

## QS Motor Group Controller

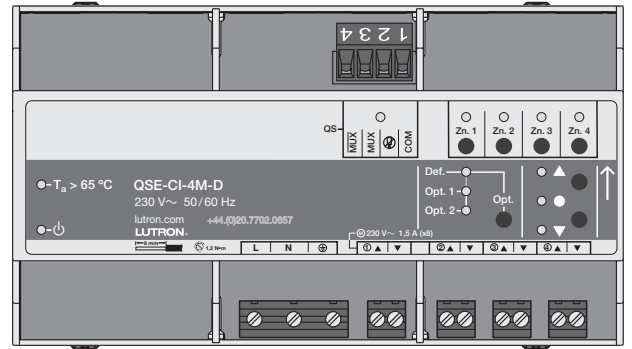
The QS motor group controller is an interface that provides seamless integration of Quantum® and QS stand-alone systems with AC blinds, shades, louvers, projection screens, or any compatible AC motor. It provides four (4) independently controllable AC raise/lower outputs from one common AC input feed.

### Features

In QS stand-alone systems, the QS motor group controller's high-voltage outputs for motor loads can be controlled and programmed similar to QS shades. The outputs can be programmed to be controlled by:

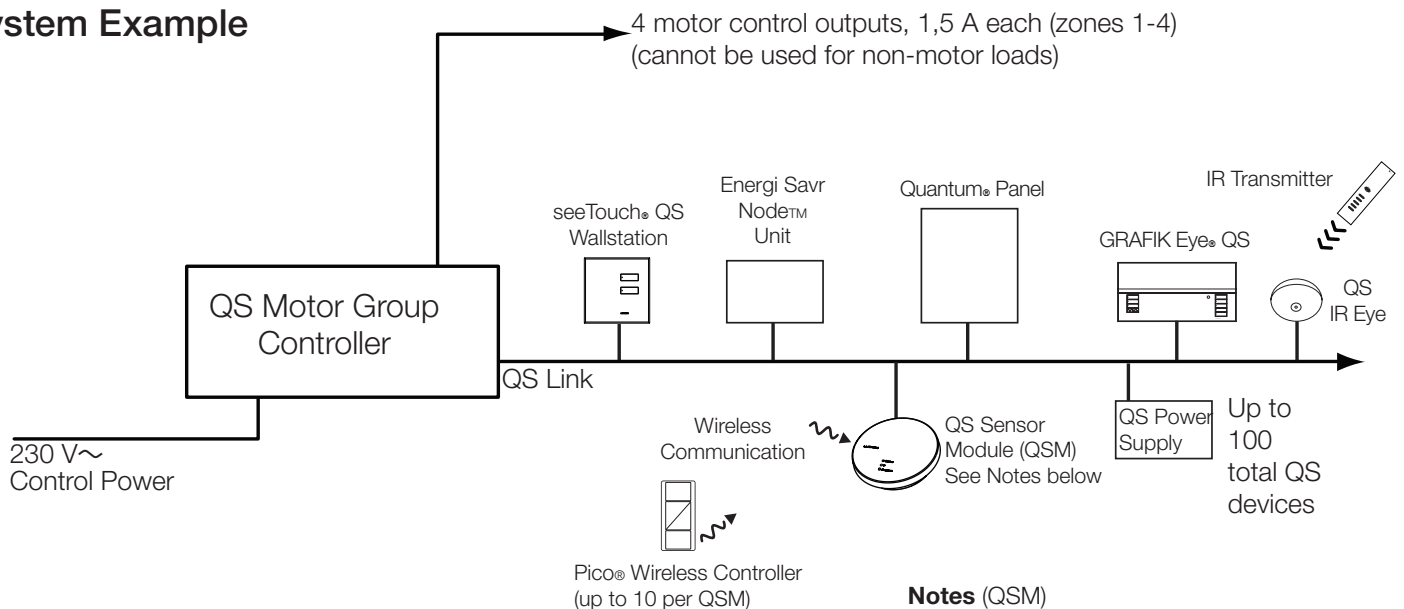
- GRAFIK Eye® QS shade button columns
- seeTouch® QS shade wallstations
- Pico® wireless shade controls (through a QS Sensor Module)

In Quantum® systems, the QS motor group controller's high-voltage outputs for motor loads are fully programmable through the Q-Design™ Quantum® programming software. (Contact Lutron Customer Service for availability.)



QSE-CI-4M-D

## System Example



### Notes (QSM)

- Up to four wired inputs total (of any type).
- Multiple QSMs can be added to increase the number of wireless inputs and Pico® wireless controllers.

Job Name:	Model Numbers:
Job Number:	

## Specifications

### Input Power

- Input voltage: 230 V~ 50/60 Hz
- 6 A maximum total input current
- At standby (no motors being driven), power is less than 1 W
- 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

### Output Capacity

- 1,5 A maximum motor load per channel (not for lighting control)
- Each zone supports only one motor; do not wire motors in parallel
- Raise and Lower outputs are mechanically interlocked to prevent simultaneously activating Raise/Lower outputs.
- Designed to withstand 100 000 open/close cycles

### Regulatory Requirements

- IEC/EN 60669-2-1, EN50428
- Lutron Quality Systems registered to ISO 9001.2008
- CE

### Other Power Specifications

- Standby power:  
- 230 V~: 660 mW
- BTU/hour when fully loaded: 5

### Environment

- Ambient temperature operating range (inside mounting panel): 0 °C to 40 °C (32 °F to 104 °F)
- Calibration point maximum: 65 °C (149 °F)
- Surrounding air temperature:  $T_a \leq 65 \text{ °C}$
- Relative humidity: less than 90% non-condensing
- For indoor use only

### Terminals

- Mains Wiring: 1,0 to 4,0 mm<sup>2</sup> (18 to 12 AWG)
- Zone Wiring: 1,0 to 4,0 mm<sup>2</sup> (18 to 12 AWG)
- QS Link Wiring: See Wiring: QS Link

### Mounting

- Use an IP20 (minimum) rated consumer panel or breaker panel with integrated DIN rail
- Width = 9 DIN modules (161,7 mm/6,4 in)

### QS Link Limits

- A QS link can have up to 100 zones (outputs) and 100 devices
- Each QS motor group controller counts as 4 zones (outputs) and 1 device on the QS link
- The QS motor group controller (QSE-CI-4M-D) unit does not supply or consume power draw units. When using accessories (such as a keypad or a QS IR Eye, an additional 24 V== power supply or an Energi Savr Node™ must provide power and/or power draw units. For more information on Power Draw Units, see "Power Draw Units on the QS Link", Lutron PN 369405, at [www.lutron.com/qs](http://www.lutron.com/qs)

### Out of Box Functionality

Default functionality that the unit will present when first installed:

- Unprogrammed shade keypads and/or Pico® wireless controls will raise/lower all 4 outputs when connected to a QS Sensor Module (QSM)

### Normal Mode Operation

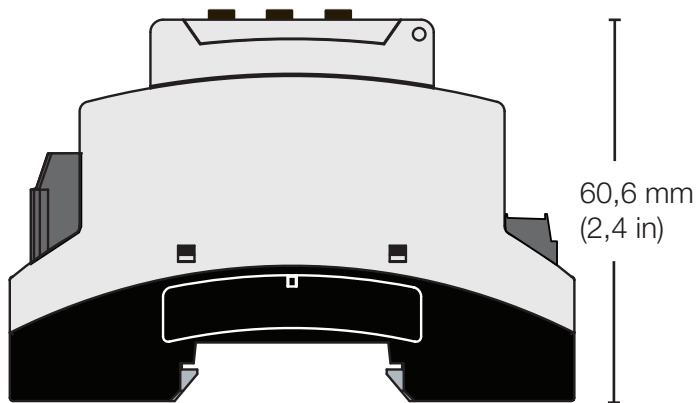
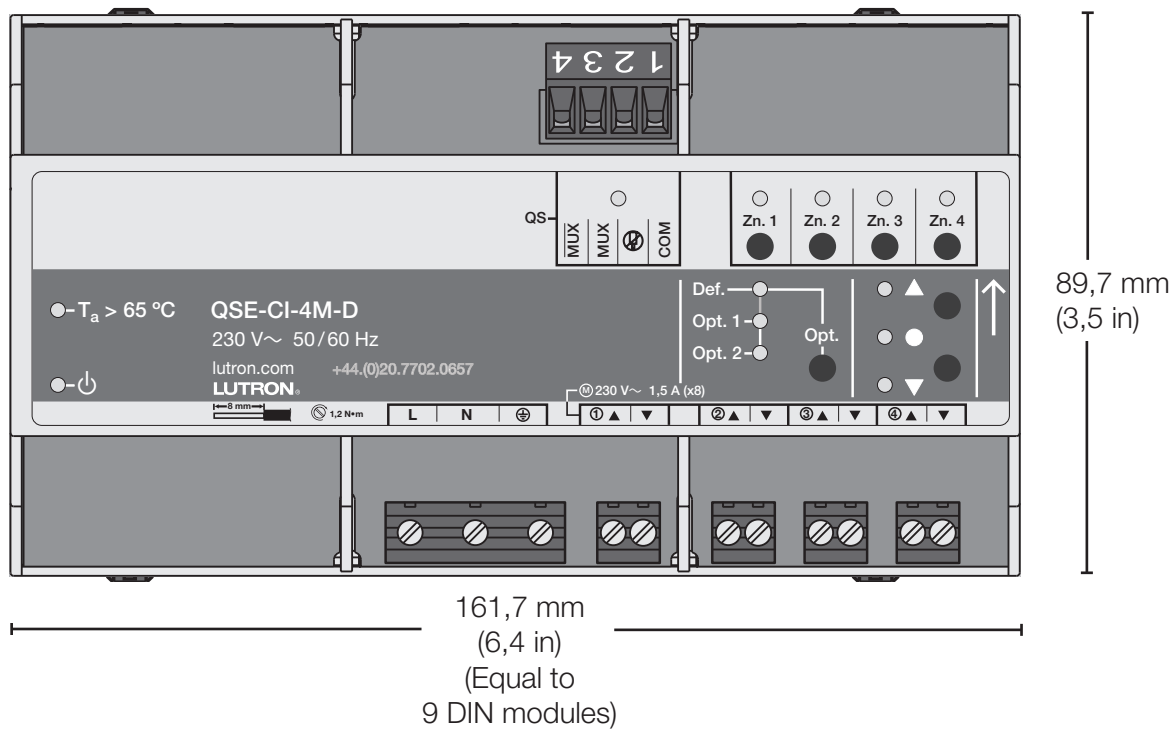
- Zone button selects the desired zone; raise/lower buttons control the selected zone
- Supports Open, Close, and Unaffected presets only; all other presets are ignored
- Does not support shade groups or areas
- Does not support discrete shade levels
- Does not support scenes

### Configurable Parameters

- Minimum On time (also called Jog Time): the minimum time for which the Raise/Lower relay will be turned on. Configurable from 80 ms to 3520 ms in 80 ms increments  
Default: 80 ms
- Interlock delay: the time both relays are de-energized while switching from Raise to Lower, or from Lower to Raise  
Configurable to 320 ms, 560 ms, or 960 ms  
Default: 320 ms
- Maximum On time (also called Travel Time or Time to Off): after this time, the relay is turned off as a precaution.  
Configurable from 10 seconds to 450 seconds in 10-second increments  
Default: 80 seconds

<p><b>Job Name:</b></p> <p><b>Job Number:</b></p>	<p><b>Model Numbers:</b></p>
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### Mechanical Dimensions

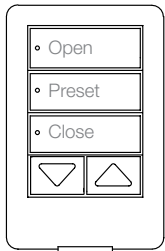


Job Name:	Model Numbers:
Job Number:	

## Control Options

### Operation with GRAFIK Eye® QS control unit

- Each QS motor group controller output can be assigned independently to any shade button column on a GRAFIK Eye® QS control unit wired on the same QS link
- GRAFIK Eye® QS shade button columns will control assigned QS motor group controller outputs in the following fashion:

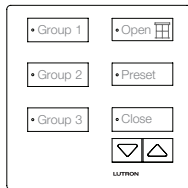
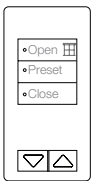


Top button: Press to move to upper/open set limit  
 Middle button(s): Stop moving  
 Bottom button: Press to move to lower/closed set limit  
 Raise: Press and hold to raise/open while button is pressed  
 Lower: Press and hold to lower/close while button is pressed

Ordering the model number with the -NST suffix will provide the engraved keypad shown above.

### Operation with seeTouch® QS wallstation

- Each QS motor group controller output can be assigned independently to any "Shade" type seeTouch® QS wallstation wired on the same QS link
- seeTouch® QS wallstations will control assigned QS motor group controller outputs in the following fashion:

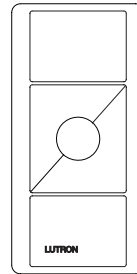


Top button: Press to move to upper/open set limit  
 Middle button(s): Stop moving  
 Bottom button: Press to move to lower/closed set limit  
 Raise: Press and hold to raise/open while button is pressed  
 Lower: Press and hold to lower/close while button is pressed

OR  
 Open/Stop/Close/Stop (single button)

### Operation with Pico® QS wireless control (through a QS Sensor Module)

- Up to ten (10) Pico® wireless controls can be associated with a QS Sensor Module (QSM)
- Up to 100 Pico® Wireless controls can be associated to QSMs on a QS link
- Each QS motor group controller output can be assigned independently to any "Shade" Pico® wireless control that is associated to a QSM on the same QS link
- Pico® wireless controls will control assigned QS motor group controller outputs in the following fashion:



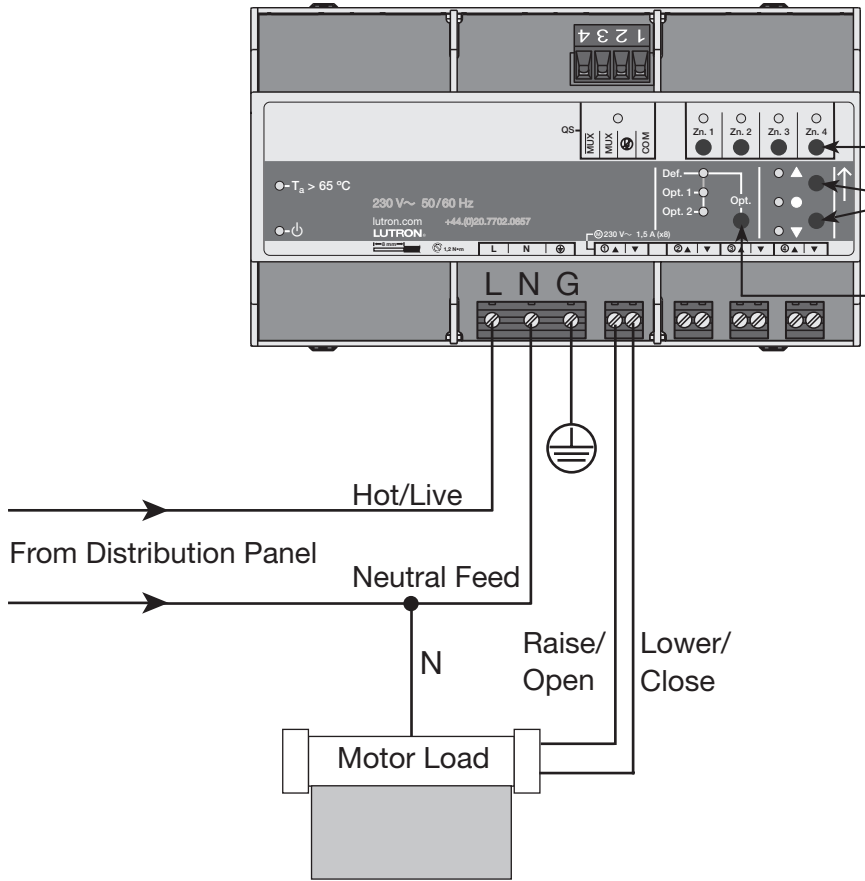
Top button: Press and release to send shades to upper/open set limit  
 Raise: Press and hold to raise/open shades  
 Lower: Press and hold to lower/close shades  
 Bottom button: Press and release to lower shades to lower/closed set limit  
**Note:** Models with a center ("favorite") button will stop the shades when they are moving when favorite button is pressed.

### Operation with QSE-CI-NWK-E Control Interface

- Each output on the QS motor group controller can be individually controlled to Raise, Lower, or Stop. See the QSE-CI-NWK-E integration document at [www.lutron.com](http://www.lutron.com) for details.

<p><b>Job Name:</b></p> <p><b>Job Number:</b></p>	<p><b>Model Numbers:</b></p>
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### Mains Voltage and Load Wiring



Zone select buttons  
 Raise/Lower buttons  
 Option button

#### Button Functions

Zone Select buttons:  
 Select desired zone  
 LED indicates which zone is selected

Raise/Lower buttons:  
 Raise/Lower selected zone  
 LEDs indicate which direction (Raise/Stop/Lower) is active

Option button:  
 Advanced programming  
 (QS stand-alone systems only)

LEDs indicate which function is active  
 Def = Default  
 Opt1 = Option 1  
 Opt2 = Option 2

#### Wiring from Distribution Panel to QS Motor Group Controller

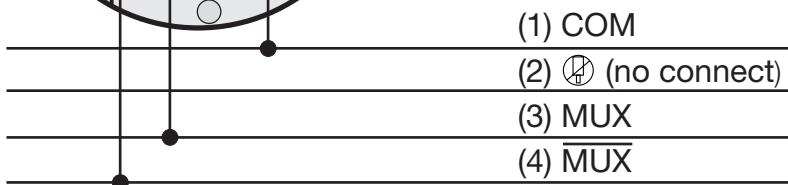
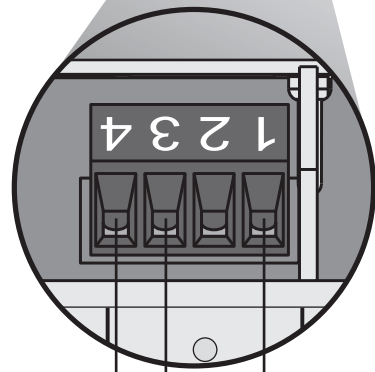
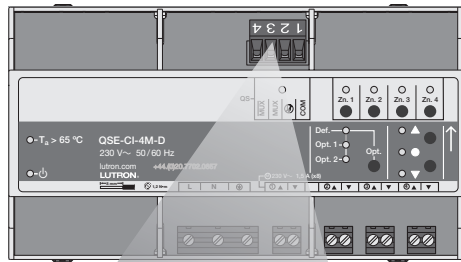
- Turn off all circuit breakers or isolators feeding the QS motor group controller unit at distribution panel.
- Run hot/live, neutral, and ground/earth (⏚) wires from a 230 V~ 50/60 Hz feed to the QS motor group controller.
- Follow appropriate local and national codes to avoid violating required separation guidelines between Mains wiring and IEC PELV/NEC® Class 2 wiring.

#### Note

Before proceeding with the line voltage/mains wiring, set the upper/open and lower/close limits for each motor. Refer to the manufacturer's instructions for instructions for your specific motor.

Job Name:	Model Numbers:
Job Number:	

### Wiring: QS Link



To additional  
QS devices

#### 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.
- Wiring may be daisy chained or t-tapped.
- Total length of QS link must not exceed 610 m (2 000 ft).
- For lengths under 150 m (500 ft), use 1,0 mm<sup>2</sup> (18 AWG) conductor for control power (COM).
- For lengths over 150 m (500 ft), use 4,0 mm<sup>2</sup> (12 AWG) conductor for control power (COM).
- Use one, twisted-shielded pair of 0,5 mm<sup>2</sup> (22 AWG) for data link (MUX, MUX).

#### Wire Sizes (check compatibility in your area)

QS Link Wiring Length	Wire Gauge	Lutron Cable Part Number
Less than 150 m (500 ft)	Common (terminal 1) 1 1,0 mm <sup>2</sup> (18 AWG)	GRX-CBL-346S (non-plenum) GRX-PCBL-346S (plenum)
	Data (terminals 3 and 4) 1 twisted, shielded pair 0,5 mm <sup>2</sup> (22 AWG)	
150 to 610 m (500 to 2000 ft)	Common (terminal 1) 1 4,0 mm <sup>2</sup> (12 AWG)	GRX-CBL-46L (non-plenum) GRX-PCBL-46L (plenum)
	Data (terminals 3 and 4) 1 twisted, shielded pair 0,5 mm <sup>2</sup> (22 AWG)	

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Job Number:	