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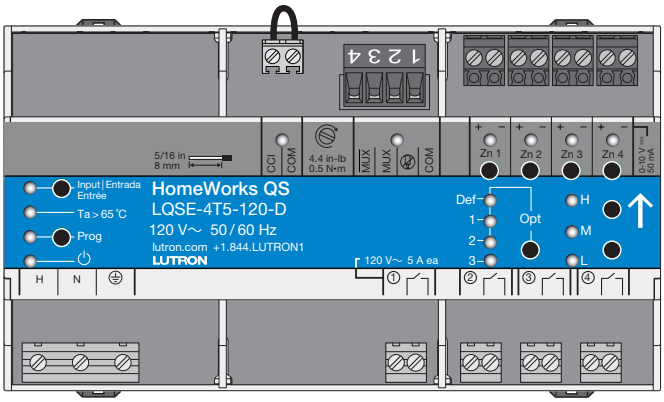
0–10 V⎓ Power Module

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

- LQSE-4T5-120-D: 4-Zone DIN Power Module for 0–10 V⎓/Switching lighting loads

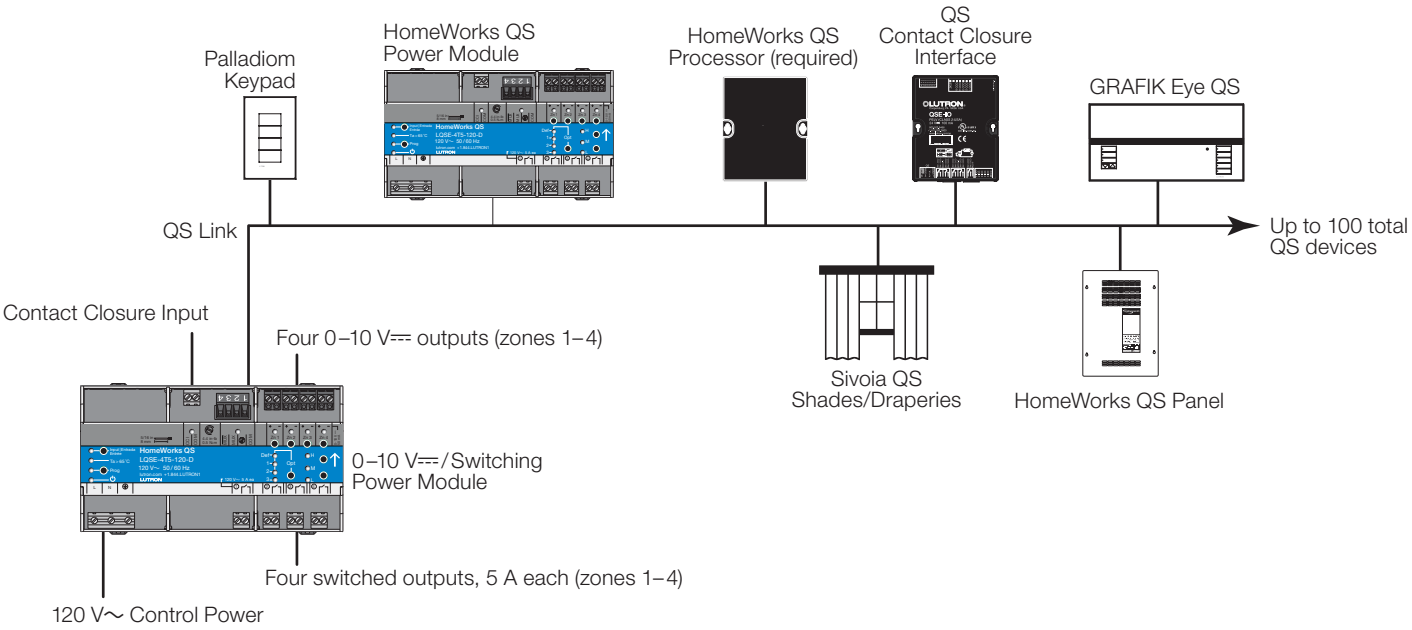


LQSE-4T5-120-D

Features

- Power Module units can be used in a HomeWorks QS system to control and manage light in an entire home or building.
- Includes QS link for seamless integration of lights and control.
- Auto sink and source capability for 0–10 V⎓ outputs.
- 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.
- Switched outputs utilize latching relays to maintain relay state if control power is lost.

System Example



LUTRON SPECIFICATION SUBMITTAL Page 1

Job Name:	Model Numbers:	
Job Number:		

Specifications

Power

- 120 V~ 50/60 Hz
- Lightning strike protection meets ANSI/IEEE standard 62.31–1980. Can withstand voltage surges of up to 6000 V~ 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 ºF to 131 ºF (0 ºC to 55 ºC)
- Calibration point maximum: 149 ºF (65 ºC)
- Relative humidity: less than 90% non-condensing
- For indoor use only

Output Zone Ratings

- Each zone is rated at 5 A for switching (maximum of 20 A per module). Rated for incandescent, ELV, MLV, and electronic ballast lighting loads.
- Switched outputs utilize latching relays to maintain relay state if control power is lost.
- 0–10 V⎓ rated for 50 mA maximum output, source or sink per zone.
- For applications requiring higher wattage ratings, use the PHPM-SW-DV-WH interface.
- For applications requiring 16 A 3-wire ballast dimming or phase adaptive dimming use the following interfaces:
  - BCI-0-10
  - BCI-0-10 + PHPM-WBX-120-WH
  - BCI-0-10 + PHPM-WBX-DV-WH

Terminals (Torque, wire gauge & type ratings)

- Mains wiring: 5.0 in-lbs (0.6 N•m)
  - 16 AWG to 10 AWG (1.0 mm^2 to 4.0 mm^2) (single wire, solid or stranded)
- Zone Wiring: 5.0 in-lbs (0.6 N•m)
  - 16 AWG to 10 AWG (1.0 mm^2 to 4.0 mm^2) (single wire, solid or stranded)
- CCI Wiring: 5.0 in-lbs (0.6 N•m)
  - 20 AWG to 10 AWG (0.5 mm^2 to 4.0 mm^2) (single wire, solid or stranded)
  - 20 AWG to 16 AWG (0.5 mm^2 to 1.0 mm^2) (two wires, solid or stranded)
- 0–10 V⎓ wiring: 5.0 in-lbs (0.6 N•m)
  - 20 AWG to 16 AWG (0.5 mm^2 to 1.0 mm^2) (single wire, solid or stranded)
- QS link: 5.0 in-lbs (0.6 N•m)
  - Power: 20 AWG to 10 AWG (0.5 mm^2 to 4.0 mm^2)
  - Data: 1 twisted, shielded pair 22 AWG to 18 AWG (0.34 mm^2 to 0.75 mm^2)
  - See **Wiring: QS Link** section on page 9

HomeWorks QS Wallstations

- HomeWorks QS wallstations can be configured to control Power Modules with the HomeWorks QS programming utility.
- LED indicator displays the status of programmed lights.

QS Link Limits

- A QS link in a HomeWorks QS system can have up to 512 zones (outputs) and 100 devices.
- Each 0–10 V⎓ power module counts as one device toward the 100 device limit, and up to 4 zones toward the 512 zone limit.

Job Name:	Model Numbers:	
Job Number:		

Manual Mode Operation

- Zone buttons:
  - Selects zone to control
- Raise/Lower buttons:
  - Turns loads on and off
  - Dim loads up and down

Note: Program, Input, and Option buttons are not used in LQSE models.

Contact Closure Input (CCI)

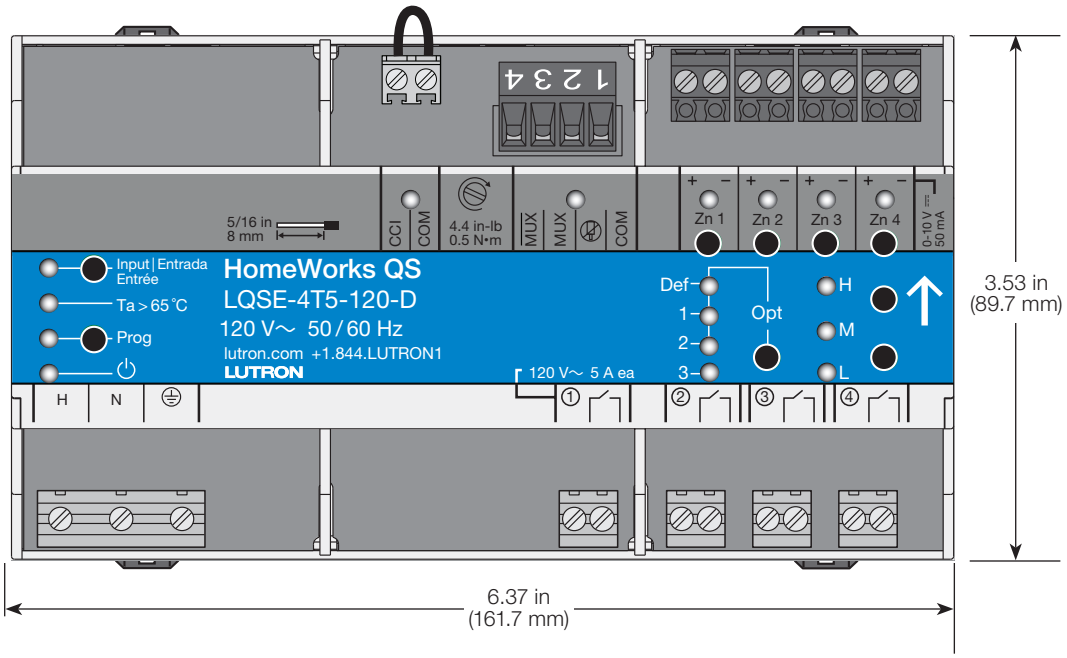
- The CCI behaves as a Manual Override Contact Closure Input.
- If the CCI is open, the Power Module unit will enter Manual Override Mode, which will turn on all loads and disable control from other devices.
- When the CCI is closed or jumpered (factory default), Power Module unit zones will return to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

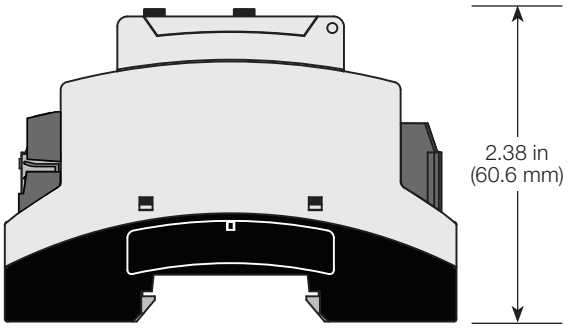
Mounting

- BTUs/hour when fully loaded: 8.5 BTU
- Mount in a Lutron DIN panel (see spec 3691055 at www.lutron.com), NEMA type 1, IP20 (minimum) rated consumer panel or breaker panel with integrated DIN rail
- Width = 9 DIN modules - 6.36 in (161.7 mm)
- See Lutron App Note 048466 at www.lutron.com for more information on mounting and installation in panels with integrated DIN rail.

Mechanical Dimensions

LQSE-4T5-120-D





Job Name:	Model Numbers:	
Job Number:		

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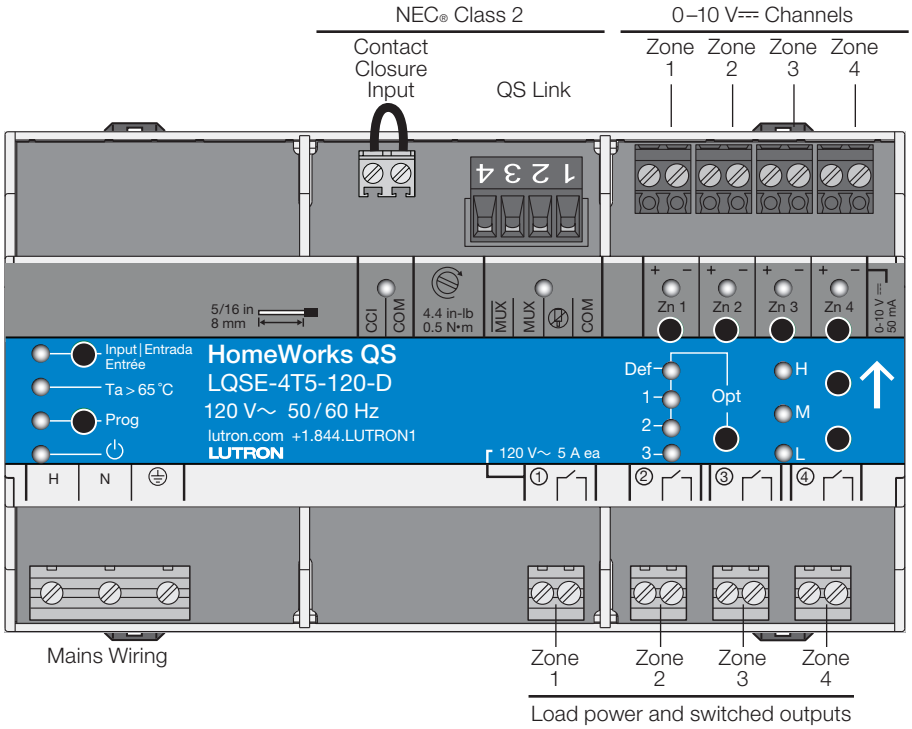
Overview of Wiring Terminals



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 unit at the distribution panel.
- Run line/hot, neutral, and earth (⏚) wires from a 120 V~ 50/60 Hz feed to the 0–10 V⎓ Power Module unit.

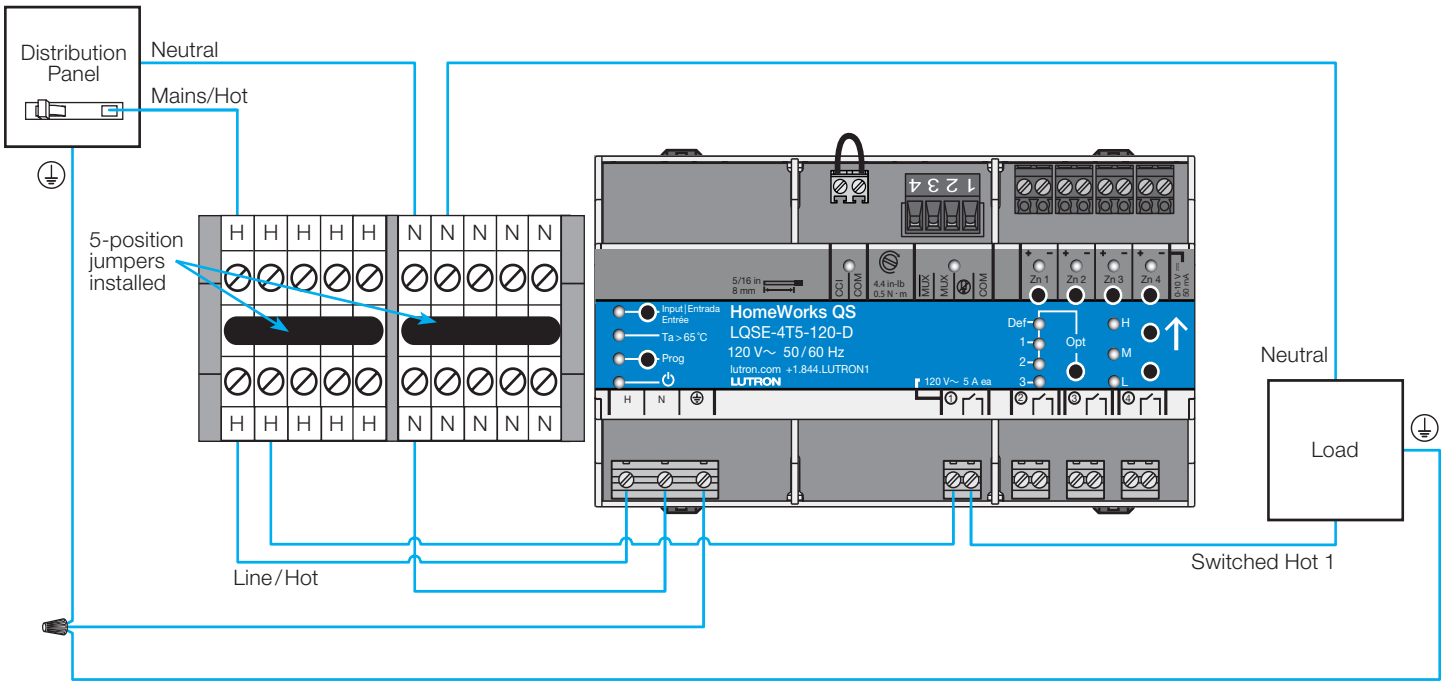
Mains Wiring

- Units are packaged with Terminal Blocks to allow for easy single or multi-feed installation. See below for wiring.
- Follow appropriate local and national codes.

Behavior During Power Failure

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

Single-Feed

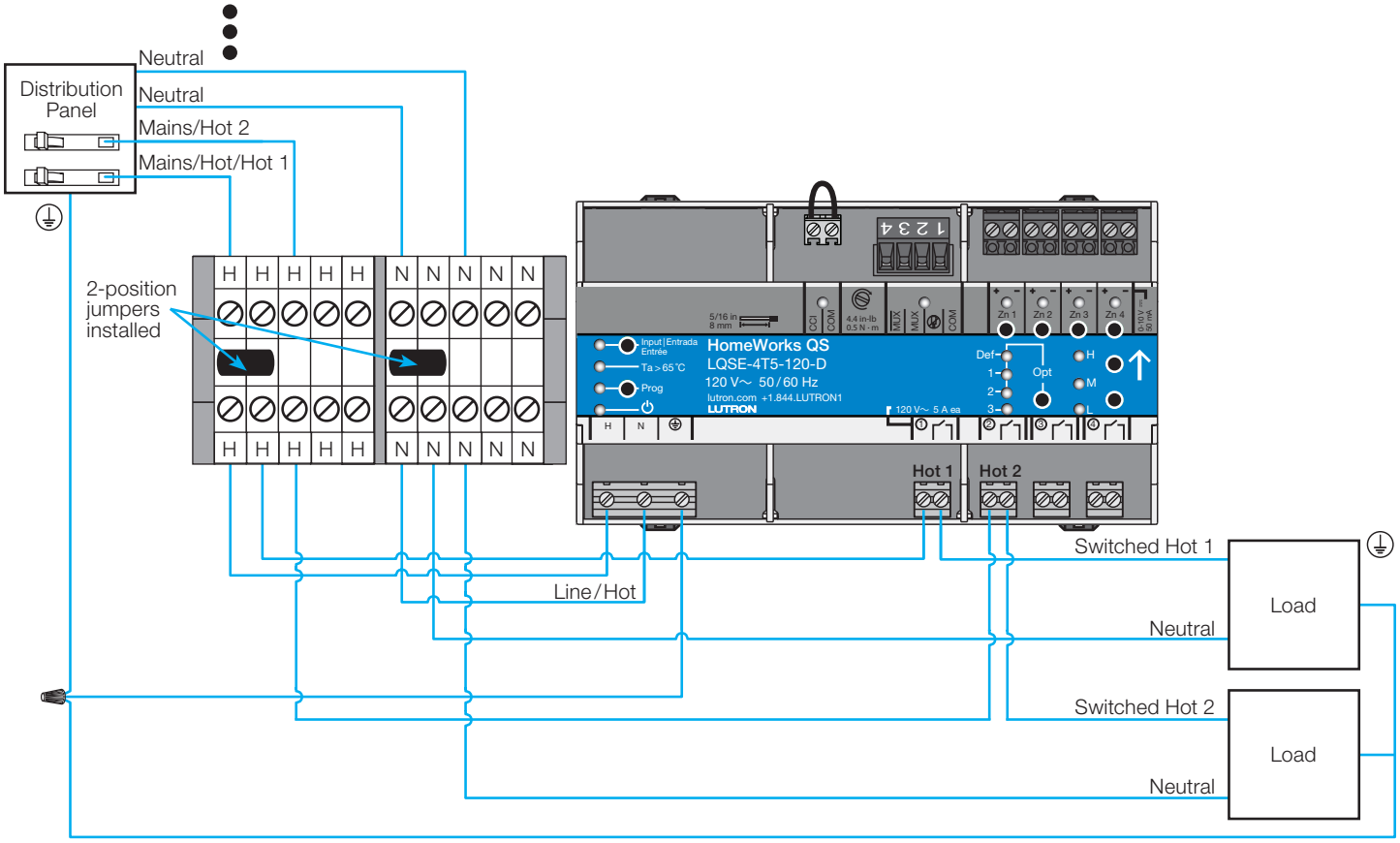


Key	
⏚	Earth/Ground
N	Neutral
H	Mains/Hot

Job Name:	Model Numbers:	
Job Number:		

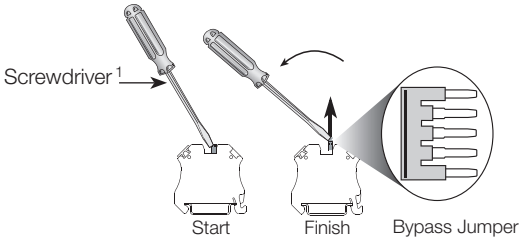
Mains Voltage Wiring *(continued)*

Multi-Feed



Key	
⏚	Earth/Ground
N	Neutral
H	Mains/Hot

Jumper Removal

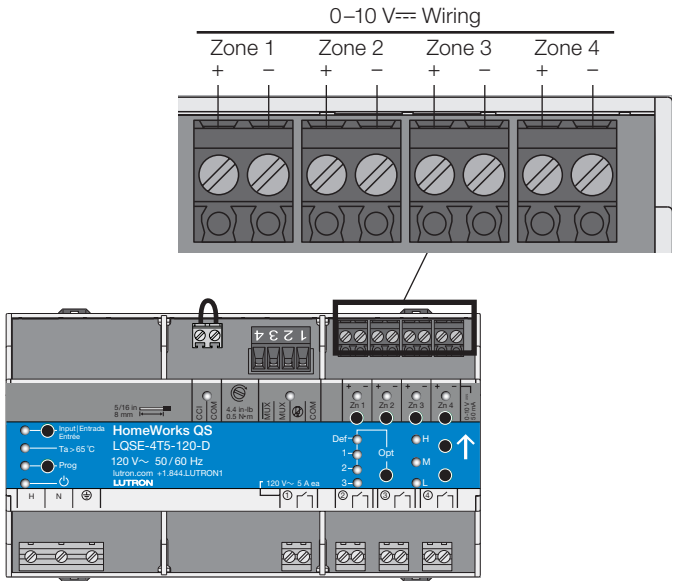


1 Use either the removal tool provided with the Lutron panel or a flat head screwdriver to remove the jumpers.

Job Name:	Model Numbers:	
Job Number:		

Wiring: 0–10 V⎓

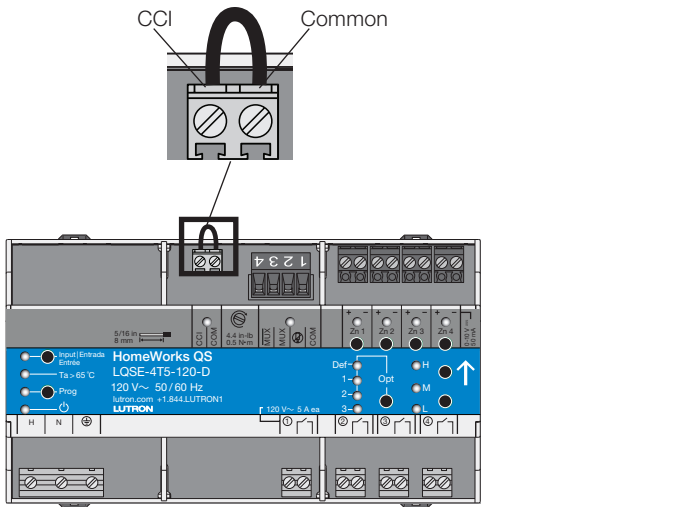
- 0–10 V⎓ zones 1-4 are double insulated from line voltage and the QS link but are not insulated from each other. They share the same common terminal (negative "-" terminal)
- Do not mix NEC® Class 2 circuits and non-NEC® Class 2 circuits for 0–10 V⎓ zone 1-4.
- Follow all national and local electrical codes for separation requirements.



Wiring: Manual Override Contact Closure Input

- Contact Closure Input (CCI) wiring is NEC® 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 units over the QS link. A maximum of 32 units 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 unit is shipped with a jumper wire pre-installed.

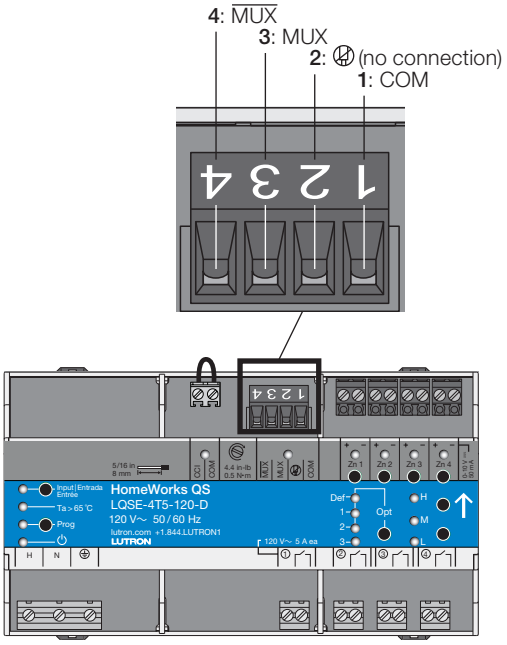
  Note: The Power Module unit will default to Manual Override Mode if the CCI is left open. If no Manual Override contact input is required, leave the wire jumper in the CCI terminals.



Job Name:	Model Numbers:	
Job Number:		

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.



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 mm^2] twisted/shielded) from Belden, model #9461.

Job Name:	Model Numbers:	
Job Number:		