

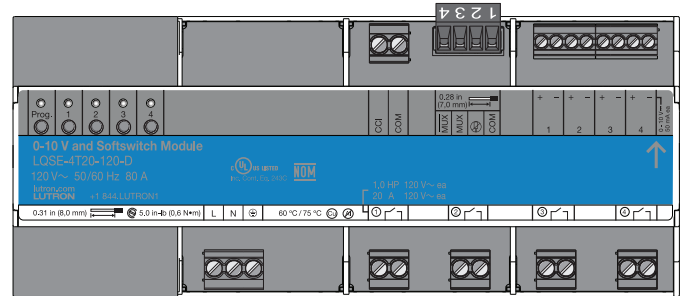
0-10 V $\overline{\text{V}}$ /Softswitch Power Module

The DIN Power Module (DPM) family is a group of modular products for the control of lighting, receptacles, and other loads. This document describes the following:

- LQSE-4T20-120-D: 4-Zone DIN Power Module with 0-10 V $\overline{\text{V}}$ /Softswitch for controlling lighting, receptacles, and other loads

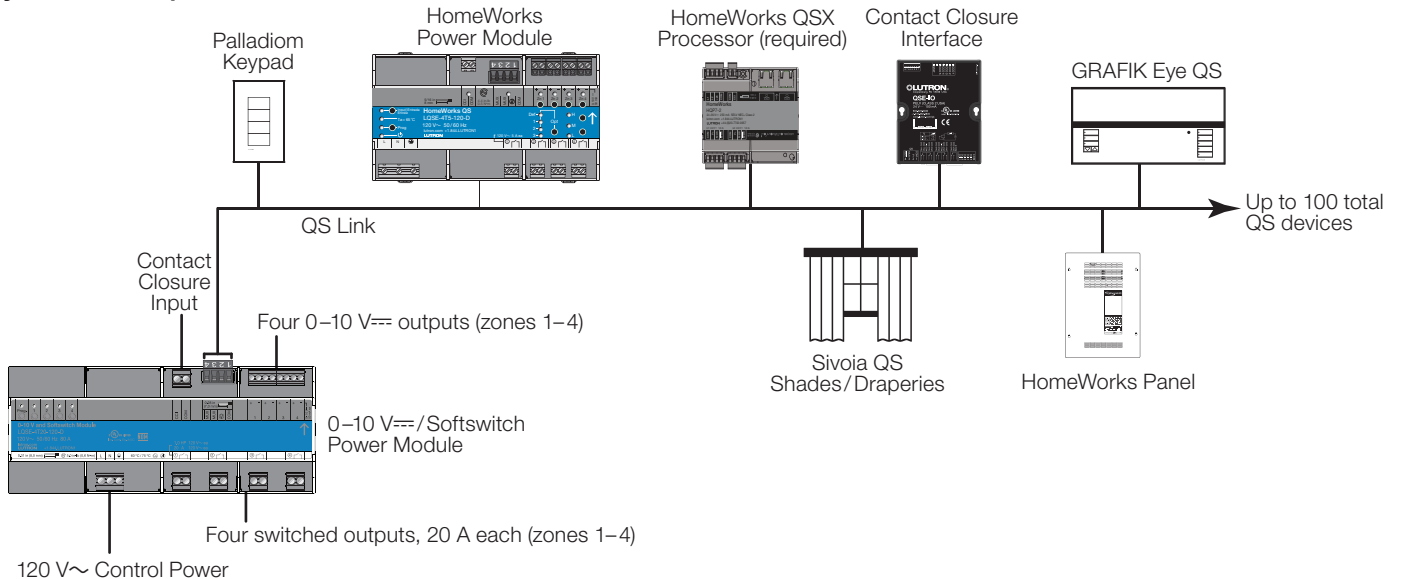
Features

- Power module can be used in a HomeWorks QSX system to control and manage light in an entire home or building.
- Includes QS link for seamless integration and control of lights.
- Auto sink and source capability for 0-10 V $\overline{\text{V}}$ outputs.
- Patented Softswitch circuit eliminates arcing at mechanical contacts when loads are switched, prolonging relay life to an average of 1,000,000 cycles at rated load.
- Buttons on the module provide override control.
- LEDs on the module provide diagnostic information.
- Power module can be used for switching only applications.
- Manual Override contact closure input (CCI).
- Power failure memory automatically returns the outputs to the levels they were set to prior to a power outage.
- Softswitch outputs utilize latching relays to maintain relay state if control power is lost.



LQSE-4T20-120-D

System Example



Job Name:	Model Numbers:
Job Number:	

Specifications

Power

- 120 V_{AC} 50/60 Hz
- Standby power: 2 W max
- Lightning strike protection meets ANSI/IEEE standard 62.31-1980. Can withstand voltage surges of up to 6000 V_{AC} and current surges of up to 3000 A.

Regulatory Approvals

- Lutron Quality Systems registered to ISO 9001:2015
- cULus Listed
- NOM Certified

Environment

- Ambient Temperature Operating Range (inside mounting panel): 32 °F to 131 °F (0 °C to 55 °C)
- Calibration point maximum: 149 °F (65 °C)
- Relative humidity: less than 90% non-condensing
- For indoor use only

Switched Output Ratings

- Rated to control 120 V_{AC} 20 A receptacles with any output. Any receptacles that are controlled by an automatic control device **must be marked** with “⏻ Controlled” located on the controlled receptacle outlet where visible after installation as stated in 2017 NEC® Article 406.3(E).

- When using the power module to control receptacles, it may be used with, but is not limited to, the following:

- Monitors
- Fans
- Humidifiers
- Printers

Note: Refer to the manufacturer’s guidelines for acceptable switching methods.

- When using the power module to control receptacles, it may NOT be suitable for use with devices that require any of the following:

- Shut-down process before power is interrupted, such as computers.
- Cool-down process before power is interrupted, such as projectors.
- Programming, such as clocks or DVRs.
- Long warm-up cycle.

- **Not for use** with loads that present a hazard if automatically energized (e.g., heaters).

Load Type	Relay Ratings
	120 V _{AC}
Tungsten	20 A
AC general use	20 A
Electric discharge lamp	16 A
LED drivers and fluorescent ballasts (NEMA 410)	16 A
Resistive	20 A
Inductive	20 A
Motor	1.0 HP

- Switched outputs utilize mechanically held latching relays to maintain relay state if control power is lost.
- For applications requiring control of multiple feed circuits, use the PHPM-SW-DV-WH interface.

0-10 V_{DC} Output Ratings

- Switched outputs utilize mechanically held latching relays to maintain relay state if control power is lost.
- 0-10 V_{DC} rated for 50 mA maximum output, source or sink per zone.
- Minimum control signal at the 0-10 V_{DC} terminals of the module is 0.3 V when 0-10 V wires are loaded to 50 mA supporting Standby Mode according to ANSI C137.1 ed 2019. Voltage at the fixture will vary; refer to App Note #587 (P/N 048587) on www.lutron.com “0-10 V Control Topology - How far can I run a low-voltage 0-10V circuit” to determine required wire gauges, lengths, and compatibility.

Terminals (Torque, wire gauge & type ratings)

- Mains wiring: 5.0 in-lbs (0.6 N•m)
 - 16 AWG to 10 AWG (1.0 mm² to 4.0 mm²) (single wire, solid or stranded)
- Zone Wiring: 5.0 in-lbs (0.6 N•m)
 - 16 AWG to 10 AWG (1.0 mm² to 4.0 mm²) (single wire, solid or stranded)
- CCI Wiring: 5.0 in-lbs (0.6 N•m)
 - 20 AWG to 10 AWG (0.5 mm² to 4.0 mm²) (single wire, solid or stranded)
 - 20 AWG to 16 AWG (0.5 mm² to 1.0 mm²) (two wires, solid or stranded)
- 0-10 V_{DC} wiring: 5.0 in-lbs (0.6 N•m)
 - 20 AWG to 16 AWG (0.5 mm² to 1.0 mm²) (single wire, solid or stranded)
- QS link: 5.0 in-lbs (0.6 N•m)
 - Power: 20 AWG to 10 AWG (0.5 mm² to 4.0 mm²)
 - Data: 1 twisted, shielded pair 22 AWG to 18 AWG (0.34 mm² to 0.75 mm²)
 - See **Wiring: QS Link** section on page 9

Job Name:	Model Numbers:
Job Number:	

Manual Mode Operation

- Zone Button (functions similar to cycle dim):
 - Tap to toggle the load on and off
 - Hold to dim the load up and down
- Program Button:
 - Activation into the system

Contact Closure Input (CCI)

- The CCI behaves as a Manual Override Contact Closure Input.
- If the CCI is open, the power module will enter Manual Override Mode, which will turn on all loads and disable control from other devices.
- When the CCI is closed or jumpered (factory default), power module zones will return to the settings or levels they were at prior to entering Manual Override Mode.

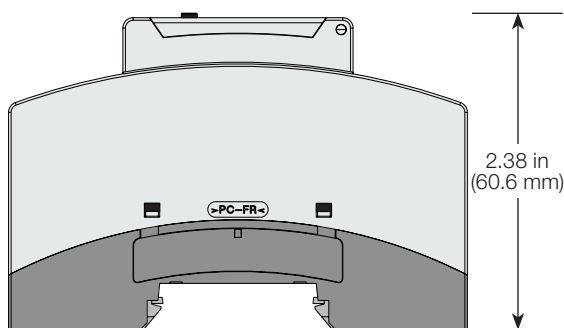
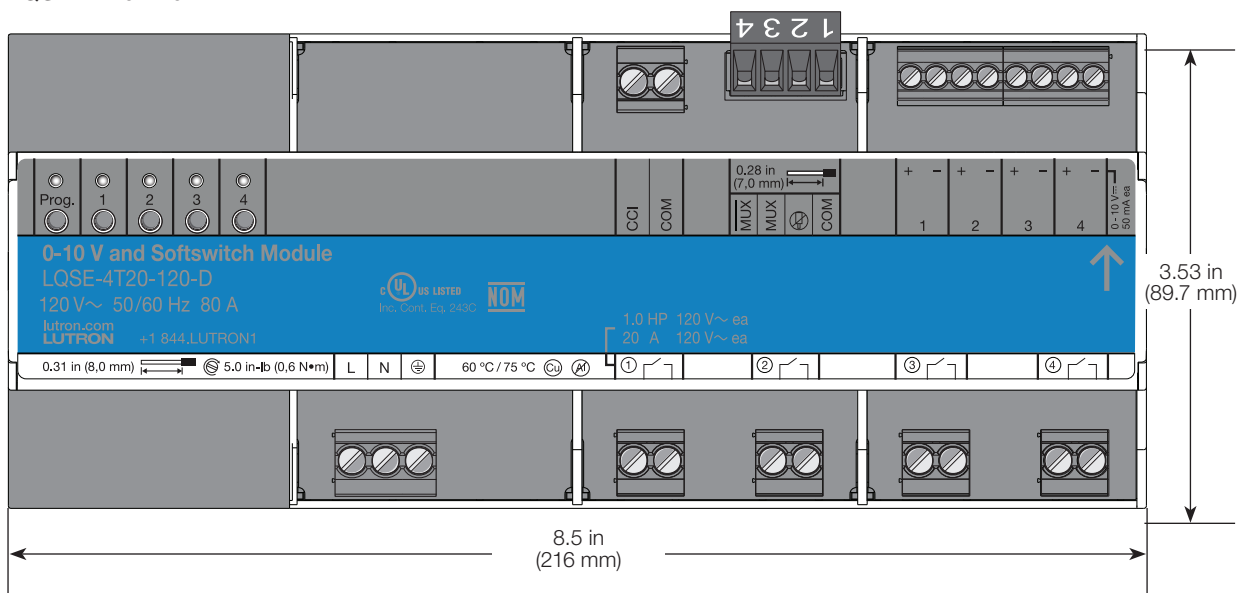
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Mounting

- BTUs/hour when fully loaded: 4 BTU
- Mount in a Lutron DIN panel (see specs 3691055, 3691106, and 3691193 at www.lutron.com), NEMA type 1, or IP20 (minimum) rated consumer panel with integrated DIN rail
- Width = 12 DIN wide - 8.5 in (216 mm)
- Mount the module where audible noise is acceptable (internal relays click)
- See Lutron Application Note 048466 at www.lutron.com for more information on mounting and installation in panels with integrated DIN rail

Mechanical Dimensions

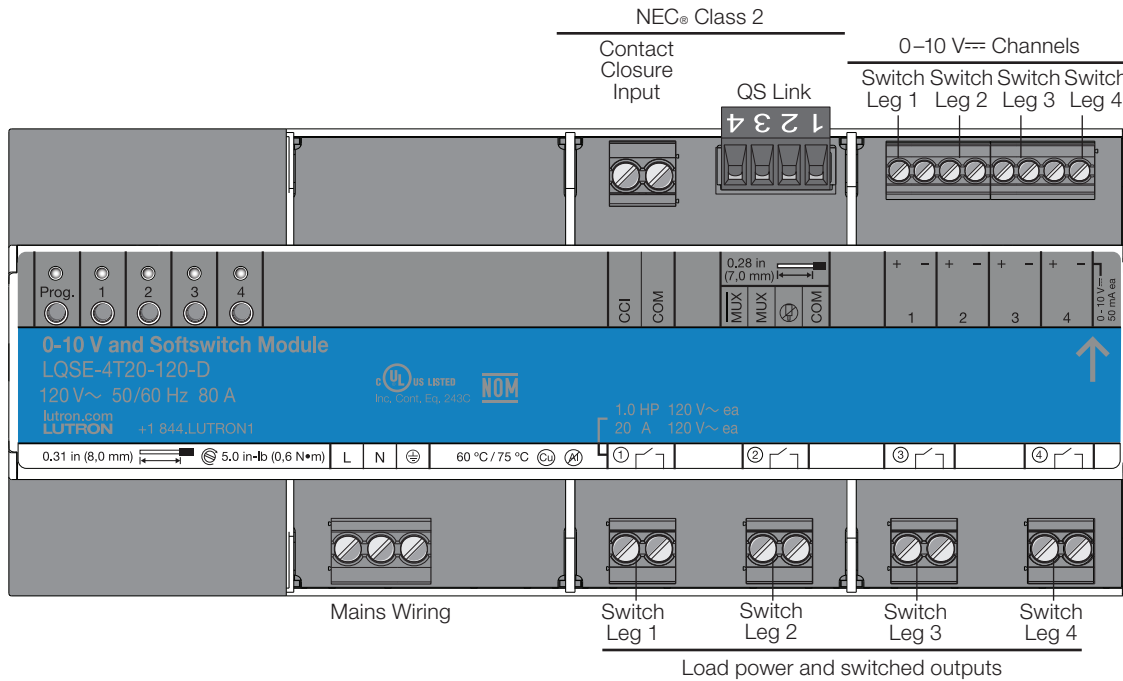
LQSE-4T20-120-D



Job Name:	Model Numbers:
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Overview of Wiring Terminals

LQSE-4T20-120-D



Job Name:	Model Numbers:
Job Number:	

Mains Voltage Wiring



WARNING: Shock Hazard. Serious injury or death may occur. Turn off power before servicing or installing. More than one disconnect may be required for this device. Wire according to local and national codes. This product should be installed by a qualified electrician.

Wiring from Distribution to Power Module Unit

- Turn off all circuit breakers or isolators feeding the Power Module at the distribution panel.
- Run line/hot, neutral, and earth (\downarrow) wires from a 120 V \sim 50/60 Hz feed to the module.
- Optional pre-stripped wiring harness sold separately, Lutron part number PDW-T-DV-MF for multi-feed installations or PDW-T-DV for single-feed installations.
- For multi-feed installation, terminal block kit PDT-T-DV-MF is required.

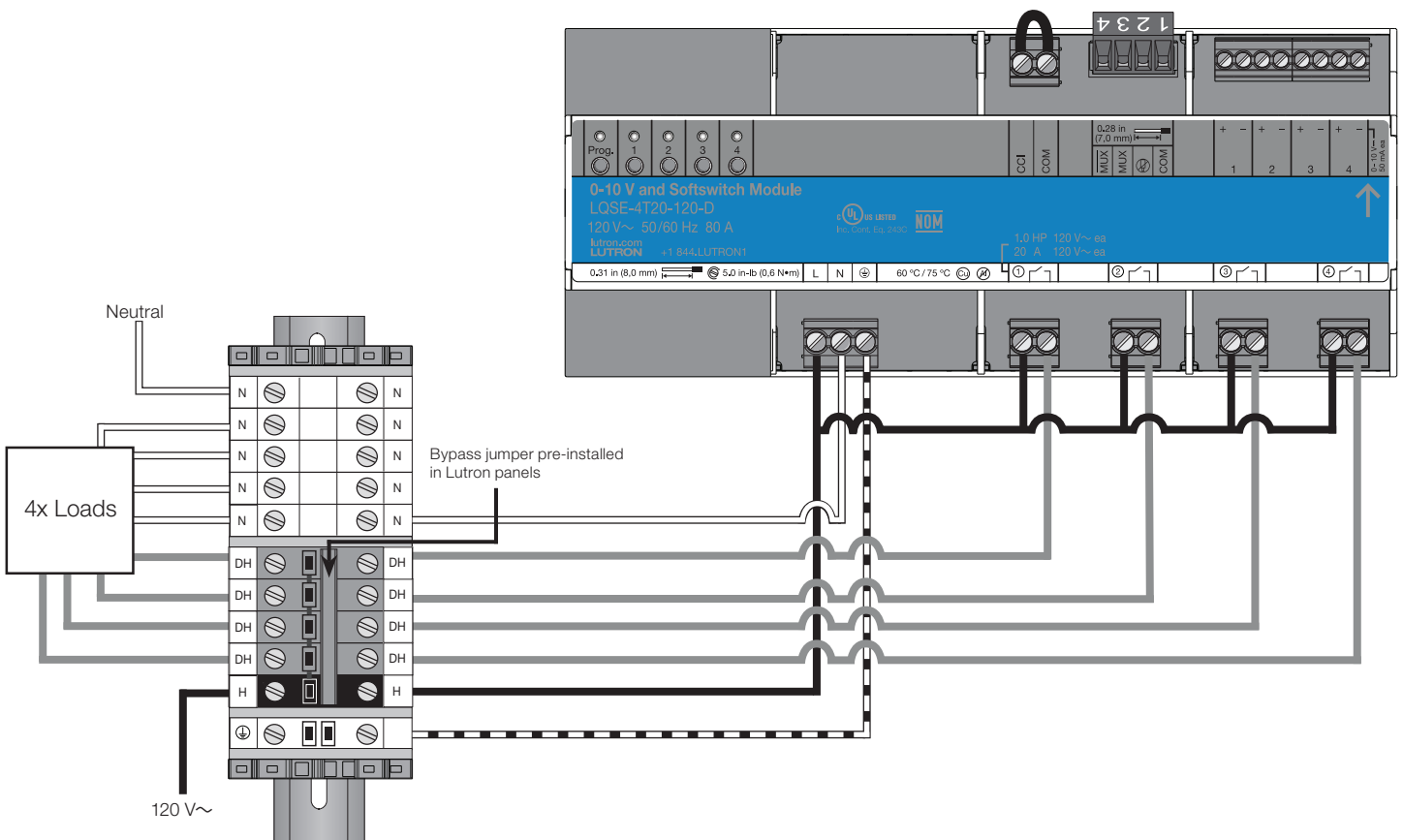
Wiring: 4 Circuits, Single-Feed

Mains Wiring

- Follow appropriate local and national codes.

Behavior During Power Failure

- Relays do not change state when power is lost to the H/N/ \downarrow terminals. Follow local and national codes for emergency lighting requirements.
- After a power failure, the 0-10 V \sim outputs return to their previous setting.

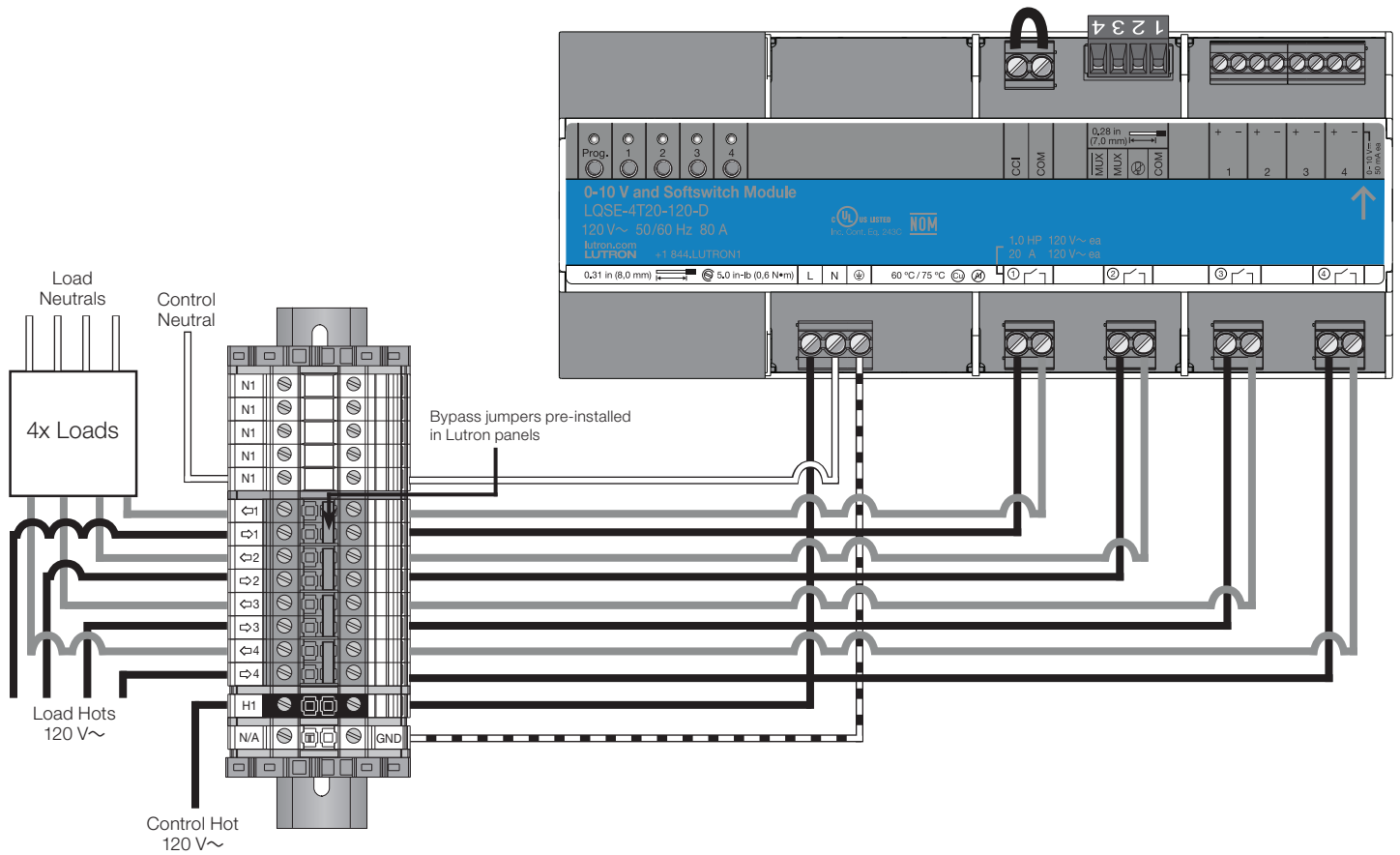


Job Name:

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Wiring: 4 Circuits, Multiple Feeds

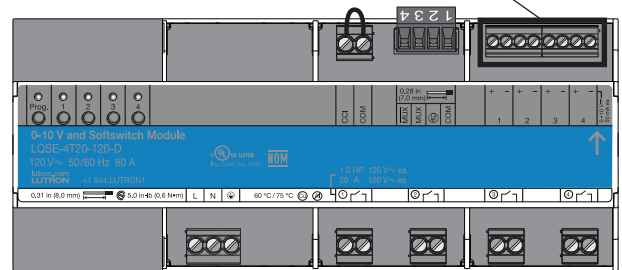
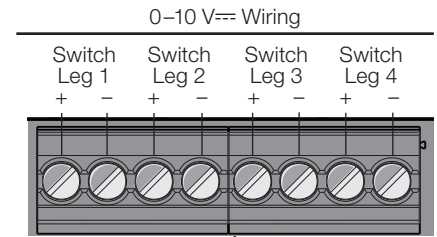


WARNING: Entrapment/Fire Hazard. To avoid the risk of entrapment, serious injury, or death, these controls must not be used to control equipment which is not visible from every control location or which could create hazardous situations such as entrapment if operated accidentally. Examples of such equipment which must not be operated by these controls include (but are not limited to) motorized gates, industrial doors, space heaters, etc. It is the installer's responsibility to ensure that the equipment being controlled is visible from every control location and that only suitable equipment is connected to these controls. Failure to do so could result in serious injury or death.

SPECIFICATION SUBMITTAL		Page
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Wiring: 0-10 V $\overline{\text{V}}$

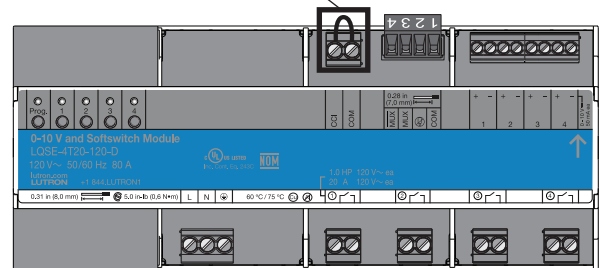
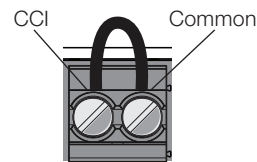
- 0-10 V $\overline{\text{V}}$ zones 1-4 are double insulated from line voltage and the QS link but are not insulated from each other. They share the same common terminal (negative “-” terminal).
- Do not mix NEC $\text{\textcircled{R}}$ Class 2 circuits and non-NEC $\text{\textcircled{R}}$ Class 2 circuits for 0-10 V $\overline{\text{V}}$ zone 1-4.
- Follow all national and local electrical codes for separation requirements.



Wiring: Manual Override Contact Closure Input

- Contact Closure Input (CCI) wiring is NEC $\text{\textcircled{R}}$ Class 2. Follow all applicable national and local codes for proper circuit separation and protection.
- When in Manual Override mode, all drivers and zone outputs will be at their programmed Manual Override light level (default is 100%). All other controls are locked out.
- The CCI is a local control only and cannot control other modules over the QS link. A maximum of 32 modules may be connected in parallel to a Manual Override device if the event is intended to affect multiple devices.
- Manual Override contact closure input is normally closed (NC). The power module is shipped with a jumper wire pre-installed.

Note: The power module will default to Manual Override Mode if the CCI is left open. If no Manual Override contact input is required, leave the wire jumper in the CCI terminals.



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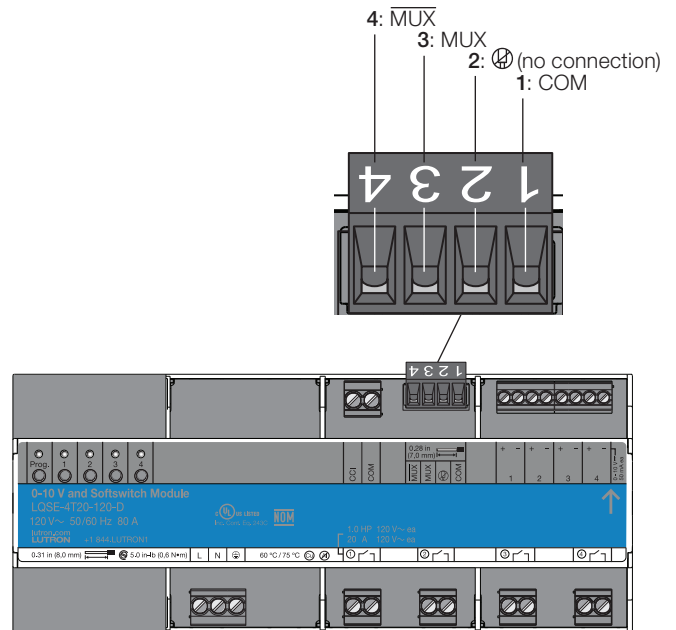
Wiring: QS Link

- QS link wiring is NEC® Class 2.
- Follow all applicable national and local codes for proper circuit separation and protection.
- Wiring may be daisy-chained or T-tapped.
- Do NOT connect terminal 2.
- Device does not supply or consume PDUs.

QS Link Wiring Options

Control Link Length	Wire Gauge (for terminals)	Available from Lutron in one cable:
Less than 500 ft (153 m)	Power (terminals 1 and 2): 1 pair 18 AWG (1.0 mm ²)	GRX-CBL-346S
	Data (terminals 3 and 4): 1 pair 22 AWG (0.5 mm ²), twisted and shielded*	
500 ft (153 m) to 2000 ft (610 m)	Power (terminals 1 and 2): 1 pair 12 AWG (4.0 mm ²)	GRX-CBL-46L
	Data (terminals 3 and 4): 1 pair 22 AWG (0.5 mm ²), twisted and shielded*	

* Alternate data-only cable: Use approved data link cable (22 AWG [0.5 mm²] twisted/shielded) from Belden, model #9461.



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