softswitch128ce-1 02.28.07

Softswitch128 Switching System

Softswitch128 Panel

System Overview

Softswitch128 is a switching system that is ideal for small to medium sized switching projects. A system consists of panels, control stations, occupancy sensors and photocells. Softswitch128 panels contain Lutron's one million cycle Softswitch™ relay and the Softswitch128 Controller.
Softswitch128 is easy to install and simple to program. Softswitch128 also includes an astronomical time clock for system automation.

System Features

- Digital control for up to 512 circuits.
- Add up to 32 digital control stations (wallstations and interfaces) for multiple points of control.
- Up to sixteen (16) Softswitch128 panels may be used.
- Add the Softswitch128 Expansion Module to the system for increased control station capacity. Three links of up to 32 control stations each (96 control stations total) may be added with the Expansion Module present.
- Integrated astronomical time clock.
- Lutron Softswitch technology for every switched output (resistive, inductive and capacitve) to full 16A.
- Softswitch relays are rated for all light sources as well as motors.
- RS232 interface available (OMX-RS232).
- Contact closure input and output devices available (OMX-AV and OMX-CCO-8).
- Keyswitch wallstations available (NTOMX-KS).
- Normal or emergency panel capability.
- Softswitch128 panel is prewired and pre-tested.
- Panels are rated for 230 V applications.
- Feed-through and branch circuit breaker type panels are available.
- Panels are field expandable.

Job Name:	Model Numbers:	
Job Number:		

Softswitch128 Controller

Softswitch128 Controller

Overview

The Softswitch128 Controller is used to configure the entire Softswitch128 system. The controller features an LCD user interface to facilitate programming all switching system and astronomical time clock (ATC) parameters.

Features

- Controller LCD screens may be displayed in English, Spanish, German, French, Portuguese, Dutch, and Italian.
- Program wallstations to recall light patterns, to toggle any switch leg(s), to activate delay-to-off and to activate contact closures on a button by button basis.
- Integrated astronomical time clock (ATC) automates switching and contact closure outputs with up to 500 user-defined events within 7 daily schedules and 40 holiday schedules. Each day may have 25 events.
- ATC events automatically select patterns, start afterhours mode, or end afterhours mode.
- Events may be copied and pasted for fast programming.
- ATC events may be triggered by time of day or by an offset from sunrise or sunset.
- System location is programmable by internal city database or by specifying latitude and longitude.
- ATC automatically adjusts for leap year and daylight savings time (where applicable).
- Programmable afterhours mode with user-selectable “blink warn” and user programmable refresh time.
- Two integrated user-configurable contact closure inputs.
- Override capability is available at the panel for controls, timeclock, and switch legs.
- Controller is located in the Softswitch128 panel for easy access.

Job Name:	Model Numbers:	
Job Number:		

Specifications

Standards

- CE

Power

- Input power: 230 V~ 50/60 Hz, phase-to-neutral.
- Branch Circuit Breakers: IEC-rated thermal magnetic. AIC ratings: 230 V – 6,000 A
- Lightning strike protection: Meets ANSI/IEEE standard 62.41-1980. Can withstand voltage surges up to 6000 V and current surges up to 3000 A.
- 10-year power failure memory: restores lighting to levels prior to power interruption.

Load Types

- Incandescent (Tungsten) and Halogen
- Magnetic Low Voltage Transformer
- Electronic Low Voltage Transformer
- Neon or Cold Cathode
- Magnetic and Electronic Fluorescent Lamp Ballasts
- HID

Motor Loads

- 1/3 HP at 120 V
- 1/2 HP at 277 V and 347 V

Switching Modules (230V)

- Softswitch relay is rated for 16 A continuous use.
- 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.

Wiring

- Internal: Wired and tested by Lutron.
- System communications: low voltage Class 2/PELV wiring connects Softswitch128 panels to control stations.
- Line (mains) voltage: feed and load wiring only (feed-through Softswitch128 panels also require a feed for the Softswitch128 controller).

Physical Design

- Enclosure: NEMA-Type 1, IP-20 protection; #16 U.S. Gauge Steel. Indoors only.
- Weight: 27 lbs (13 kg) for Mini panels 80 lbs (37 kg) for Standard panels

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.

Job Name:	Model Numbers:	
Job Number:		

Specifications (continued)

Softswitch128 Controller

- Configures entire Softswitch128 system.
- Two low voltage (15-24 V⎓) contact closure inputs, momentary or maintained, pull up or pull down.
- Emergency Sensing.
- Astronomical Time Clock.
- Digital Control Link.
- Mounted in Softswitch128 panel.

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.

OMX-RS232

- Interfaces the Softswitch128 system to a PC, touchscreen, or building management system (BMS).
- Use RS232 strings to set light levels and enable/disable time clock events.

OMX-AV

- 5 low voltage contact closure inputs and 5 outputs.
- Inputs may select patterns, toggle lights, or activate delay-to-off.
- Interfaces with occupancy sensors or photosensors (with relay) to activate patterns or turn off lights in an unoccupied space.
- Contact closure outputs are activated by button presses, contact closure inputs, time clock events, or emergency status.
- See OMX-AV specification for mounting, wiring, contact closure output ratings, and voltage limits. Note: only the above features are supported by Softswitch128.

OMX-CCO-8

- Integrates third party motorized window treatments or A/V equipment.
- Outputs are activated by button presses, contact closure inputs, time clock events or emergency status.
- See OMX-CCO-8 product specification for mounting, wiring and voltage limits.

Contact Closure Inputs

- Two closure inputs are available at the Softswitch128 controller.
- May be configured as pull up to 15 or 24 V⎓ (externally supplied) or pulled down to common.
- Programmable as maintained or momentary.
- Functions are programmable on contact close, contact open or both.

Wall Stations

- One to seven button seeTouch™ and single button FOMX controls are available.
- Buttons are programmable to select patterns, toggle circuits or activate delay-to-off.
- Buttons are programmed at the Softswitch128 controller.
- Wall controls are powered by and communicate via the Softswitch128 low-voltage communication link.
- See specification submittals for seeTouch and FOMX wallstations for wiring and mounting details.
- Keyswitch control is also available.

Job Name:	Model Numbers:	
Job Number:		

How to Build a Custom Model Number

X P S 2 4 - 2 3 0 4 I S - 1 6 - CGP396

- Prefix
- Number of Circuits
- Voltage
- Feed
- Breaker Rating
- Custom Number

Feed

4IS for 3 phase 4 wire feed.

Breaker Rating

Omit for feed through panels.
16 for 16 A branch circuit breakers.

NOTE: Only good for 8-24 circuits

Example Model Numbers

Model number for 230 V~ Softswitch128 panel with 20 circuits and Lutron installed 16A branch circuit breakers:
XPS20-2304IS-16-CGP396

How to Build a Model Number

X P S 12 - 2 3 0 FT

- Prefix
- Number of Circuits
- Voltage
- Feed

Prefix

XPS for Softswitch128 panels.

Number of Circuits

Total number of circuits (switch legs) in the panel.

Voltage

230 for 230 V~

Feed

FT for feed through panels.

Example Model Numbers

Model number for 230 V~ Softswitch128 panel with 12 circuits without circuit breakers:
XPS12-230FT

Job Name:	Model Numbers:	
Job Number:		

Feed-Through Softswitch128 Panel Models

(without branch circuit breakers)

Mini Softswitch128 Feed Through Models for 230 V~

Model Prefix	Switch Legs	Feed Type	Maximum Feed
XPS8	8	Feed Through	16 A
XPS12	12		
XPS16	16		

Standard Softswitch128 Feed Through Models for 230 V~

Model Prefix	Switch Legs	Feed Type	Maximum Feed
XPS20	20	Feed Through	16 A
XPS24	24		
XPS28	28		
XPS32	32		
XPS36	36		
XPS40	40		
XPS44	44		
XPS48	48		

Wire Sizes

- #14 AWG (2.0 mm^2) to #10 AWG (4.0 mm^2) for Feed Wiring and Switch Legs (to loads).
- Power (Hot/Live) and Switched Hot/Live connect directly to Terminal Block for Switch Legs.

Job Name:	Model Numbers:	
Job Number:		

Softswitch128 Panels with Branch Circuit Breakers

Standard Softswitch128 Panels with Circuit Breakers for 230 V~ (max. feed is 125 A)

Model Prefix	Switch Legs	Feed Type	Branch Breaker[1]
XPS8 XPS12 XPS16 XPS20 XPS24	8 12 16 20 24	3Ø 4 W Isolation Switch Accepts #14 AWG (2.0 mm²) to #2 AWG (35 mm²)	 16 A

Wire Sizes for Switch Legs

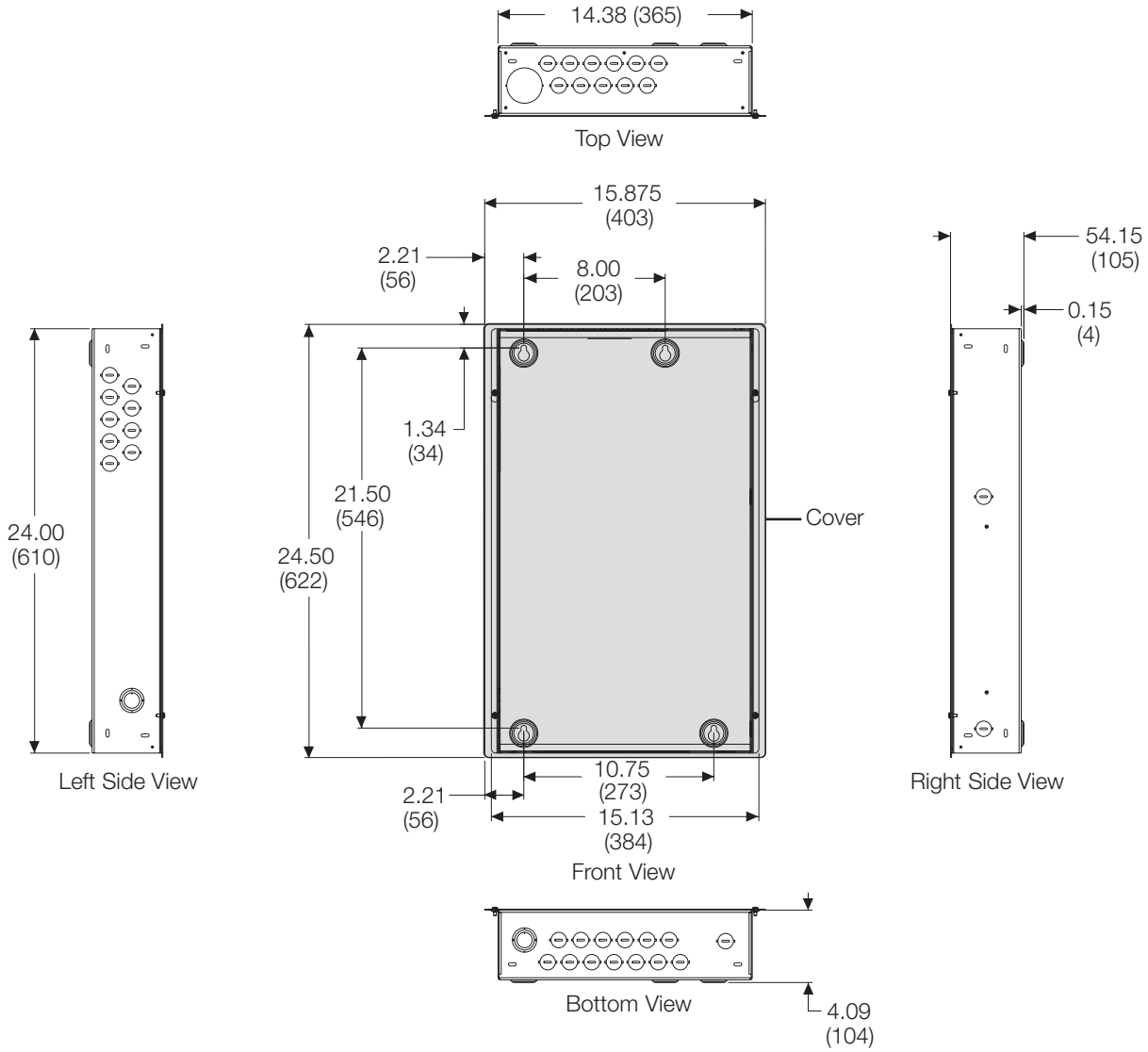
- #14 AWG (2.0 mm²) to #10 AWG (4.0 mm²)

Job Name:	Model Numbers:	
Job Number:		

Mini Softswitch128 Panel Dimensions

Suggested Mounting Height:

Mount Mini Softswitch128 at a height of 45 in. (1130 mm), measured from floor to bottom of panel for optimal LCD viewing.



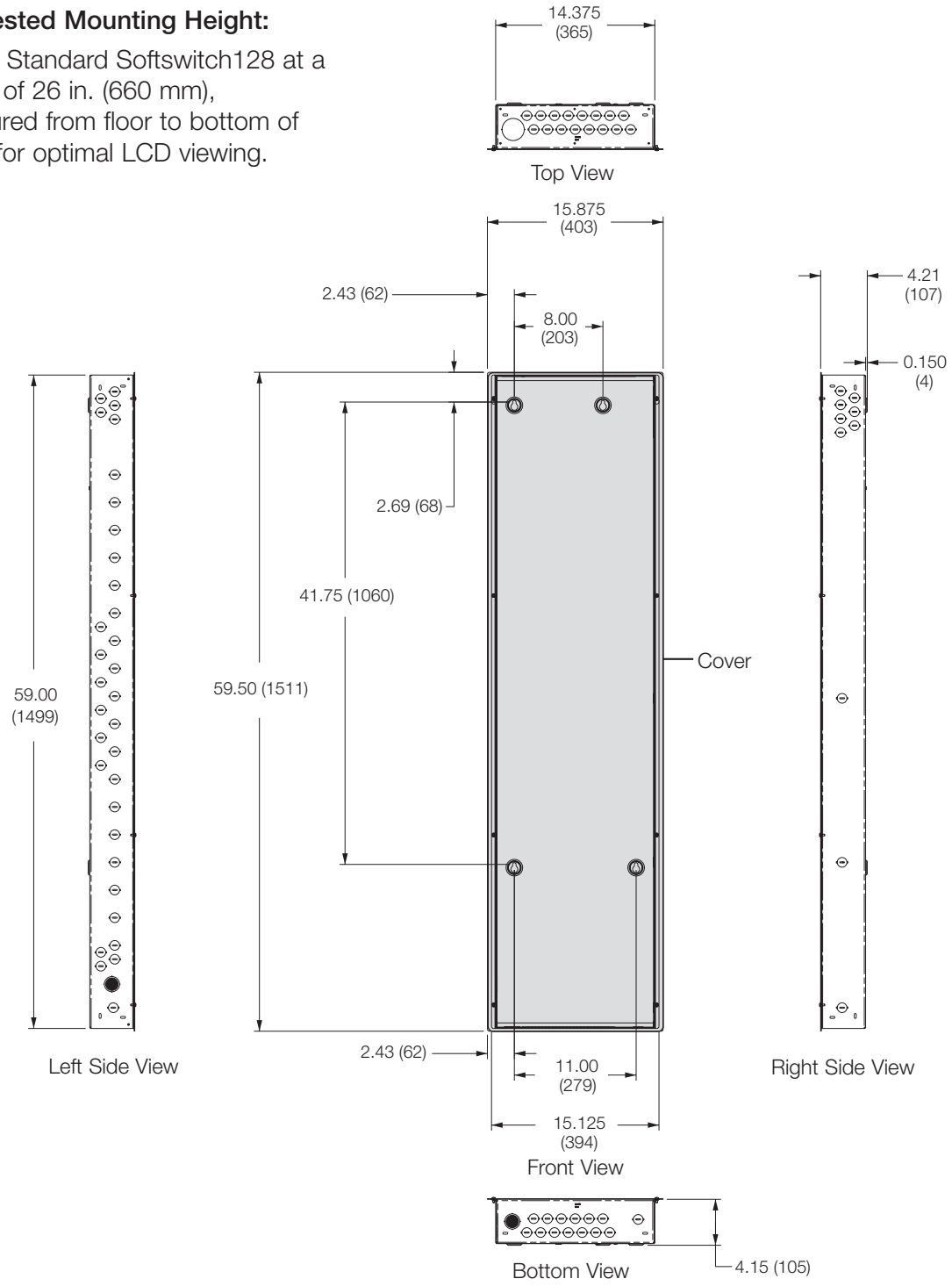
All dimensions in inches (mm).

Job Name:	Model Numbers:	
Job Number:		

Standard Softswitch128 Panel Dimensions

Suggested Mounting Height:

Mount Standard Softswitch128 at a height of 26 in. (660 mm), measured from floor to bottom of panel for optimal LCD viewing.



All dimensions in inches (mm).

Job Name:	Model Numbers:	
Job Number:		

Mounting for Softswitch128 Panels

- For indoor use only!
- Consult dimensions page for panel size, conduit knockouts, and mounting holes.
- Mount where ambient temperature is 32-104 ºF (0-40 ºC).
- Panels weigh up to 80 lbs. (36.3 kg). Reinforce wall structure for weight and local codes.
- Mount panel where audible noise is acceptable. (internal relays click.)
- Mount panel so line (mains) voltage wiring is at least 6 ft. (1.8 m) from sound or electronic equipment and wiring.
- Mount within 7º of true vertical.

Suggested Mounting Height:

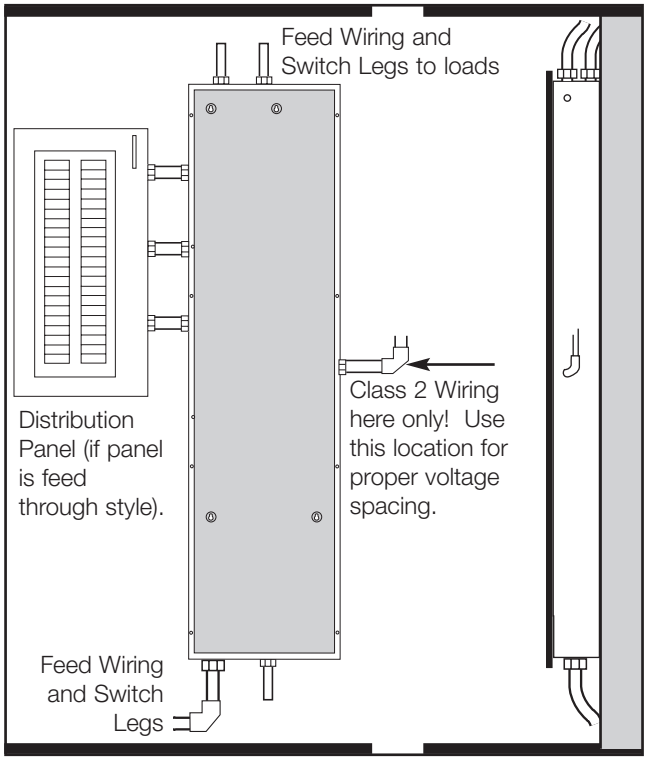
For optimum viewing of the Softswitch128 Controller, mount Softswitch128 panels at the recommended distance from the floor (measured from floor to bottom of panel).

Panel Size	Distance
Mini	45 in (1130 mm)
Standard	26 in (660 mm)

Surface Mounting

- Lutron recommends using 0.25 in. (6 mm) mounting bolts.
- Leave 1.25 in. (38 mm) clearance on each side of panel for cover.

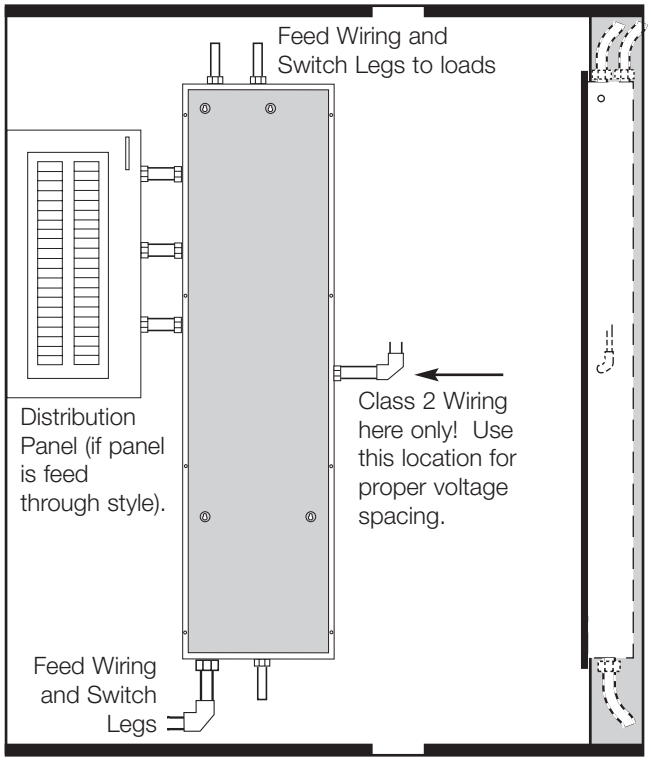
Front View Side View



Recess Mounting

- Mount panel from flush to 0.125 in. (3 mm) below finished wall surface.
- Leave 1.25 in. (38 mm) clearance on each side of panel for cover.

Front View Side View



Job Name:	Model Numbers:	
Job Number:		

Feed-Through Softswitch128 Wiring Overview

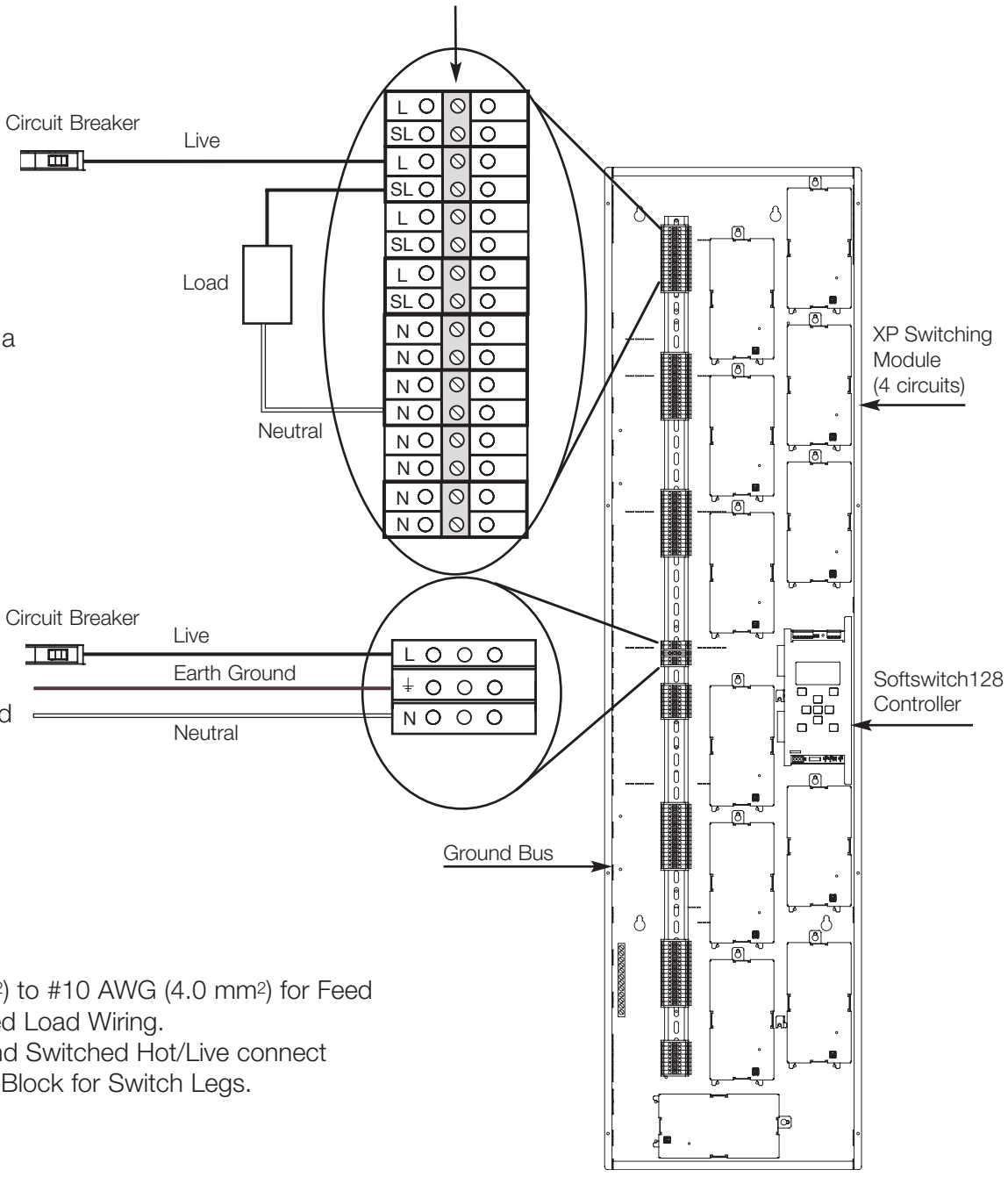
Wire the Softswitch128 panel as shown. Use a trough when the Softswitch128 Panel is not adjacent to a distribution panel. Splice Neutrals in trough.

Do not remove bypass jumpers until load wiring is verified.

Leaving bypass jumpers installed allows Softswitch128 panels to be used to provide temporary lighting, until load wiring is verified.

Switched Load Wiring:

Each switched circuit requires a dedicated 16 A circuit breaker and feed wiring to/from a distribution panel.



Control Wiring:

Control wiring requires a dedicated feed and circuit breaker.

Wire Sizes

- #14 AWG (2.0 mm²) to #10 AWG (4.0 mm²) for Feed Wiring and Switched Load Wiring.
- Power (Hot/Live) and Switched Hot/Live connect directly to Terminal Block for Switch Legs.

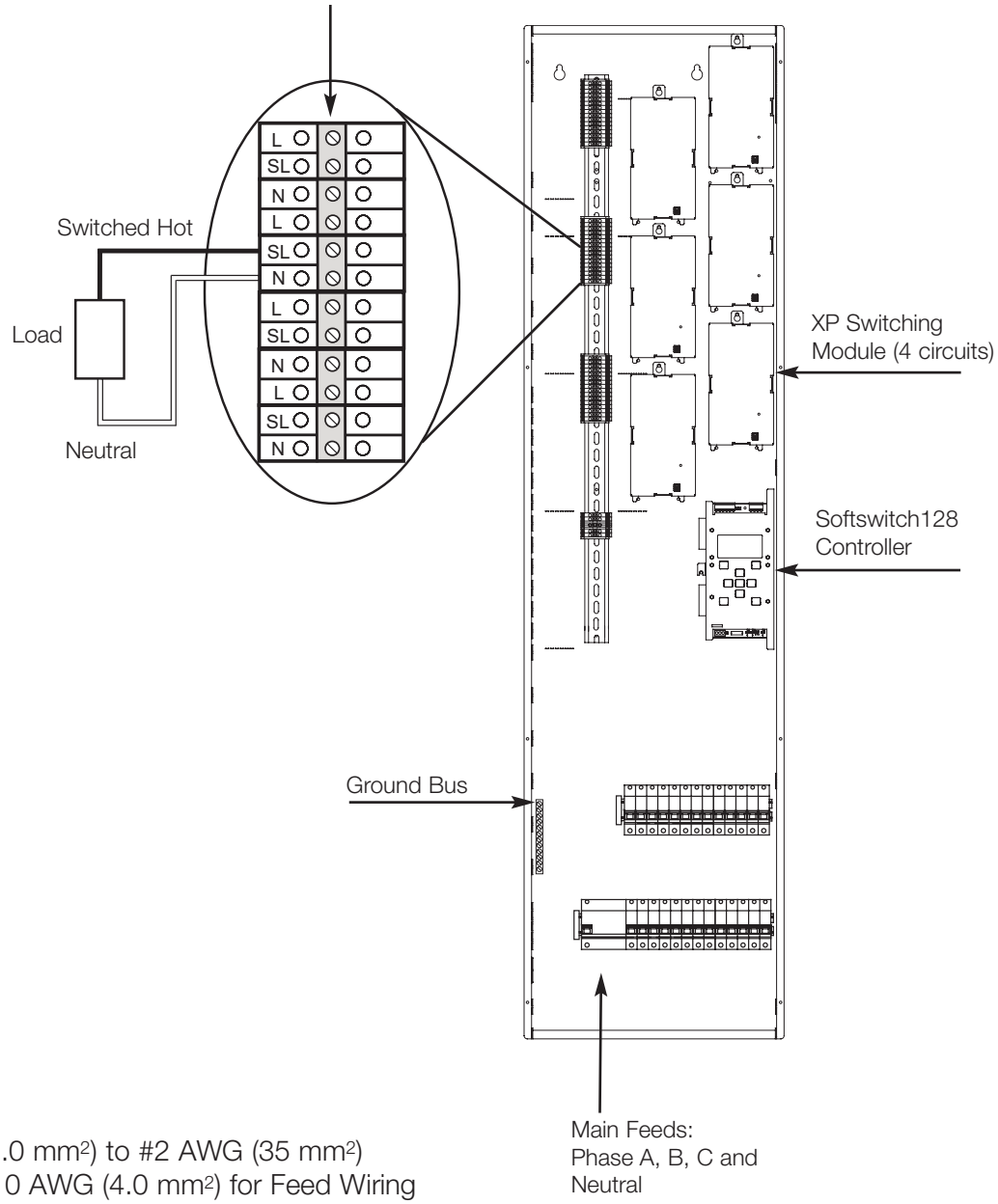
Job Name:	Model Numbers:	
Job Number:		

Softswitch128 with Branch Circuit Breakers Wiring Overview

Wire switched loads as shown:

Do not remove bypass jumpers until load wiring is verified.

Leaving bypass jumpers installed allows Softswitch128 panels to be used to provide temporary lighting until load wiring is verified.



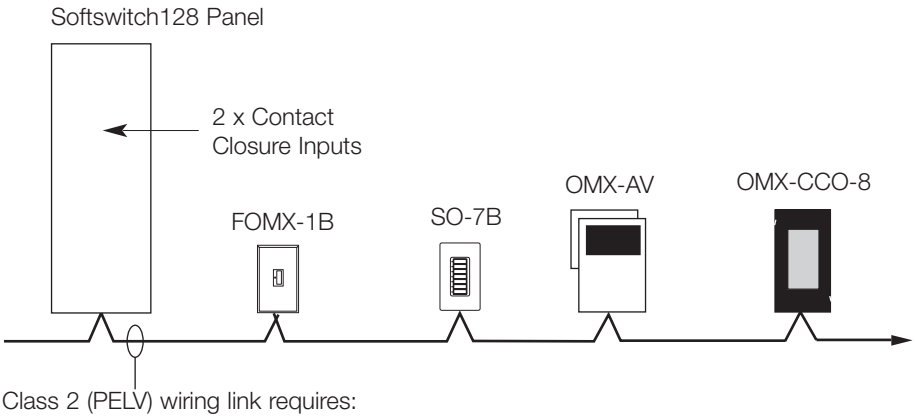
Wire Sizes

- Power (Live): #14 AWG (2.0 mm²) to #2 AWG (35 mm²)
- #14 AWG (2.0 mm²) to #10 AWG (4.0 mm²) for Feed Wiring and Switched Load Wiring.

Job Name:	Model Numbers:	
Job Number:		

Low Voltage Class 2 (PELV) Wiring

- Low-voltag Class 2 (PELV) wiring is used for all system communications.
- Wiring must be daisy-chained.
- Low-voltage wiring must run in a separate trough from line (mains) voltage.
- Must be less than 2000 ft. (600 m) long.
- Install Link Terminators (LT-1) at the start and end of the Class 2 Link.



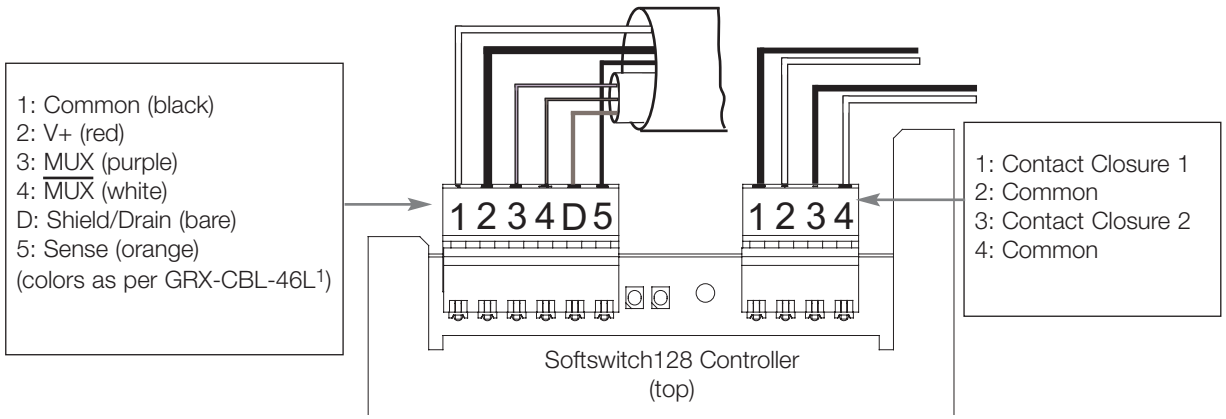
Note: Link Terminators (LT-1) are required at the start and end of the Softswitch128 Class 2 link. LT-1's are included with the Softswitch128 panel.

Class 2 (PELV) wiring link requires:
- Two #12 AWG (2.5 mm²) conductors for control wiring.
- One shielded, twisted pair #18 AWG (1.0 mm²) for data link.

Softswitch128 Controller Wiring Details:

For the Class 2 (PELV) link, use GRX-CBL-46L or equivalent. The cable consists of:
- Two #12 AWG (2.5 mm²) wires.
- One #22 AWG (.625 mm²) twisted shielded pair.
- One #18 AWG (1.0 mm²) wire for Emergency Sense.

For contact closure input wiring use #18 AWG (1.0mm²) or larger. Keep wire runs less than 500 ft. (152 m).



[1] Lutron has approved cable from Belden, Liberty, Alpha, and Signature. Ask for Lutron GRAFIK Eye® Cable.

Job Name:	Model Numbers:	
Job Number:		