

DIN Power Module - Switching

The Switching 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.

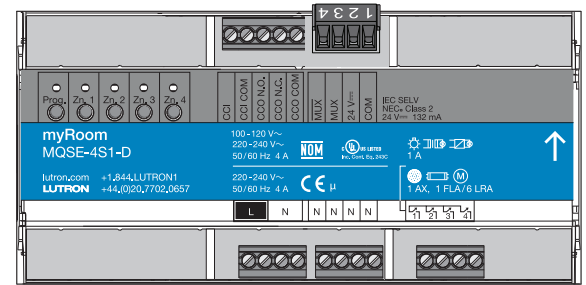
Features

- Contact Closure Input (CCI) for integration with magnetic door switch or keycard (myRoom Plus only).
- Contact Closure Output (CCO) for integration with room thermostat or controlled receptacles via contactor.
- Adaptive zero-cross switching maximizes relay life. Activity adapts to variations in relay timing.
- Rated for lighting loads as defined by IEC/EN 60669, NEMA 410, as well as INC, LED, MLV, and ELV.
- Includes QS link for seamless integration of lights, motorized window treatments (myRoom Plus only), 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-4S1-D	4 A	100–120 V~, 220–240 V~ 50/60 Hz	1 A per output, 4 outputs
MQSE-3S1-D	3 A	120–240 V~ 50/60 Hz	1 A per output, 3 outputs
MQSE-2S1-D	2 A	120–240 V~ 50/60 Hz	1 A per output, 2 outputs

* Not all models are available in all countries.



MQSE-4S1-D (shown)

System Compatibility and Limitations:

The models listed are compatible with both myRoom Prime and myRoom Plus lighting control systems. Please note that the capabilities and limitations of the Prime and Plus versions of the myRoom system are different. For a list of the system rules and the capability differences between Prime and Plus, please see the Lutron System Rules Specification Submittal at:

http://www.lutron.com/TechnicalDocumentLibrary/369821_Lutron_Residential_and_Commerical_System_Rules.pdf

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Job Name:	Model Numbers:
Job Number:	

System Example - myRoom Prime

Room Thermostat
(LR-HVAC-230-S)

or

3rd Party
Thermostat



CCO

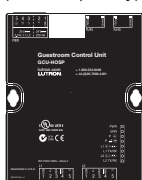
3rd Party Magnetic
Door Switch



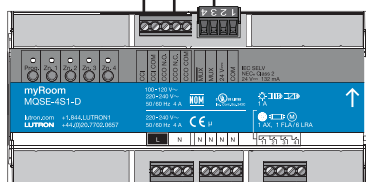
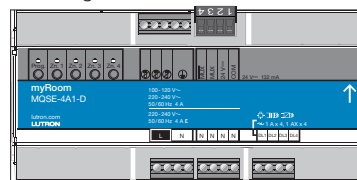
CCI

QS Link

GCU-HOSP
(for setup only)

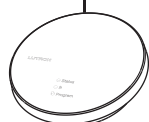


Dimming Power Module

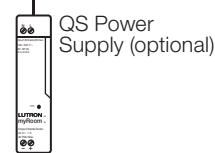


Switching Power Module

QS Sensor Module (QSM)

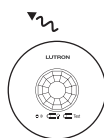


Wireless Communication

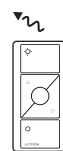


QS Power
Supply (optional)

To additional
QS devices



Radio Power Saver
Occupancy Sensor
(up to 10 per QSM)



Pico
Wireless Controller
(up to 10 per QSM)

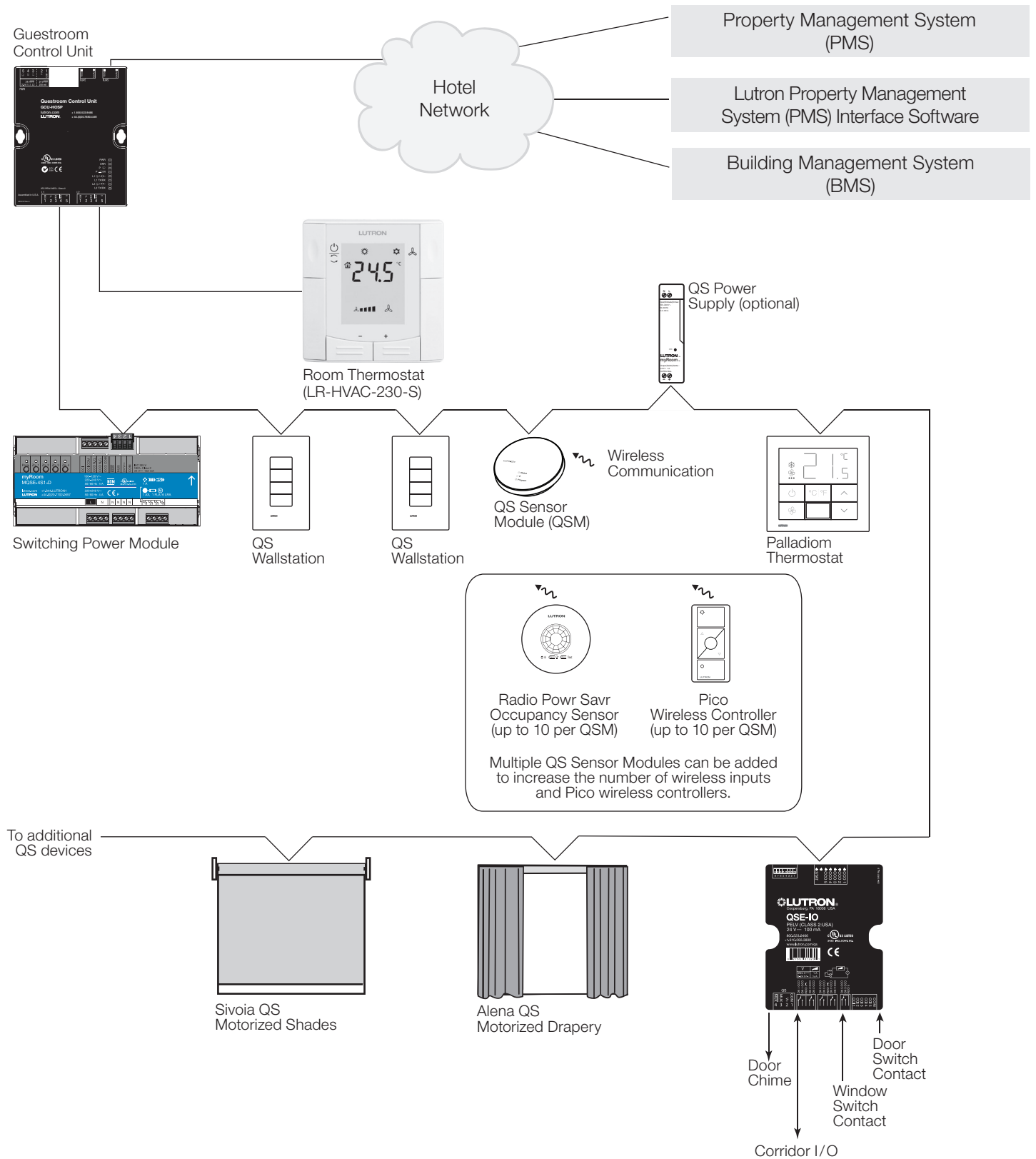
Multiple QS Sensor Modules can be added
to increase the number of wireless inputs
and Pico wireless controllers.

Job Name:

Model Numbers:

Job Number:

System Example - myRoom Plus



Job Name:

Model Numbers:

Job Number:

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 Model Number table on page 1
- Single input feed
- 4 A maximum input current
- Lightning strike protection meets ANSI/IEEE standard C62.41 and IEC 61000-4-5. Can withstand voltage surges up to 6 000 V~ and current surges up to 3 000 A.
- Standby power: <3 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 **Mounting** section
- 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)
- CCI/CCO wiring: 0.5 mm² to 2.5 mm² (22 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

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

Output Zone Ratings

- Each zone is rated at 1 A for switching. Rated for resistive, inductive, or capacitive lighting loads as defined by IEC/EN 60669, NEMA 410.
- Air gap is present for each output when load is switched off.
- No minimum load per output.
- 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 in to the unit. An example is a dedicated receptacle with an alternate plug type.
 - Controlling loads outside the table below will damage the device and void the warranty.
- If attempting to control general purpose receptacles, use the appropriate third-party contactor/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 Residual Current Circuit Breaker with Overload (RCBO) protected circuit if required.
- For applications requiring higher wattage ratings, use PHPM-SW-DV-WH, GRX-TVI, or LQSE-4S10-D.
- 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
	100–240 V~
Tungsten ¹	1 A
AC General Use	1 A
Electric Discharge Lamp	1 A
Electric Ballast (NEMA 410)	1 A
Resistive	1 A
Inductive	1 A
LED	1 A
Motor ²	1 A

¹ When using tungsten loads, lamps should be from a reputable manufacturer and be fused. Lutron recommends using an IEC 60127-2 compliant 2 A external fuse for each output that is using tungsten loads. Please see Application Note 048566 for additional information.

² Two motors max per module.

Job Name:	Model Numbers:
Job Number:	

Specifications - (continued)

Contact Closure Input (CCI)

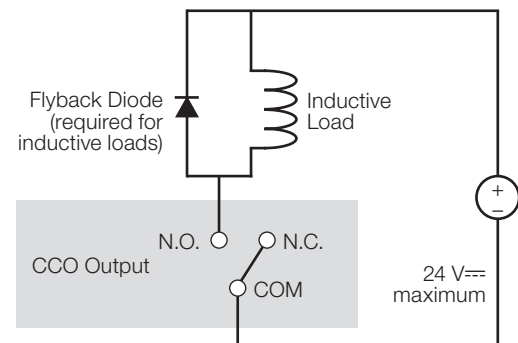
- The CCI is configured as an input from a magnetic door switch.
- Switching module determines room occupied/unoccupied status based on occupancy sensor input (e.g. - Radio Powr Savr associated to a QSM) and magnetic door sensor/switch.
 - Occupied state: All or some zones will turn on to a fixed light level.
 - Unoccupied state: All zones will go to Off state.
- Accept maintained inputs.
- Accept momentary inputs with 40 msec minimum pulse times.
- Off-state leakage current must be less than 100 μ A.
- Open circuit voltage: 24 V \equiv maximum.
- Inputs must be dry contact closure, solid state, open collector, or active-low (NPN)/active high (PNP) output.
 - Open collector NPN or active-low on-state voltage must be less than 2 V \equiv and sink 3.0 mA.
 - Open collector PNP or active-high on-state voltage must be greater than 12 V \equiv and source 3.0 mA.

Contact Closure Output (CCO)

- The CCO output has Normally Open and Normally Closed outputs.
- In a myRoom Prime system, it is used for thermostat setback or receptacle control (must be used in conjunction with an occupancy sensor and magnetic door sensor/switch). Other options are available in a myRoom Plus system.
 - Occupied state: N.O. CCO closes (N.C. CCO opens).
 - Unoccupied state: N.O. CCO opens (N.C. CCO closes).
- Accepts voltages of 0–24 V \sim /0–24 V \equiv ; see chart below for load switching capacities:

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

- Default: Maintained 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.



⚠ 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.

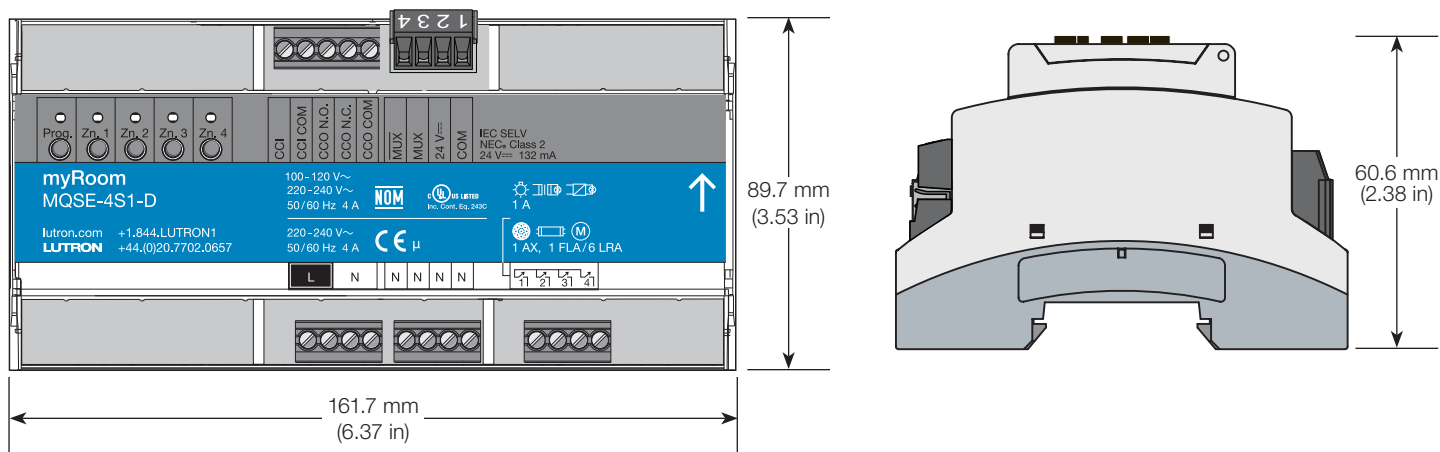
IMPORTANT NOTE: Examples of such equipment which must not be operated by these controls include (but are not limited to) motorized gates, garage doors, industrial doors, microwave ovens, heating pads, fireplaces, space heaters, etc. It is the installer's responsibility to ensure that the equipment being 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.

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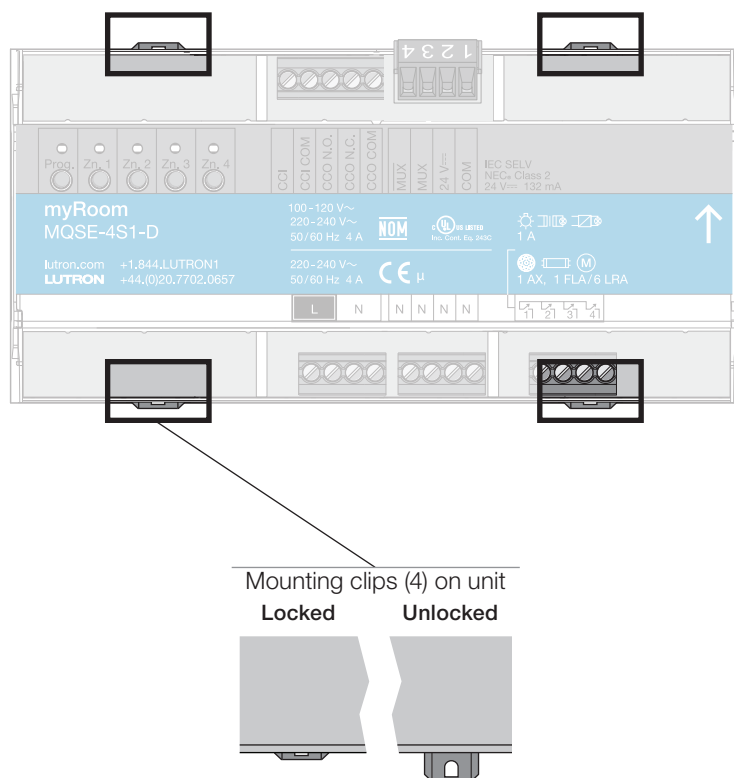
Job Name:	Model Numbers:
Job Number:	

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 (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.
- See Lutron 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 relays click)
- Unit generates heat, maximum 24 BTUs/hr.
- 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).
 - Temperature inside mounting panel, within 20 mm (0.80 in) of unit, is between 0 °C and 40 °C (32 °F and 104 °F).
 - Calibration point maximum: 65 °C (149 °F).



Job Name:	Model Numbers:
Job Number:	

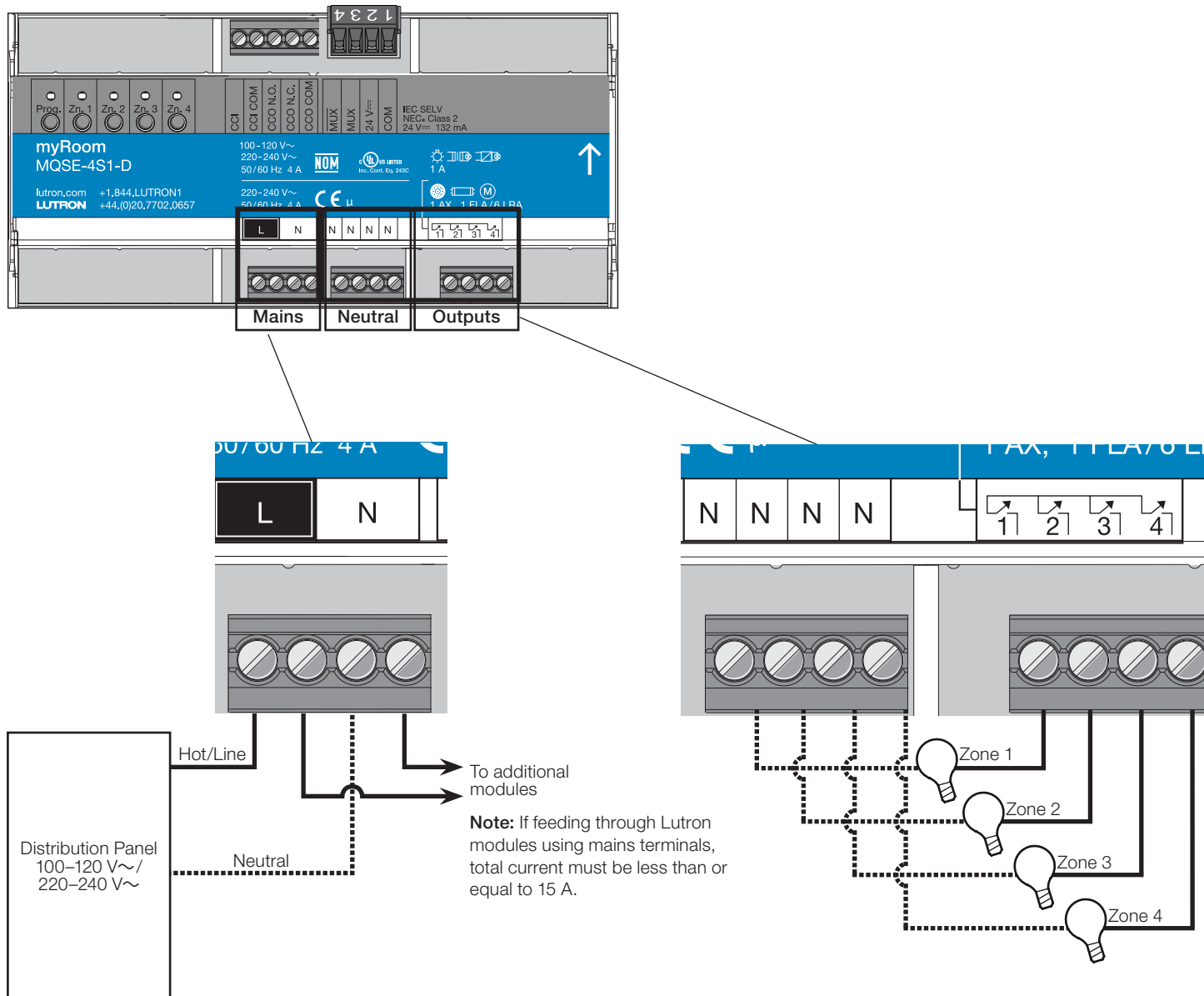
Wiring: Mains and Output Zones

Wiring from Distribution to Switching Power Module

- Turn off all circuit breakers or isolators feeding the Switching Power Module at the distribution panel.
- Run line/hot and neutral wires from a 100–120 V~/220–240 V~ 50/60 Hz feed to the Switching 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 SELV/NEC® Class 2 Separation

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



Job Name:

Model Numbers:

Job Number:

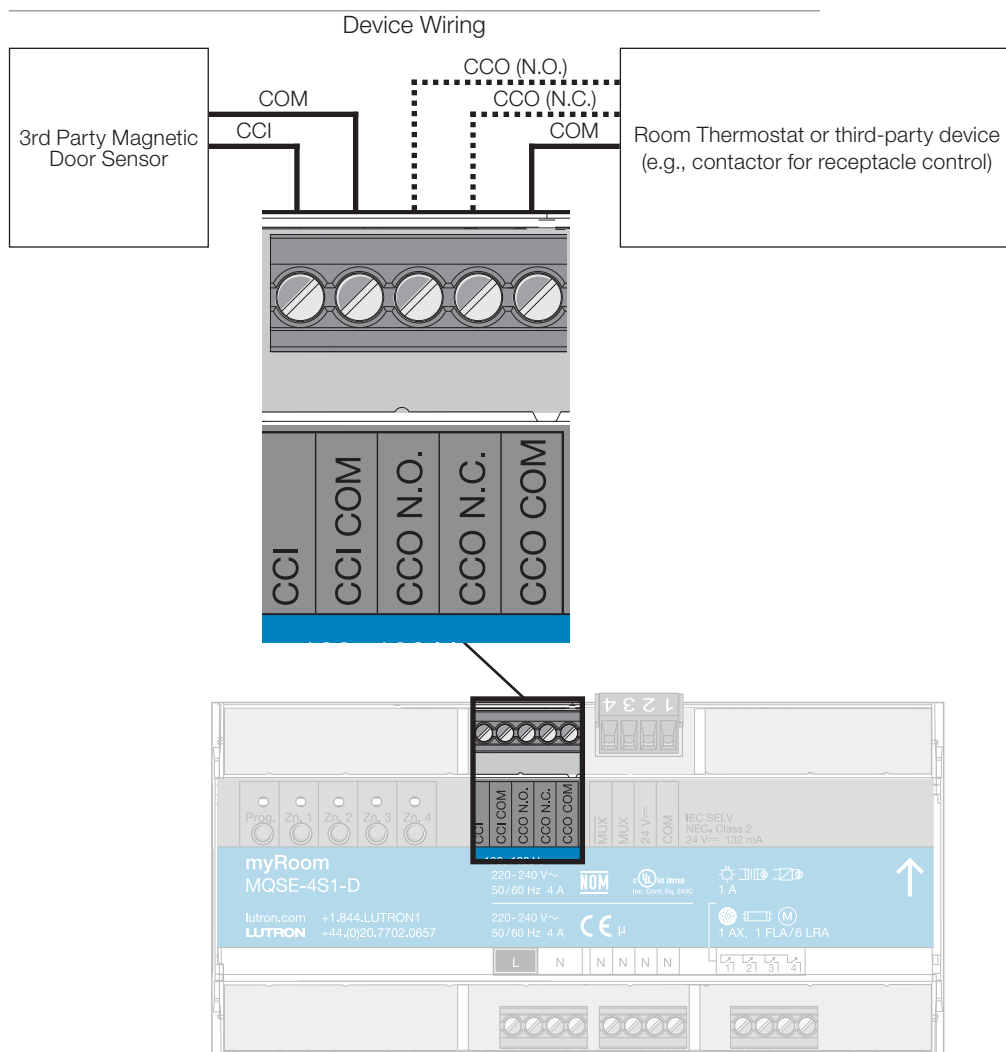
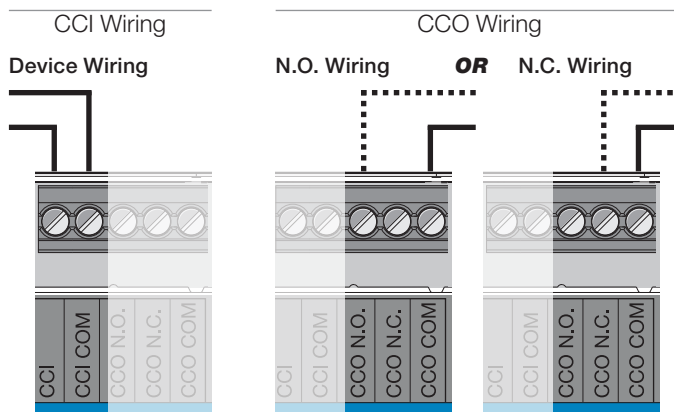
Wiring: Contact Closure Input/ Contact Closure Output

(continued)

IEC SELV/NEC® Class 2

Contact Closures

- Contact Closure Input (CCI)/Contact Closure Output (CCO) wiring is IEC SELV/NEC® Class 2. Follow all applicable national and local codes for proper circuit separation and protection.



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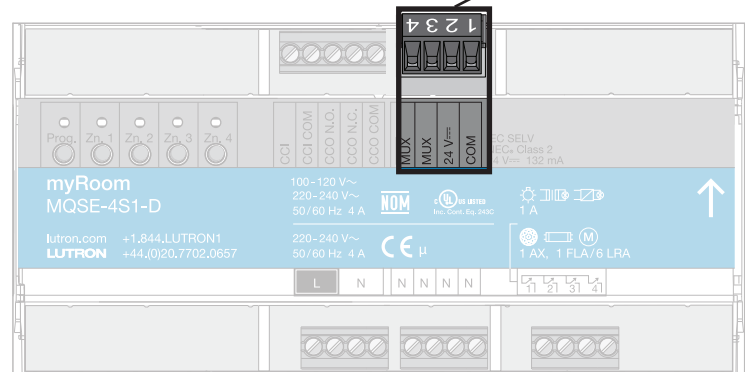
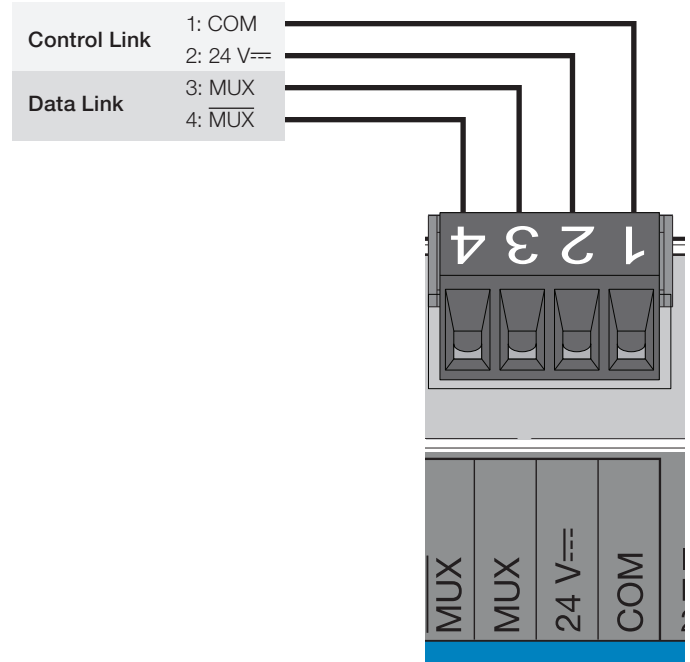
Model Numbers:

Job Number:

Wiring: QS Link

IEC SELV/NEC® Class 2 QS Link Wiring

- Link communicates using IEC SELV/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 Switching 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, 369597, or 3691078 on www.lutron.com
- Control power link (COM, 24 V $\overline{=}$) wiring:
 - For lengths under 150 m (500 ft), use 1.0 mm² (18 AWG) conductors.
 - For lengths over 150 m (500 ft), use 4.0 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 SELV/NEC® Class 2 terminal will accept up to two 1.0 mm² (18 AWG) wires; two 4.0 mm² (12 AWG) wires will not fit. If using two 4.0 mm² (12 AWG) wires, connect using appropriate wire connectors.



Note: For more information on PDUs, refer to “Power Draw Units on the QS Link” document (Lutron P/N 369405).

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