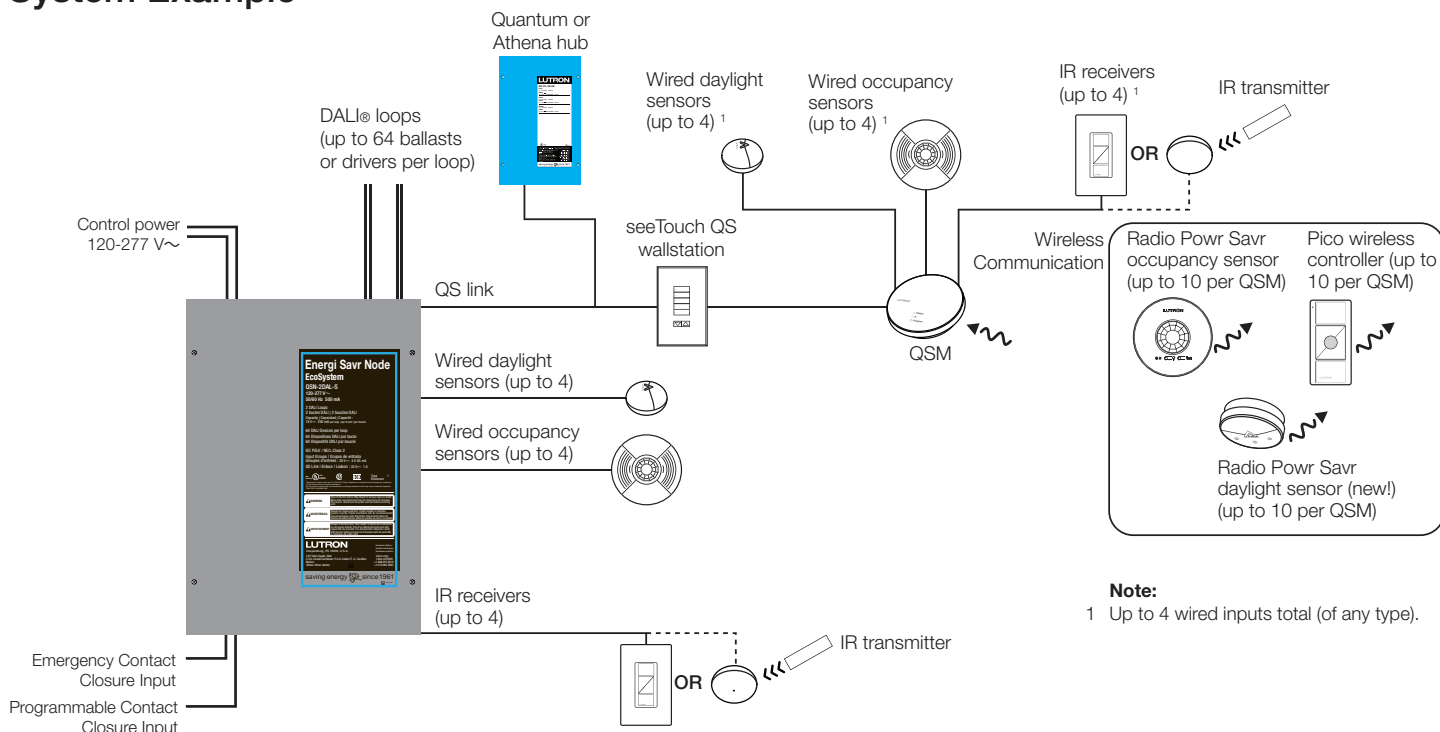


System Example



Note: This device is not compatible with the Energi Savr Node *iPod* programming app. It is only for use in a Quantum or Athena system

Job Name:

Model Numbers:

Job Number:

Specifications

Regulatory Approvals

- UL® Listed
- CSA
- NOM Certified
- Lutron Quality Systems registered to ISO 9001.2015
- IEC 62386-101 Ed. 2
- Complies with requirements for use in other spaces used for environmental air (plenums) per NEC® 2017 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
- For commercial use, Class A only.

Power

- Control Power: 120-277 V~ 50/60 Hz
- Maximum current draw: 0.5 A
- 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.
- DALI® loop output: 18 V== 250 mA maximum per loop
- 10-year power failure memory: restores lighting to levels prior to power interruption.

Environment

- Ambient temperature operating range: 32 °F to 104 °F (0 °C to 40 °C).
- Relative humidity: less than 90% non-condensing.
- For indoor use only.

Terminals

- Control power wiring: 14 AWG to 12 AWG (2.5 mm² to 4.0 mm²)
- DALI® digital loop wiring: 20 AWG to 16 AWG (0.5 mm² to 1.5 mm²)
- Input group wiring: 22 AWG to 12 AWG (0.5 mm² to 4.0 mm²)
- QS link wiring: 22 AWG to 12 AWG (0.5 mm² to 4.0 mm²)

Physical Design

- NEMA Type 1, IP-20 protection.

Mounting

- Surface-mount.

DALI® Buses

- Up to 64 DALI® compliant loads on each loop can be addressed and grouped into 16 zones.
- Supplies a maximum of 250mA to power each bus.
- Supplies a guaranteed current of 128 mA to power each bus.
- DALI® loop wires are polarity insensitive and topology free.
- Automatic shutdown and restart after short-circuit.

QS Link Limits

- Each Energi Savr Node unit with DALI® can provide up to 30 Power Draw Units for other QS devices. Refer to the QS link Power Draw Units specification submittal (Lutron P/N 369405) at www.lutron.com for more information concerning Power Draw Units.
- The QS Link can have up to 100 devices and 100 zones.
- Each Energi Savr Node unit with DALI® counts as 1 device towards the 100 device limit.
- Each Energi Savr Node unit with DALI® can count as 1 to 32 zones towards the 100 zone limit, depending on the number of zones created.
- A maximum of 8 DALI® digital links may be connected to the QS link.
- A maximum of 512 DALI® ballasts may be connected to the QS link.

QS Link Sensor Limits

- 100 wired and wireless occupancy sensors.
- 100 wired and wireless daylight sensors.
- 100 wired wallstations or Pico wireless controllers.

Sensors Connected to the Energi Savr Node unit with DALI®

- Four power supply outputs
- 20 V== 65 mA maximum

Job Name:	Model Numbers:
Job Number:	

Specifications *(continued)*

Occupancy Sensors

- Use Lutron LOS series of wired occupancy sensors in occupancy mode to control one or more areas.
- Use Lutron occupancy sensors in vacancy mode to automatically turn the lights off in an area after it becomes vacant.
- Use Lutron occupancy sensors to automatically turn the lights on in area when it becomes occupied and to automatically turn the lights off in an area after it becomes vacant.
- Each of the four occupancy inputs can power one Lutron occupancy sensor.
- Up to four additional Lutron wired occupancy sensors or ten additional Radio Powr Savr occupancy/vacancy sensors can be assigned per QS Sensor Module (QSM) on the QS link.

seeTouch QS Controls

- Refer to seeTouch QS spec submittal for further information.
- Configurable seeTouch QS wallstations, refer to the QS wallstation programming guide for configuration options

IR Controls

- Use Lutron IR receivers or wired Pico keypads for personal control of individual lighting zones.
- Four IR devices can connect directly to the Energi Savr Node unit with DALI®.

Daylight Sensors

- Lutron daylight sensors allow daylight harvesting with programmable effect on light output.
- Four daylight sensors can be connected directly to the Energi Savr Node unit with DALI®.
- Use Lutron EC-DIR-WH sensors to control one or more daylight rows.
- Alternatively, up to four additional Lutron wired daylight sensors or ten additional Radio Powr Savr daylight sensors can be assigned per QSM on the QS link.

Contact Closure Input (CCI)

- 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 and sink 3.0 mA.
 - Open collector PNP or active-high on-state voltage must be greater than 12 V and source 3.0 mA.
 - Open circuit voltage: 24 V maximum.
 - Off-state leakage current must be less than 100 μ A.
 - Accepts maintained inputs and momentary inputs with 40 msec minimum pulse times
- Configurable for normally open (NO) or normally closed (NC) operation.
- Input is miswire-protected up to 36 V $\overline{=}$.
- Functionality defined by Quantum or Athena system programming.

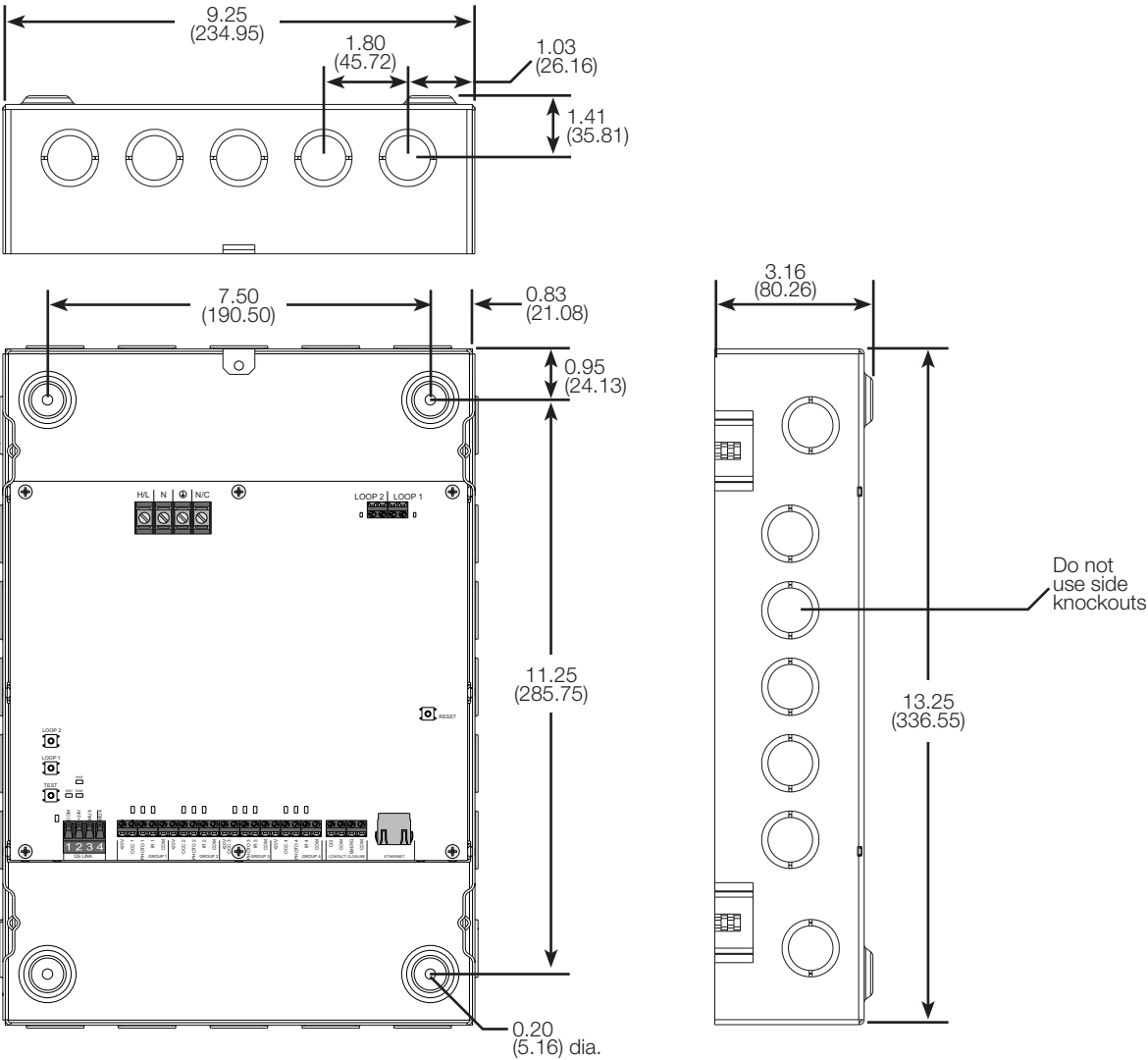
Emergency Contact Closure Input

- By default, contact closure input from Lutron Emergency Lighting Interface (LUT-ELI-3PH), security, or fire alarm systems turns all zones on to full output when emergency state is detected.
- Emergency contact closure input is normally closed (NC). The Energi Savr Node unit with DALI® is shipped with a jumper pre-installed.
- Response of each zone is configurable.
- Attached devices, by default, will go to maximum output and ignore control inputs.
- No operations will be allowed until emergency signal is cleared.
- 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 and sink 3.0 mA.
 - Open collector PNP or active-high on-state voltage must be greater than 12 V and source 3.0 mA.
 - Open circuit voltage: 24 V maximum.
 - Off-state leakage current must be less than 100 μ A.
 - Accepts maintained inputs and momentary inputs with 40 msec minimum pulse times
- Input is miswire-protected up to 36 V $\overline{=}$.
- Emergency CCI cannot control other Energi Savr Node units.
- See Application Note #106, (P/N 048106) "Emergency Lighting" at www.lutron.com for more details.

Job Name:	Model Numbers:
Job Number:	

Mechanical Dimensions

All dimensions shown as in (mm)



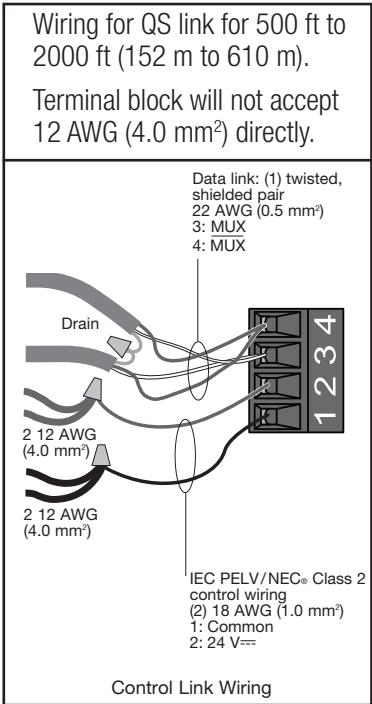
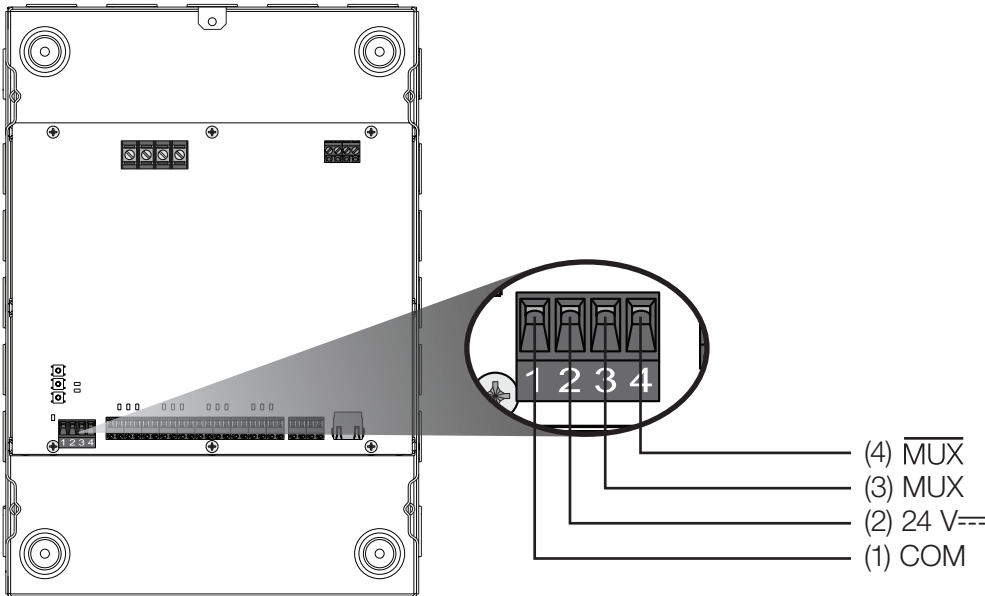
Wiring: QS Link

- QS link communication uses IEC PELV/NEC® Class 2 wiring. Follow all local and national electrical codes when installing IEC PELV/NEC® Class 2 wiring with line voltage wiring.
- The total distance of the QS link wiring must not exceed 2000 ft (610 m).

QS Link Wiring Distance	Wire Gauge	Available from Lutron in one cable:
Less than 500 ft (152 m)	Power (terminals 1 and 2): 1 pair 18 AWG (1.0 mm²)	GRX-CBL-346S (non-plenum) GRX-PCBL-346S (plenum)
	Data (terminals 3 and 4): 1 pair 22 AWG (0.5 mm²), twisted and shielded*	
500 ft to 2000 ft (152 m to 610 m)	Power (terminals 1 and 2): 1 pair 12 AWG (4.0 mm²)	GRX-CBL-46L (non-plenum) GRX-PCBL-46L (plenum)
	Data (terminals 3 and 4): 1 pair 22 AWG (0.5 mm²), twisted and shielded*	

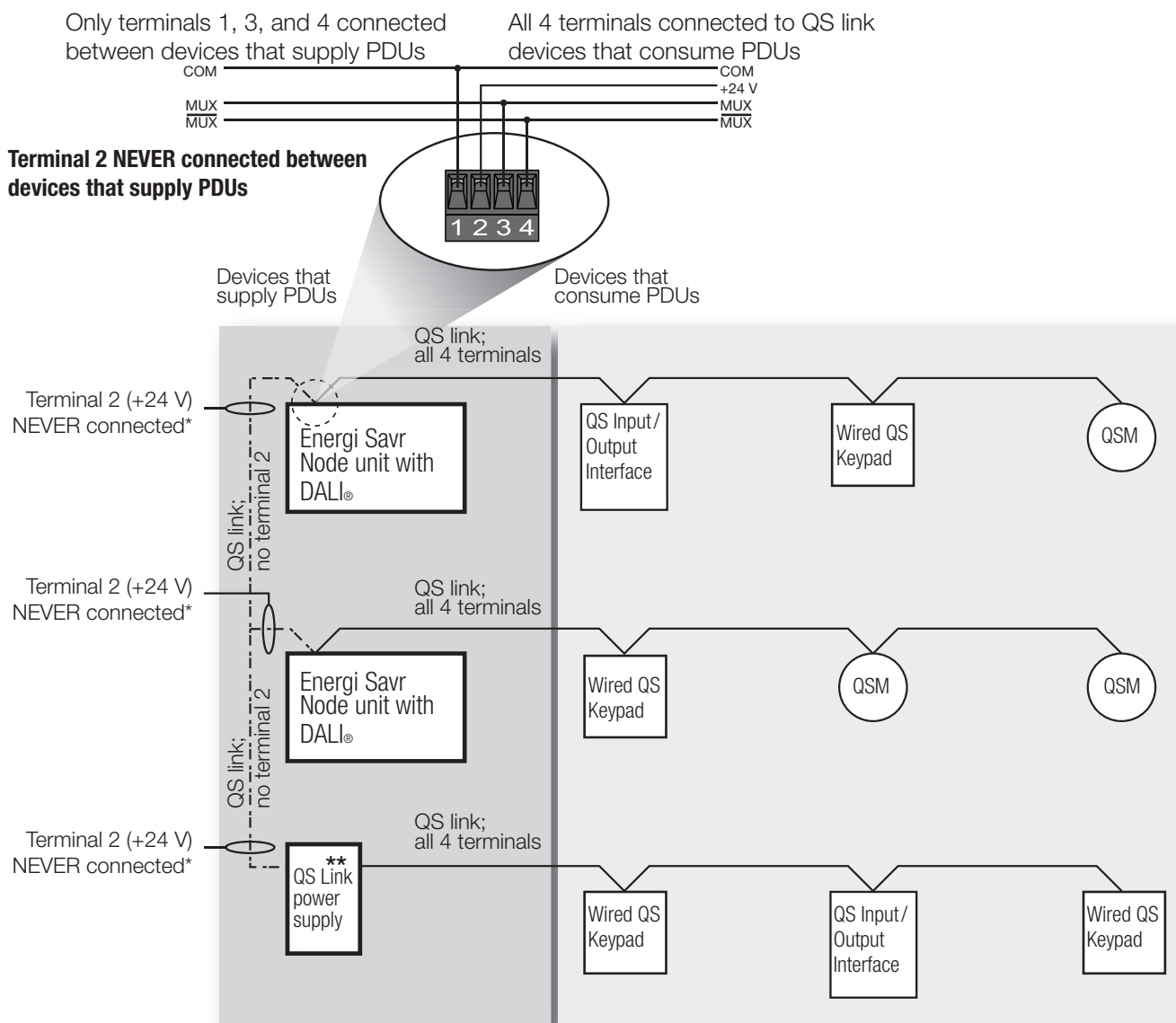
* Alternate Data-only cable: Use approved data link cable 22 AWG (0.5 mm²) twisted/shielded from Belden, model #9461.

Energi Savr Node unit with DALI®



- QS Link Wiring:**
- 22 AWG to 12 AWG (0.5 mm² to 4.0 mm²)

Wiring: QS Link *(continued)*



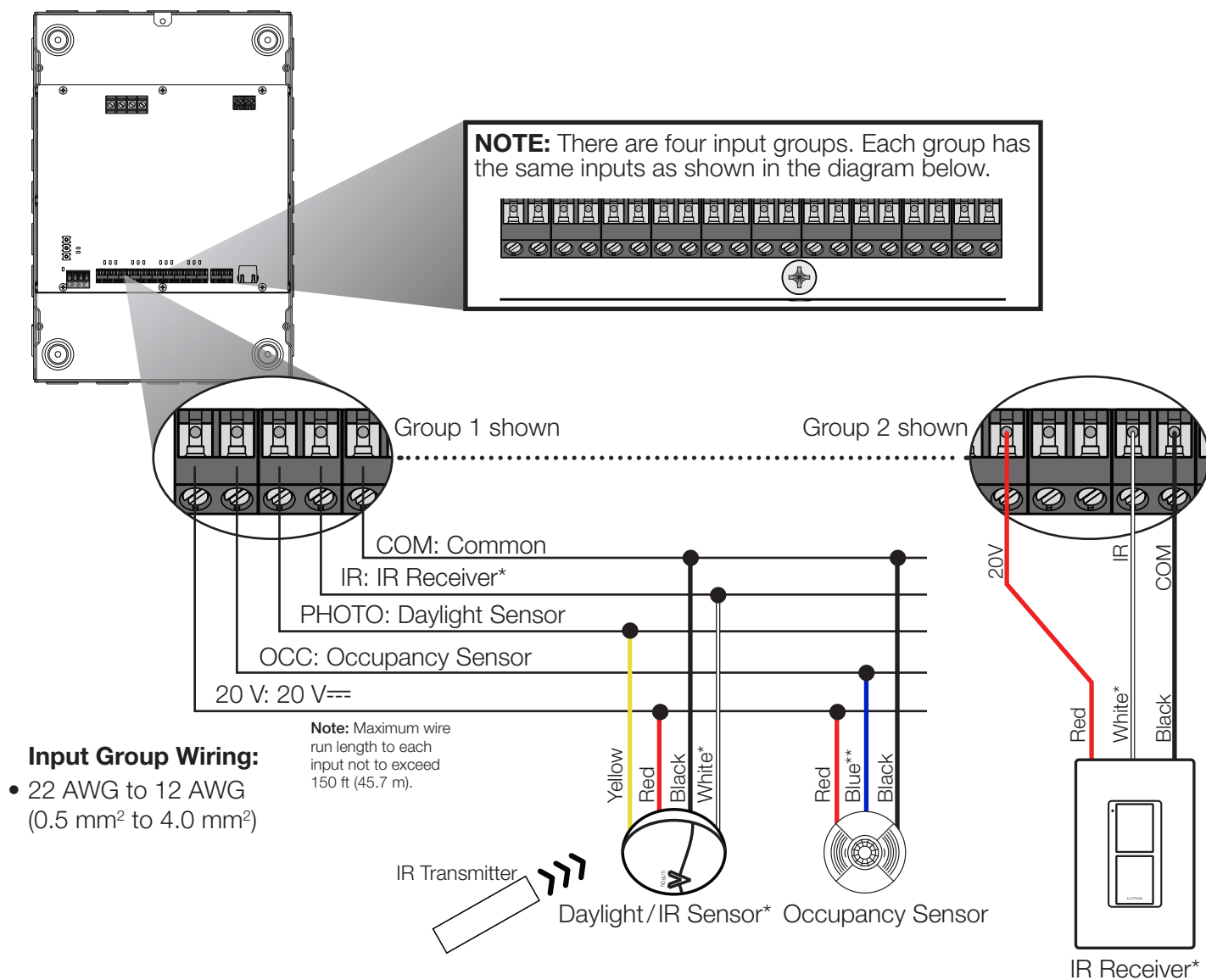
QS Link Wiring Rules

- * 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.

NOTE: Refer to the QS Link Power Draw Units specification submittal (Lutron P/N 369405) at www.lutron.com for information concerning Power Draw Units (PDUs).

Job Name:	Model Numbers:
Job Number:	

Wiring: IEC PELV/NEC® Class 2 Inputs

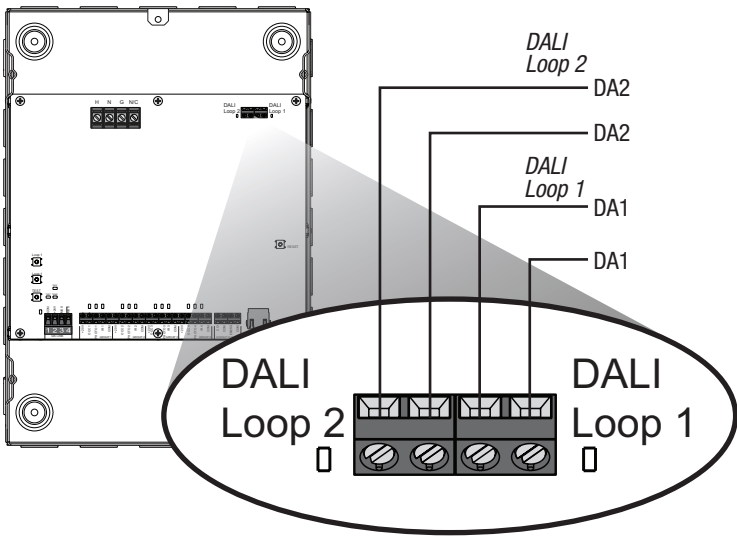


* **Note:** Only one IR device may be connected per IR input. If the IR signal from a daylight sensor is connected, a wall control may not be connected to the same input, and vice-versa.

**Connect the gray wire on -R model occupancy sensors.

Job Name:	Model Numbers:
Job Number:	

Wiring Diagram: DALI® Loop



The Energi Savr Node unit with DALI® will supply power to an independent DALI® loop, which supports a maximum of 64 ballasts per loop.

DALI® Wiring

- DALI® wiring is not SELV.
- DALI® wiring is treated as line voltage, and thus may be run within the same sheathing.
- Ensure that there is not greater than a 2 V_{DC} drop between the Energi Savr Node unit with DALI® and the end of the DALI® loop.
- Consult all national and local electrical codes for separation requirements.

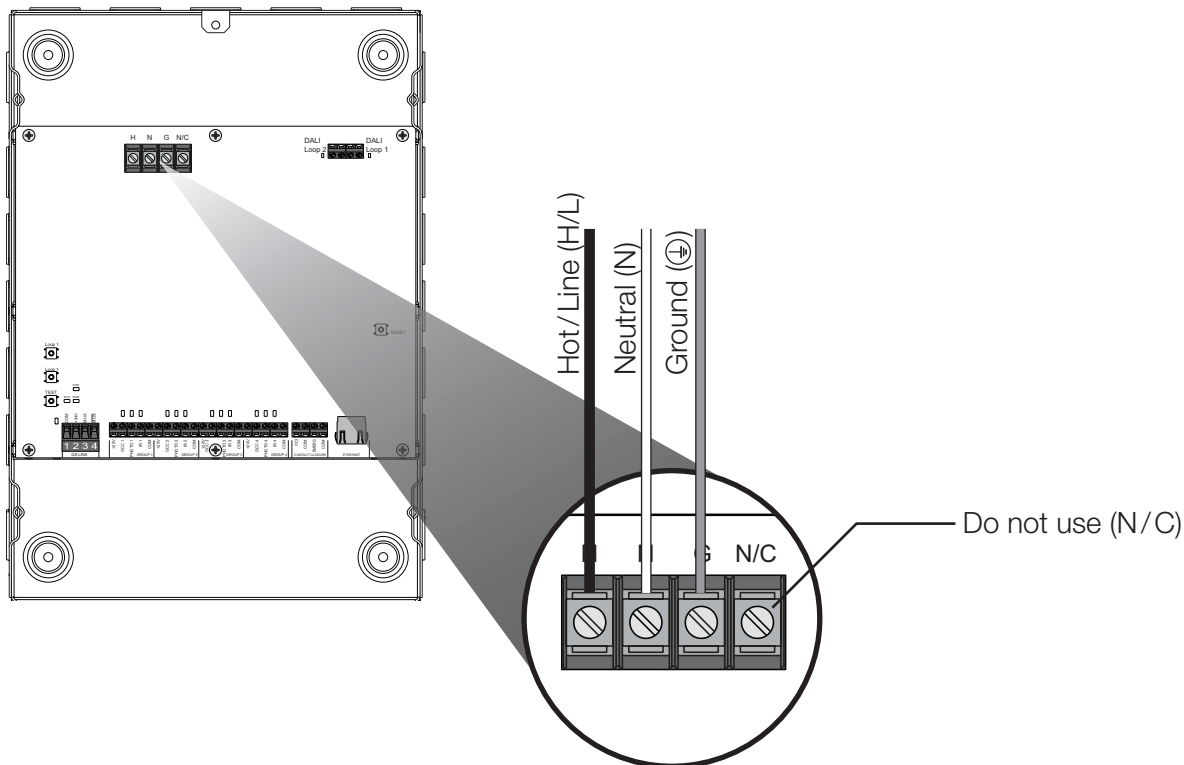
Wire Gauge	Maximum DALI® Compliant Bus Wire Length
16 AWG (1.5 mm ²)	980 ft (300 m)
18 AWG (1.0 mm ²)	490 ft (150 m)
20 AWG (0.5 mm ²)	325 ft (100 m)

Wiring: Control Power

Wiring Notes

- Control Power wiring should be from a normal, non-emergency feed for proper operation of the Energi Savr Node unit with DALI®.
- Power terminals accept (1) or (2) 14 AWG to 12 AWG (2.5 mm² to 4.0 mm²) solid or stranded wire.

Energi Savr Node unit with DALI



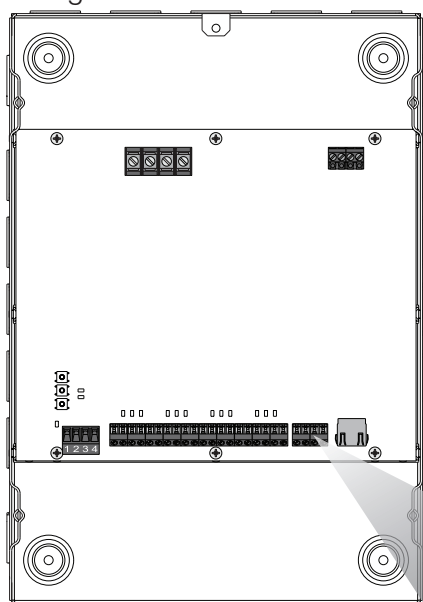
Job Name:

Model Numbers:

Job Number:

Wiring: Contact Closure Inputs

Energi Savr Node unit with DALI®



- Accepts 22 AWG to 12 AWG (0.5 mm² to 4.0 mm²) solid or stranded wires.
- Maximum wire run distance: 250 ft (76 m).

EMERG: Emergency Contact Closure Input

COM: Common

Jumper

CCI: Contact Closure Input

COM: Common

Emergency CCI

- The attached device must provide a closed dry contact closure or solid-state output.
- Input is miswire-protected up to 36 V_{AC}.
- The Energi Savr Node unit with DALI® is shipped with a jumper pre-installed in the Emergency Contact Closure Input.
- Emergency mode is activated by opening the Emergency Contact Closure. Pre-installed jumper must be removed to utilize this function.
- See Application Note #106, (P/N 048106) "Emergency Lighting" at www.lutron.com for more details.

Programmable CCI

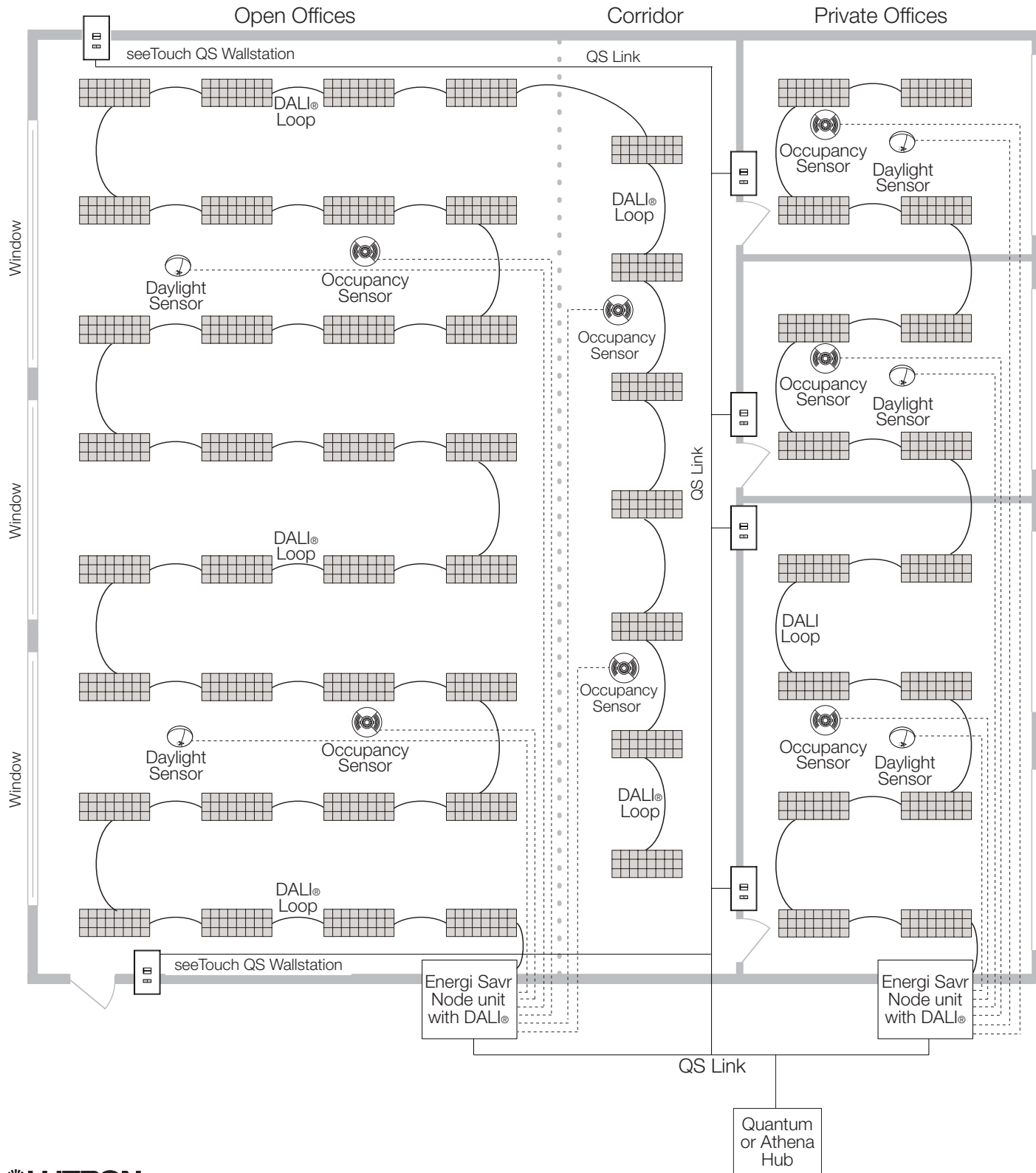
- The attached device must provide a dry contact closure or solid-state output.
- Input is miswire-protected up to 36 V_{AC}.

Job Name:

Model Numbers:

Job Number:

Typical Application: Requires Quantum or Athena system commissioning



Job Name:

Model Numbers:

Job Number:

Troubleshooting and Maintenance Features

- Maintains redundant memory of ballast programming for ease of single or multiple ballast replacement.
- After installation, "TEST" button verifies DALI® wiring on all fixtures.
- Status LEDs verify connections to control stations and sensors.
- After installation, Energi Savr Node unit with DALI® identifies ballast communication failures.

☼Lutron, Lutron, EcoSystem, Pico, Quantum, Athena, Energi Savr Node, Radio Powr Savr, and seeTouch are trademarks or registered trademarks of Lutron Electronics Co., Inc. in the US and/or other countries.

iPod is a registered trademark of Apple, Inc., registered in the U.S. and other countries.

All other product names, logos, and brands are property of their respective owners.

☼LUTRON

SPECIFICATION SUBMITTAL

Page

Job Name:	Model Numbers:
Job Number:	