure inputs or with optional occupant sensor inputs.

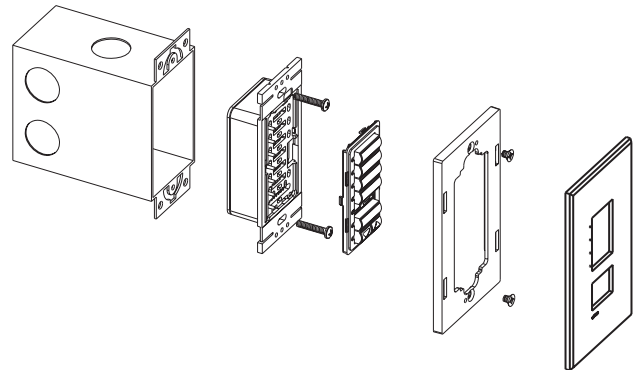
Button Programming

- Each button may be programmed for scene selection, toggle, delay-to-off, raise, or lower functionality.
- Button programming can be used to provide specialized manual control of multiple areas.

Button Engraving

Custom engraving is available using button/faceplate replacement kits.

To order, contact Lutron Customer Service at 1-888-LUTRON1 (1-888-588-7661).

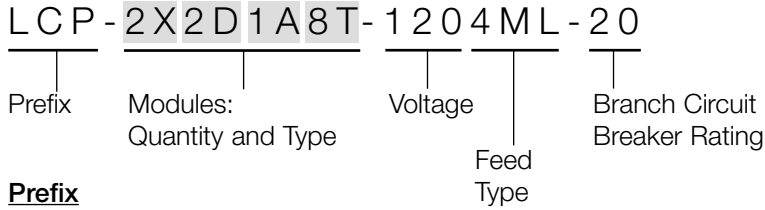


Typical wallbox dimensions: 3.74in. (95 mm) high, 2.17in. (55 mm) wide, 2.75in. (70 mm) deep.

Job Name:	Model Numbers:
Job Number:	

LCP Panel Model Numbers: Mini and Standard-Size

Example



Prefix

LCP = LCP dimming panel

Module Types

X S D Q A E M F T

List modules in the order shown above. Insert the quantity before each module code. Omit codes for modules not used in panel. See Note at right for limits on numbers of modules per panel.

- X = Four-Circuit Switching (Relay) (XP)
- S = One-Circuit Dimming (1U)
- D = Two-Circuit Dimming (2U)
- Q = Four-Circuit Dimming (4U)
- A = Four-Circuit Adaptive Dimming (4A)
- M = Four-Circuit Motor (4M)
- F = Four-Circuit Quiet Fan Speed (4FSQ)
- T = 0-10 V[∞] Ballast Control (TVM)

Voltage

120 for 120 V[∞]

Feed Type

- FT = Feed-through panel (circuit breakers not included)
- 3 M or 3ML = 1 phase 3 wire feed (split phase)
- 4 M or 4ML = 3 phase 4 wire feed

Branch Circuit Breaker Rating

Omit for feed-through panels
 20 for 20 A branch circuit breakers

Frequency - All Model Numbers and Voltages

50/60 Hz

Output (Load) Ratings

Module Type	Rating
XP	16 A per circuit
1U, 2U, 4U	16 A per module
4A	16 A per module, 10 A per output
4M	16 A per module, 5 A per output (1/4 HP single motor)
4FSQ	2 A per output (single ceiling fan)
TVM	50 mA per channel, 750 mA per system

Note

Module quantities are limited as follows:

Standard-Size Branch Circuit Breaker panels:

- Max. # in panel: 9
- Max. # with TVM modules: 8
- Max. # with XP modules: 7
- Max. # with XP and TVM modules: 5

Standard-Size Feed-Through panels:

- Max. # in panel: 9
- Max. # with TVM modules: 8

Mini-Size Branch Circuit Breaker panels (no XP modules):

- Max. # in panel: 3

Mini-Size Feed-Through panels:

- Max. # in panel (with XP modules): 3
- Max. # in panel (all XP modules): 4

Input Ratings

- 120 V[∞]
- 120/240 V[∞]
- 120/208 V[∞]

Job Name:	Model Numbers:
Job Number:	

Ratings: Mini and Standard-Size

LCP128 panels with circuit breakers, no XP switching modules (standard panels, main lugs only)

Number of Modules	Feed Type	Feed Size (A)	Breaker Ratings	Panel Size
2	1Ø, 3W	20 A	20 A	Mini
3	3Ø, 4W	20 A	20 A	Mini
4	3Ø, 4W or 1Ø, 3W	175 A	20 A	Standard
5	3Ø, 4W or 1Ø, 3W	175 A	20 A	Standard
6	3Ø, 4W or 1Ø, 3W	175 A	20 A	Standard
7	3Ø, 4W or 1Ø, 3W	175 A	20 A	Standard
8	3Ø, 4W or 1Ø, 3W	175 A	20 A	Standard
9	3Ø, 4W or 1Ø, 3W	175 A	20 A	Standard

LCP128 panels with circuit breakers, with XP switching modules (standard panels, main lugs only)

Number of Modules	Feed Type	Feed Size (A)	Breaker Ratings	Panel Size
2	3Ø, 4W or 1Ø, 3W	200 A	20 A	Standard
3	3Ø, 4W or 1Ø, 3W	200 A	20 A	Standard
4	3Ø, 4W or 1Ø, 3W	200 A	20 A	Standard
5	3Ø, 4W or 1Ø, 3W	200 A	20 A	Standard
6	3Ø, 4W or 1Ø, 3W	200 A	20 A	Standard
7	3Ø, 4W or 1Ø, 3W	200 A	20 A	Standard

Note: Refer to the “How to Build a Model Number” section for a listing of available module types.

Job Name:	Model Numbers:
Job Number:	

Ratings: Mini and Standard-Size (continued)

Feed-through LCP128 panels, with XP Switching Modules (without branch circuit breakers)

Number of Modules	Feed Type	Feed Size (A)	Panel Size
2	1Ø, 2W	20 A	Mini
3	1Ø, 2W	20 A	Mini
4	1Ø, 2W	20 A	Standard
5	1Ø, 2W	20 A	Standard
6	1Ø, 2W	20 A	Standard
7	1Ø, 2W	20 A	Standard
8	1Ø, 2W	20 A	Standard
9	1Ø, 2W	20 A	Standard

Feed-through LCP128 panels, XP Switching Modules Only (without branch circuit breakers)

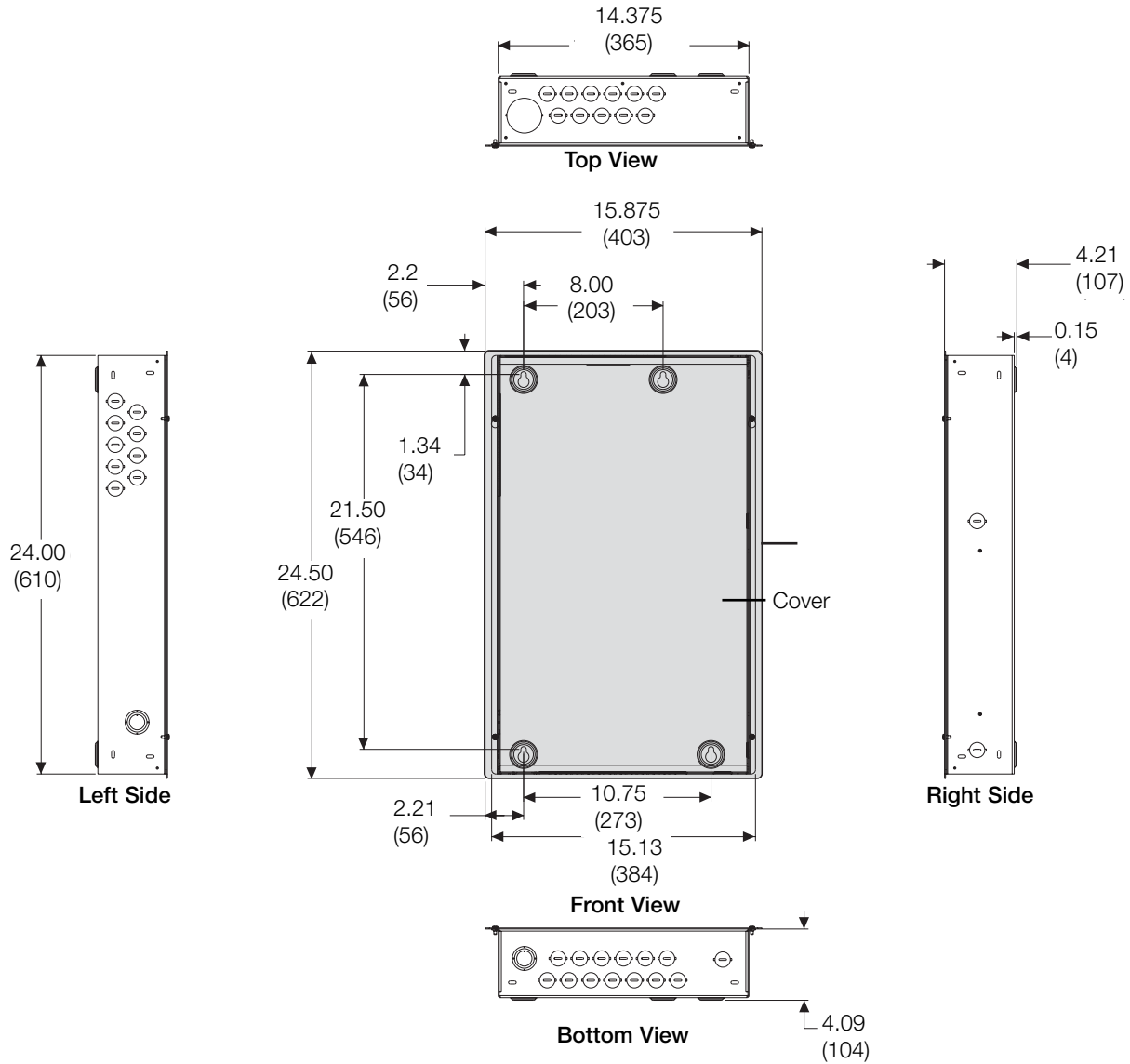
Number of Modules	Feed Type	Feed Size (A)	Panel Size
2	1Ø, 2W	20 A	Mini
3	1Ø, 2W	20 A	Mini
4	1Ø, 2W	20 A	Mini
5	1Ø, 2W	20 A	Standard
6	1Ø, 2W	20 A	Standard
7	1Ø, 2W	20 A	Standard
8	1Ø, 2W	20 A	Standard
9	1Ø, 2W	20 A	Standard

Note: Refer to the “How to Build a Model Number” section for a listing of available module types.

Job Name:	Model Numbers:
Job Number:	

Mini Panel Dimensions

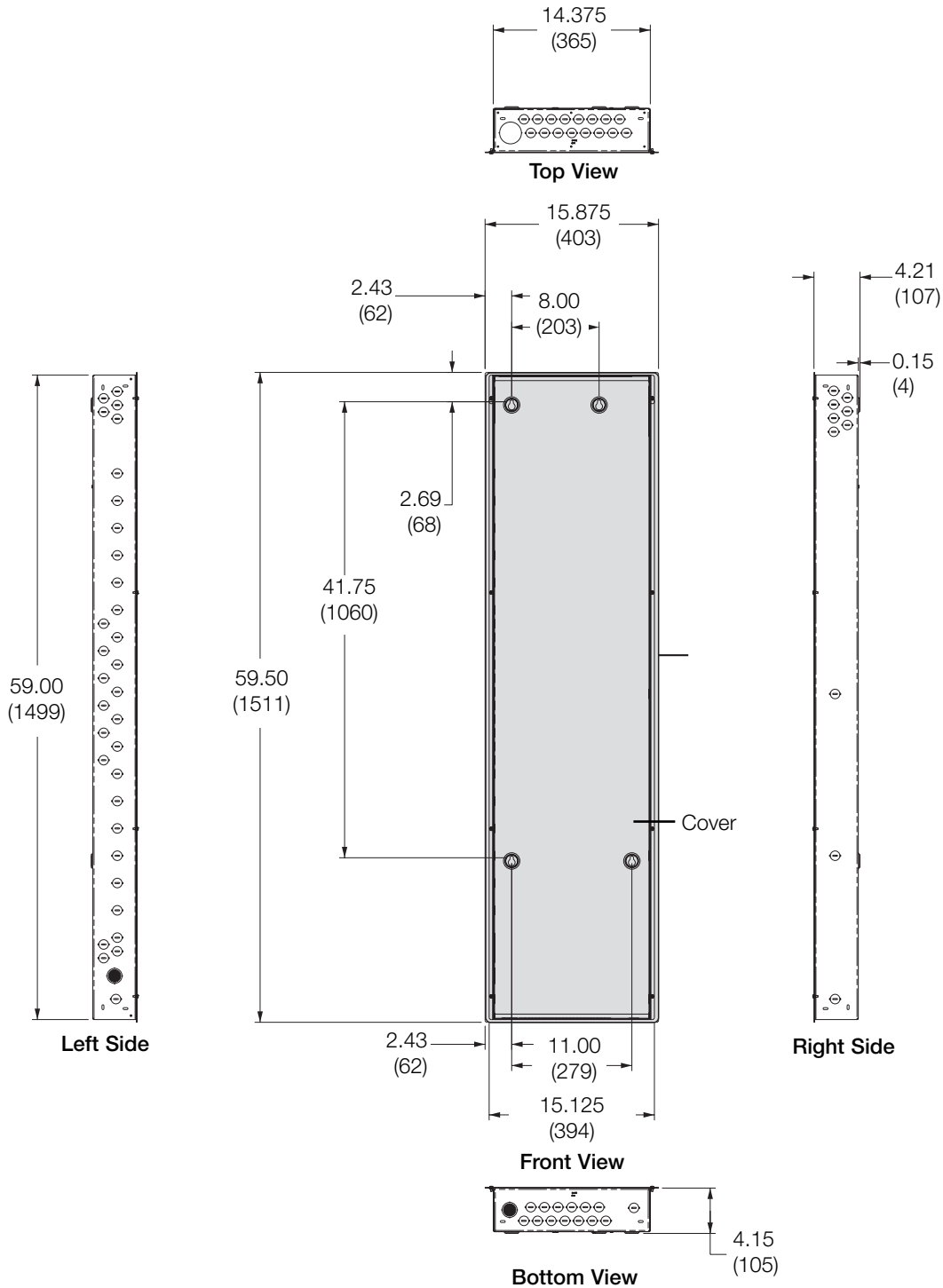
Dimensions are in inches (mm).



Job Name:	Model Numbers:
Job Number:	

Standard-Size Panel Dimensions

Dimensions are in inches (mm).



Job Name:	Model Numbers:
Job Number:	

Panel Mounting: Mini and Standard-Size

- Panel generates heat. Mount only where ambient temperature will be 32°F-104°F (0°C - 40°C).
- Reinforce wall structure as required for weight and local codes.
- Allow 12 in. (305 mm) clearance above and below panel.
- Indoor use only. NEMA®, Type 1 enclosure, IP20.
- Relative humidity must be < 90% non-condensing.
- Mount panels within 7° of true vertical.
- Install in accordance with all national and local electrical codes.

No. Modules	Max. Heat BTUs (Kcal)/Hr.
1	90 (22.68)
2	170 (42.84)
3	250 (63.00)
4	330 (83.16)
5	410 (103.32)
6	490 (123.48)
7	570 (143.64)
8	650 (163.80)
9	730 (183.96)



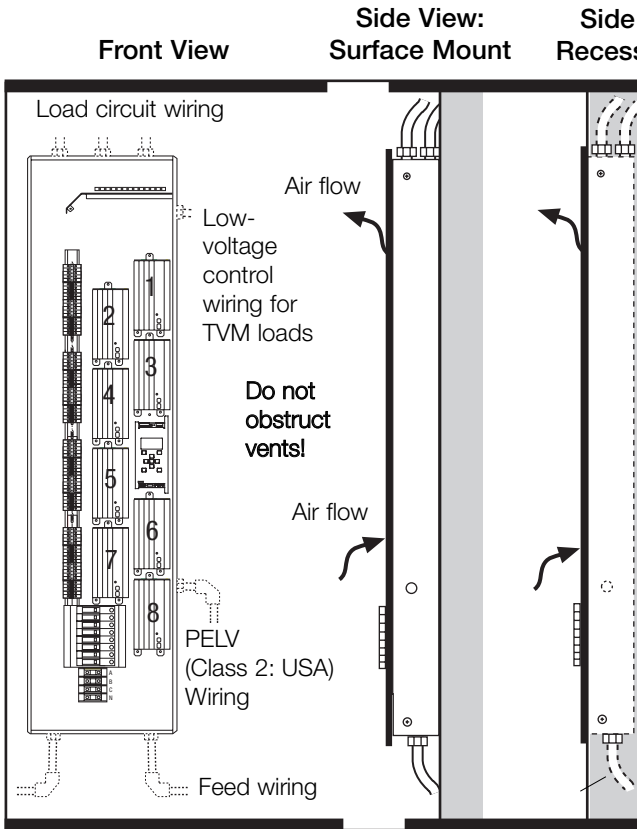
Caution! Dimming panels will hum slightly and internal relays will click while in operation. Mount where audible noise is acceptable.



Caution! Mount panel so line (mains) voltage wiring will be at least 6 feet (1.8 m) from sound or electronic equipment and its wiring.



Caution! This equipment is air-cooled. Vents must not be blocked or you will void the warranty.



LP8/32-1204ML-20 shown

Surface Mounting

- Lutron recommends using 1/4 in. (6 mm) mounting bolts (maximum size accepted by keyholes).
- Reinforce wall structure as required for weight and local codes.
- Do not mount panel directly to wall board/drywall.

Recess Mounting

- Mount to wall stud by screwing through slots in corners of panel.
- Mount panel between flush and 1/8 in. (3 mm) below finished wall surface.

Recommended Mounting Heights* (for LCP128 systems)

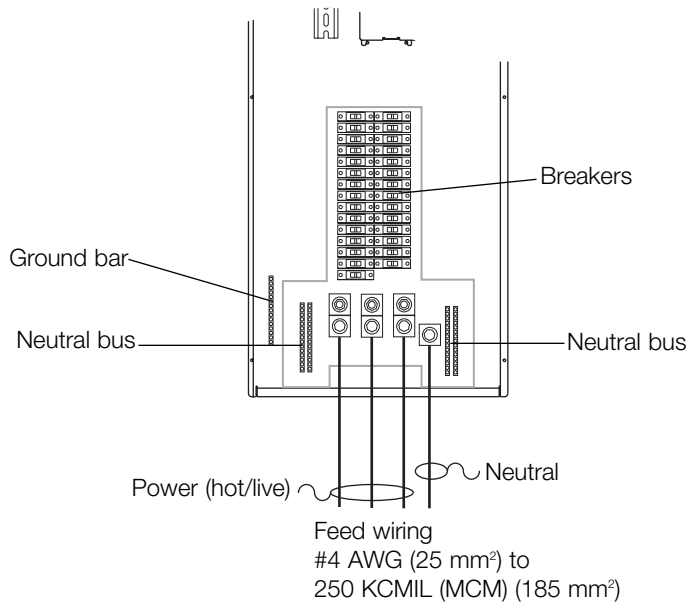
Mini	45in. (1143 mm)
Standard	25in. (635 mm)

* Measure from floor to bottom of panel; optimal viewing height for controller.

Job Name:	Model Numbers:
Job Number:	

Feed Wiring Details: 120 V~ Mini and Standard-Size Main Lug

Dimming and Switching Panels



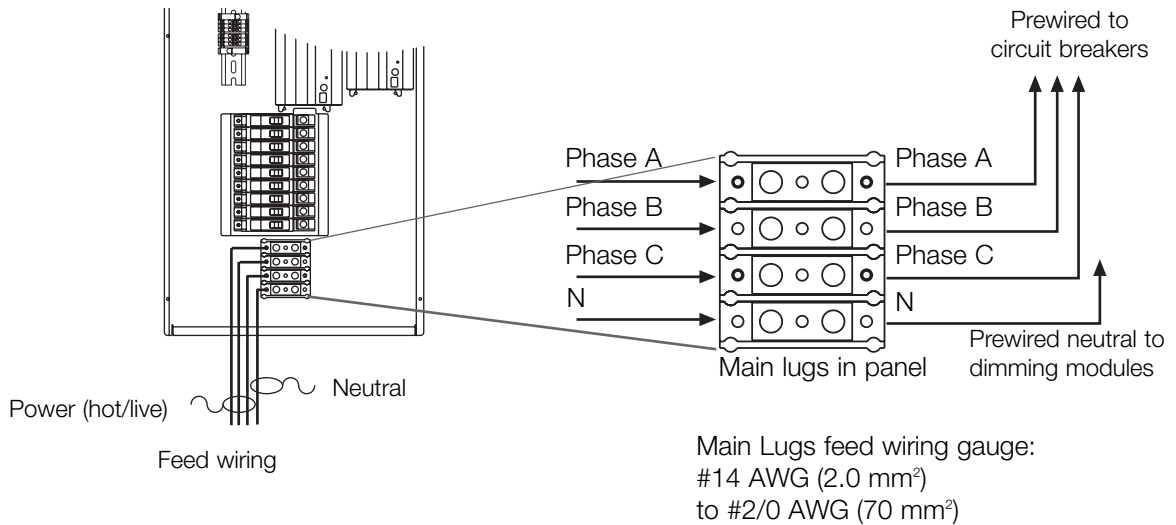
Wire Sizes for Load Wiring (All Models)

- Dimmed/Switched Hot (Live):
#14 AWG (2.5 mm²) to #10 AWG (4.0 mm²)
- Load Neutral:
#14 AWG (2.5 mm²) to #10 AWG (4.0 mm²)

Notes

- See Load Wiring to Terminal Blocks page for load wiring details.
- On **dimming panels** only, the input breaker of Circuit 1 supplies current to Load Circuit 1 and to the Control Wiring (2 A draw max.). Panels with switching modules have a dedicated circuit breaker for the control circuit.

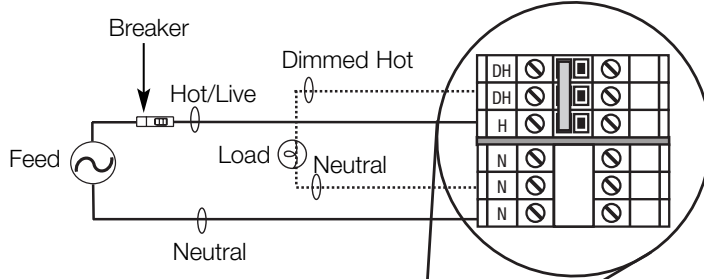
Dimming Panels



Job Name:	Model Numbers:
Job Number:	

Wiring Details: 120 V~ Mini and Standard-Size Feed-Through Panel

Typical Dimming/Switching Leg



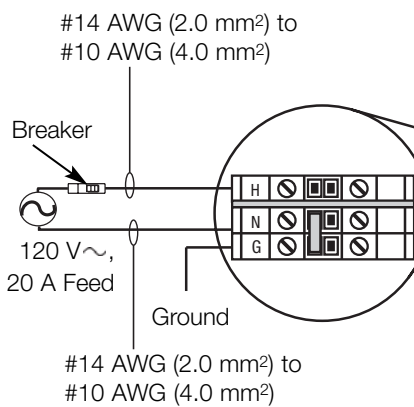
Wire Sizes for Power Feed, To Each Circuit

- **Power Feed:**
#14 AWG (2.0 mm²) to #10 AWG (4.0 mm²)
- **Neutral Feed:**
#14 AWG (2.0 mm²) to #10 AWG (4.0 mm²)

Wire Sizes for Load Wiring, From Each Output

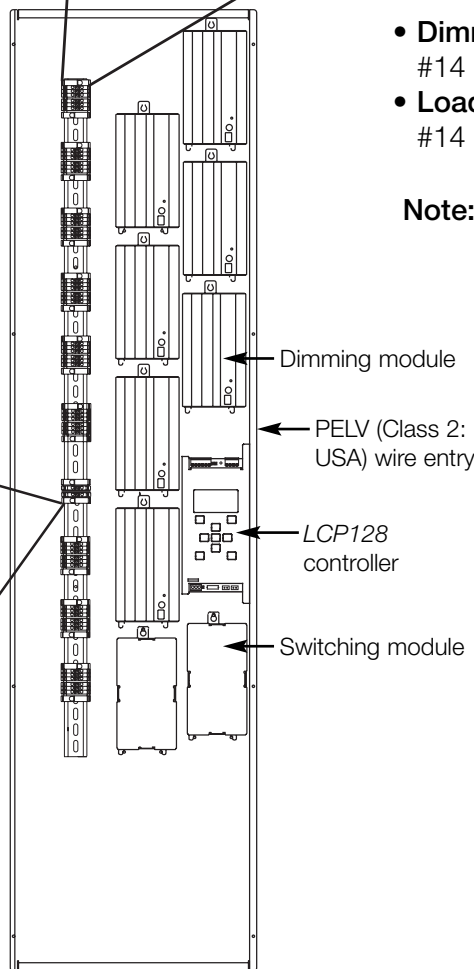
- **Dimmed/Switched Hot (Live):**
#14 AWG (2.0 mm²) to #10 AWG (4.0 mm²)
- **Load Neutral:**
#14 AWG (2.0 mm²) to #10 AWG (4.0 mm²)

Note: See Load Wiring to Terminal Blocks page for load wiring details.



Control Feed

An additional feed (120 V~ on a dedicated breaker) is required for feed-through panels to power the low-voltage control transformer.



Job Name:	Model Numbers:
Job Number:	

Feed and Load Wiring to Terminal Blocks: 120 V~ Mini and Standard-Size

General Notes

- Typical dimming/switching legs shown.
- Do not remove bypass jumpers until after load wiring has been verified.

Wire sizes for power feed, to each input

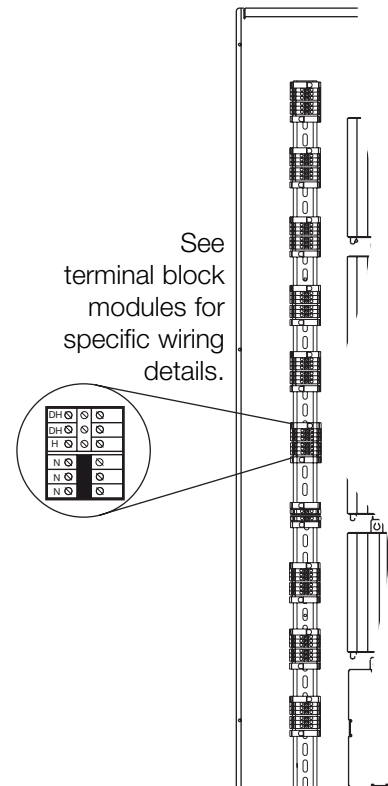
- Power feed: #14 AWG (2.5 mm²) to #10 AWG (4.0 mm²)
- Neutral feed: #14 AWG (2.5 mm²) to #10 AWG (4.0 mm²)

Wire sizes for load wiring, from each output

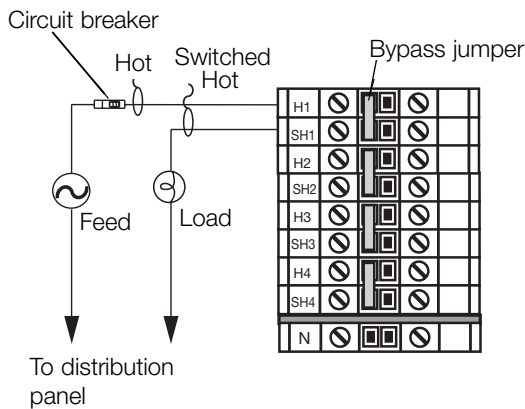
- Dimmed/switched hot (live): #14 AWG (2.5 mm²) to #10 AWG (4.0 mm²)
- Load neutral: #14 AWG (2.5 mm²) to #10 AWG (4.0 mm²)

Control Feed

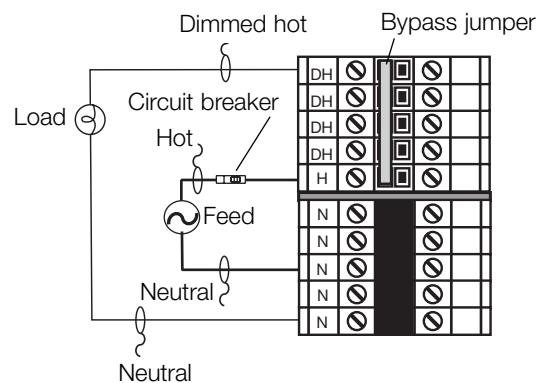
An additional feed (120 V~ on a dedicated breaker) is required for feed-through panels to power the low-voltage control transformer.



4-Circuit Switching (Relay) Module (XP)



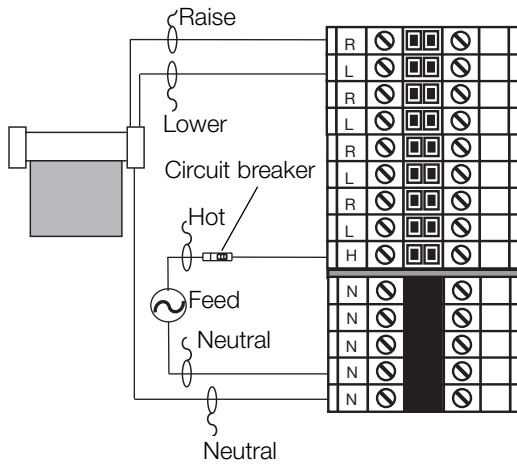
4-Circuit Dimming Module (4U) 4-Circuit Adaptive Dimming Module (4A) 4-Circuit Quiet Fan Speed Module (4FSQ)



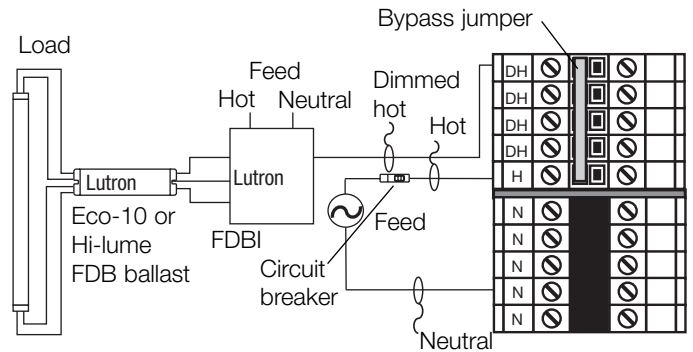
Job Name:	Model Numbers:
Job Number:	

Feed and Load Wiring to Terminal Blocks: 120 V~ Mini and Standard-Size (continued)

4-Circuit Motor Module (4M)



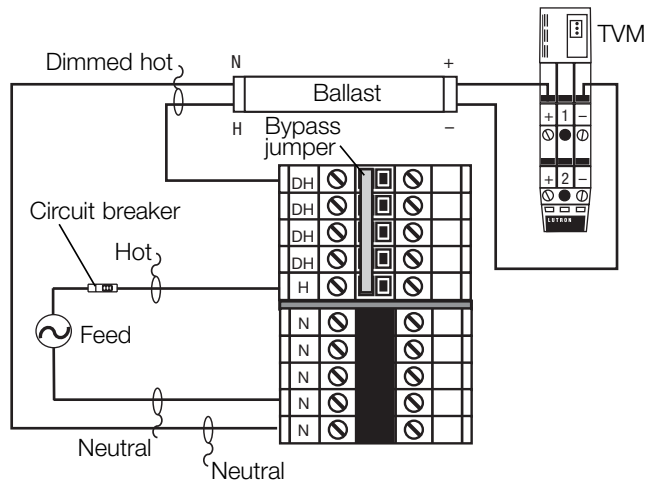
Connecting an NGRX-FDBI to a Panel



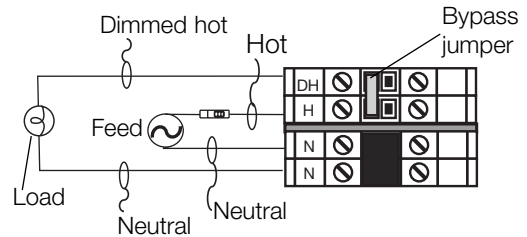
Refer to FDBI Installation Sheet for detailed wiring.

TVM Module

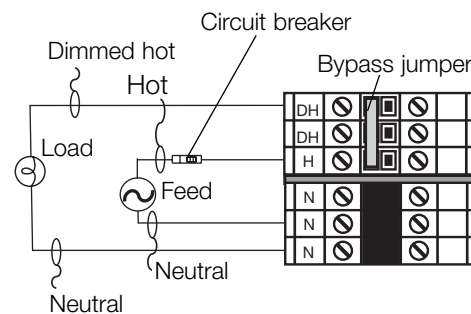
For 0-10 V, PWM, Tridonic® DSI, and DALI loads. Each TVM controls two consecutive circuits of lighting and are the first circuits in the panel. Maximum low-voltage ballast control current: 50 mA per zone, 750 mA per panel. Dimming or switching module is used to switch power to the ballast.



1-Circuit Dimming Module (1U)



2-Circuit Dimming Module (2U)

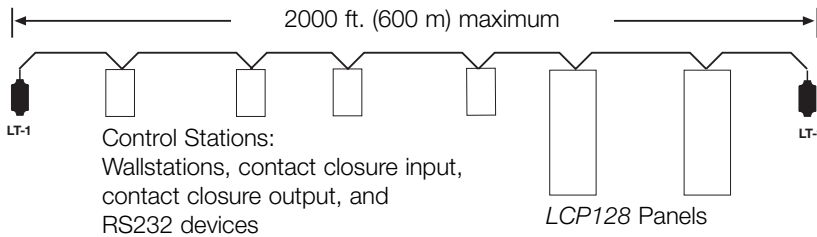


Job Name:	Model Numbers:
Job Number:	

PELV (Class 2: USA) Wiring

The *LCP128* system communicates to control stations using a PELV (Class 2: USA) low-voltage link. Control stations include wallstations, contact closure input and output devices, and RS232 interfaces. Wire the PELV (Class 2: USA) link according to the following guidelines:

- Link must be daisy chained.
- Must run in separate trough from line (mains) voltage.
- Link must be less than 2000 ft. (600 m) long.
- Make wire connections inside the wallbox and *LCP128* panel.
- Install Link Terminators (LT-1) at the start and end of the PELV (Class 2: USA) daisy-chained link.
- The order of controls on the control link is not important.
- Use Lutron GRX-CBL-46L cable or equivalent.



Note: Link Terminators (LT-1) are required at the start and end of the *LCP128* PELV (Class 2: USA) link.

Maximum total length of the control link is 2,000 ft. (600 m). This distance is based on proper shielding of the twisted/shielded pair, proper wire size, and the use of link terminators (LT-1) at each end of the link. If unapproved cable or smaller wire is used control link length must be de-rated according to the following chart:

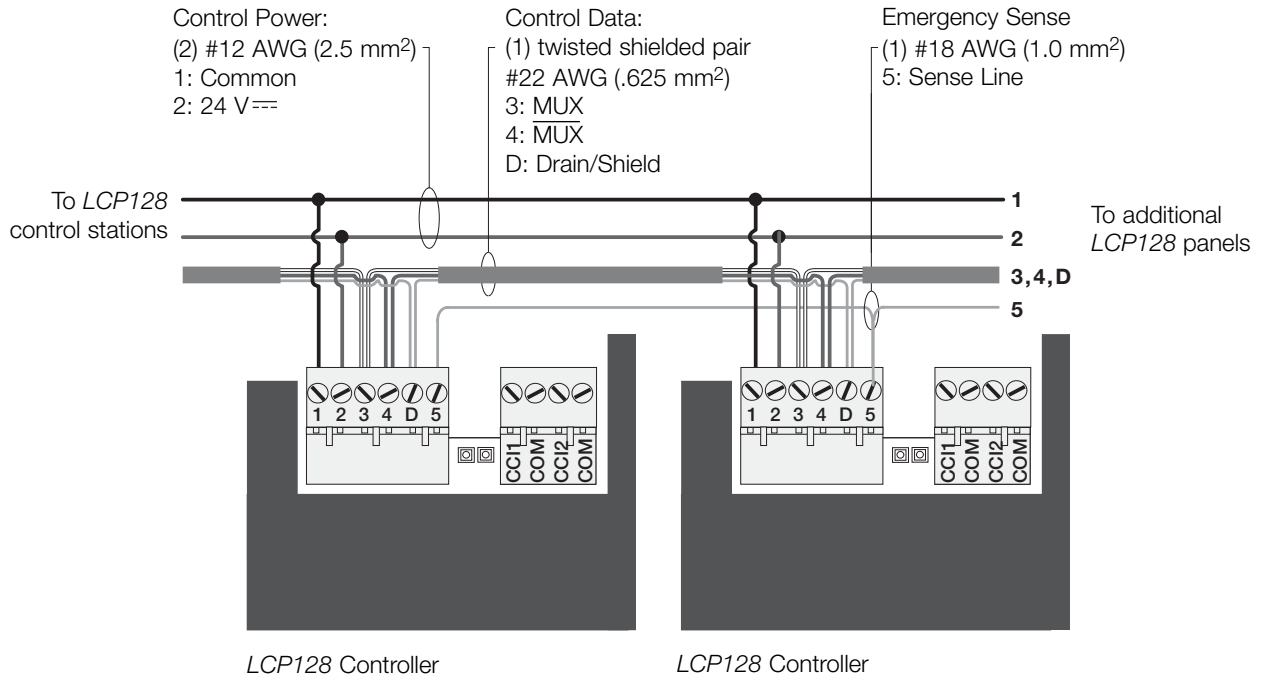
Terminal 1 & 2 Wire Sizes	Max. Control Link Length
#12 AWG (4.0 mm ²)	2000 ft. (600 m)
#14 AWG (2.5 mm ²)	1400 ft. (425 m)
#16 AWG (1.5 mm ²)	900 ft. (275 m)
#18 AWG (1.0 mm ²)	600 ft. (180 m)



Notice! If Link Terminators (LT-1) are not used or improper wiring topology is employed, the system will not communicate properly.

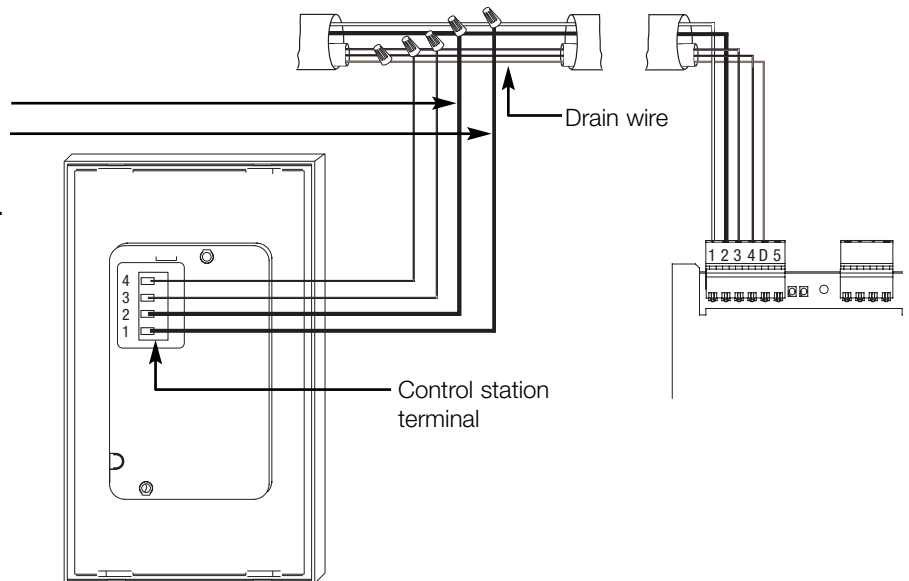
Job Name:	Model Numbers:
Job Number:	

PELV (Class 2: USA) Wiring Panel to Panel and Panel to Control Stations



Wiring Notes:

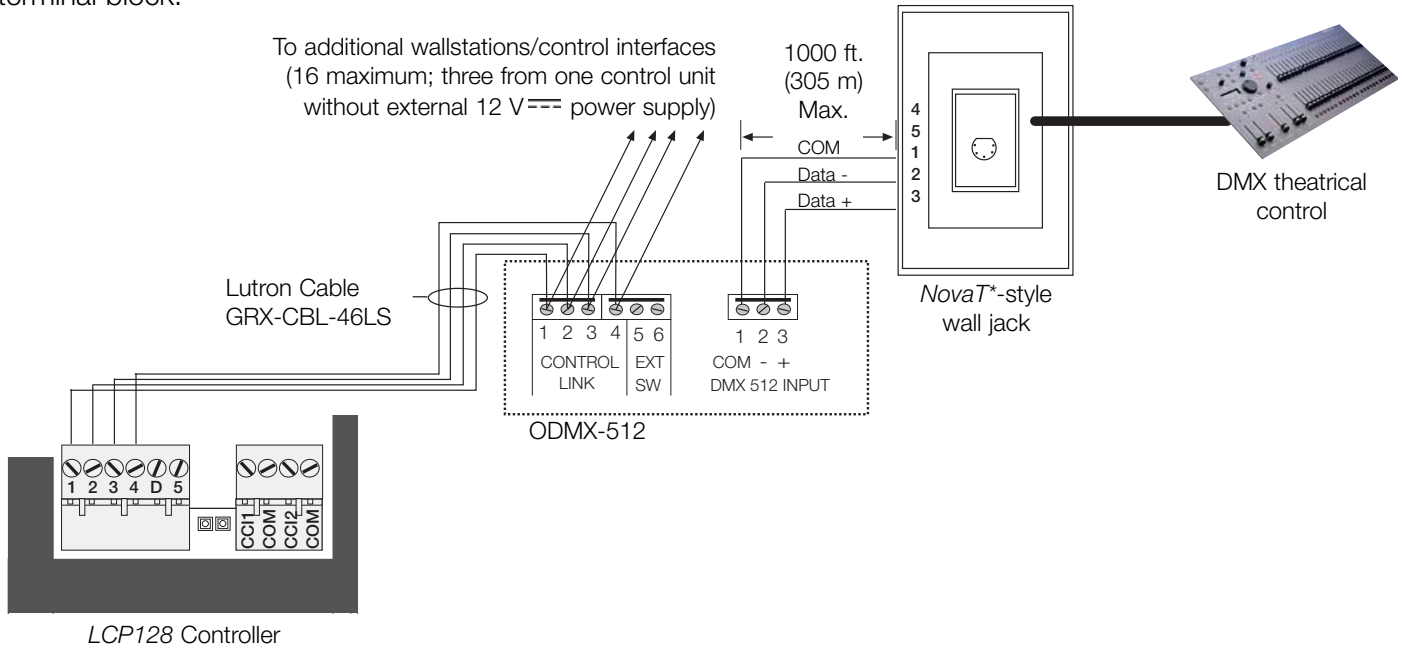
- Use a wire connector to attach one #18 AWG (1.0 mm²) wire for Common (terminal 1) and one #18 AWG (1.0 mm²) wire for 24 V_{AC} (terminal 2) from the PELV (Class 2: USA) link to the control. Two #12 AWG (4.0 mm²) wires cannot both be terminated on the control station. Maximum wire length from link to control is 8 ft. (2.5 m).
- Only connect the Drain/Shield wire (bare copper) to terminal 'D' in LCP128 panels. Maintain the shield throughout the link but do not allow it to touch ground (earth) or wallstation circuitry.



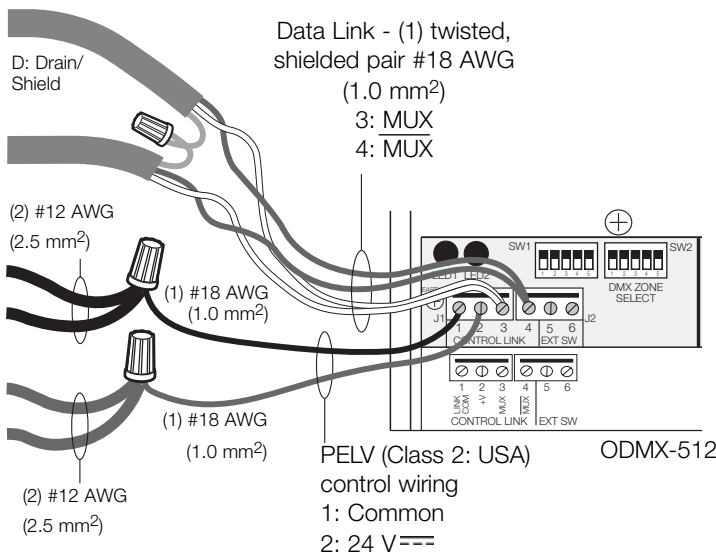
Job Name:	Model Numbers:
Job Number:	

PELV (Class 2: USA) Wiring for ODMX-512

- Make daisy-chain connections to the low-voltage PELV (Class 2: USA) MUX link terminals on the front of ODMX-512 interface
- Do not use T-taps; run all wires in and out of terminal block.
- Each terminal accepts up to two #18 AWG (1.0 mm²) wires.



PELV (Class 2: USA) Terminal Connections



- Two #12 AWG (2.5 mm²) conductors for common (terminal 1) and 24 V^{DC} (terminal 2). These will not fit in terminals. Connect as shown.
- One shielded, twisted pair #18 AWG (1.0 mm²) for data link (terminals 3 and 4).
- Connect Drain/Shield as shown. Do not connect to Ground (Earth) or wallstation/control Interfaces. Connect the bare drain wires and cut off the outside shield.
- Do not connect the extra #18 AWG (1.0 mm²) wire to the ODMX-512. Connect only to LCP128 panels as a “sense line” for emergency (essential) lighting.

Job Name:	Model Numbers:
Job Number:	