

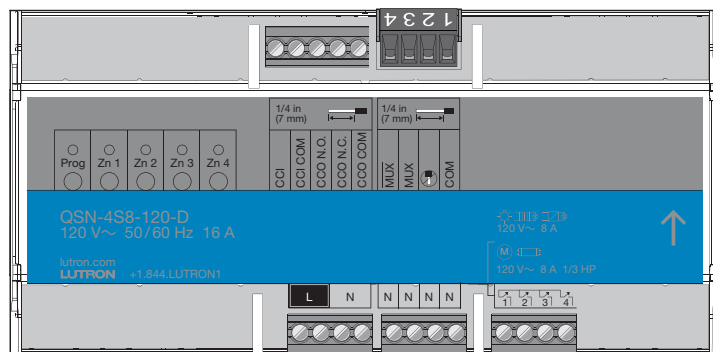
Energi Savr Node Switching Power Module

The Energi Savr Node (ESN) family is a group of modular products for the control of lighting loads and motor loads.

This document describes the following product:
QSN-4S8-120-D: 4-zone ESN for switching of lighting and motor loads.

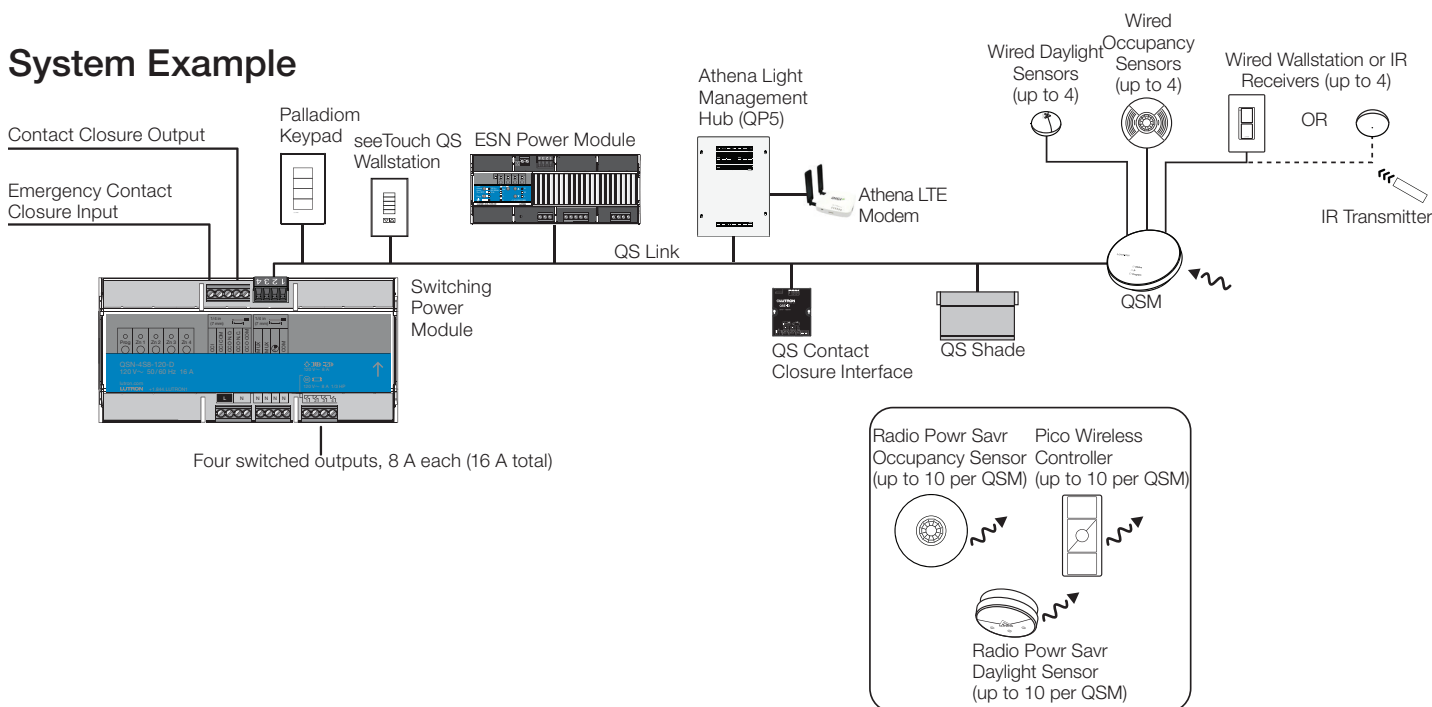
Features

- Four switched output zones.
- Adaptive zero-cross switching maximizes relay life.
- Rated for lighting loads as defined by UL® 508, NEMA 410, as well as INC, MLV, and ELV.
- Rated for motor loads of 1/3 HP.
- Includes QS link for seamless connection to an Athena system.
- LEDs on the module provide diagnostic information.
- Buttons on module provide override control.
- Emergency Contact Closure Input (CCI).
- Programmable Contact Closure Output (CCO).
- Power failure memory automatically returns the outputs to the levels they were set to prior to a power outage.
- Evaluated by UL® for use in emergency lighting systems in accordance with UL924 when paired with a LUT-ELI-3PH (UL® file E234628).



QSN-4S8-120-D

System Example



Job Name:

Model Numbers:

Job Number:

Specifications

Switching Power Module

Power

- 120 V~ 50/60 Hz
- 8 A per output 16 A maximum input current
- Lightning strike protection meets ANSI/IEEE standard C62.41. Can withstand voltage surges up to 6000 V~ and current surges up to 3000 A.

Regulatory Approvals

- cULus Listed
- NOM Certified
- Lutron Quality Systems registered to ISO 9001.2015
- ICES-5(B)/NMB-5(B)
- FCC Class B

Environment

- See **Mounting** on page 4 for thermal specifications.
- Relative humidity: less than 90% non-condensing
- For indoor use only

Output Zone Ratings

- Each zone is rated at 8 A for switching. Rated to switch incandescent, resistive, inductive, or capacitive lighting loads as defined by NEMA 410.
- Air gap off per output.
- No minimum load per output.
- Do not use for control of AC shades, projection screens, or AC motors requiring mechanically interlocked outputs that prevent simultaneous activation.
- This module is designed to control loads with ratings as noted in the table below.
- Outputs cannot be used to control general purpose receptacles.

Load Type	Relay Ratings
	120 V~
Tungsten	8 A/zone, 16 A max/module
AC General Use	8 A/zone, 16 A max/module
Electric Discharge Lamp	8 A/zone, 16 A max/module
Electronic Ballast (NEMA 410)	8 A/zone, 16 A max/module
Resistive	8 A/zone, 16 A max/module
Inductive	8 A/zone, 16 A max/module
Motor	8 A (1/3 HP)/zone, 16 A max/module

Terminals (torque, wire gauge & type ratings)

- Mains wiring: 4.4 in-lbs (0.5 N•m)
18 AWG to 12 AWG (1.0 mm² to 2.5 mm²)
(single wire, solid or stranded)
- CCI/CCO wiring: 4.4 in-lbs (0.5 N•m)
20 AWG to 12 AWG (0.5 mm² to 2.5 mm²)
(single wire, solid or stranded)
22 AWG to 16 AWG (0.5 mm² to 1.5 mm²)
(two wires, solid or stranded)
- Zone wiring: 4.4 in-lbs (0.5 N•m)
18 AWG to 12 AWG (1.0 mm² to 2.5 mm²)
(single wire, solid or stranded)
- QS link: 4.4 in-lbs (0.5 N•m)
20 AWG to 12 AWG (0.5 mm² to 2.5 mm²)
(single wire, solid or stranded)
22 AWG to 18 AWG (0.5 mm² to 1.0 mm²)
(two wires, solid or stranded)

Programming and Compatibility Requirements

- Setup and programming of the switching power module is done through the Athena programming software.
- Athena software version 20.4 or higher is required.

QS Link Limits

- Each power module counts as one device toward the QS link device limit, and 4 switchlegs toward the switchleg limit.
- Special considerations:
 - When controlling lamps, Lutron recommends using permanently installed fixtures.
 - If controlling plug-in lamps, installation must ensure a method of preventing non-rated loads being plugged into the module. For a full model list, please refer to Lutron P/N 369269 at www.lutron.com
 - Controlling loads outside the parameters listed in the specifications may damage the device and void the warranty.
- If attempting to control general purpose receptacles, use the appropriate third-party power pack for the rated load.
- Run a separate neutral for each load circuit. A common neutral connection is not recommended.
- Unit may be powered by Ground Fault Interrupter (GFI) or Arc Fault Circuit Interrupter (AFCI) protected circuit if required.
- For applications requiring higher wattage ratings, use the PHPM-SW-DV-WH interface.

⚠ WARNING – Entrapment Hazard – May result in serious injury or death. These controls should only be used to control equipment which is visible from every control location.

⚠ WARNING – Fire Hazard – May result in serious injury or death. Only use these controls to operate approved load and equipment types.

IMPORTANT NOTE: Examples of such equipment which must not be operated by these controls include (but are not limited to) motorized gates, garage doors, industrial doors, microwave ovens, heating pads, fireplaces, 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.

LUTRON SPECIFICATION SUBMITTAL

Page

Job Name:	Model Numbers:
Job Number:	

Out of Box Functionality

Normal Mode Operation

- Zone button on the module can be used to turn loads on and off.

Emergency Contact Closure Input (CCI)

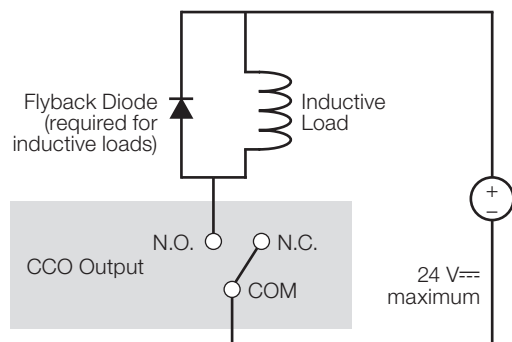
- Normal mode: The unit can dim loads as normal and respond to button presses, occupancy sensors, daylight sensors, timeclock events and preset scene calls.
- Emergency mode: When the Emergency CCI is open, the unit will override the light output to its emergency level and enter lockout mode. It will not respond to any button presses, occupancy sensors, daylight sensors, timeclock events, or preset scene calls.
- Return from Emergency mode to Normal mode: Once the Emergency CCI is closed or jumpered, the zones will return to the previous light level and it will again respond to button presses, occupancy sensors, daylight sensors, timeclock events, and preset scene calls.

Contact Closure Output (CCO)

- Accepts voltages of 0–24 V \sim / 0–24 V \equiv ; see chart below for load switching capacities:

Switching Voltage	Resistive Load R
0–24 V \equiv	1.0 A
0–24 V \sim	0.5 A

- Provides both normally open (N.O.) and normally closed (N.C.) dry contacts.
- Maintained or momentary output type.
- Output relay is non-latching (if relay is closed and power is lost, relay will open).
- The CCO is not rated to control unclamped, inductive loads. Inductive loads include, but are not limited to, relays, solenoids, and motors. To control these types of equipment, a flyback diode (not included) must be used (DC voltages only). See diagram below.



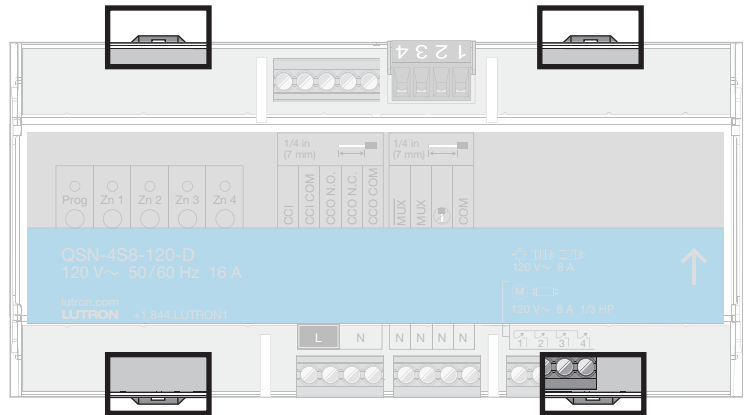
Job Name:

Model Numbers:

Job Number:

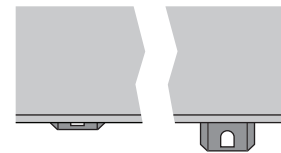
Mounting

- Mount in a Lutron DIN panel (see spec 3691183 at www.lutron.com).
- Module is 9 DIN modules wide, 6.37 in (161.7 mm).
- Mount in an accessible and serviceable location.
- Module may be mounted by pressing the unit onto the DIN rail with the clips locked. To remove the module from the DIN rail, unlock the clips using a screwdriver.
- Mount the module where audible noise is acceptable (internal relays click).
- Module generates heat, maximum 24 BTUs/hr.
- Mount module such that all the conditions below are met:
 - Room ambient temperature is between 32 °F and 104 °F (0 °C and 40 °C).
 - Calibration point maximum: 149 °F (65 °C).

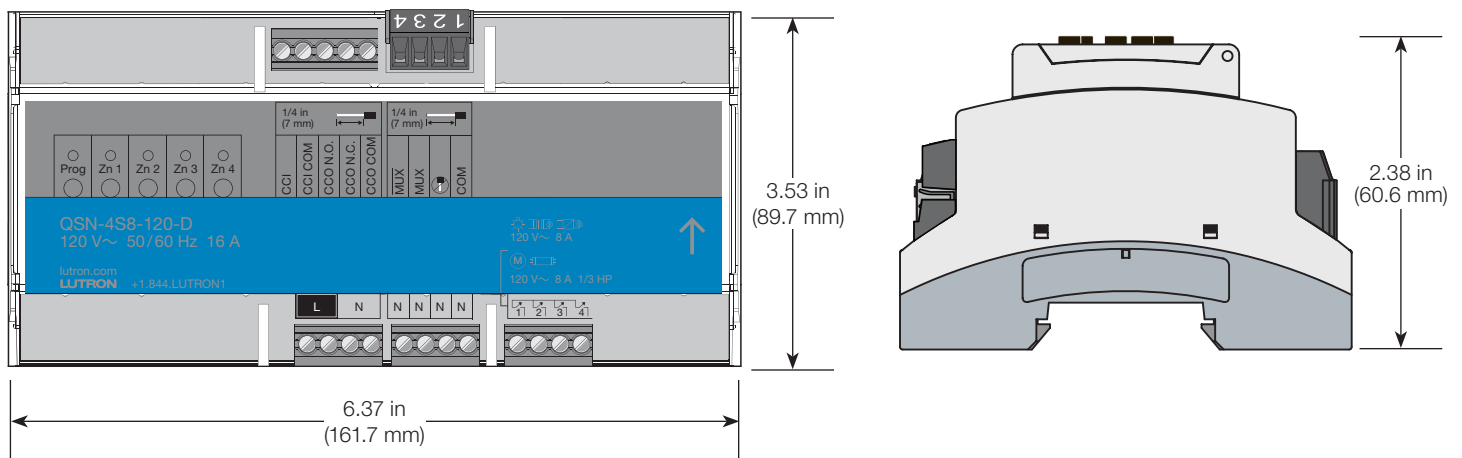


Mounting clips (4) on unit

Locked Unlocked



Mechanical Dimensions

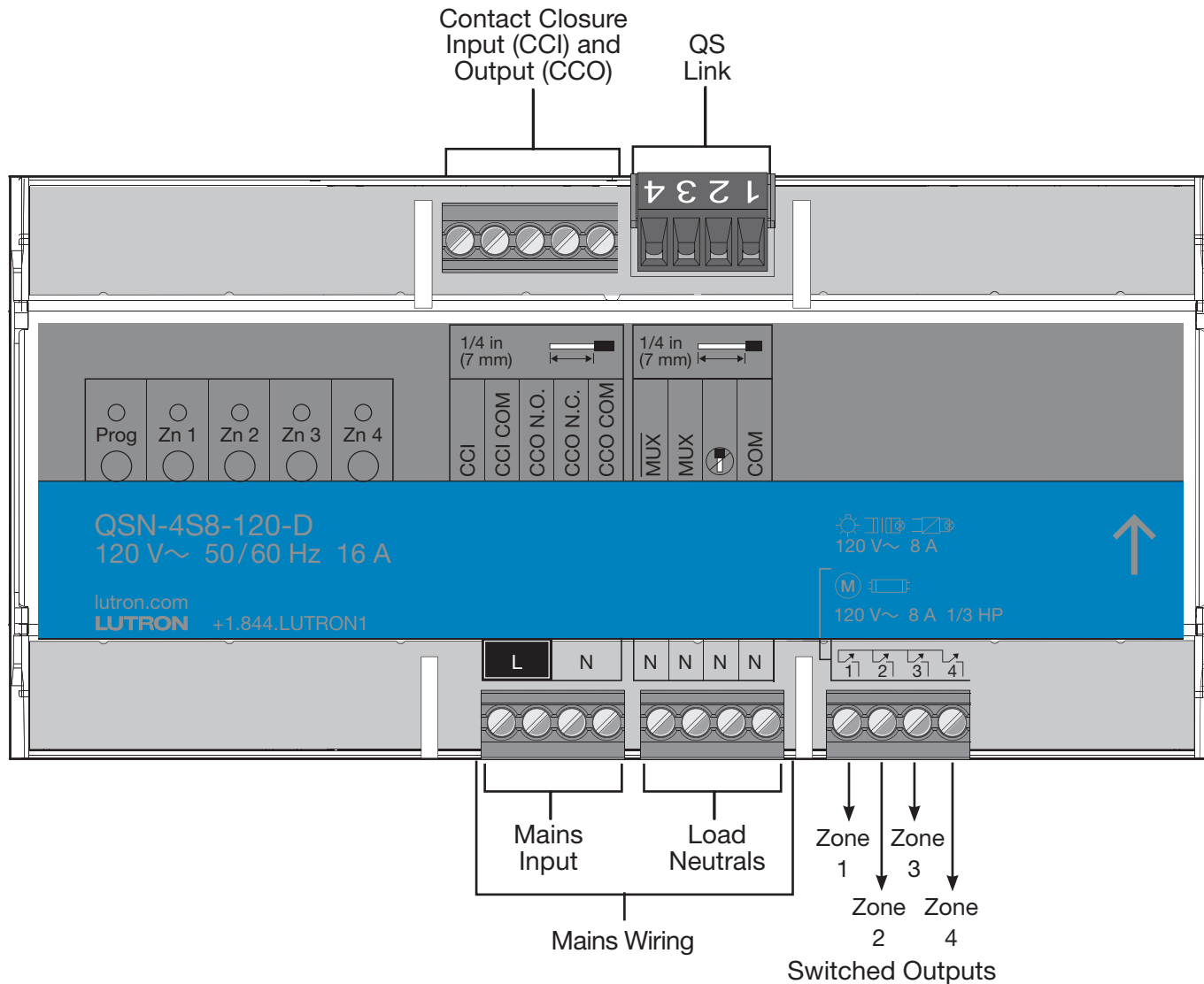


Job Name:

Model Numbers:

Job Number:

Overview of Wiring Terminals



Job Name:

Model Numbers:

Job Number:

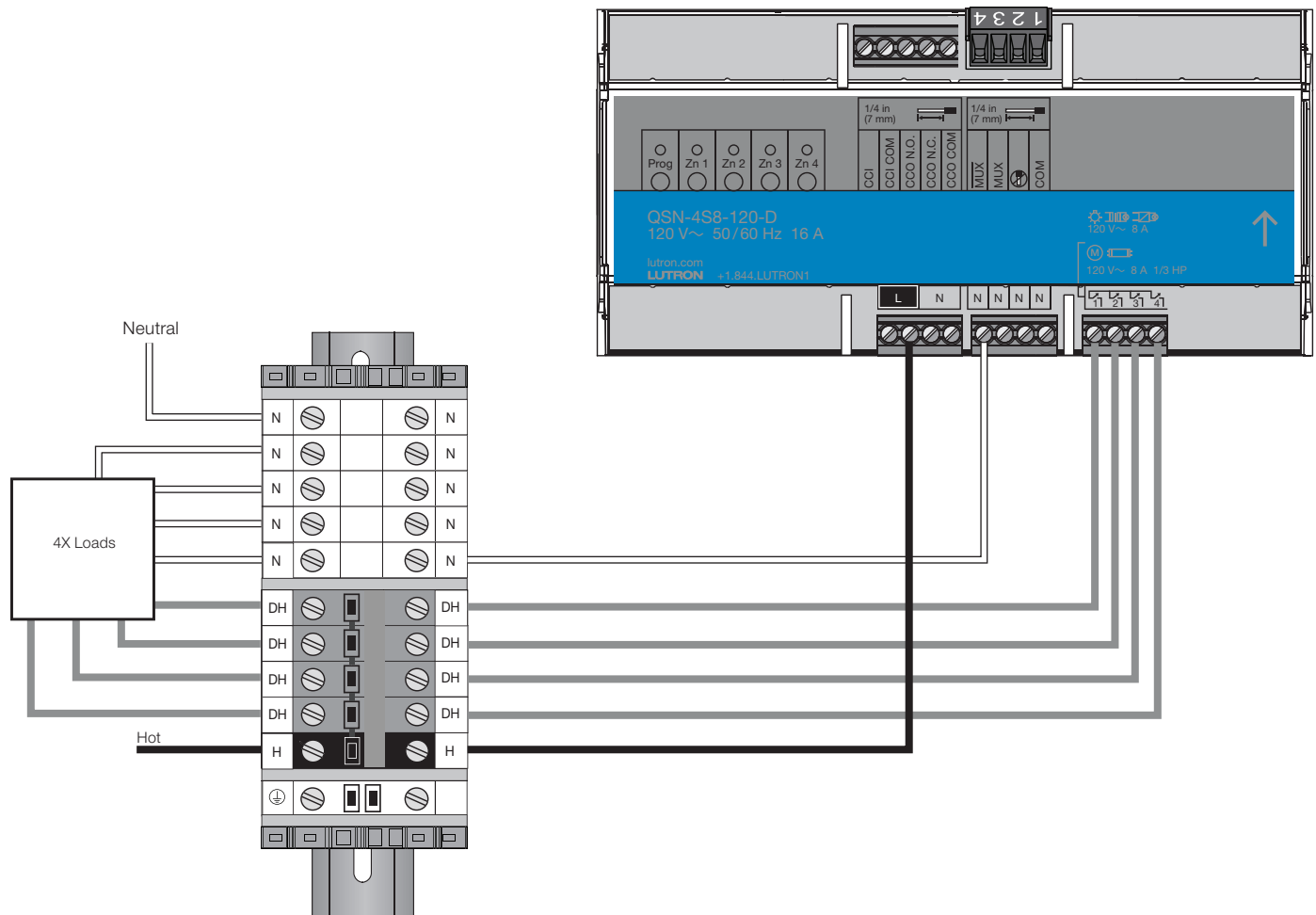
Wiring: Mains and Output Zones

Wiring from Distribution Panel to Module

- Turn off all circuit breakers or isolators feeding the module at the distribution panel.
- Run line/hot and neutral wires from a 120 V~ 50/60 Hz feed to the unit.
- Run a separate neutral for each load circuit. A common neutral connection is not recommended.
- Optional pre-stripped wiring harness sold separately, Lutron P/N PDW-S-DV.

Mains Wiring and NEC® Class 2 Separation

- Follow appropriate local and national codes to avoid violating required separation guidelines.



Job Name:

Model Numbers:

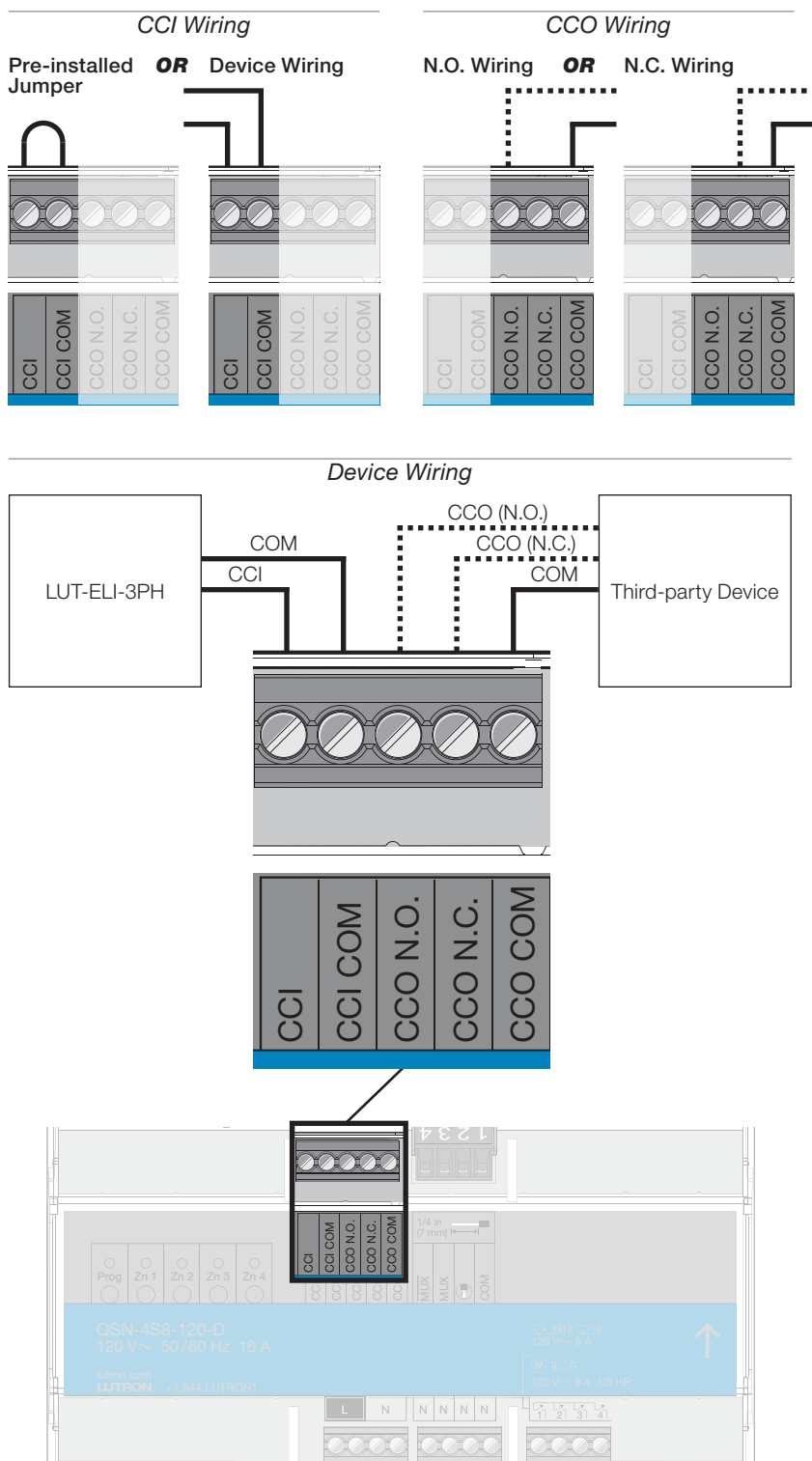
Job Number:

Wiring: Emergency Contact Closure Input and Contact Closure Output

NEC® Class 2 Contact Closures

- Emergency Contact Closure Input (CCI)/ Contact Closure Output (CCO) wiring is NEC® Class 2. Follow all applicable national and local codes for proper circuit separation and protection.
- Turn off all breakers or isolators feeding the unit at distribution panel before servicing unit.
- CCI is local control only and cannot control other units over the QS link. CCI on up to 32 units may be connected to an emergency device (LUT-ELI-3PH) in parallel if event is intended to affect multiple units. Refer to Lutron's Emergency Lighting Application Note #106 (P/N 048106) on www.lutron.com for details.
- When in emergency mode:
 - All zone outputs will be switched on.
 - Controls will not affect units in emergency mode.
 - Controls connected to a unit in emergency mode will continue to affect units on the link that are not in emergency mode.
- Emergency contact closure input is normally closed (N.C.). The unit is shipped with a jumper pre-installed.

Note: The unit will default to emergency mode if the CCI is left open. If no contact closure input is required, leave the wire jumper in the CCI terminals.



Job Name:

Model Numbers:

Job Number:

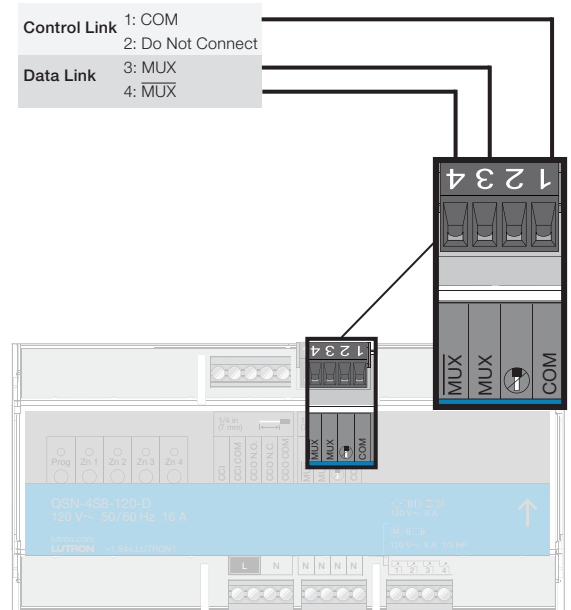
Wiring: QS Link

QS Link NEC® Class 2 Wiring

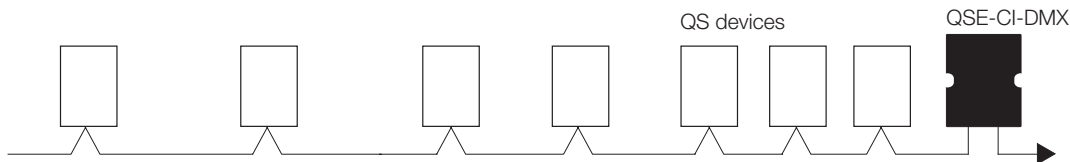
- Follow all applicable national and local codes for proper circuit separation and protection.
- Link communicates using NEC® Class 2 wiring.
- Device does not supply or consume PDUs.
- Wiring may be daisy-chained or T-tapped.
- Do NOT connect terminal 2.
- Optional QS link wiring harnesses sold separately, refer to Lutron specification submittal 3691183 on www.lutron.com for part numbers.

QS Link Wiring Options

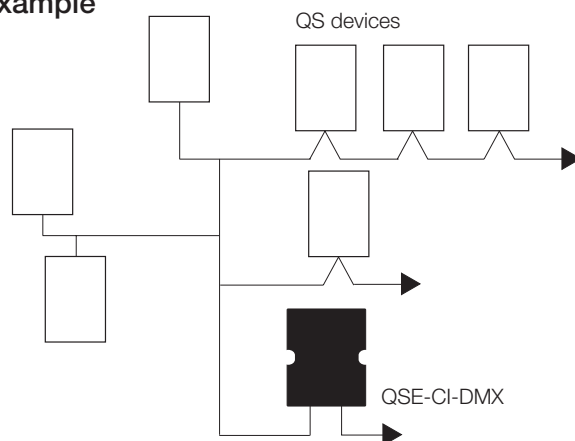
Control Link Length	Wire Gauge (for terminals)	Available from Lutron in one cable:
Less than 500 ft (153 m)	Power (terminals 1 and 2): 1 pair 18 AWG (1.0 mm ²)	GRX-CBL-346S (non-plenum)
	Data (terminals 3 and 4): 1 pair 22 AWG (0.5 mm ²), twisted and screened	GRX-PCBL-346S (plenum)
500 ft (153 m) to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



Daisy-Chain Wiring Example



T-Tap Wiring Example



The Lutron logo, Lutron, Athena, Energi Savr Node, Palladium, Pico, Radio Powr Savr, and seeTouch are trademarks or registered trademarks of Lutron Electronics Co., Inc. in the US and/or other countries

All other product names, logos, and brands are property of their respective owners.