

Athena Light Management Hub (QP5)

The Athena Light Management Hub (QP5) connects Lutron QS devices to your Athena lighting and shading control system.

Features

- Designed to control, manage, and monitor Lutron Energi Savr Node units, QS and Pico wallstations, Contract Roller QS shades and QS drapery systems.
- The Athena system brings switching, dimming, motorized window shades, digital ballasts, digital LED drivers, and smart sensors together under one software tool.
- QS link wiring can be T-tapped or daisy-chained.

QP5 Hub Capabilities

- Supports up to two Athena Edge processors with up to two links each that can be individually configured to communicate with:
 - Lutron QS devices
- Includes 8-port Ethernet unmanaged PoE switch to easily connect processors and power a Lutron Athena Clear Connect Gateway–Type X.
- Q-POE-PNL can be used to connect a Lutron Athena Clear Connect Gateway–Type X to the processor hub when the wiring distance exceeds 328 ft (100 m).
- Supports both astronomic and time-of-day events to automatically control the lights and shades/draperies in the system.

Athena Hubs Available:

QP5-1L-POE – 1 Link Athena hub*

QP5-2L-POE – 2 Link Athena hub

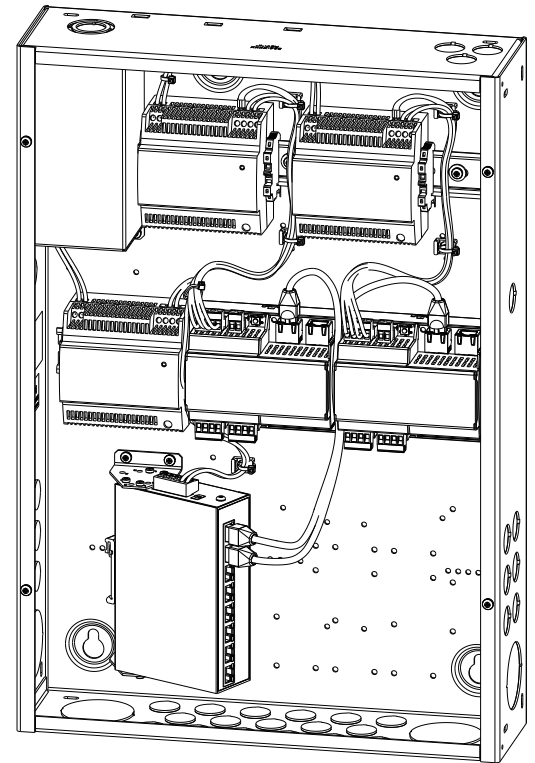
QP5-4L-POE – 4 Link Athena hub

Athena Hub Accessory:

Q-POE-PNL – Ethernet range extender, no configurable link. Does not include an Athena Edge processor or respective software features and functionality.

* 1L hub link capability differs from 2L and 4L hubs. See Specifications page.

** Pico wireless controls, QS keypads, IR



QP5-4L-POE shown

Configurable Link/Switchleg Capabilities

Model	Limitations per Processor		
	Number of Processors per Panel	Number of QS Links	Number of Ethernet Ports
QP-5-1L-POE	(1) 1-link	1	2
QP-5-2L-POE	(1) 2-link	2	2
QP-5-4L-POE	(2) 2-link	2	2

Model	Limitations per QS Link					
	QS Device Count	Wall Controls**	Occupancy Sensor Count	Daylight Sensor Count	Switchleg Count	DMX Interface Limit
QP-5-1L-POE	25	50	50	50	256	8
QP-5-2L-POE	99	100	100	100	512	16
QP-5-4L-POE	99	100	100	100	512	16

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Specifications

Regulatory Approvals

- cULus® Listed (Reference: UL® File E42071)
- CE
- Complies with requirements for use in other spaces used for environmental air (plenums) per NEC® 2014 300.22(C)(3)
- Meets the Canadian National Building Code plenum requirements for a concealed space used as a plenum within a floor or roof assembly

Power

- Input voltage: 100–277 V~ 50/60 Hz, normal feed*
- Input Current:
 - QP5-1L-POE/QP5-2L-POE:
 - 2.4 A (100 V~)
 - 2 A (120 V~)
 - 1.4 A (230 V~)
 - 1 A (277 V~)
 - QP5-4L-POE:
 - 3.6 A (100 V~)
 - 3 A (120 V~)
 - 2.1 A (230 V~)
 - 1.5 A (277 V~)
 - Q-POE-PNL:
 - 1.2 A (100 V~)
 - 1 A (120 V~)
 - 0.7 A (230 V~)
 - 0.5 A (277 V~)
- Output: Edge Processor: 24 V== 1 A per link
Ethernet PoE Switch: 60 W total,
30 W max per port
- Power Dissipation (max):
 - QP5-1L-POE/QP5-2L-POE: 85 BTUs/hr
 - QP5-4L-POE: 125 BTUs/hr
 - Q-POE-PNL: 45 BTUs/hr

Physical Design

- Enclosure: NEMA Type 1, IP-20 protection
16 U.S. gauge steel
- Enclosure: W: 14.39 in (365 mm)
H: 21.00 in (533 mm)
D: 4.09 in (104 mm)
- Enclosure with Cover: W: 15.39 in (291 mm)
H: 21.50 in (546 mm)
D: 4.14 in (105 mm)
- Weight: 25 lb (11.3 kg) (without packaging)

Mounting

- Surface-mount only

Environment

- For indoor use only
- 32 °F to 104 °F (0 °C to 40 °C)
- Relative humidity less than 90% non-condensing

Ethernet Port Connections

- Each hub comes with an 8-port unmanaged PoE switch.
 - Ports on the switch must only be used for:
 - Processors (inside the hub)
 - Athena Clear Connect Gateway-Type X
 - Connections to other hubs (QP5 or QP6)
 - Connections to network
 - Do not use unused ports to connect any other Ethernet connections or PoE equipment other than specified above
- Example: QP5-4L-POE has:
- 8 total ports
 - 2 (1 port used per processor)
 - 6 available to connect to other devices

Internet Connection

- Providing the Athena hub with an internet connection is highly recommended. This connection is outbound from the Athena processor to the cloud (see the Athena IT Guide at www.lutron.com/AthenaITGuide for details). Having this connection provides for automated firmware updates as well as remote access, diagnostics, and service (some features may only be available after system startup).

* If the QP5 panel's PoE switch is powering a Q-RF that is controlling one or more designated Ketra emergency fixtures, power for the QP5 must be supplied via normal-only feed and not using an uninterruptible power supply or generator.

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Athena Security Statement

Lutron takes cybersecurity very seriously. We actively monitor the threat landscape and take a proactive approach to security and privacy, continuously working to update and enhance our systems and processes.

At Lutron, we call our approach to cybersecurity **“Secure Lifecycle”**, and we would like to present the following steps we take to protect your security and privacy:

- **Security by Design.** When building a new system, Lutron utilizes a dedicated security team to ensure best practices are implemented. Security is built in. It is not an afterthought or an add-on.
- **Third-Party Validation.** Security is complicated. Lutron has a dedicated team of internal experts, but we also leverage external experts to double-check our work, and to make security recommendations.
- **Continuous Monitoring and Improvements.** Security is a constantly moving target. Lutron uses a dedicated security team to continuously monitor for potential threats and, when needed, send out security patches to update installed systems.
- **Ongoing Support.** Lutron has the resources you need to answer questions about security when they arise

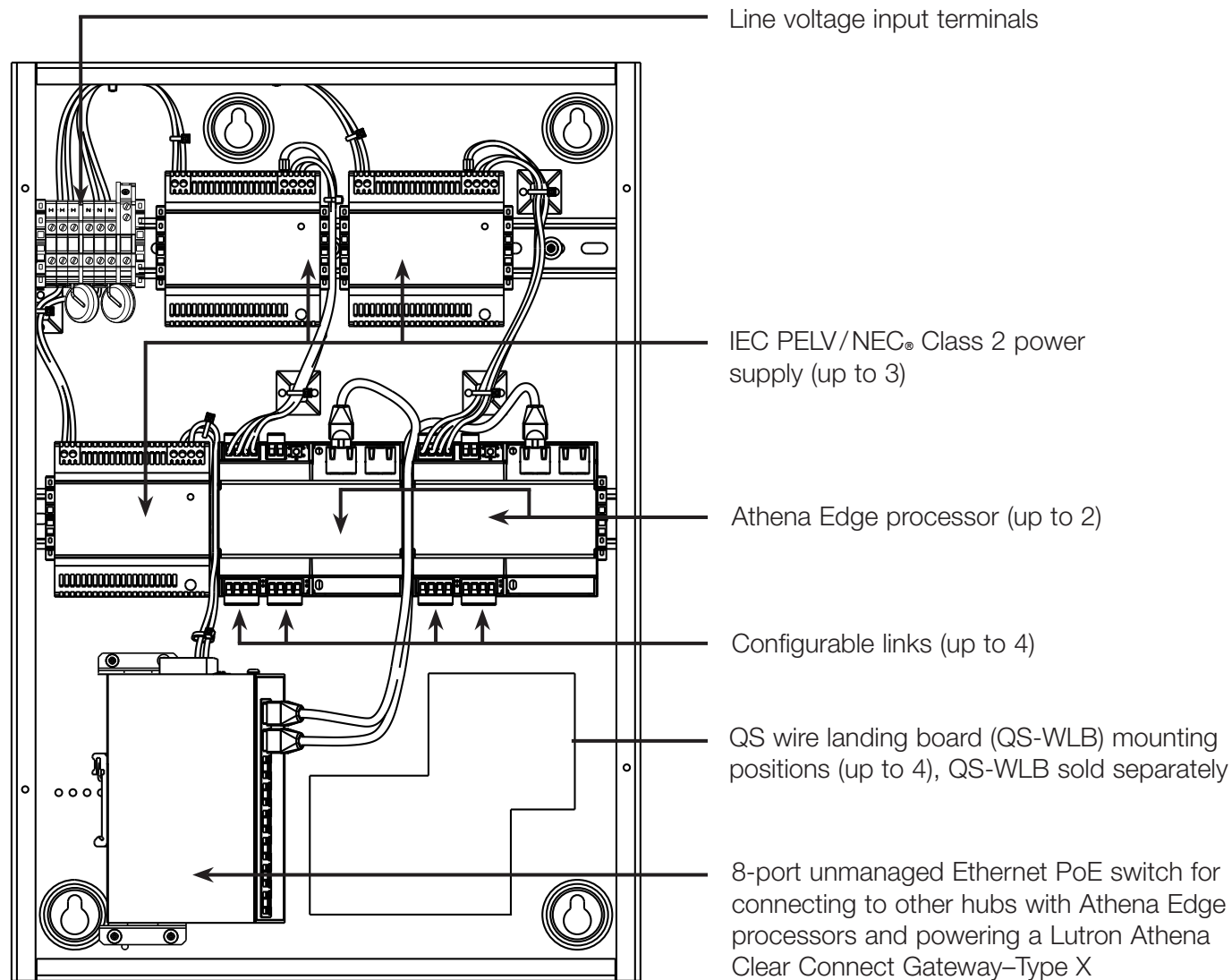
We incorporate a variety of security features into our product designs. These features include recommendations from the National Institute of Standards and Technology (NIST) among others, and they are aimed at meeting our secure lifecycle protections. While we do not publish a comprehensive list of our security features, the following list is a small example of some of the techniques employed in our system designs for Athena Processors, Light Management Hubs, Clear Connect – Type X Gateway devices and associated services (such as mobile applications and cloud resources):

1. Secure and authenticated remote access with unique keys for every Athena system
2. A secure hardware element (“chip”) on all Athena processors and Clear Connect – Type X Gateway to guard the keys used for secure communication and authentication
3. Enforcing industry-standard encrypted communication and techniques for our integration protocols to the highest extent possible. Any integrated third-party components or systems should be evaluated independently.
4. Secure commissioning – all communication between the system programming software tool/app and the processors is encrypted and authenticated. Programming a system requires permission to access that system.
5. Security updates are pushed out automatically to the lighting system for urgent security patches. Lutron is committed to one year of security support from system start-up date.
6. Use of industry-standard techniques for cloud-based integrations, such as OAuth2.0
7. Signed processor firmware to ensure a firmware update is authentically from Lutron.

If you have additional questions or would like to make a vulnerability disclosure to Lutron, please contact Lutron’s 24/7 Technical support Line at 1.844.LUTRON1 or email us at support@lutron.com.

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Hub Overview



QP5-4L-POE shown

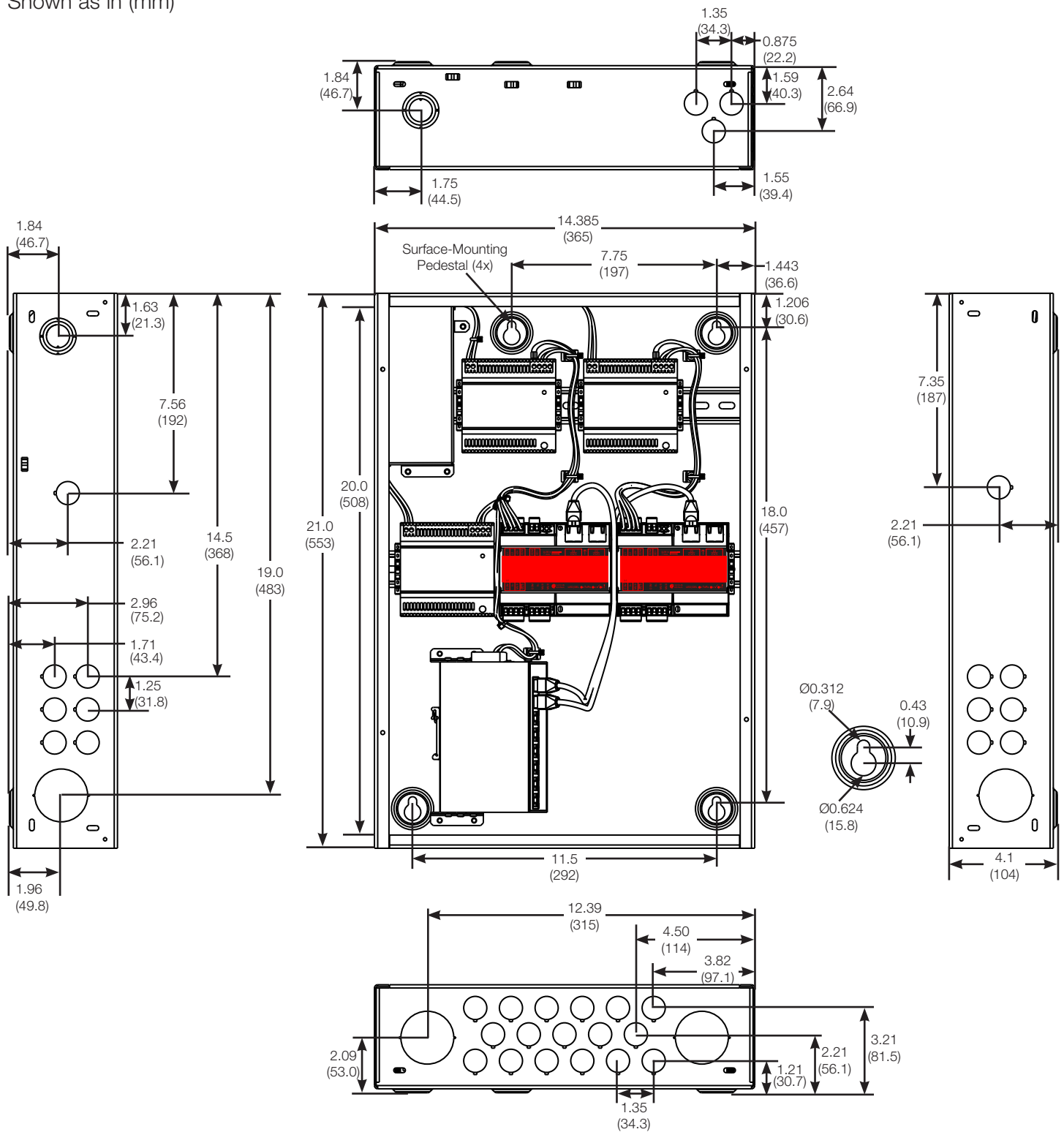
Job Name:

Model Numbers:

Job Number:

Dimensions

Shown as in (mm)



QP5-4L-POE shown

Job Name:

Model Numbers:

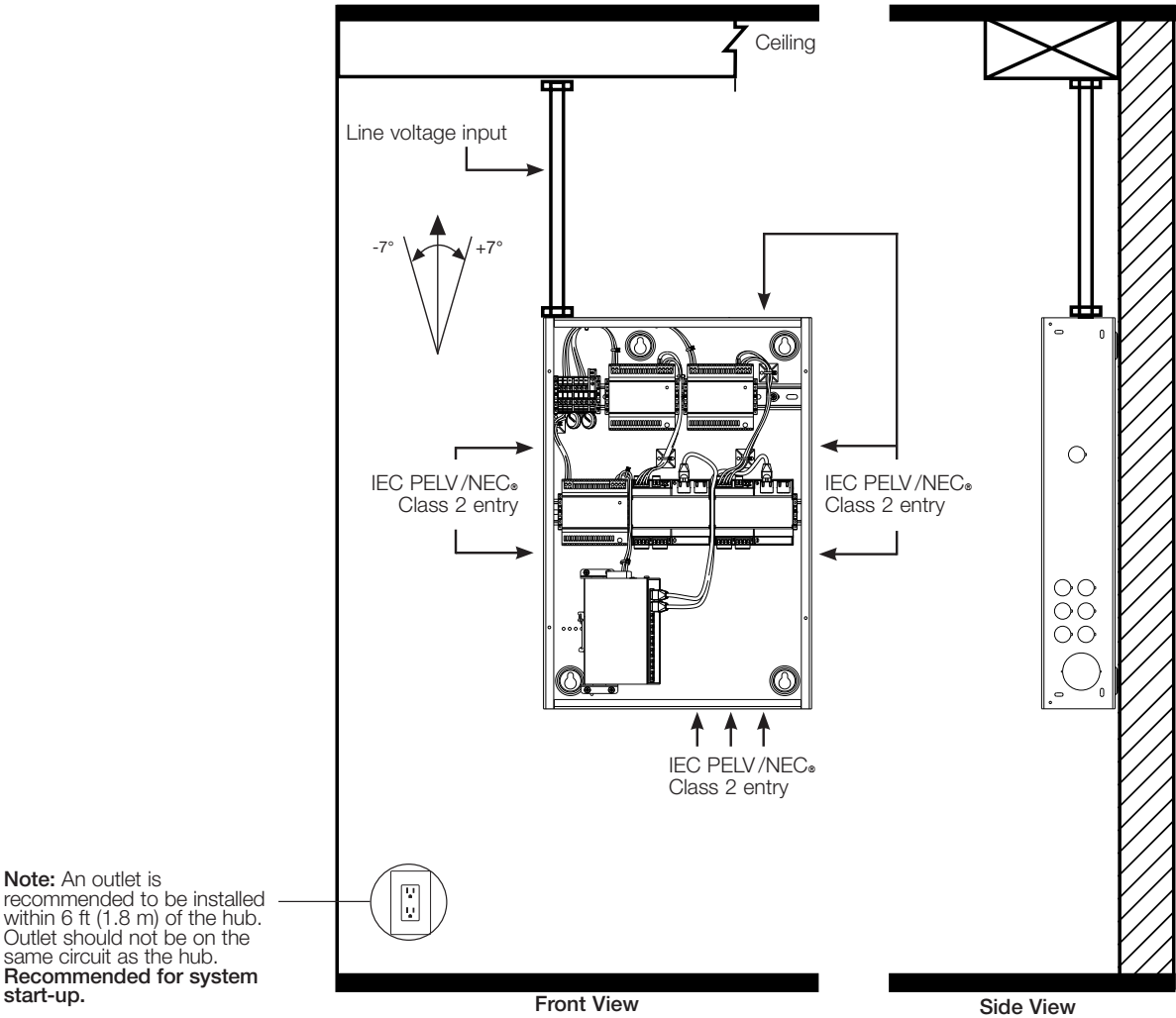
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Mounting and Conduit Entry

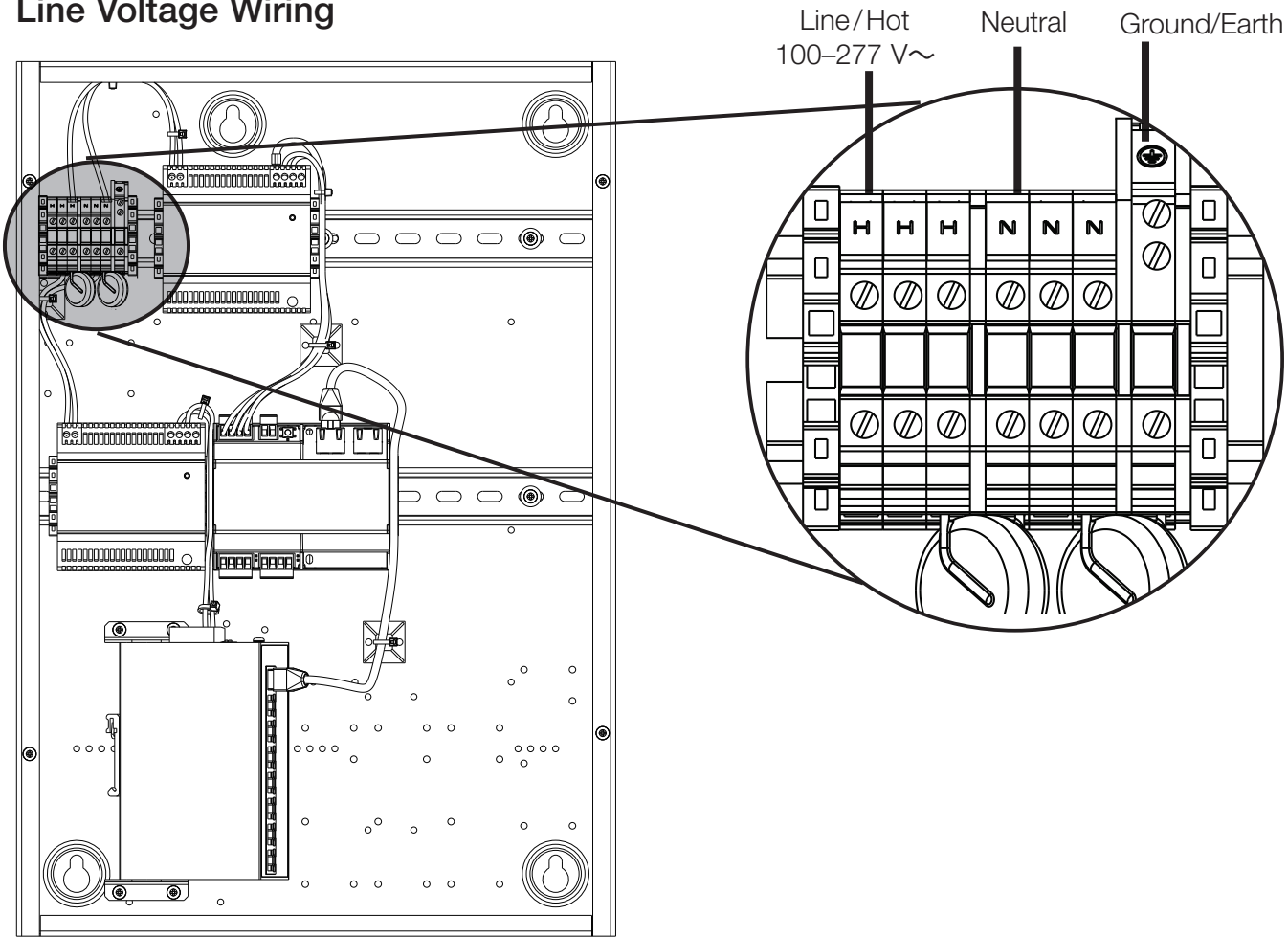
- Surface-mount indoors.
- Hub generates heat. Mount only where temperature will be 32 °F to 104 °F (0 °C to 40 °C).
- This equipment is air-cooled. Do not block vents or warranty will be void. A minimum of 12 in (305 mm) of unobstructed space is required in front of and below the hub for ventilation.
- Water damages equipment. Mount in a location where the hub and processors will not get wet.
- Mount in an accessible and serviceable location.
- Mount within 7° of true vertical.
- An outlet is recommended to be installed within 6 ft (1.8 m) of the hub for servicing. Outlet should not be on the same circuit as the hub.
- Reinforce wall structure for weight and local codes.

Hub	Weight (without packaging)
All models	25 lb (11.3 kg)

- Mount hub so line (mains) voltage is at least 6 ft (1.8 m) from sound or sensitive electronic equipment.
- A Light Management Hub (QP5) may be mounted above, below, or beside other Light Management Hubs (QP5 or QP6). Maintain at least 5 in (127 mm) of spacing between installed hub and other equipment, and follow the NEC® guidelines.



Line Voltage Wiring



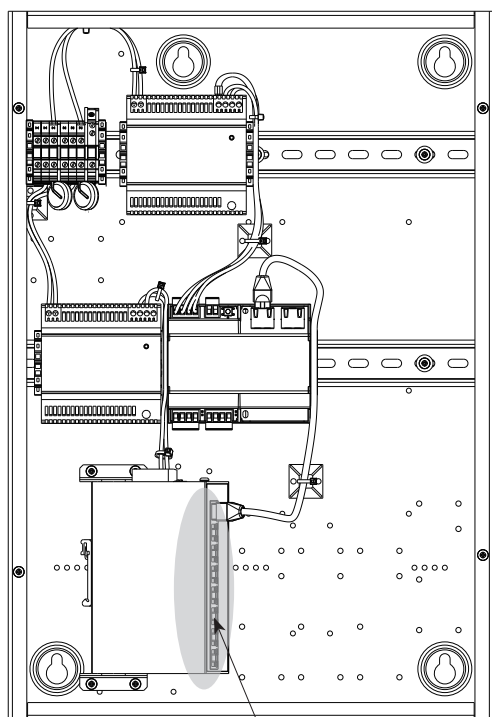
QP5-2L-POE shown

Notes

- Line voltage must enter hub in top left corner as shown above
- Lutron requires a 100–277 V~ normal feed. See Lutron Application Note 106 (P/N048106) at www.lutron.com for information on emergency lighting applications. Athena hubs and network switches providing power to Clear Connect Type X Gateways MUST be powered with normal power if Ketra loads are used for emergency lighting
- Lutron recommends no more than four Light Management Hubs are powered by a dedicated single derated 20 A circuit
- Run wiring so line (mains) Class 1 voltage is separate from IEC PELV/NEC® Class 2 wiring

Job Name:	Model Numbers:	
Job Number:		

Athena Hub Ethernet Link Wiring

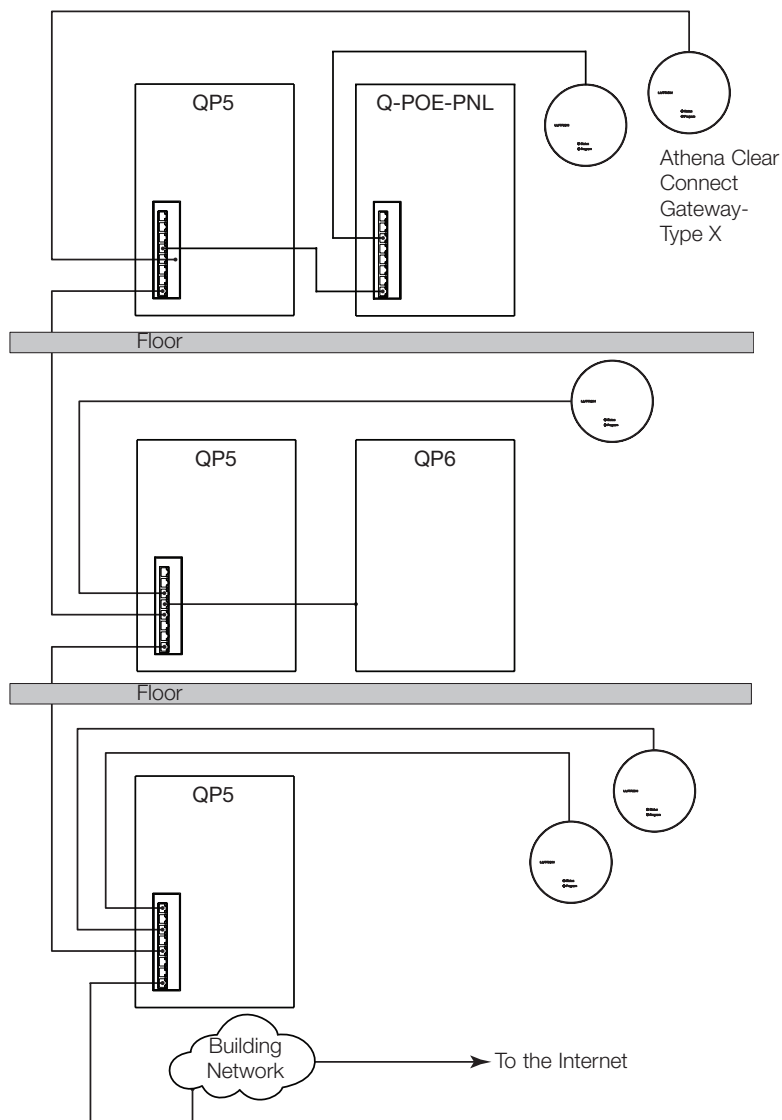


Unmanaged
Ethernet switch

Notes

- Use Cat5e minimum cable for all connections between hubs and a Athena Clear Connect Gateway-Type X.
- The wiring between hubs and gateways is considered PELV/NEC® Class 2; do not run in the same conduit as line (mains) voltage wiring.
- Processors cannot be daisy-chained. Each must be connected to the internal Ethernet switch. The second Ethernet connection is used for service or diagnostics only.
- All system Ethernet wiring must comply with IEEE 802.3 standards.
- Wiring distance for any single “wire segment” is 328 ft (100 m) max; this applies for any Ethernet connections between hubs or to a Athena Clear Connect Gateway-Type X. Use Lutron's Q-POE-PNL or unmanaged Ethernet switches for longer distances.
- For more information about connecting a Athena system to a corporate or building-wide network, please refer to the Athena IT Guide (P/N 040453) at www.lutron.com/AthenaITguide

Typical System Ethernet Wiring Riser Diagram



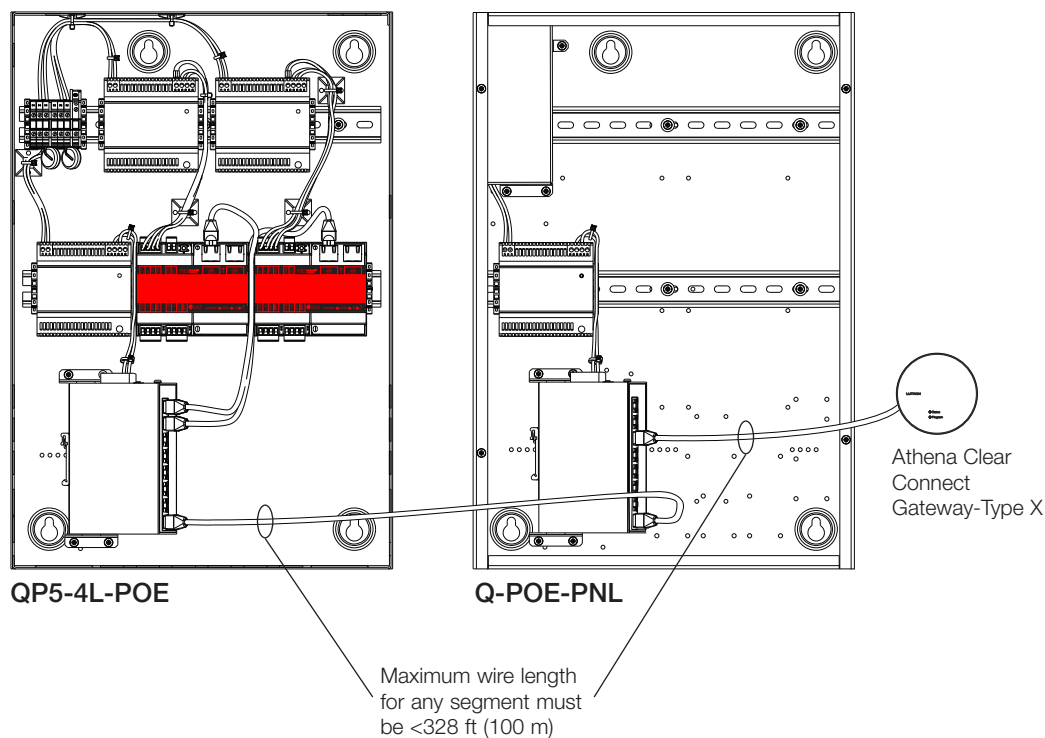
Note: Refer to the IT Guide at www.lutron.com/AthenaITguide for more information for managed switch configuration requirements.

Job Name:

Model Numbers:

Job Number:

Q-POE-PNL Wiring

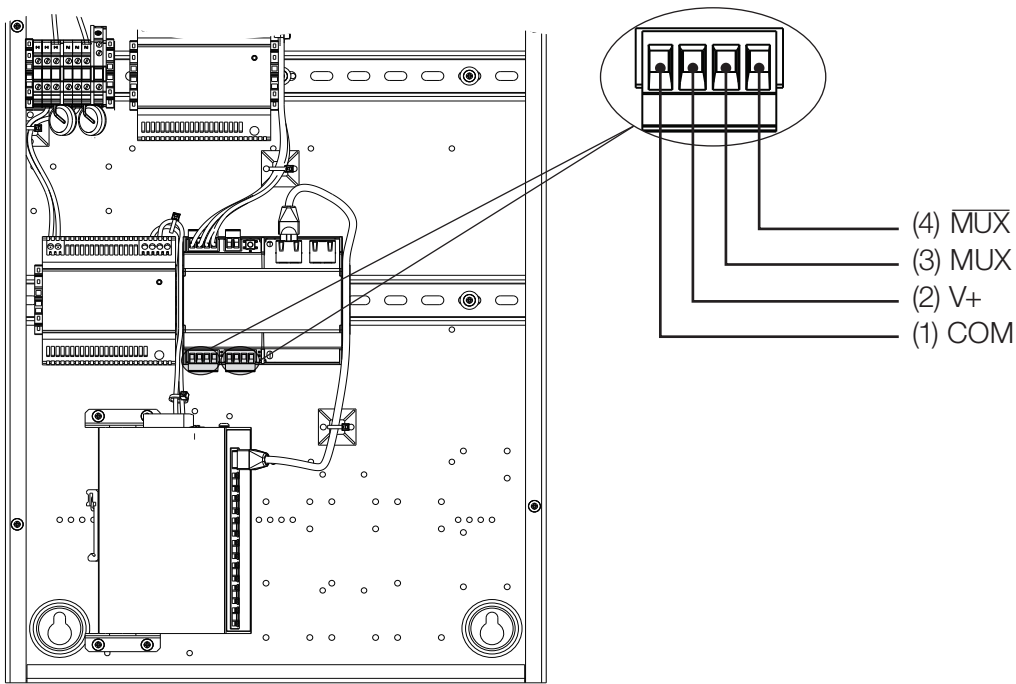


Notes

- For distances >328 ft (100 m) use a Lutron Q-POE-PNL or either a IEEE 802.3af-2003 or 802.3at-2009 compliant PoE extender (not by Lutron) or a PoE unmanaged Ethernet switch (not by Lutron).
- One Q-POE-PNL is required for every additional 328 ft (100 m).
- All connections between PoE switch and the Type X gateways should be Cat5e minimum.

Job Name:	Model Numbers:	
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Configurable Link Wiring: QS Link



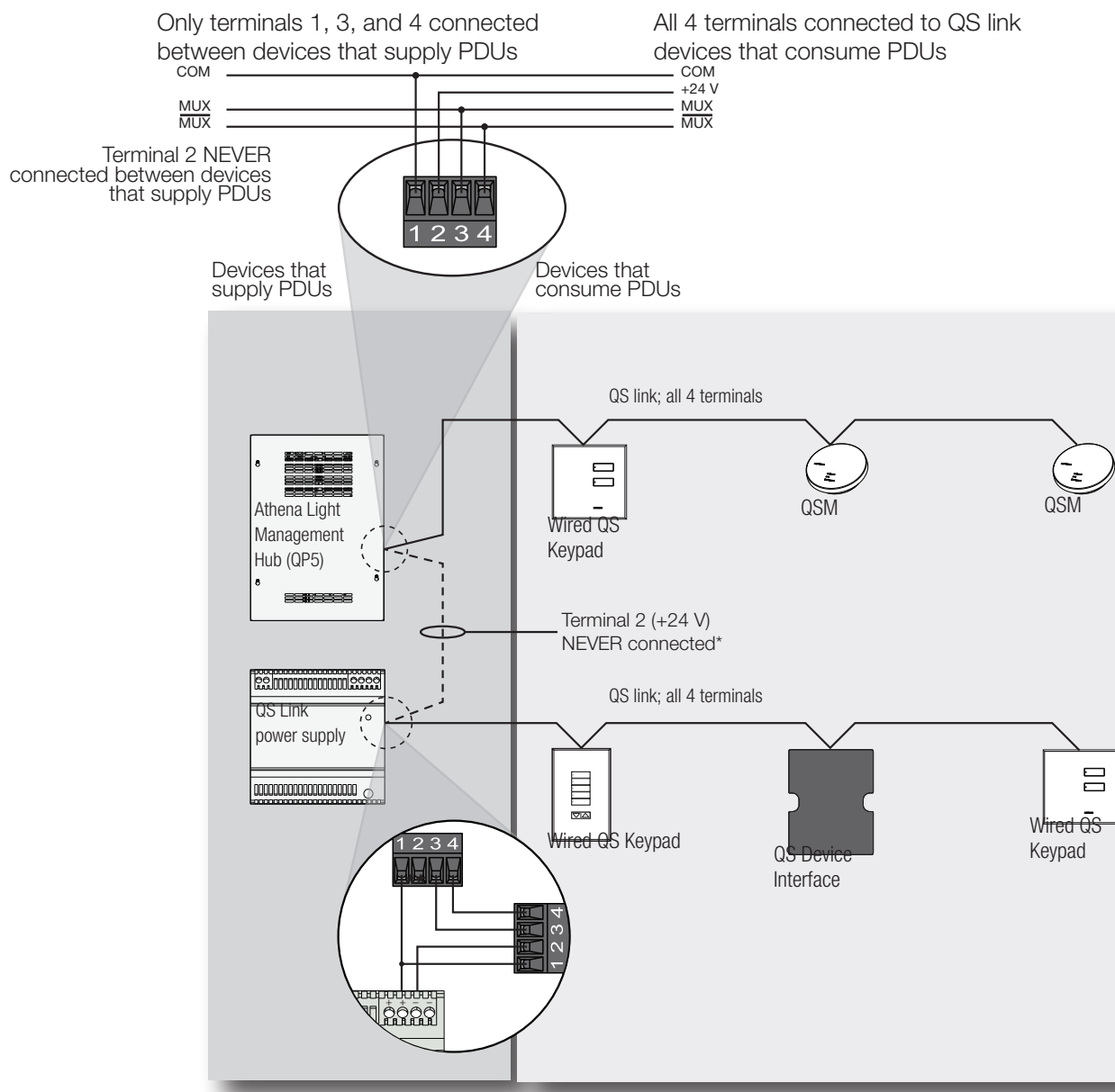
QP5-2L-POE shown

Maximum Link Length	Wire Gauge	Available from Lutron in one cable	Alternate Wiring
500 ft (152 m)	Power (terminals 1 and 2) 1 pair 18 AWG (1.0 mm²) Data (terminals 3 and 4) 1 pair 22 AWG (0.5 mm²) twisted and shielded	GRX-CBL-346S GRX-PCBL-346S	Power Connections: use two 18 AWG (1.0 mm²) stranded conductors Data connections: use Belden Cable #9461 (two 22 AWG (0.5 mm²) twisted shielded pair)
2000 ft (609 m)	Power (terminals 1 and 2) 1 pair 12 AWG (4.0 mm²) Data (terminals 3 and 4) 1 pair 22 AWG (0.5 mm²) twisted and shielded	GRX-CBL-46L GRX-PCBL-46L	Power Connections: use two 12 AWG (4.0 mm²) stranded conductors Data connections: use Belden Cable #9461 (two 22 AWG (0.5 mm²) twisted shielded pair)

Notes

- Link communication uses IEC PELV/NEC® Class 2 low-voltage wiring.
 - Follow all local and national electrical codes when installing IEC PELV/NEC® Class 2 wiring with line voltage/mains wiring.
 - Terminals will accept:
 - One 22 AWG to 12 AWG (0.5 mm² to 2.5 mm²) wire
 - Up to two 18 AWG (1.0 mm²) wires
 - The total wire length of a link must not exceed 2000 ft (609 m).
- The Athena Light Management Hub provides 33 power draw units (PDUs) on each QS Link. For more information, see “Power Draw Units on the QS Link” (Lutron P/N 369405) at www.lutron.com
 - QS Link Wiring can be T-tapped or daisy-chained.
 - Shield wire will not land on the processor, it should be isolated from ground and all other connections.

Configurable Link Wiring: QS Link *(continued)*



QS Link Wiring Rules

- * Terminal 2 (+24 V) should NEVER be connected between devices that supply PDUs.
- ** For QS Link power supply wiring connection details, refer to the installation instructions for the specific power supply model being used.

Job Name:

Model Numbers:

Job Number:

Software

OpenADR Compliant

- OpenADR 2.0b compliant when used with LUT-Q-OPNADR-CPN8064

iOS Control Application

- The Athena system can have up to 10 simultaneously connected mobile app clients
- Compatible with Lutron App
- Requires iOS 13 or newer

Scheduling

- Events can be scheduled to occur at fixed times or relative to sunrise/sunset and can be programmed to occur once or to be reoccurring

User Access

- Username and password required for user access

Load Shed/Demand Response

- Participate in load shed/demand response programs offered by local utility companies
- Apply a load shed reduction to the system, thereby reducing the building's lighting power usage

Lighting Control

- Monitor current status of areas, scenes, and zones
- Activate lighting scenes
- Adjust lighting zone levels
- Modify lighting zone levels in area scenes
- Control the intensity and color of Ketra fixtures
- Adjust saturated color and vibrancy of Ketra fixtures

QS Shade Control

- Monitor current status of shade groups and drives
- Activate shade presets
- Adjust shade levels

Job Name:	Model Numbers:	
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Compatible Models

Load controls

- QSN-*
- QSE-CI-DMX

Wall controls

- PJ2-*
- PJN-*
- PX-*
- QSWA-*
- QSWAS-*
- QSWE-*
- QSWs2-*
- QSWs2-KS-*
- QWP-*

Shades

- Contract Roller Shades
- Sivoia QS Shades

Sensors

- GRX-IRPS
- EC-DIR*
- GRX-CES*
- LOS-*
- LRF2-OCR2B*
- LRF2-DCRB*
- LUT-WS*
- QSM2-*

Accessories

- LUT-19AV-1U
- LUT-5x10-ENC
- LFG*
- LTR-*
- LPFP-*
- L-PED*
- PICO-*

Power Interfaces

- TVI-LMF-2A
- C5-*
- PHPM-*
- GRX-TVI

Integration Interfaces

- LUT-Q-OPNADR-CPN8064
- QSE-CI-NWK-E
- QSE-IO
- QSE-CI-WCI

Emergency

- LUT-ELI-3PH (for QSN-* load control panels)
- LUT-SHUNT-A-TD (for Ketra loads)

Power Supplies

- QSPS-*

Cable

- QS-CBL-*
- GRX-CBL-*
- GRX-PCBL-*

* Designates additional model number characters that may vary depending on the specific model chosen.

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