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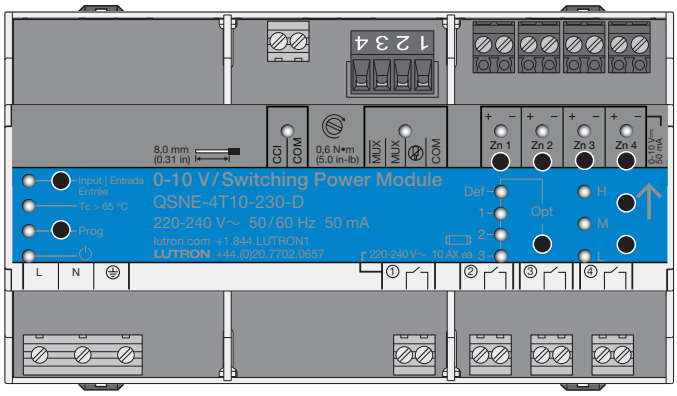
Energi Savr Node

The Energi Savr Node (ESN) family is a group of modular products for the control of lighting loads. This document describes the following:

- QSNE-4T10-230-D: 4-Zone ESN module for 0–10 V/Switching

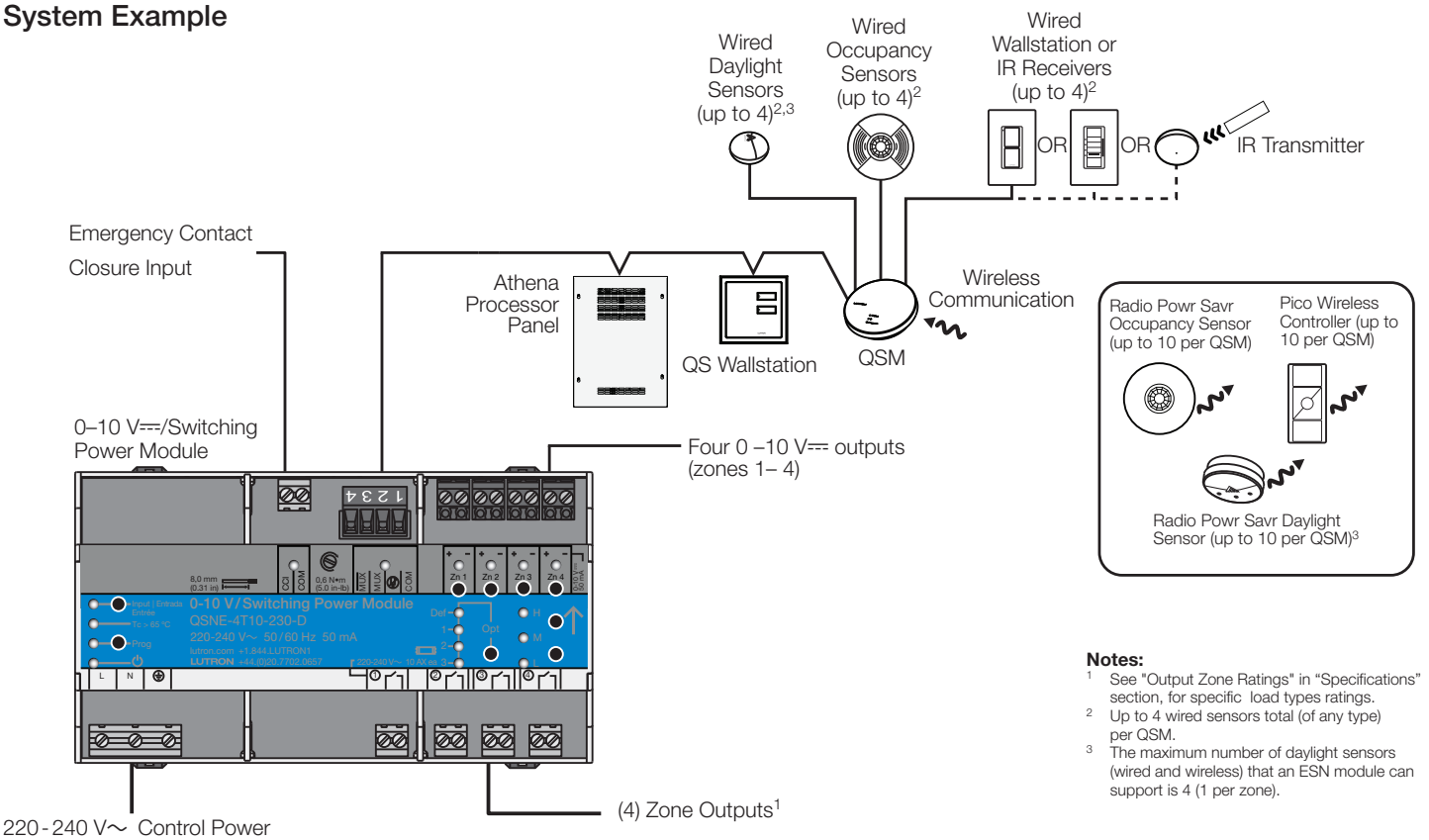


QSNE-4T10-230-D

Features

- 0-10 V/switching power module can be used in an Athena system.
- Includes QS link for seamless integration of lights and controls.
- Auto sink and source capability for 0 –10 V⎓ outputs.
- Buttons on the module provide override control.
- LEDs on the module provide diagnostic information.
- 0-10 V/switching power module can be used for 0 –10 V⎓ and switching applications only.
- Emergency 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



Notes:

1 See "Output Zone Ratings" in "Specifications" section, for specific load types ratings.
2 Up to 4 wired sensors total (of any type) per QSM.
3 The maximum number of daylight sensors (wired and wireless) that an ESN module can support is 4 (1 per zone).

LUTRON SPECIFICATION SUBMITTAL Page 1

Job Name:	Model Numbers:	
Job Number:		

Specifications

Power

- 220–240 V~ 50/60 Hz
- Lightning strike protection meets ANSI/IEEE standard 62.31–1980. Can withstand voltage surges of up to 6 000 V~ and current surges of up to 3 000 A.
- Current draw: 50 mA max
- Standby power : 1 W
- BTUs/hour when fully loaded: 4

Standards

- Lutron Quality Systems registered to ISO 9001:2008
- CE Marked
- UKCA Marked

Environment

- Ambient Temperature Operating Range: 0 ºC to 40 ºC (32 ºF to 104 ºF)
- Calibration point maximum: 65 ºC (149 ºF)
- Relative humidity: less than 90% non-condensing
- For indoor use only

Terminals

- Mains wiring: 0.5 mm^2 to 6.0 mm^2 (24 to 10 AWG)
- 0–10 V Wiring: 0.5 mm^2 to 2.5 mm^2 (24 to 12 AWG)
- CCI Wiring: 0.5 mm^2 to 6.0 mm^2 (24 to 10 AWG)
- Zone wiring: 0.5 mm^2 to 6.0 mm^2 (24 to 10 AWG)

Mounting

- Use an IP20 (minimum) rated consumer panel or breaker panel with integrated DIN rail
- Width = 161.7 mm (6.4 in)
- Mount module in orientation shown.
- Mount to DIN rail by pressing module onto rail with clips locked. To remove from rail, unlock clips using a screwdriver.
- Mount in an accessible and serviceable location.
- Module generates heat, maximum 4 BTUs / Hour.
- Mount module such that all the conditions below are met:
  - Ambient Temperature Operating Range (inside mounting panel): 0 ºC to 40 ºC (32 ºF to 104 ºF)
  - Calibration point maximum: 65 ºC (149 ºF)
- For more information on mounting and installation in panels with integrated DIN rail see the DIN Rail Best Practices Application Note (P/N 048466) at www.lutron.com.

Programming and Compatibility Requirements

- Setup and programming of the 0-10 V⎓/switching power module is done through the Athena programming software.
- Athena software version 20.4 or higher required. Module is not compatible with Lutron Quantum system.

Output Zone Ratings

- Each zone is rated at 10 AX for switching. Rated for resistive, capacitive, or inductive 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.

QS Link Limits

- Each 0 –10 V⎓ module counts as one device toward the QS link device limit, and up to 4 zones toward the QS link zone limit.

Manual Mode Operation

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

Contact Closure Input (CCI)

- The CCI behaves as a Emergency Contact Closure Input.
- If the CCI is open, the module will enter emergency 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 emergency mode.

Job Name:	Model Numbers:	
Job Number:		

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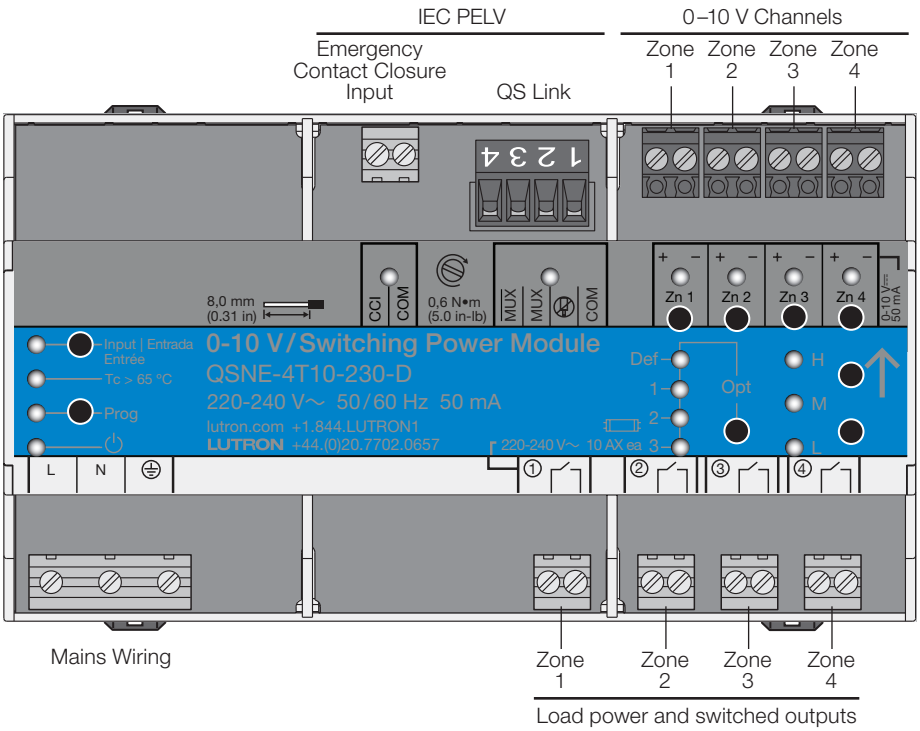
Overview of Wiring Terminals



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Job Number:		

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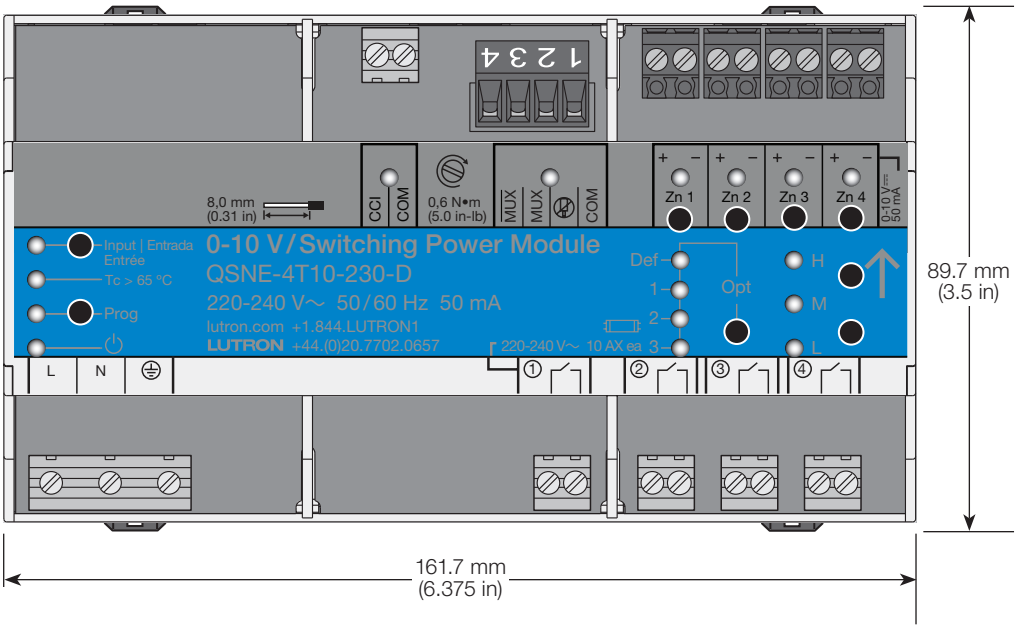
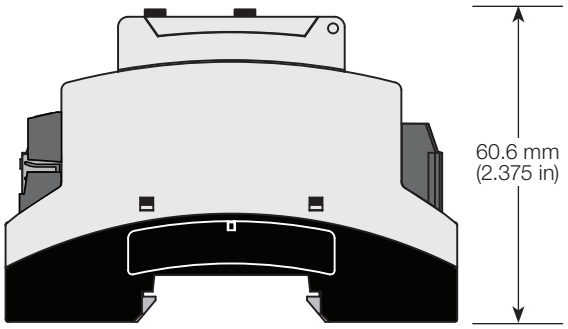
Mechanical Dimensions





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Mains Voltage Wiring

Wiring from Distribution to Power Module

- Turn off all circuit breakers or isolators feeding the power module at distribution panel.
- Run line, neutral, and earth (⏚) wires from a 220-240 V~ 50/60 Hz feed to the power module.

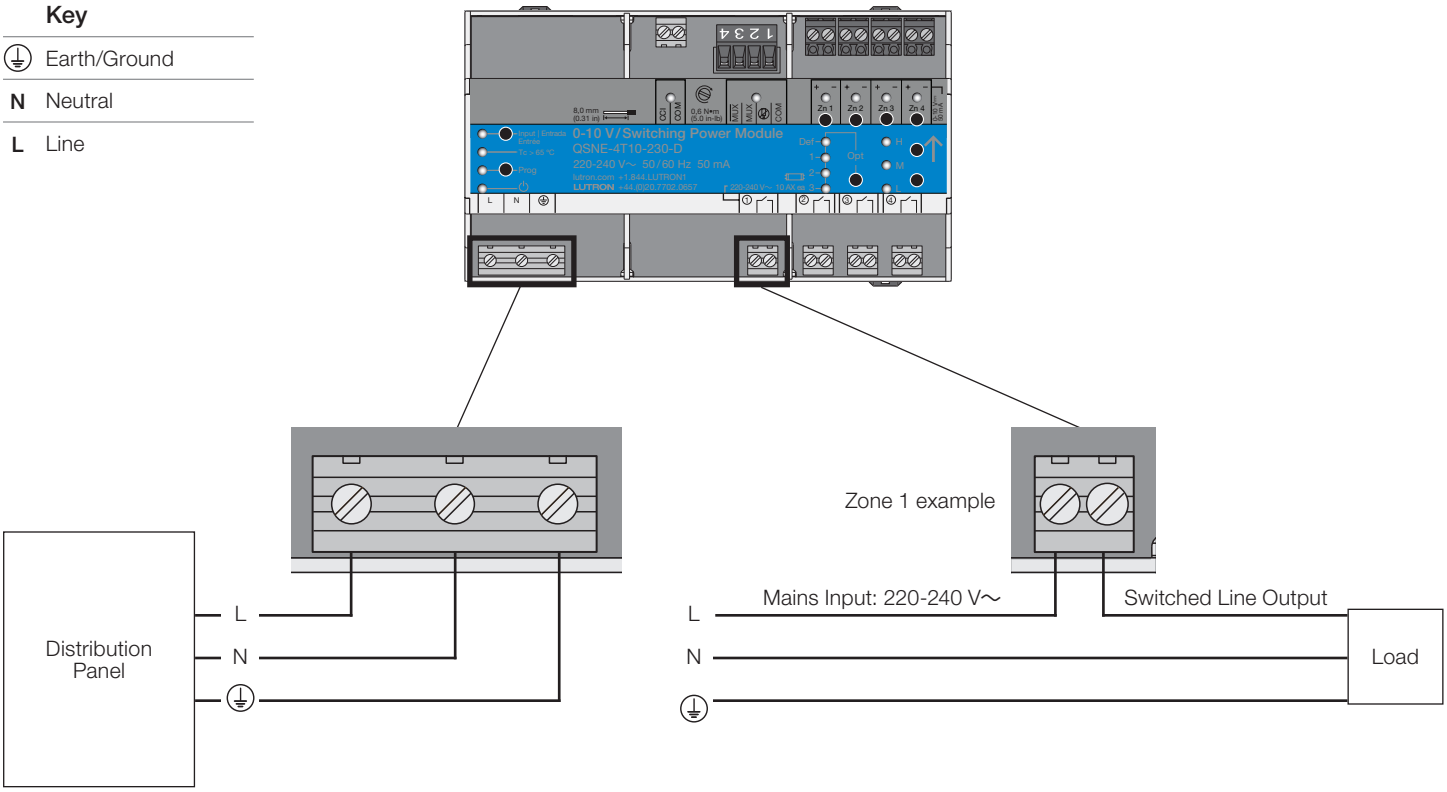
Mains Wiring and IEC PELV Separation

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

Behavior During Power Failure

- Relays do not change state when power is lost to the L/N/⏚ terminals. Follow local and national codes for emergency lighting requirements.

Key	
⏚	Earth/Ground
N	Neutral
L	Line

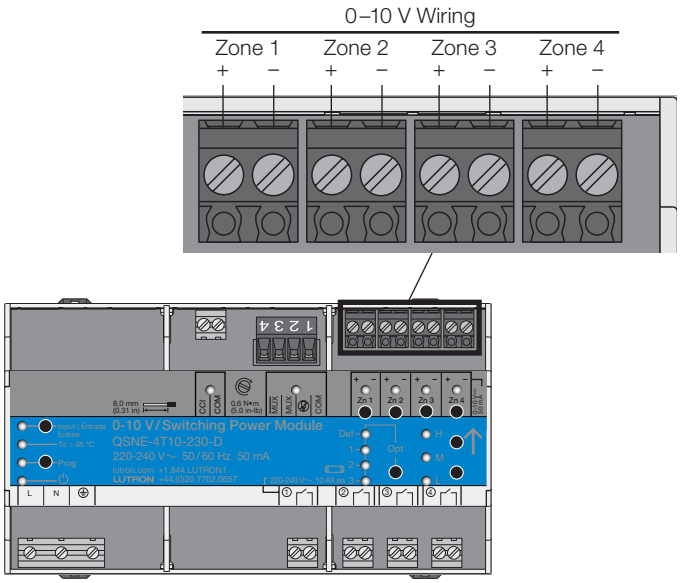


Job Name:	Model Numbers:	
Job Number:		

Wiring: 0–10 V

0–10 V Wiring

- 0–10 V zones 1–4 are double-insulated from all other inputs and outputs.
- 0–10 V zones 1–4 are not insulated from each other. They share the same common terminal (negative "–" terminal).
- Connect only SELV/IEC PELV circuits, or connect only non-SELV/IEC PELV circuits to 0–10 V zones 1–4. Do not mix SELV/IEC PELV circuits and non-SELV/IEC PELV circuits.
- Follow all national and local electrical codes for separation requirements.

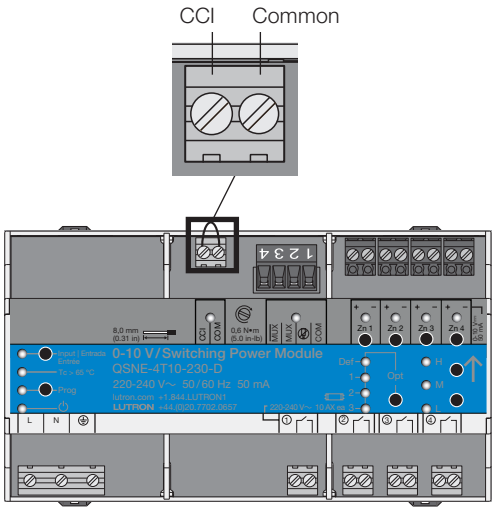


Wiring: Emergency Contact Closure Input

IEC PELV Emergency Contact Closure Input

- Emergency Contact Closure Input (CCI) wiring is IEC PELV. Follow all applicable national and local codes for proper circuit separation and protection.
- When in emergency mode, all ballasts and modules will be at their programmed emergency light level (default is 100%). All sensors and 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 CCO device if the event is intended to affect multiple devices.
- Emergency contact closure input is normally closed (NC). The module is shipped with a jumper pre-installed.

  Note: The module will default to emergency mode if the CCI is left open. If no emergency contact input is required, please leave the wire jumper in the CCI terminals. The module will process any sensor events received while in emergency mode after it exits emergency mode.

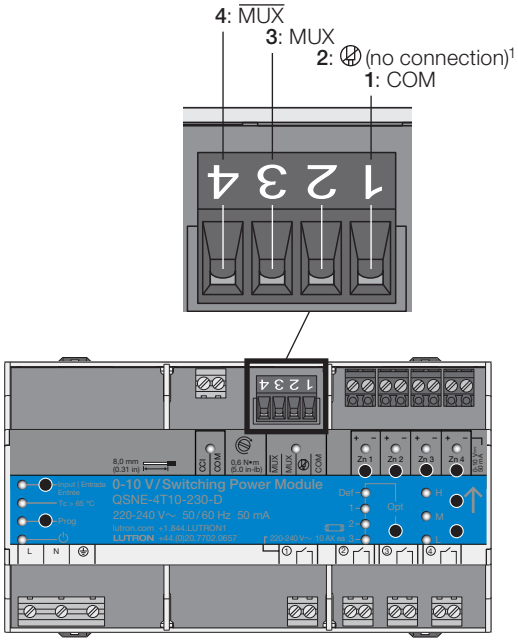


Job Name:	Model Numbers:	
Job Number:		

Wiring: QS Link

IEC PELV QS Link Wiring

- Link communicates using IEC PELV wiring.
- Follow all applicable national and local codes for proper circuit separation and protection.
- Wiring may be daisy-chained or T-tapped.
- Total length of QS link must not exceed 610 m (2000 ft).
- Do NOT connect terminal 2.

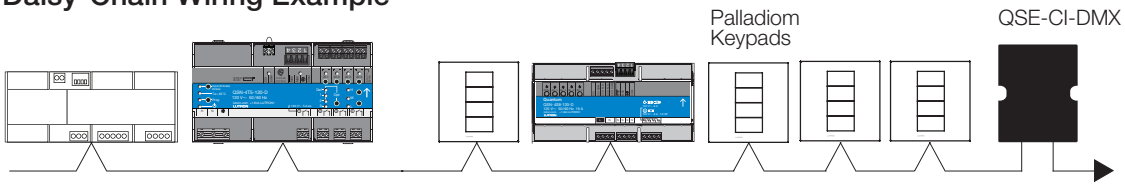


QS Link Wiring Options

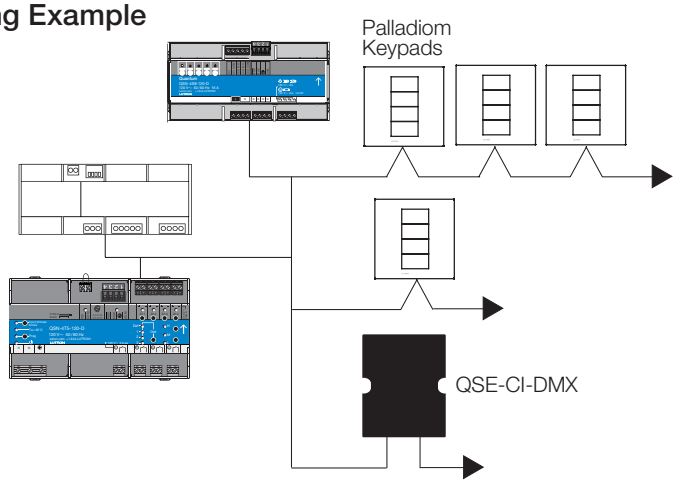
QS Link Wiring Length	Wire Gauge	Available from Lutron in one cable:*
Less than 153 m (502 ft)	Power (terminals 1 and 2): 1 pair 1.0 mm² (18 AWG)	QS-CBL-LSZH (Low-Smoke Zero-Halogen) GRX-CBL-346S (non plenum) GRX-PCBL-346S (plenum)
	Data (terminals 3 and 4): 1 pair 0.5 mm² (22 AWG), twisted and screened	
153 m to 610 m (502 ft to 2000 ft)	Power (terminals 1 and 2): 1 pair 4.0 mm² (12 AWG)	GRX-CBL-46L (non plenum) GRX-PCBL-46L (plenum)
	Data (terminals 3 and 4): 1 pair 0.5 mm² (22 AWG), twisted and screened	

* Varies by region, refer to the cable spec.

Daisy-Chain Wiring Example



T-Tap Wiring Example



[1] Module does not consume or supply PDUs on the QS link. **Do not** connect the 24 V⎓ wire to module. Note: 24 V⎓ wire must bypass the module if other devices on the link consume PDUs.

Job Name:	Model Numbers:	
Job Number:		