

DIN Power Module - Phase Adaptive

The Phase Adaptive Power Module family is a group of modular products for the control of lighting loads. This product is compatible with Lutron myRoom guestroom systems only.

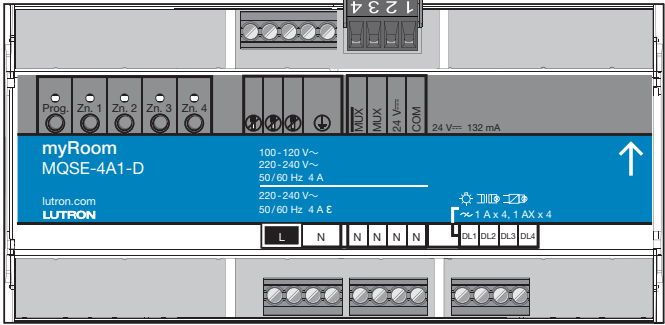
Features

- Leading-edge or trailing-edge dimming for incandescent / halogen, electronic / magnetic low-voltage, and neon / cold cathode light sources.
- Controls dimmable CFL/LED loads. Refer to www.lutron.com/LEDTool for compatibility with dimmable CFL/LED light sources.
- RTISS Equipped technology compensates for incoming line-voltage variations (up to ± 2% change in frequency/second) such as changes in Root Mean Square (RMS) voltage, frequency shifts, harmonics, and line noise.
- NEMA® SSL7A-2015 compliant for compatibility with solid-state lighting.
- Includes QS link for seamless integration of lights, motorized window treatments, and control stations.
- Provides 4 Power Draw Units (PDUs) to power QS devices on the QS link.
- LEDs on the module provide diagnostic information.
- Buttons on module provide load override control.
- Power failure memory.

Models Available *

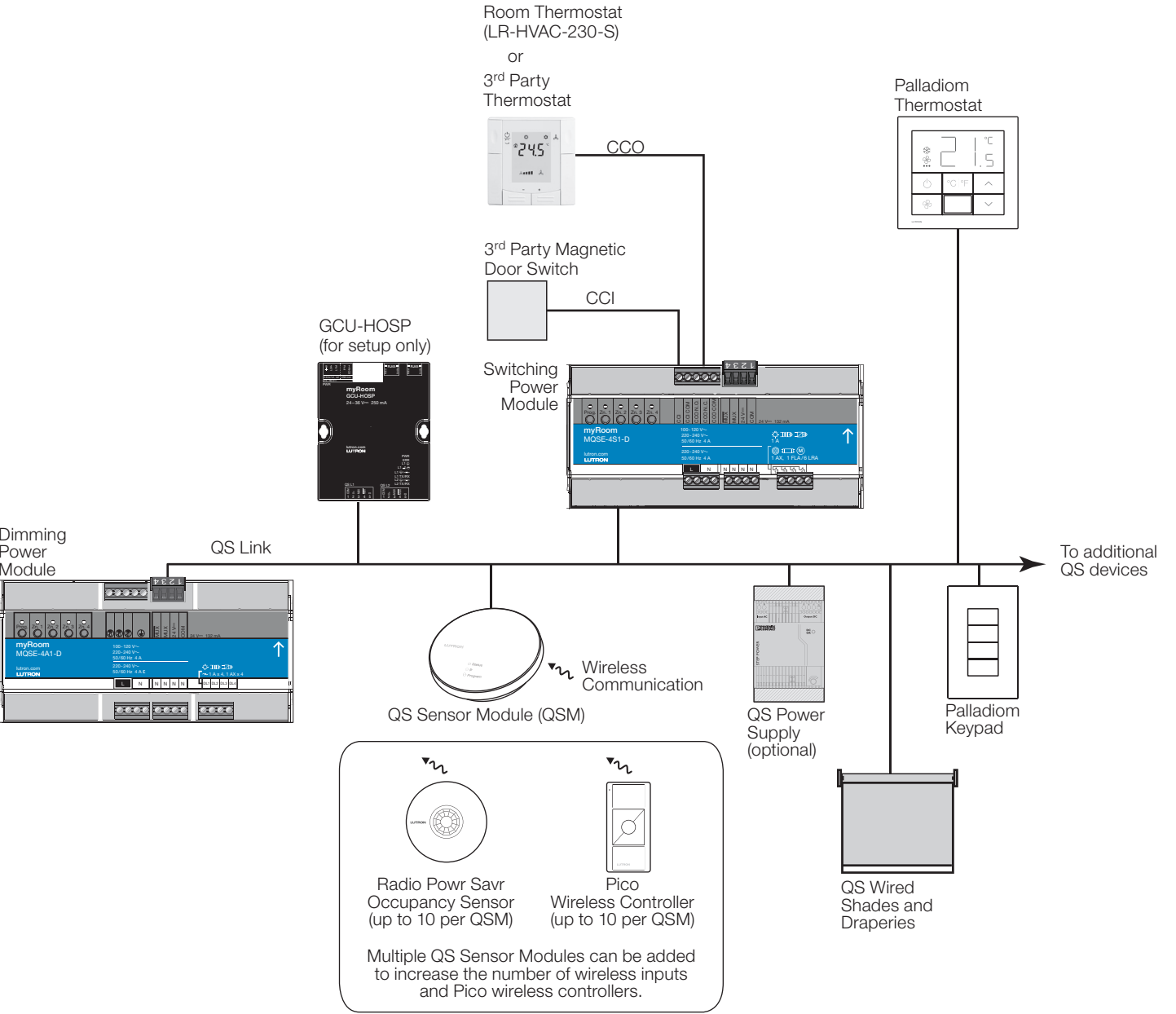
Model Number	Maximum Input Current	Input Voltage	Outputs
MQSE-4A1-D	4 A	100–120 V~, 220–240 V~ 50/60 Hz	1 A per output, 4 outputs
MQSE-3A1-D	3 A	120–240 V~ 50/60 Hz	1 A per output, 3 outputs
MQSE-2A1-D	2 A	120–240 V~ 50/60 Hz	1 A per output, 2 outputs

* Not all models are available in all countries.

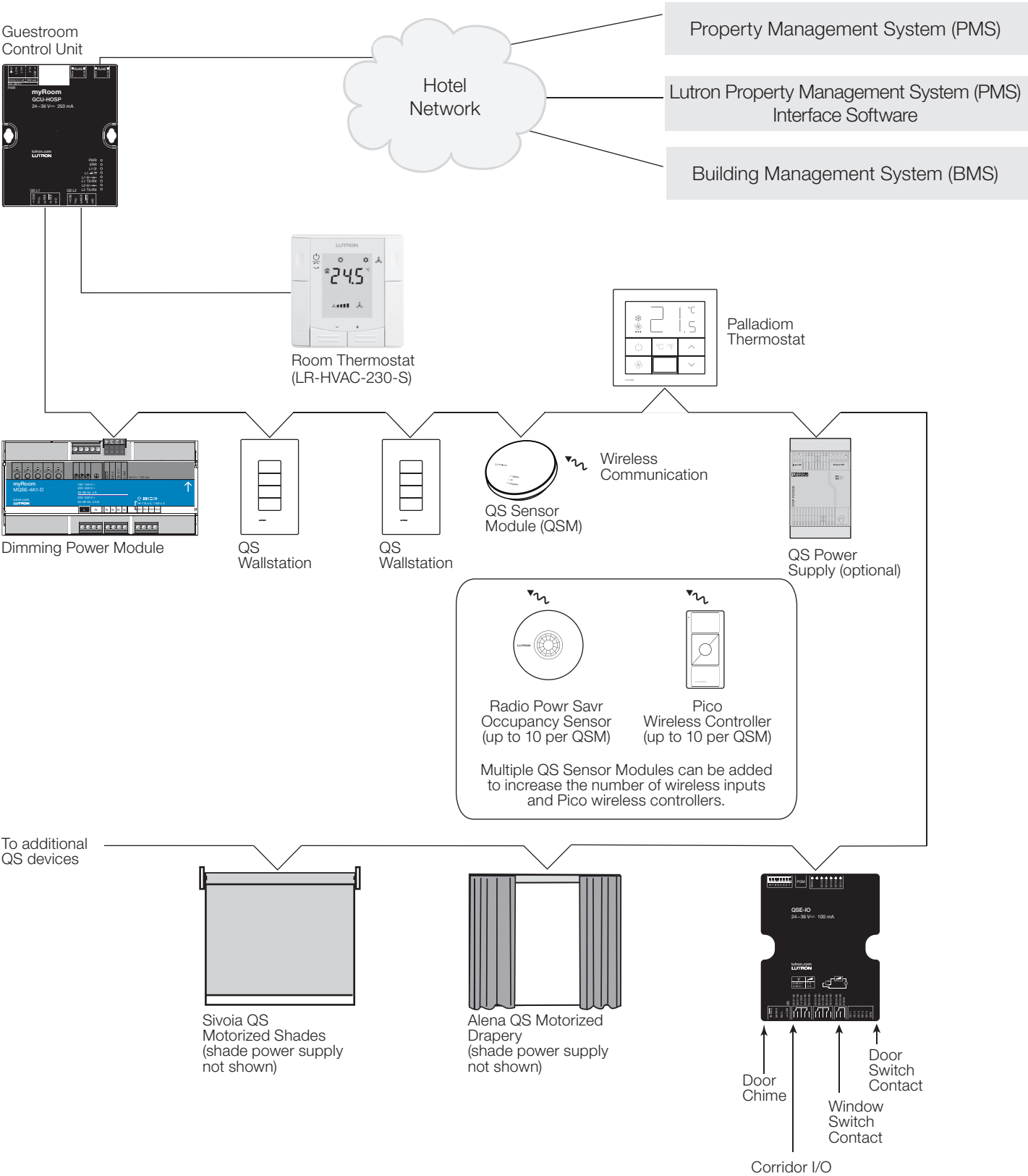


MQSE-4A1-D (shown)

System Example - myRoom Prime



System Example - myRoom Plus



Specifications

Regulatory Approvals

- UL® Listed
- cUL Listed
- NOM Certified
- RoHS Compliant
- IEC/EN 60669 (220–240 V~ 50/60 Hz only)
- Lutron Quality Systems registered to ISO 9001.2015

Power

- See **Models Available** table on page 1
- Single input feed
- Maximum Input Current:
 - MQSE-4A1-D = 4 A
 - MQSE-3A1-D = 3 A
 - MQSE-2A1-D = 2 A
- Lightning strike protection meets ANSI/IEEE standard C62.41 and IEC 61000-4-5. Can withstand voltage surges of up to 6 000 V~ and current surges of up to 3 000 A
- Standby power: <2 W (wired devices on QS link excluded)
- Provides 4 PDUs to power QS devices on QS link
- ESD protection exceeds agency requirements per IEC-61000-4-2
- QS Link output: 24 V==
- For ungrounded delta feed applications, contact Lutron

Environment

- For thermal specifications, see **Output Zone Rating** and **Mounting** sections
- Relative humidity: less than 90% non-condensing
- For indoor use only

Terminals

- Mains wiring: 1.0 mm² to 2.5 mm² (18 AWG to 12 AWG) (single wire, solid or stranded)
- Zone wiring: 1.0 mm² to 2.5 mm² (18 AWG to 12 AWG) (single wire, solid or stranded)
- QS Link: 0.5 mm² to 2.5 mm² (22 AWG to 12 AWG) (single wire, solid or stranded)

Manual Mode Operation

- By default, each zone is set to auto-detect the load type and fade to only 100% (non-dim). See **QS Dimming and Switching Power Module Installation Guide** at www.lutron.com for details on programming the load type
- Zone buttons on the unit can be used to:
 - Turn loads on and off
 - Dim loads up and down when configured to a dimmed load type

Output Zone Ratings

- **No Derating** is required if all the conditions below are met:
 - Calibration point maximum is 70 °C (158 °F)
 - Room ambient temperature is between 0 °C and 30 °C (32 °F and 86 °F).
 - Panel ambient temperature, within 20 mm (0.80 in) of unit, is between 0 °C and 50 °C (32 °F and 122 °F).
- **25 W (100–120 V~)/50 W (220–240 V~): Derating** on all zones is required for a single module in a non-ventilated enclosure if the room ambient temperature is between 30 °C and 40 °C (86 °F and 104 °F).
- **50 W (100–120 V~)/100 W (220–240 V~): Derating** on all zones is required in a multiple row non-ventilated enclosure if the temperature is between 30 °C and 40 °C (86 °F and 104 °F).
- Each zone has a 5 W (incandescent) minimum load requirement. For LED compatibility details, see www.lutron.com/LEDTool and Application Note #557 (P/N 048557) at www.lutron.com.
- When programmed to “auto” mode, the unit starts in reverse-phase and if an incompatible load is detected, it will convert to forward-phase.
- Does not support non-dimmable loads.
- One load type per zone.
- This module is designed to control loads with ratings as noted in the table below. Outputs cannot be used to control general purpose receptacles.

Job Name:	Model Numbers:
Job Number:	

Specifications (continued)

- Special considerations:
 - Outputs are not compatible with load-side switching (i.e., breakers, switches, lamps with integral switch control, etc.).
 - When controlling lamps, Lutron recommends using permanently installed fixtures. Output should not be used to control general purpose receptacles. Doing so will void the warranty.
 - If controlling plug-in lamps, installation must ensure a method of preventing non-rated loads being plugged into the unit. An example is a dedicated receptacle with an alternate plug load such as a Duplex Dimming Receptacle (NTR-15-DDTR-) and Dimming Lamp Plug (RP-FDU-10-). Lamps must not be switched using the controls integral to the lamp.
 - Controlling loads outside the parameters listed in the table below may damage the device and void the warranty.
- 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 Residual Current Circuit Breaker with Overload (RCBO) protected circuit if required. Load circuit wiring (from breaker to unit to load) must be run in its own non-metallic conduit, or nuisance tripping may occur.
- For applications requiring 0–10 V_{DC} control, use 10 V_{DC} Interface (GRX-TVI).
- For applications requiring higher wattage ratings, use multiple individual circuits and group them into a single zone via software, or use a PHPM-PA for 120 V_{AC} installations.
- Maximum wire length between Phase Adaptive Power Module and the load must be less than 30.5 m (100 ft).

⚠ 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.

Each zone is rated for the following wattage and load types^A:

Load Type	Zones 1 – 4				
	100 V _{AC}	120 V _{AC}	220 V _{AC}	230 V _{AC}	240 V _{AC}
Incandescent / Halogen	100 W	120 W	220 W	230 W	240 W
Electronic Low-Voltage	100 W	120 W	220 W	230 W	240 W
Magnetic Low-Voltage ^B	100 VA (75 W ^C)	120 VA (90 W ^C)	220 VA (165 W ^C)	230 VA (172 W ^C)	240 VA (180 W ^C)
Neon / Cold Cathode ^B	100 VA (75 W ^C)	120 VA (90 W ^C)	220 VA (165 W ^C)	230 VA (172 W ^C)	240 VA (180 W ^C)
Hi-lume A-Series LTE	N/A	120 VA 1-6 drivers	N/A	N/A	N/A

^A Refer to www.lutron.com/LEDtool for compatibility with dimmable CFL/LED light sources.

^B Only use iron core transformers intended for use with an electronic switch or dimmer per Clause 8.3 of IEC/EN 60669-2-1.

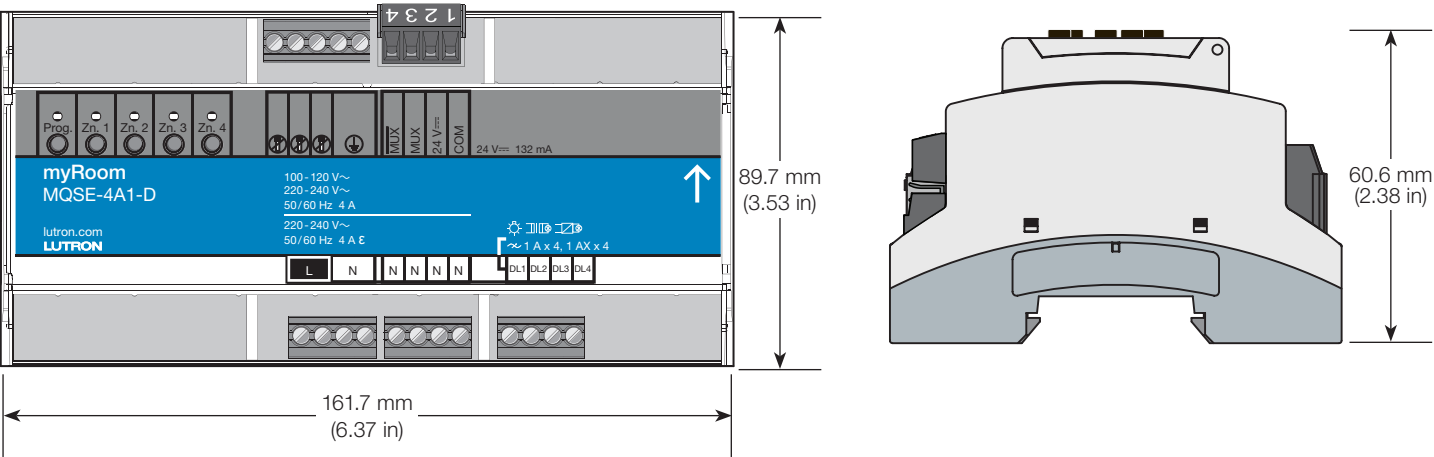
^C Actual lamp wattage.

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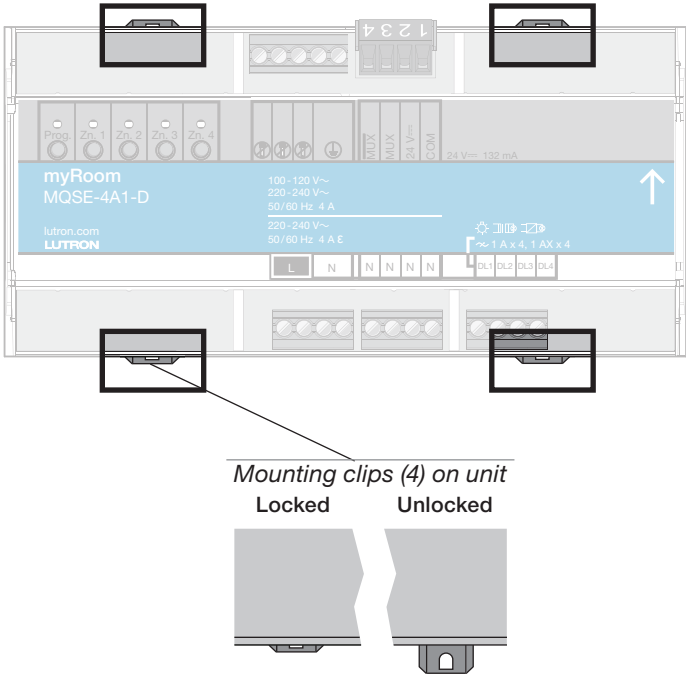
Job Name:	Model Numbers:
Job Number:	

Mechanical Dimensions



Mounting

- Mount in IP20 (minimum) rated consumer panel or breaker panel with integrated DIN rail.
- For United States and Canada, use NEMA Type 1 minimum rated enclosure.
- Unit is 9 DIN modules (161.7 mm [6.37 in]) wide.
- Mount in an accessible and serviceable location.
- Unit may be mounted by pressing the unit onto the DIN rail with the clips locked. To remove the unit from the DIN rail, unlock the clips using a screwdriver.
- Mount with arrows facing up to ensure adequate cooling.
- See Lutron Application Note #466 (P/N 048466) at www.lutron.com for more information on mounting and installation in panels with integrated DIN rail.
- Mount the Power Module where audible noise is acceptable (internal relay click).
- Unit generates heat, maximum 35 BTUs/Hour.
- Mount unit such that all the conditions below are met:
 - Room ambient temperature is between 0 °C and 40 °C (32 °F and 104 °F). Zone derating applies for unventilated enclosures when ambient temperature is >30 °C (86 °F).
 - Temperature inside mounting panel, within 20 mm (0.80 in) of unit, is between 0 °C and 50 °C (32 °F and 122 °F).
 - Calibration point maximum: 70 °C (158 °F).



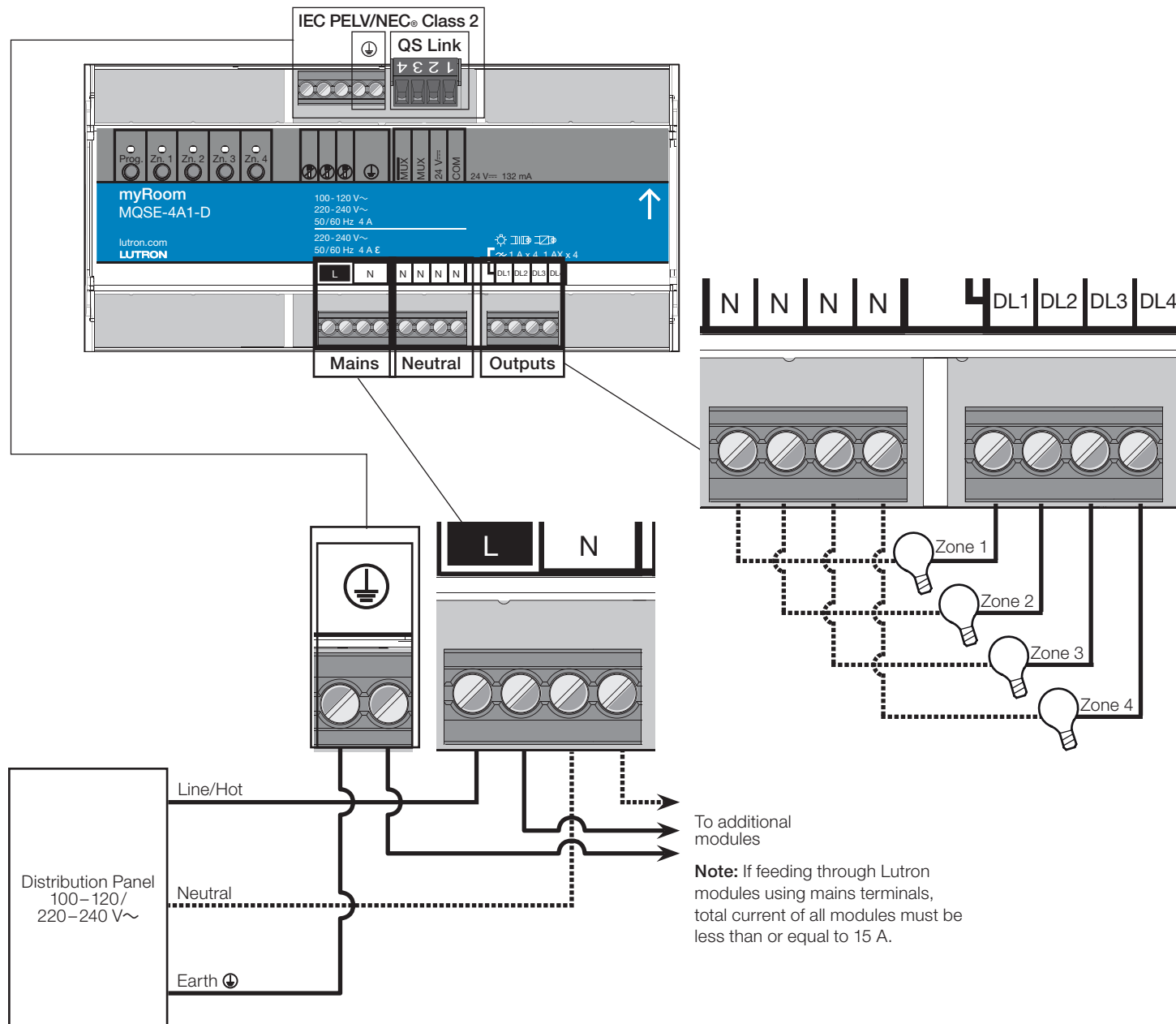
Wiring: Mains and Output Zones

Wiring from Distribution to Phase Adaptive Power Module

- Turn off all circuit breakers or isolators feeding the Phase Adaptive Power Module at the distribution panel.
- Run line/hot and neutral wires from a 100–120/220–240 V~ 50/60 Hz feed to the Phase Adaptive Power Module unit.
- Run a separate neutral for each load circuit. A common neutral connection is not recommended.
- All loads should be fully wired and tested for short circuits **BEFORE** connecting to the module.

Mains Wiring and IEC PELV/NEC® Class 2 Separation

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

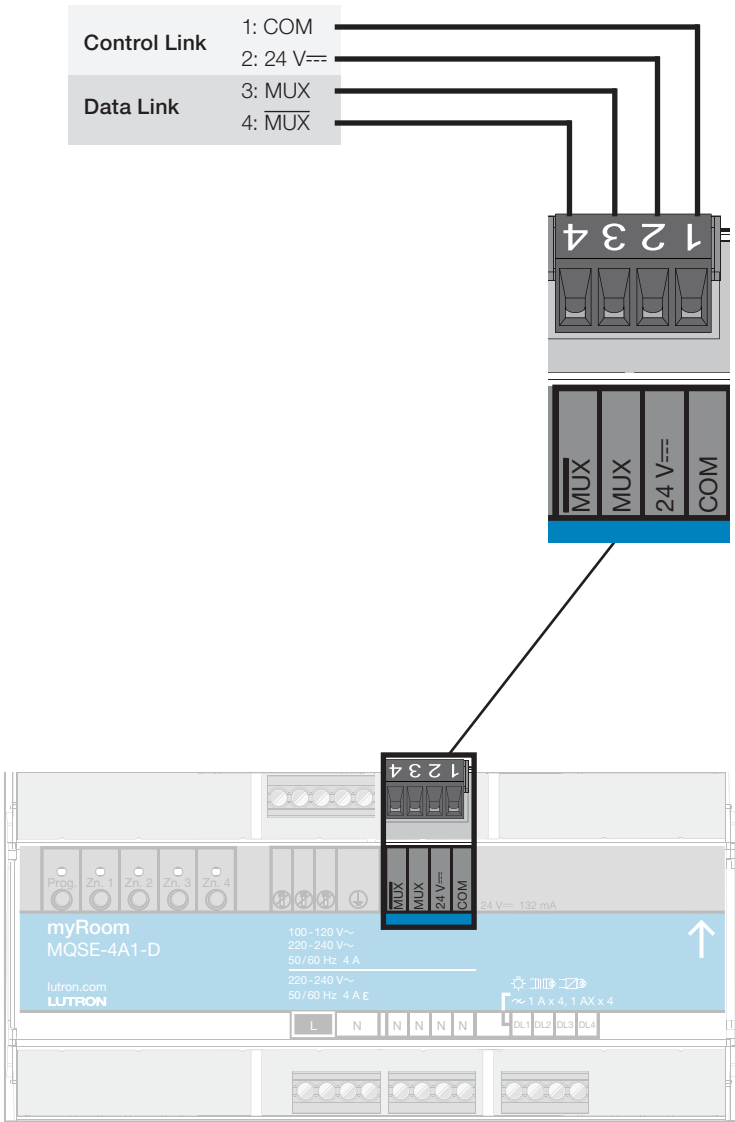


Wiring: QS Link

IEC PELV/NEC® Class 2 QS Link Wiring

- Link communicates using IEC PELV/NEC® Class 2 wiring.
- Follow all applicable national and local codes for proper circuit separation and protection.
- Turn off all breakers or isolators feeding the Phase Adaptive Power Module before servicing.
- Wiring may be t-tapped or daisy-chained.
- Total length of QS link must not exceed 610 m (2 000 ft).
 - For the Lutron All-In-One cable specification, see Lutron P/N 369596 or 369597 at www.lutron.com.
- Control power link (COM, 24 V $\overline{\text{=}}$) wiring:
 - For lengths under 150 m (500 ft), use 1.0 mm² (18 AWG) conductors.
 - For lengths over 150 m (500 ft), use 2.5 mm² (12 AWG) conductors.
- Data link (MUX, $\overline{\text{MUX}}$) wiring:
 - Use one, twisted-shielded pair of 1.0 mm² (18 AWG).
 - Alternate data-only cable: use approved data link cable (0.5 mm² [22 AWG] twisted, shielded) from Belden, model #9461.
- Each QS link IEC PELV/NEC® Class 2 terminal will accept up to two 1.0 mm² (18 AWG) wires; two 2.5 mm² (12 AWG) wires will not fit. If using two 2.5 mm² (12 AWG) wires, connect using appropriate wire connectors.

Note: For more information on PDUs, refer to the **Power Draw Units on the QS Link** document (P/N 369405) at www.lutron.com



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