

DALI Power Module

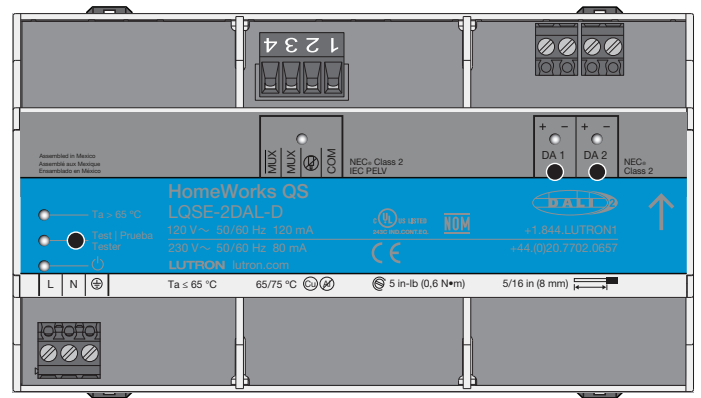
The DALI Power Module is a DIN-rail mounted controller for DALI-compliant digital addressable loads, referred to as control gear. It provides DALI bus power and control for two independent DALI buses with up to 64 DALI-compliant digital addressable loads each.

Model Number

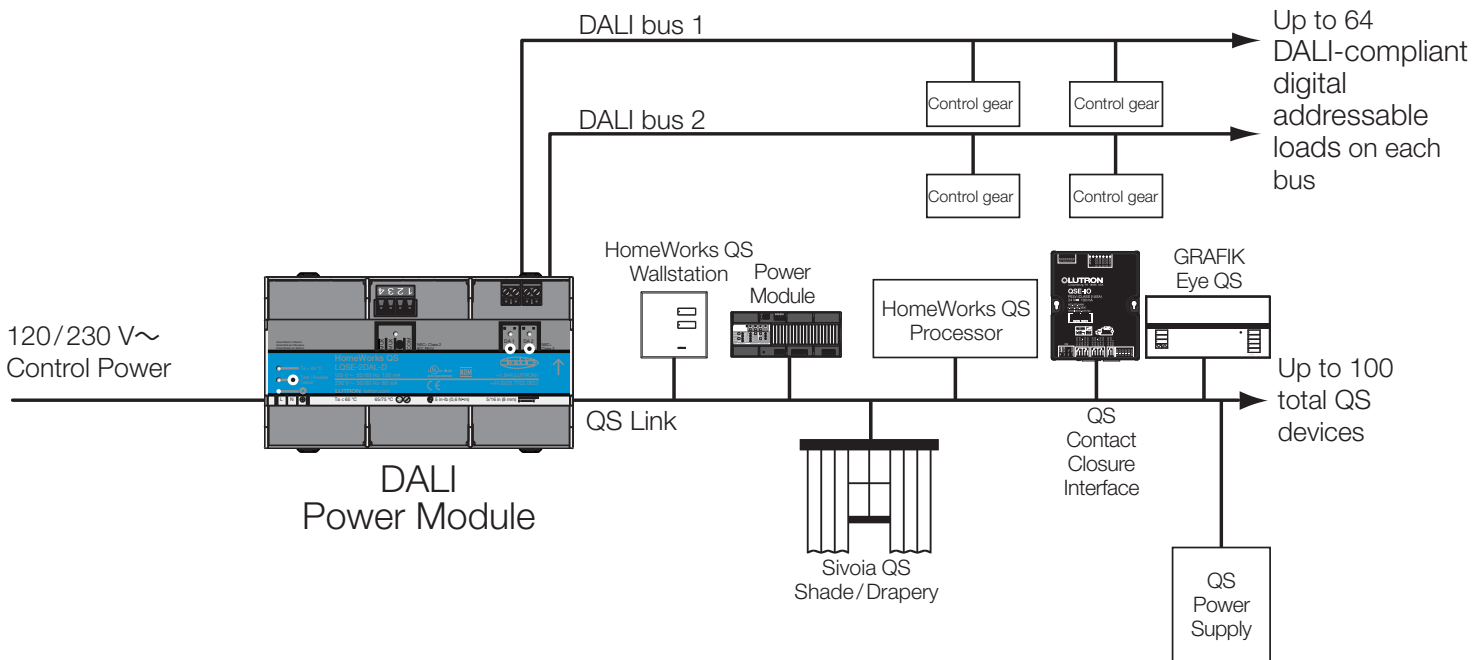
LQSE-2DAL-D: 2-link DALI fixture controller

Features

- Provides power for two buses of DALI-compliant digital addressable loads:
 - 128 mA guaranteed current
 - 250 mA maximum supply current per bus
- Each DALI bus can control a maximum of 16 zones.
- Power failure memory retains programming in the event of a power loss.
- DALI Power Module can be used in a HomeWorks QS system to control and manage light in an entire home or building.



DALI Power Module (LQSE-2DAL-D)



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| Job Name: | Model Numbers: |
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Specifications

Power

- 120 V~ 50/60 Hz 120 mA
- 230 V~ 50/60 Hz 80 mA
- Lightning strike protection meets ANSI/IEEE standard 62.31-1980. Can withstand voltage surges of up to 6000 V~ and current surges of up to 3000 A.
- Stand by power: 7 W
- BTUs/hour when fully loaded: 24
- DALI bus Output: 16 V $\overline{=}$ 128 mA guaranteed supply current, 250 mA maximum supply current per bus.

Standards

- Lutron Quality Systems registered to ISO 9001:2015.
- IEC 60669-2-1
- DALI-2 Certified
- UL
- cUL
- NOM

DALI Control Gear Compatibility

- DALI-2 Certified; Compatible with DALI control gear (e.g. LED drivers).
- The LQSE-2DAL-D is a single master controller and therefore no other controllers may exist on the same DALI bus.

Environment

- Surrounding Air Temperature Range: 0 °C to 65 °C (32 °F to 149 °F).
- Relative Humidity: less than 90% non-condensing.
- Calibration point maximum: 75 °C (167 °F)
- For indoor use only.

Terminals

- Mains Wiring: 1.0 mm² to 4.0 mm² (18 AWG to 10 AWG)
- DALI bus Wiring: 0.5 mm² to 4.0 mm² (20 AWG to 10 AWG)
- QS Link Wiring: 0.5 mm² to 4.0 mm² (20 AWG to 10 AWG)
- Minimum wire temperature rating = 65 °C (149 °F), copper wire only

Mounting

- Mount in a Lutron DIN Panel (see spec 369788) or in an IP20 (minimum) rated consumer panel or breaker panel with integrated DIN rail.
- Width = 9 DIN modules (161.7 mm or 6 $\frac{3}{8}$ in).
- For more information on mounting and installation in panels with integrated DIN rail see Lutron P/N 048466 at www.lutron.com.

Programming and Compatibility Requirements

- The LQSE-2DAL-D can only be used with the HomeWorks QS system.
- Setup and programming of the DALI Power Module is done through the HomeWorks QS programming software.

DALI Buses

- Up to 64 DALI compliant loads on each bus can be addressed and grouped into 16 zones.
- DALI Power Module supplies a maximum of 250 mA to power each bus.
- DALI Power Module supplies a guaranteed current of 128 mA to power each bus.
- DALI Power Module has an integrated bus power supply with polarity indicated on the unit.
- Some DALI loads may be polarity sensitive. Refer to individual manufacturers' specifications for proper connection to the DALI bus.
- Short circuit protection with automatic restart.

QS Link Limits

- A QS link in a HomeWorks QS system can have up to 512 zones (outputs) and 100 devices. A DALI compliant digital addressable load counts as 1 zone unless specifically grouped into zones from the HomeWorks QS software.
- Each DALI Power Module counts as one device toward the 100 device limit.
- A maximum of 8 fully loaded DALI buses may be connected to a single QS link.

HomeWorks QS Wallstations

- HomeWorks QS wallstations can be configured to control DALI Power Modules with the HomeWorks QS programming utility.
- LED indicator displays the status of programmed lights.

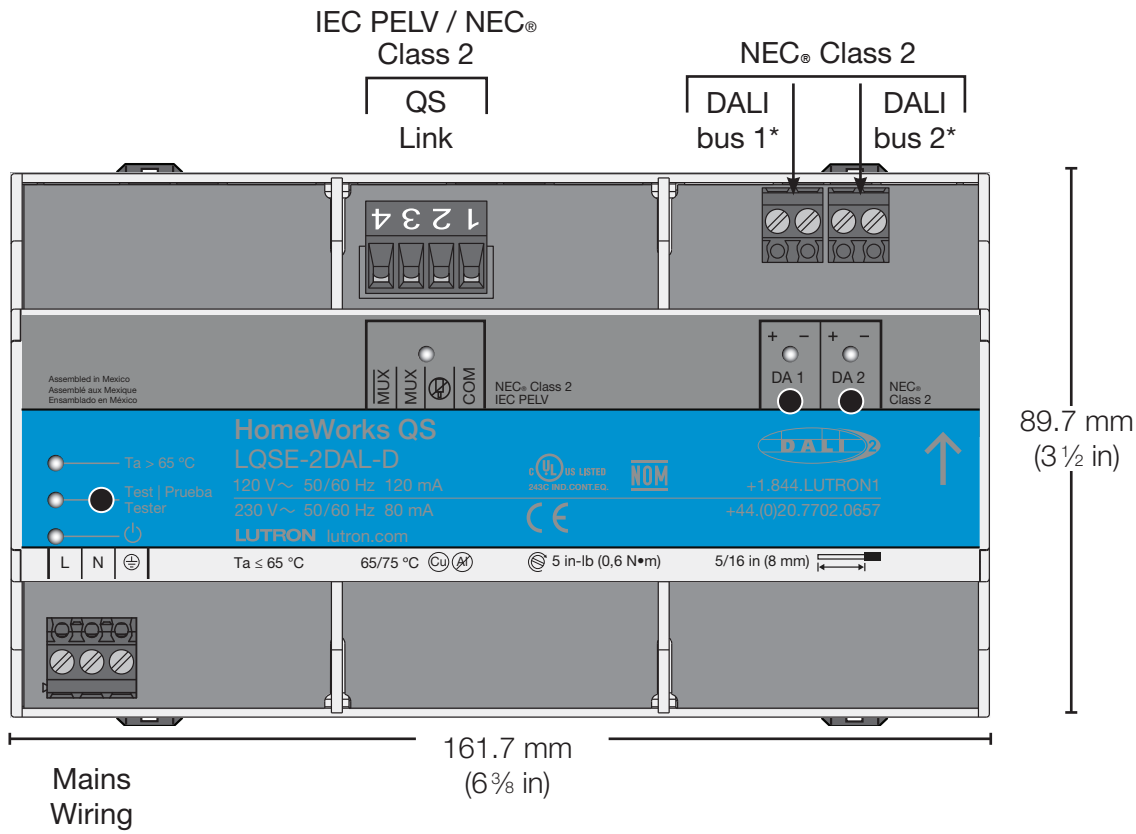
Troubleshooting and Maintenance Features

- Maintains redundant memory of control gear programming for ease of single or multiple control gear replacement.
- To verify DALI lights connected to DALI bus 1 and bus 2:
 - **Enter Test Mode:** Press and hold **Test** button on the DALI Power Module until the Test LED starts flashing.
 - **Test:** Each press of either the **DALI 1** or **DALI 2** button will cycle the lights between high-end, low-end, flash and off for that bus.
 - **Exit Test Mode:** Press and hold **Test** button until Test LED stops flashing.

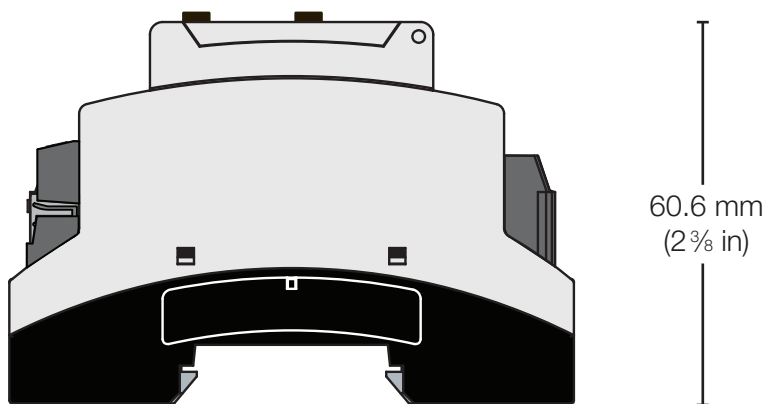
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Overview of Wiring Terminals and Mechanical Dimensions

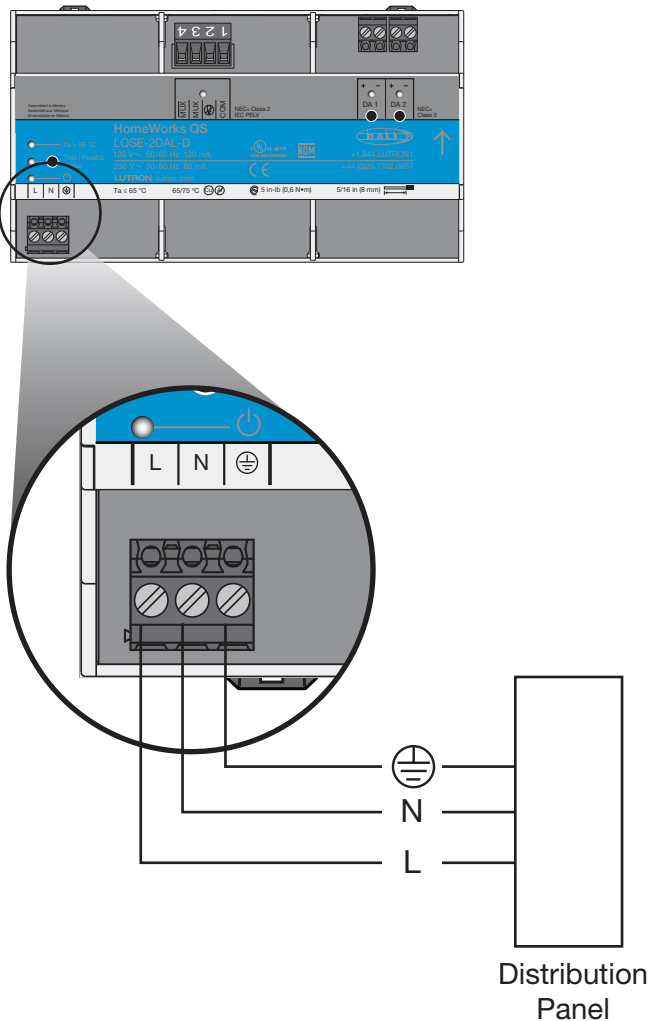



* Wire according to local codes.



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Wiring: Mains Voltage



 – Earth/Ground
 N – Neutral
 L – Mains/Line

Wiring from Distribution to Power Module

- Turn off all circuit breakers or isolators feeding the Power Module unit at the distribution panel.
- Run line, neutral, and earth/ground (⊕) wires from a feed to the DALI Power Module.
- Use 1.0 mm² to 4.0 mm² (18 AWG to 12 AWG) conductors (depending on breaker rating) to feed the mains wiring. The device draws less than 120 mA (120 V~) and 80 mA (230 V~).

Emergency Lighting Applications

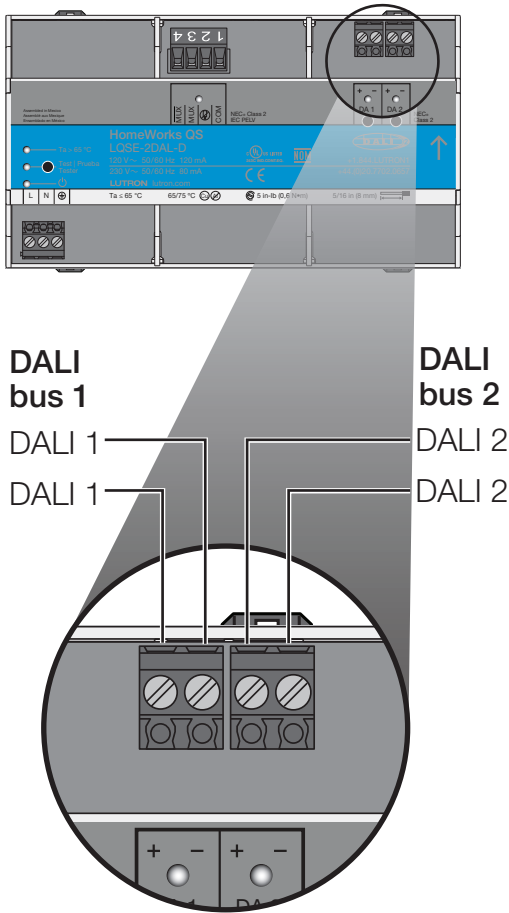
- Use normal (non-essential) power only to power the DALI Power Module.
- When normal power drops out, the DALI Power Module will not power the DALI buses. When this occurs, control gear powered from emergency feeds go to their emergency mode (full light output by default).

Mains Wiring and IEC PELV/NEC® Class 2 Separation

- The DALI Power Module is designed to separate mains wiring from IEC PELV/NEC® Class 2 circuits.
- Follow appropriate local and national codes to avoid violating required separation guidelines.

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Wiring: DALI Bus



The DALI Power Module will supply power for two independent DALI buses, which supports a maximum of 64 DALI-compliant digital addressable loads per bus.

DALI Wiring

- DALI wiring is not SELV.
- DALI wiring may be treated as mains voltage, and thus can be run within the same sheathing.
- Ensure that there is no greater than a 2 V_{rms} drop between the DALI Power Module and the end of the DALI bus.
- Consult all national and local electrical codes for separation requirements.

| Wire Gauge | Maximum DALI-compliant Bus Wire Length |
|-------------------------------|--|
| 1.5 mm ² (14 AWG) | 300 m (984 ft) |
| 0.75 mm ² (18 AWG) | 150 m (492 ft) |
| 0.5 mm ² (20 AWG) | 100 m (328 ft) |

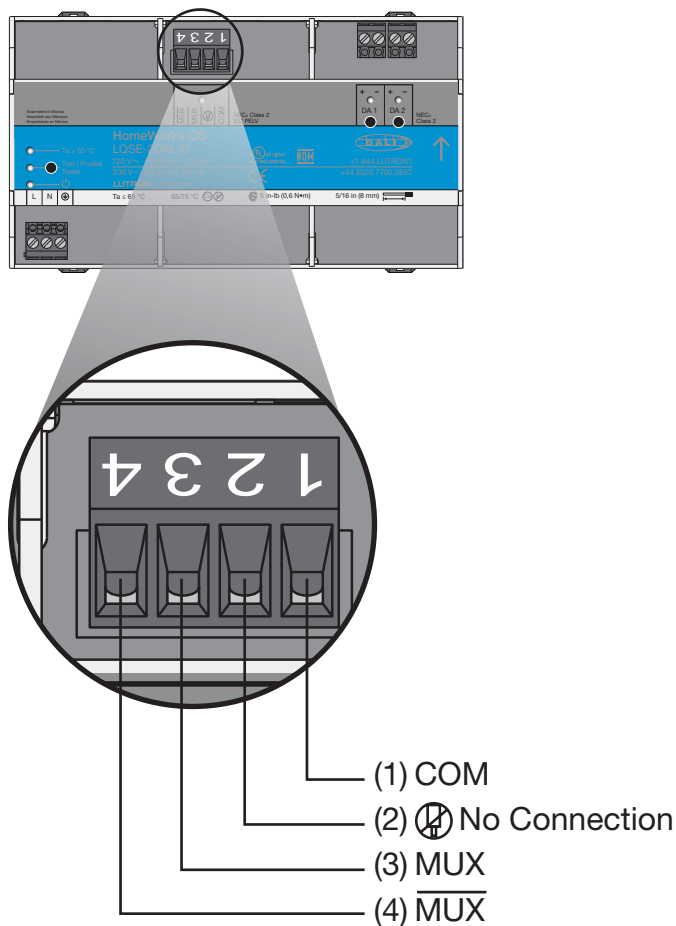
Lutron Qualified DALI Control Gear

Lutron requires that all DALI devices that are intended to be used with a Lutron DALI controller must be pre-tested by Lutron and determined to be compatible before being used on a project.

For a complete list of Lutron qualified DALI ballasts please refer to Application Note #482 for more information.

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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.
- Wiring may be daisy chained or t-tapped.
- Do NOT connect terminal 2.
- Total length of QS link must not exceed 610 m (2000 ft).
- Use one, twisted-shielded pair of 0.5 mm² (20 AWG) for data link (MUX, MUX).

| QS Link Wiring Length | Wire Gauge | Available from Lutron in one cable: |
|---------------------------------|--|-------------------------------------|
| Less than 153 m (500 ft) | Power (terminals 1 and 2): 1 pair 1.0 mm ² (18 AWG) | GRX-CBL-346S (non plenum) |
| | Data (terminals 3 and 4): 1 pair 0.5 mm ² (20 AWG), twisted and shielded | GRX-PCBL-346S (plenum) |
| 153 m to 610 m (500 to 2000 ft) | Power (terminals 1 and 2): 1 pair 4.0 mm ² (10 AWG) | GRX-CBL-46L (non plenum) |
| | Data (terminals 3 and 4): 1 pair 0.5 mm ² (20 AWG), twisted and shielded | GRX-PCBL-46L (plenum) |

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