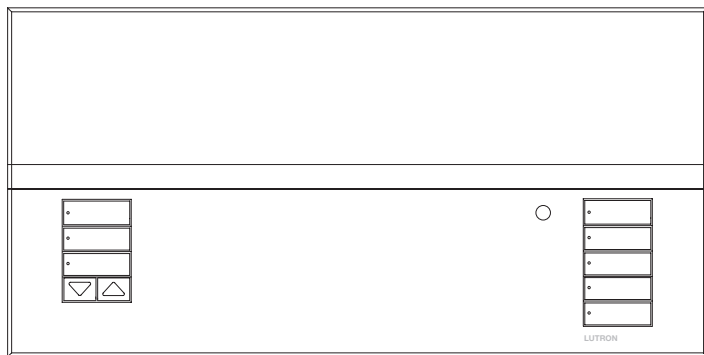# ⚙ LUTRON

GRAFIK Eye QS with EcoSystem Control Unit

Quick Installation and Operation Guide

Please Read

The GRAFIK Eye QS with EcoSystem control unit allows for control of both lights and shades, without interfaces, using a single control unit. Features include pushbutton scene recall, info screen that displays energy savings and status, IR receiver, astronomic timeclock, contact closure input, and engravable backlit buttons that are easy to find and operate. The built-in EcoSystem bus link can control up to 64 EcoSystem devices.

Model Numbers: QSGRJ-6E, QSGRJ-8E, QSGRJ-16E
QSGR-6E, QSGR-8E, QSGR-16E

	120 V∼ 50/60 Hz	220 - 240 V∼ 50/60 Hz
Unit Capacity (watts)	2000 W	3000 W
MLV	2000 VA 1600 W	3000 VA 2400 W
Zone Capacity (watts)	25 – 800 W	40 – 1200 W
MLV	25 – 800 VA 25 – 600 W	40 – 1200 VA 40 – 960 W

See page 6 for EcoSystem bus ratings;
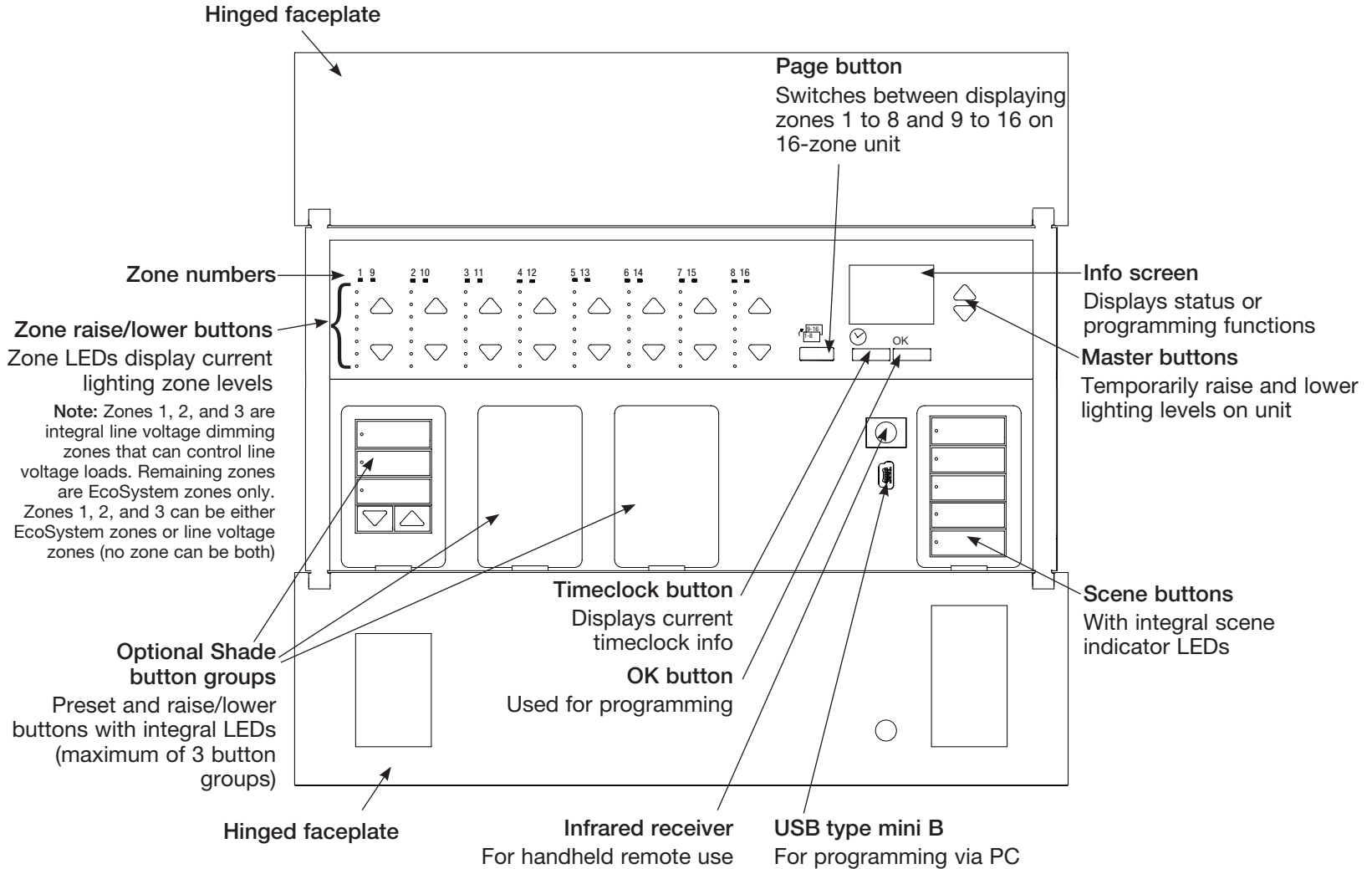see page 7 for IEC PELV/NEC® Class 2 ratings.

Contents

For additional features and advanced functions, see the complete installation and operation guide at www.lutron.com/qs

For California residents only:
The batteries in these devices contain Perchlorate Material – special handling may apply.
For more information, visit www.dtsc.ca.gov/hazardouswaste/perchlorate

English   **Español**   **Français**

Features and Functions of the GRAFIK Eye QS with EcoSystem Control Unit

Hinged faceplate

Page button
Switches between displaying zones 1 to 8 and 9 to 16 on 16-zone unit

Zone numbers

Info screen
Displays status or programming functions

Zone raise/lower buttons
Zone LEDs display current lighting zone levels

Note: Zones 1, 2, and 3 are integral line voltage dimming zones that can control line voltage loads. Remaining zones are EcoSystem zones only. Zones 1, 2, and 3 can be either EcoSystem zones or line voltage zones (no zone can be both)

Master buttons
Temporarily raise and lower lighting levels on unit

Optional Shade button groups
Preset and raise/lower buttons with integral LEDs (maximum of 3 button groups)

Timeclock button
Displays current timeclock info

OK button
Used for programming

Scene buttons
With integral scene indicator LEDs

Hinged faceplate

Infrared receiver
For handheld remote use

USB type mini B
For programming via PC

Note: 6-zone control unit will show only zones 1 through 6.

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Wiring the GRAFIK Eye QS with EcoSystem Control Unit:
Overview of Line Voltage/Mains and EcoSystem Wiring
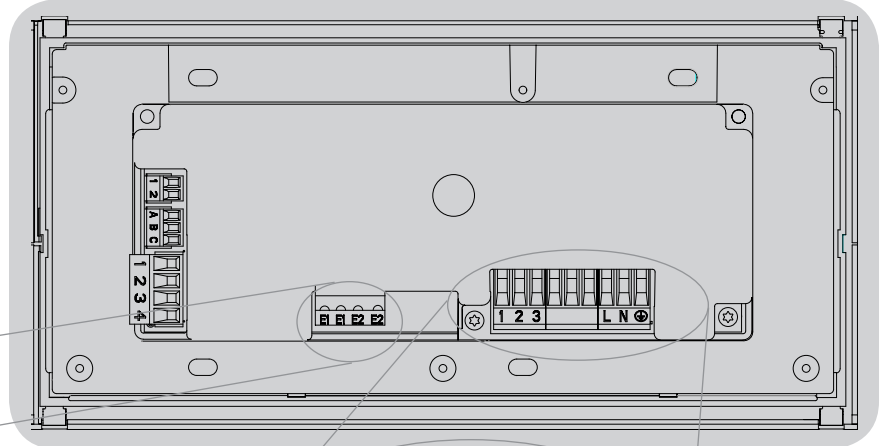
Two E1 and two E2 connections are provided for ease of wiring, and to provide two connecting points; there is only one EcoSystem link on the unit.

Note: Ballasts and other EcoSystem devices must **NOT** obtain power from a line voltage output on the GRAFIK Eye QS with EcoSystem control unit.
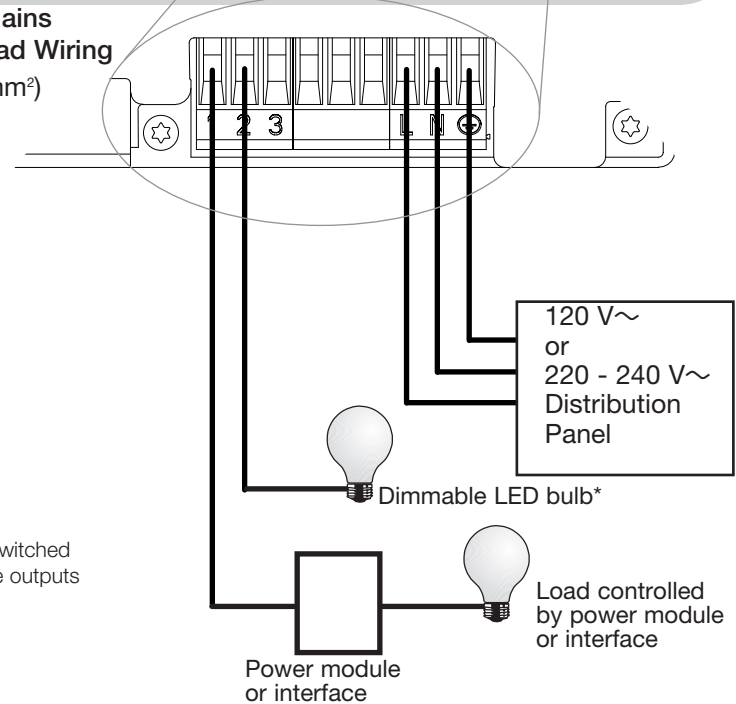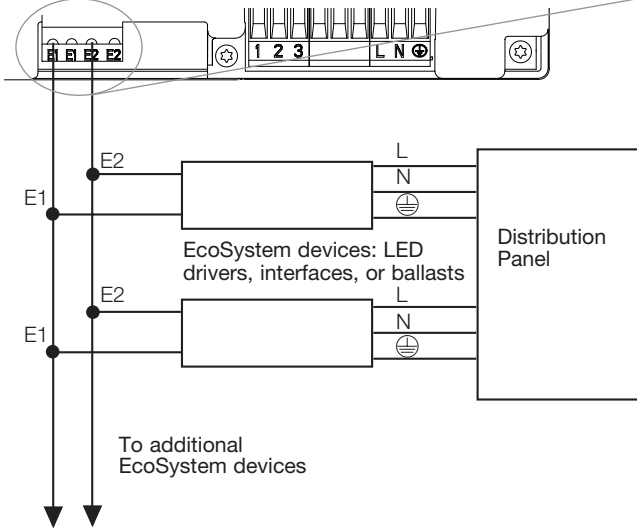
EcoSystem Bus Wiring

(See the bus wiring details section for complete specification)
Two 16 AWG (1.5 mm^2) each terminal

EcoSystem devices: LED drivers, interfaces, or ballasts

Distribution Panel

E1

E2

L
N

To additional EcoSystem devices

Line Voltage/Mains Cables and Load Wiring

12 AWG (4.0 mm^2) each terminal

Terminal labels:
L: Hot/Live
N: Neutral
⏚ : Ground
1, 2, 3: Dimmed/Switched line voltage outputs

120 V∼
or
220 - 240 V∼
Distribution Panel

Dimmable LED bulb*

Power module or interface

Load controlled by power module or interface

* For a complete list of approved dimmable LEDs please call 1.800.523.9466 or visit www.lutron.com/dimcflled

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Wiring the GRAFIK Eye QS with EcoSystem Control Unit: Line Voltage Wiring Details

- Use properly certified cable for all line voltage/mains cables.
- Proper short-circuit and overload protection must be provided at the distribution panel. You can use up to a 20 A circuit breaker for your installation.
- Install in accordance with all local and national electrical codes.
- IEC PELV/NEC® Class 2 terminals may be temporarily unplugged for ease of IR, occupancy sensor, and control wiring.
- **Notice: Risk of damage to unit.** Do not connect line voltage/mains cable to IEC PELV/NEC® Class 2 terminals.

Step 1: Install wallbox. Mount a 3½ in (89 mm) deep 4-gang U.S. wallbox on a dry, flat indoor surface that is accessible and allows for system programming and operation. Allow at least 4½ in (110 mm) clearance above and below the faceplate to ensure proper heat dissipation. Allow 1 in (25 mm) for faceplate overhang on all sides.

Note: 4-gang wallbox available from Lutron; P/N 241400.

Faceplate overhangs wallbox on all sides; allow 1 in (25 mm)

4½ in (110 mm)
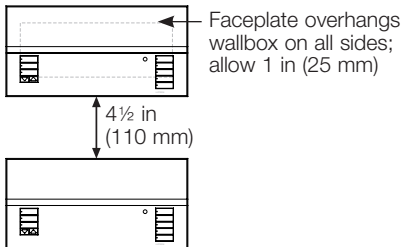
Step 2: Test load wiring.
- Turn power OFF at the circuit breaker or fuse box.
- Connect a standard light switch between the live lead and load wire to test the circuit.
- Turn power ON and check for short or open circuits. If load does not operate, the circuit is open. If the circuit breaker trips (fuse blows or opens), a load short may exist. Correct short or open circuits and test again.

Hot/Live   Switch

Load

Neutral
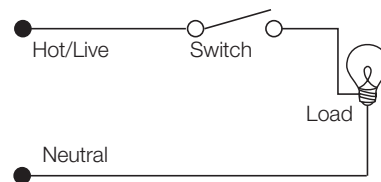
Step 3: Check control unit wiring.
- Earth/ground terminal connection must be made as shown in line voltage wiring diagrams.
- Do not mix different load types on the same zone.
- Follow all local and national electrical codes when installing IEC PELV/NEC® wiring with line voltage/mains wiring.

WARNING! Shock hazard. May result in serious injury or death. Always turn off circuit breaker or remove main fuse from power line before doing any work. Before connecting the loads to the GRAFIK Eye QS with EcoSystem control unit, test the loads for short-circuits.

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For additional information, see the complete installation and operation guide at www.lutron.com/qs
GRAFIK Eye QS with EcoSystem Control Unit Quick Installation and Operation Guide   4

Wiring the GRAFIK Eye QS with EcoSystem Control Unit:
Line Voltage Wiring Details *(continued)*

Step 4: Connect line voltage and loads to control unit.

• Strip ⁵⁄₁₆ in (8 mm) of insulation off the line voltage/mains cables in the wallbox.

⁵⁄₁₆ in
(8 mm)
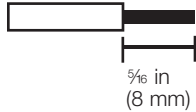
• Connect the line voltage/mains, ground, and load wires to the appropriate terminals on the back of the control unit.

L: Hot/Live

N: Neutral

⏚: Ground

Terminals 1, 2, 3: Dimmed/Switched
line voltage outputs

The recommended installation torque is 5.0 in·lb (0.6 N·m) for line voltage/mains connections and 5.0 in·lb (0.6 N·m) for the earth/ground connection.

Note: See the zone setup section for a list of compatible load types and instructions for programming the GRAFIK Eye QS with EcoSystem control unit to properly recognize them.

Notice: Risk of damage to unit. GRAFIK Eye QS with EcoSystem control units must be installed by a qualified electrician in accordance with all applicable regulations and building codes. Improper wiring can result in damage to control units or other equipment.

Note: To avoid overheating and possible damage to equipment, do not install control units to dim receptacles, motor-operated appliances, or fluorescent lighting not equipped with Lutron Hi-lume, Eco-10, Tu-Wire, EcoSystem electronic dimming ballasts, or other EcoSystem devices approved for your location. In dimmed magnetic low-voltage circuits, you can prevent transformer overheating and failure by avoiding excessively high current flow. Do not operate control units with any lamps removed or burned out; replace any burned out lamps immediately; use only transformers that incorporate thermal protection or fused primary windings. Control units are designed for residential and commercial use, for indoor use only.

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Wiring the GRAFIK Eye QS with EcoSystem Control Unit: EcoSystem Bus Wiring Details

EcoSystem bus wiring may be considered NEC® Class 1 or IEC PELV/ NEC® Class 2.

- NEC® Class 1: EcoSystem bus wiring may be run in the same conduit as mains voltage wiring to fixtures.
- IEC PELV/NEC® Class 2: EcoSystem bus wiring must be separated from all mains and NEC® Class 1 wiring.
- Consult applicable national and local codes for compliance.
- Lutron recommends using two different colors for E1 and E2 (EcoSystem bus) wires. This will prevent wiring mistakes in junction boxes where several different EcoSystem bus wires combine. Use the following instructions for wiring the EcoSystem bus.

- Each EcoSystem link can have only 1 GRAFIK Eye QS with EcoSystem control unit connected to it. No additional EcoSystem bus supplies can be on the link.
- Up to 64 EcoSystem devices can be connected to the EcoSystem link.
- No other devices may be connected to the EcoSystem link.

⚠ **WARNING! Shock hazard. May result in serious injury or death.** Do not wire live. Interrupt power via circuit breaker before wiring and servicing the EcoSystem bus supply.

Step 1: Use the wire size chart at right to determine which wire size to use based on the length of the EcoSystem bus.

Step 2: Wire the EcoSystem bus from terminal E1 and terminal E2 to all EcoSystem devices.

Step 3: If wiring the EcoSystem bus as IEC PELV/NEC® Class 2, maintain proper separation from mains and NEC® Class 1 wiring.

Step 4: Turn on circuit breaker to energize.

EcoSystem Bus	
18 V⎓	250 mA

Wiring Size and Bus Length

EcoSystem bus wires E1 and E2 are not polarity sensitive. EcoSystem bus length is limited by the wire gauge used for E1 and E2 as follows:

| Wire Gauge	Maximum EcoSystem Bus Length
12 AWG (4.0 mm^2)	2200 ft (671 m)
14 AWG (2.5 mm^2)	1400 ft (427 m)
16 AWG (1.5 mm^2)	900 ft (275 m)
18 AWG (1.0 mm^2)	570 ft (175 m)

Note: Some EcoSystem devices (ballasts, drivers, and interfaces) accept connections to daylight sensors and occupancy sensors. For instructions on installing and operating these devices, refer to their individual instruction sheets.

EcoSystem bus wiring cables (16 AWG/ 1.5 mm^2) are available from Lutron, part numbers C-CBL-216-GR-1 (non-plenum) and C-PCBL-216-CL-1 (plenum).

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For additional information, see the complete installation and operation guide at www.lutron.com/qs
GRAFIK Eye QS with EcoSystem Control Unit Quick Installation and Operation Guide   6

Wiring the GRAFIK Eye QS with EcoSystem Control Unit:
Overview of IEC PELV/NEC® Class 2 Wiring

IR Wiring
18 AWG (1.0 mm²)
each terminal
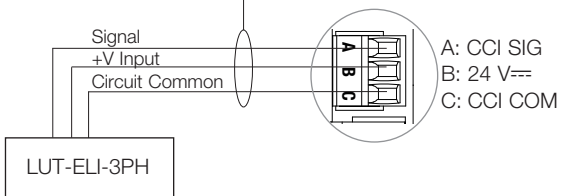
From external
IR connection
(by others)

1: IR DATA
2: IR COM
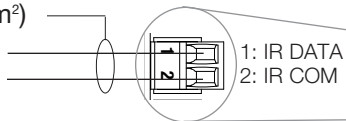
Contact Closure Input Wiring
24 V⎓ 50 mA
For settings, see the full installation
and operation guide at
www.lutron.com/qs.

A: CCI SIG
B: 24 V⎓
C: CCI COM
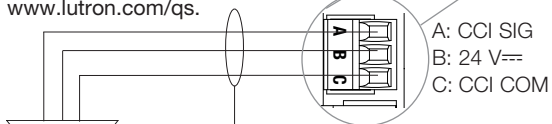
Example:
Occupancy sensor
(maximum 1)

18 AWG (1.0 mm²)
each terminal

Signal
+V Input
Circuit Common

A: CCI SIG
B: 24 V⎓
C: CCI COM

LUT-ELI-3PH

Example:
Emergency lighting interface (maximum 1)

Note: The GRAFIK Eye QS control unit must
be powered by a Normal/Emergency
distribution panel for proper ELI
operation. Refer to the LUT-ELI-3PH
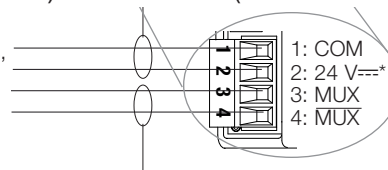Installation Guide for the complete
wiring diagram.
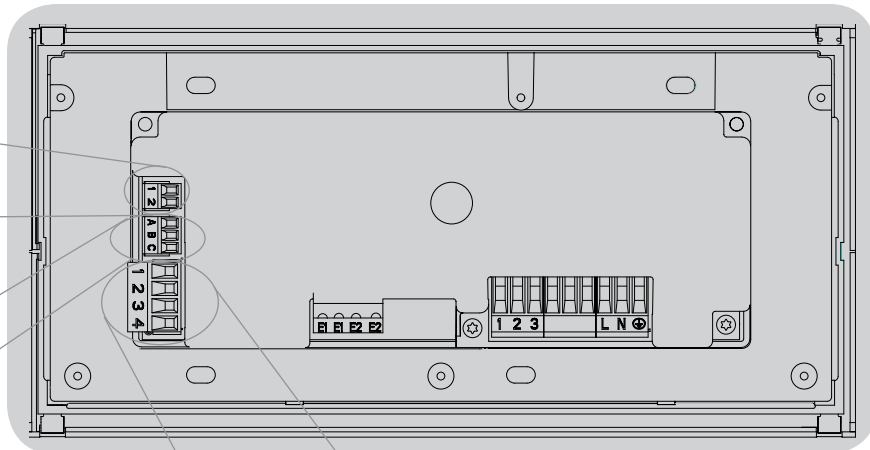
QS Link Control Wiring
24 V⎓ 100 mA

Common and power (terminals 1 and 2):
Two 18 AWG (1.0 mm²) each terminal (for link <500 ft/153 m)
Two 12 AWG (4.0 mm²) each terminal (for link 500-2000 ft/153-610 m)

To control stations,
shades, or other
GRAFIK Eye QS
control units

1: COM
2: 24 V⎓*
3: MUX
4: MUX

*Do not connect terminal 2
between any GRAFIK Eye QS
control unit and any other power
supply, including another GRAFIK
Eye QS control unit.
See "Power Group Wiring" for a
detailed wiring example.

Data (terminals 3 and 4):
Twisted, shielded pair 22 AWG (0.5 mm²)
each terminal

Note: Use appropriate wire connecting devices
as specified by local codes.

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For additional information, see the complete installation and operation guide at www.lutron.com/qs
GRAFIK Eye QS with EcoSystem Control Unit Quick Installation and Operation Guide   7

Wiring the GRAFIK Eye QS with EcoSystem Control Unit:
## QS Link Control Wiring Details

- System 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/mains wiring.
- Each terminal accepts up to two 18 AWG (1.0 mm²) wires.
- Total length of control link must not exceed 2000 ft (610 m).
- Make all connections in the control unit's wallbox.
- Wiring can be T-tapped or daisy-chained.
- IEC PELV/NEC® Class 2 24 V⎓ 150 mA.

System Limits

The QS wired communication link is limited to 100 devices or 100 zones.

The GRAFIK Eye QS control unit supplies 3 Power Draw Units (PDUs) on the QS link. Refer to the QS Link Power Draw Units specification submittal (Lutron PN 369405) for more information concerning Power Draw Units.

T-Tap Wiring Example
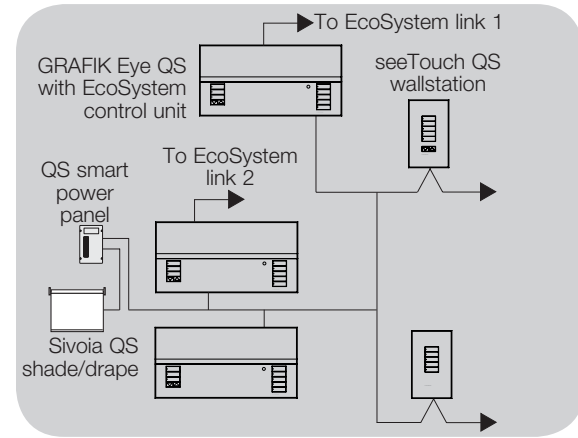
Daisy-Chain Wiring Example
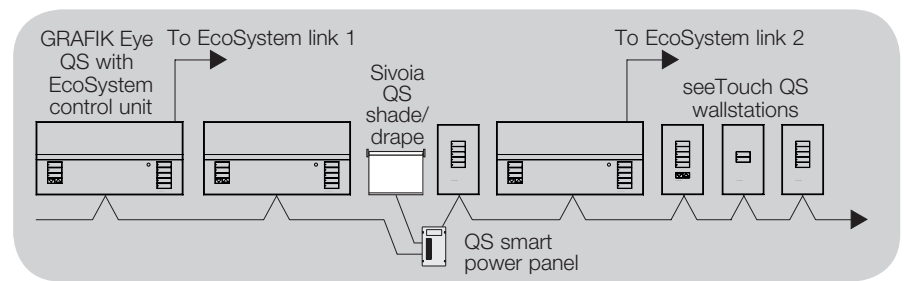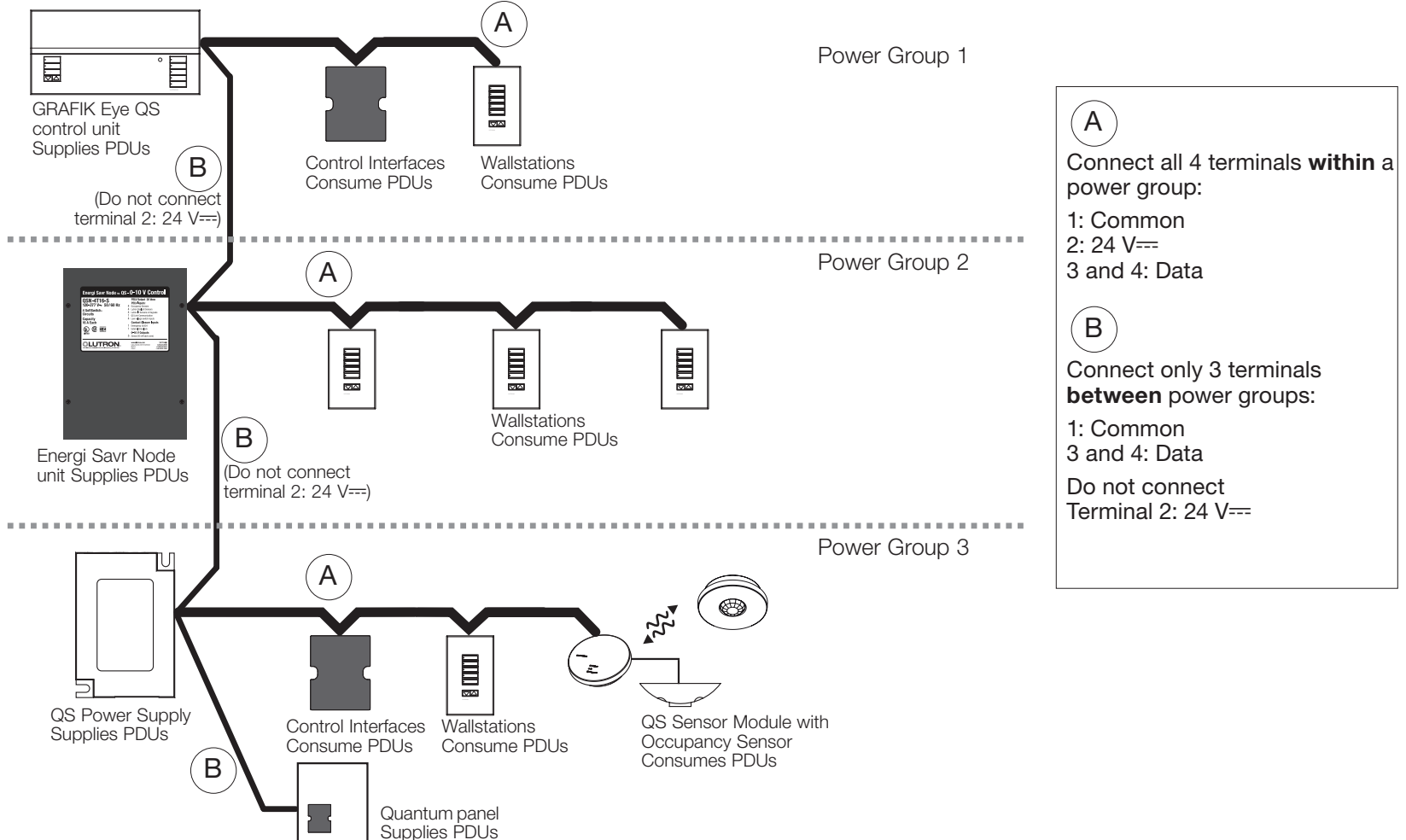

Wire Sizes (check compatibility in your area)

QS Link Wiring Length	Wire Gauge	Lutron Cable Part Number
Less than 500 ft (153 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 twisted, shielded pair 22 AWG (0.5 mm²)	
500 to 2000 ft (153 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 twisted, shielded pair 22 AWG (0.5 mm²)	

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For additional information, see the complete installation and operation guide at www.lutron.com/qs
GRAFIK Eye QS with EcoSystem Control Unit Quick Installation and Operation Guide   8

Wiring the GRAFIK Eye QS with EcoSystem Control Unit: Power Group Wiring Example

On the QS link, there are devices that supply power and devices that consume power. Each device has a specific number of Power Draw Units (PDUs) it either supplies or consumes. A Power Group consists of one device that supplies power and one or more devices that consume power; each Power Group may have only one power-supplying device. Refer to the QS Link Power Draw Units specification submittal (Lutron PN 369405) for more information concerning PDUs.

Within Power Groups on the QS link, connect all 4 terminals (1, 2, 3, and 4), shown by the letter A in the diagram. Between devices on the QS link that supply power, connect only terminals 1, 3, and 4 (NOT terminal 2), shown by the letter B on the diagram.

Wiring can be T-tapped or daisy-chained.

GRAFIK Eye QS control unit Supplies PDUs

Power Group 1

Control Interfaces Consume PDUs

Wallstations Consume PDUs

B (Do not connect terminal 2: 24 V⎓)

Energi Savr Node unit Supplies PDUs

Power Group 2

Wallstations Consume PDUs

B (Do not connect terminal 2: 24 V⎓)

QS Power Supply Supplies PDUs

Power Group 3

Control Interfaces Consume PDUs

Wallstations Consume PDUs

QS Sensor Module with Occupancy Sensor Consumes PDUs

Quantum panel Supplies PDUs

A Connect all 4 terminals **within** a power group:

1: Common
2: 24 V⎓
3 and 4: Data

B Connect only 3 terminals **between** power groups:

1: Common
3 and 4: Data

Do not connect
Terminal 2: 24 V⎓

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Completing Installation of the GRAFIK Eye QS Control Unit
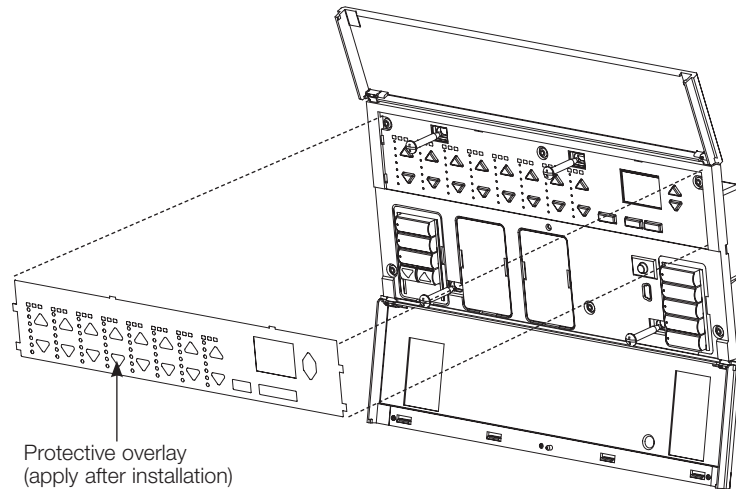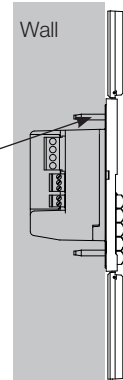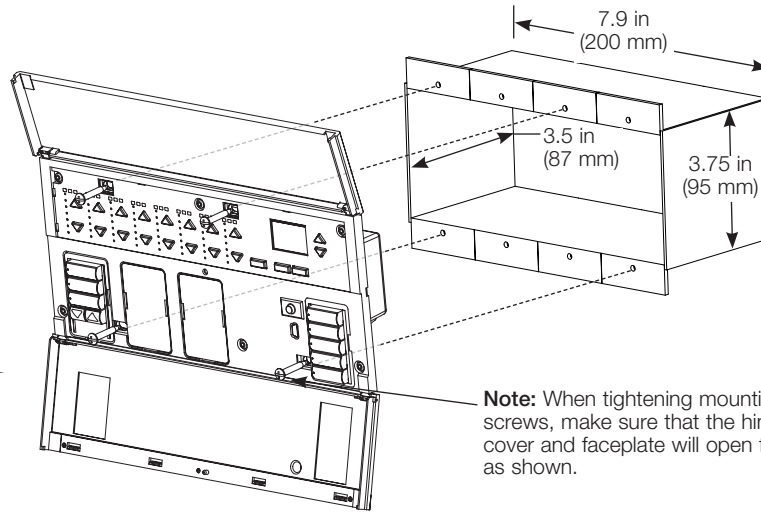
1. Mount the control unit in the wallbox as shown using the four screws provided.

   Note: Follow all local and national electrical codes when installing IEC PELV/NEC® Class 2 wiring with line voltage/mains wiring.

2. Verify installation:
   - Restore power.
   - Press the top scene button. The LED will light.
   - Press the zone raise and lower buttons. Make sure the control unit is dimming all connected loads.

3. Apply the protective overlay to the control unit.

7.9 in (200 mm)

3.5 in (87 mm)

3.75 in (95 mm)

Wall

Note: When tightening mounting screws, make sure that the hinged cover and faceplate will open fully, as shown.

Protective overlay (apply after installation)

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Programming Mode

Entering and Exiting Programming Mode

Main menu
Timeclock
Scene setup

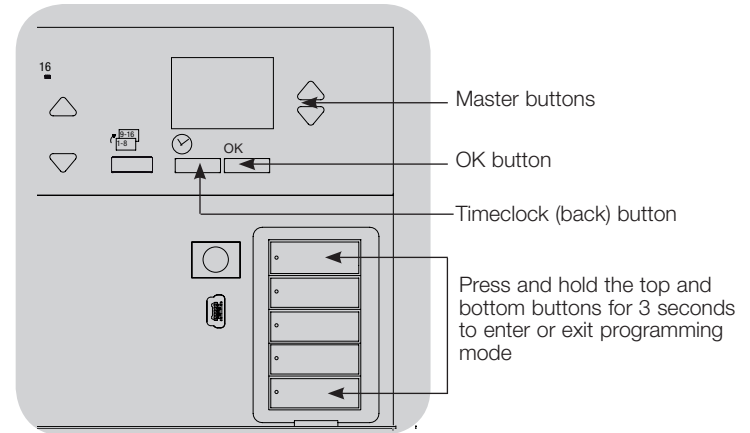**Entering programming mode:**
Press and hold the top and bottom scene buttons simultaneously for 3 seconds. The LEDs in the scene buttons will scroll from top to bottom, confirming that you are in programming mode, and the info screen will display the main menu.

Scene 1
Fade time
3 seconds

Exiting programming mode:
Press and hold the top and bottom scene buttons simultaneously for 3 seconds. The info screen will go to Scene 1.

Master buttons

OK button

Timeclock (back) button

Press and hold the top and bottom buttons for 3 seconds to enter or exit programming mode

Navigating Menus in Programming Mode

Master Buttons
The Master buttons allow you to move through the menu choices. The current choice is highlighted on the info screen.

OK Button
The OK button chooses the current highlighted menu choice. This will either take you to the next menu or accept a setting you have selected. When the screen displays a Yes/No question, the OK button is "Yes".

Timeclock Button
The timeclock button functions as a "back" button during programming mode. Pressing the timeclock button takes you back one step in the current menu. Pressing it repeatedly will eventually return you to the main menu, but will not exit programming mode. When the screen displays a Yes/No question, the Timeclock button is "No".

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Wireless Mode

Many models of the GRAFIK Eye QS control unit support wireless communication with other Lutron products. This feature allows for easy integration of wireless sensors, keypads, remotes, and shades for single-room wireless applications

Units supporting wireless communication are labeled "GRAFIK Eye QS Wireless" on the front label of the unit.

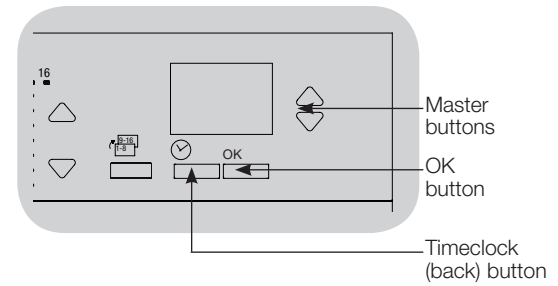The wireless feature of the GRAFIK Eye QS Wireless control unit has three (3) modes of operation.

- **Disabled:** Use for wired-only systems.
- **Enabled:** The GRAFIK Eye QS Wireless control unit will respond to any programming commands from nearby Lutron QS wireless (and compatible) products.
- **Ignore Programming (default):** The GRAFIK Eye QS Wireless control unit will only respond to normal operation commands from wireless devices associated while in Enabled mode.

Changing the wireless mode of the GRAFIK Eye QS Wireless control unit:
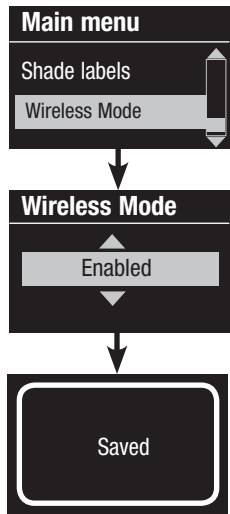
1. Enter programming mode.
2. Use the Master buttons to highlight "Wireless Mode" and press the OK button to accept.
3. Use the Master buttons to highlight the desired wireless mode, and press the OK button to accept.
4. The info screen will display a confirming "Saved" message.
5. Exit programming mode.

Note: The wireless signal has a range of 30 ft (9 m) through standard construction or 60 ft (18 m) line of sight.

Main menu

Shade labels

Wireless Mode

↓

Wireless Mode

▲

Enabled

▼

↓

Saved

Master buttons

OK button

Timeclock (back) button

FCC Information

Changes or modifications not expressly approved by Lutron Electronics Co. could void the user's authority to operate this equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. Operation is subject to the following: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

These limits are designed to provide reasonable protection against harmful interference in a residential and commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Zone Setup

Assigning Load Types
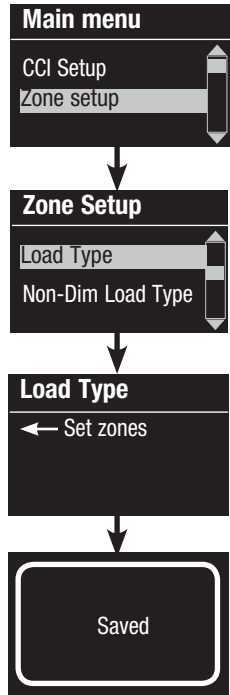
Main menu
CCI Setup
Zone setup

↓

Zone Setup
Load Type
Non-Dim Load Type

↓

Load Type
← Set zones

↓

Saved

1. Enter programming mode.
2. Use the Master buttons to highlight "Zone setup" and press the OK button to accept.
3. Use the Master buttons to highlight "Load type". Press the OK button to accept. See "Setting Load Types" table on the next page.
4. Use the zone raise/lower buttons to choose the load type for that zone. See the list on the next page for supported load types. Press the OK button to accept.
5. The info screen will confirm that your load type has been saved.
6. Exit programming mode.

Master buttons
OK button

Use the zone raise/lower buttons to choose the load type for that zone.
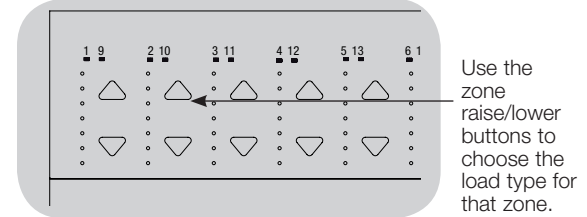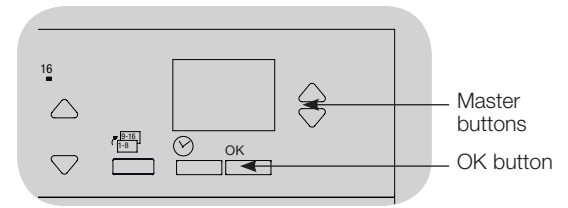
Assigning Non-Dim Load Type

Zones assigned to non-dim loads have three available configurations:

Main menu
CCI Setup
Zone setup

↓

Zone Setup
Load Type
Non-Dim Load Type
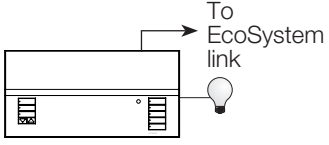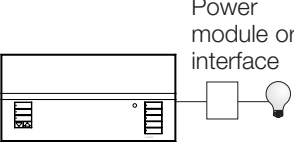
↓

Load Type
← Set zones

↓

Saved

- LOFO: Last On, First Off
- FOFO: First On, First Off
- FOLO: First On, Last Off

Scenes made up of both dim and non-dim load types will toggle the non-dim loads before the dim loads in a "First" on/off configuration, and after the dim loads in a "Last" on/off configuration.
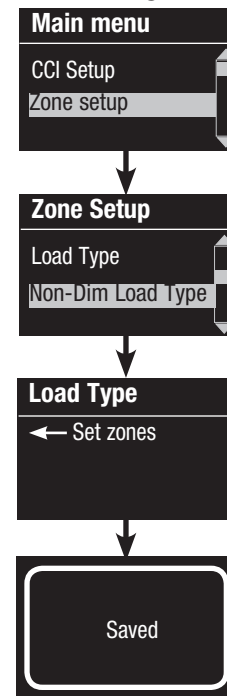
1. Enter programming mode.
2. Use the Master buttons to highlight "Zone setup" and press the OK button to accept.
3. Use the Master buttons to highlight "Non-Dim Load type". Press the OK button to accept. See "Setting Load Types" table on the next page.
4. Use the zone raise/lower buttons to choose the non-dim load type for that zone. (Zones not programmed as non-dim will be displayed as Unaffected.) Press the OK button to accept.
5. The info screen will confirm that your load type has been saved.
6. Exit programming mode.

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Zone Setup *(continued)*

Setting Load Types		
	Direct control via GRAFIK Eye QS control unit To EcoSystem link	**Control via power module or interface** Power module or interface
Fixture load type	**Choose this load type from the menu on the GRAFIK Eye QS control unit:**	
Incandescent	Incandescent	Power module
MLV (magnetic low-voltage)	MLV	Power module
ELV (electronic low-voltage)	—	Power module
Hi-Lume/Eco-10 ballast	—	Fluorescent module
Hi-lume 2-wire LTE LED driver	Fluorescent module	—
Hi-lume 3-wire L3D LED driver	—	Fluorescent module
0-10 V	—	Fluorescent module
Non-dim lighting loads	Non-dim	Non-dim
Neon/Cold cathode	Neon, CC	Neon, CC
Tu-Wire	Tu-Wire	Tu-Wire
Advance Mark X	Tu-Wire	Tu-Wire
EcoSystem	Digital load	—
DMX	—	DMX
RGB/CMY DMX	—	RGB/CMY DMX
EcoSystem switching (e.g., XPJ)	Non-dim digital	—
Cree LR4/LR6 LED	Cree LR4/LR6 LED	Fluorescent module
LED	Incandescent*	Power Module
EcoSystem	Digital load	—
DMX	—	DMX
RGB/CMY DMX	—	RGB/CMY DMX
EcoSystem switching (e.g., XPJ)	Non-dim digital	—

(Rows "Incandescent" through "LED" are grouped under **Zones 1 – 3**; rows "EcoSystem" through the final "EcoSystem switching (e.g., XPJ)" are grouped under **Zones 4 – 16**.)

Load Type Notes

- All electronic low-voltage (ELV) lighting used with an interface must be rated for reverse phase control dimming. Before installing an ELV light source, verify with the manufacturer that their transformer can be dimmed. When dimming, an ELV interface (e.g., PHPM-PA-DV-WH) must be used with the control unit.
- For all DMX or RGB/CMY DMX lighting, an external DMX interface (e.g., QSE-CI-DMX) must be used with the control unit.
- Maximum total lighting load for Lutron Tu-Wire and Advance Mark X electronic dimming ballasts (120 V$\sim$ only) must not exceed 6 A per zone or 16 A per unit.
- Maximum total lighting load for LTE LED drivers must not exceed 10 LED drivers per zone or 26 LED drivers per unit.

For non-EcoSystem loads:

- Not all zones must be connected; however, connected zones must have a minimum load:
  120 V$\sim$: 25 W
  220 - 240 V$\sim$: 40 W
- Maximum zone loads:
  120 V$\sim$: 800 W
  220 - 240 V$\sim$: 1200 W
- Maximum total lighting load for magnetic low-voltage (MLV) varies by input voltage:
  120 V$\sim$: 800 VA / 600 W
 220 - 240 V$\sim$: 1200 VA / 960 W

* Use incandescent load type unless otherwise specified in the LED product selection tool available at www.lutron.com/ledtool.

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EcoSystem Setup

After EcoSystem devices are wired and powered, they must be addressed before the system can control them. The "Build System" command automates this process.

Note: All existing EcoSystem programming will be deleted when the "Build System" command is run, including EcoSystem sensor programming on the GRAFIK Eye QS control unit.

Building the System
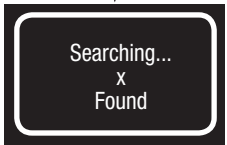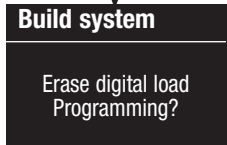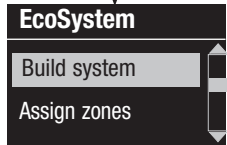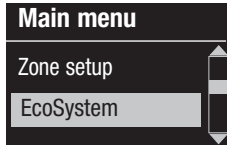
1. Enter programming mode.
2. Use the Master buttons to highlight "EcoSystem" and press the OK button to accept.
3. Use the Master buttons to highlight "Build system" and press the OK button to accept.
4. Press the OK button to erase all current programming, reset and address EcoSystem devices, and find sensors on the system.
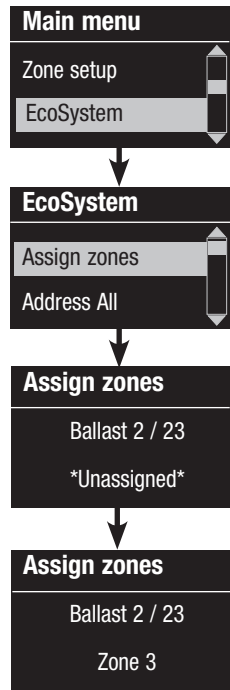5. Exit programming mode.

   Note: After running "Build System", Zone 4 will control all EcoSystem devices for diagnostics and verification of wiring. (This feature is disabled once any of the addressed devices are assigned to a zone on the GRAFIK Eye QS control unit.) Use the Zone 4 raise/lower buttons to verify that all devices are correctly addressed. If a device does not respond, repeat the "Build System" command and/or check the wiring.

☀️**LUTRON**
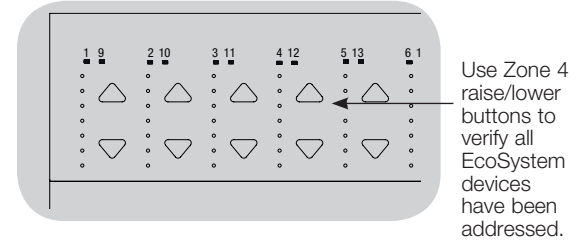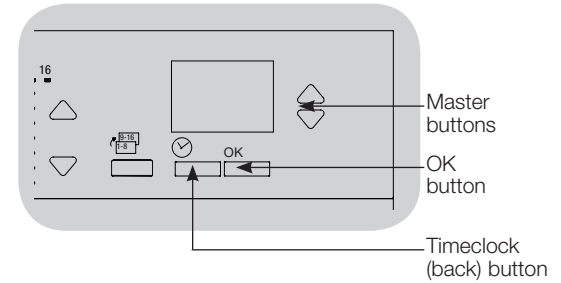
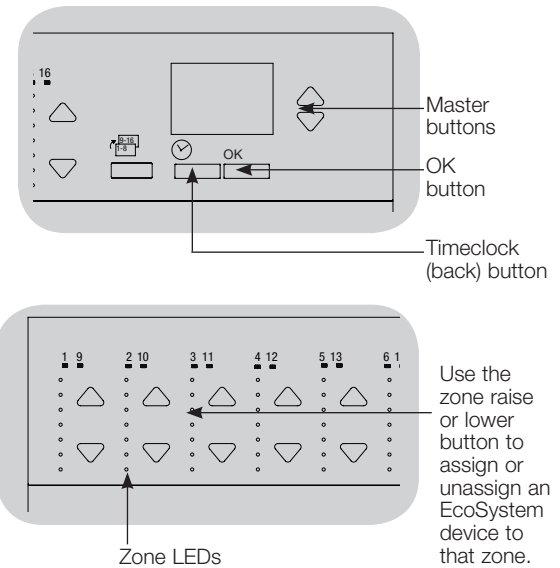# EcoSystem Setup

Assigning/Unassigning an EcoSystem Device to a Zone

EcoSystem devices must be addressed on the system (see previous page) before assigning or unassigning to a zone.

Master buttons

OK button

Timeclock (back) button

Main menu

Zone setup

EcoSystem

↓

EcoSystem

Assign zones

Address All

↓

Assign zones

Ballast 2 / 23

Unassigned

↓

Assign zones

Ballast 2 / 23

Zone 3

1. Enter programming mode.
2. Use the Master buttons to highlight "EcoSystem" and press the OK button to accept.
3. Use the Master buttons to highlight "Assign zones" and press the OK button to accept.
4. Use the Master buttons to scroll through the EcoSystem devices on the link. The selected device will flash, and the info screen will display the device number and the number of devices on the link. If the device is currently assigned to a zone, the zone number will display at the bottom of the screen and the LEDs for the zone will go on; otherwise, the info screen will display "*Unassigned*".
   • Press the zone raise button to <u>assign</u> the device to that zone.
   • Press the zone lower button to <u>unassign</u> the device to that zone.
5. Press the timeclock (back) button to return to the EcoSystem menu. EcoSystem devices will return to normal levels.
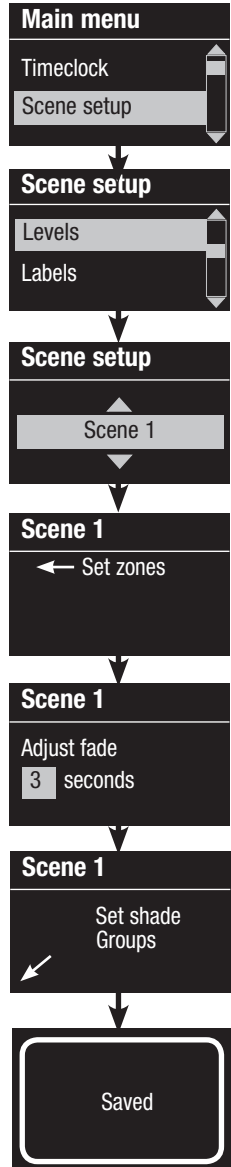6. Exit programming mode.

Notes
• Devices that were previously assigned to a zone will be removed from the old zone and assigned to the new zone (each device can be assigned to only 1 zone at a time).
• Devices can be assigned only to zones set to EcoSystem load type.
• Refer to the Zone Setup section for instructions on changing load type.

Use the zone raise or lower button to assign or unassign an EcoSystem device to that zone.

Zone LEDs

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Scene Setup

Setting Zone Levels, Fade Rates, and Shade Group Actions

Main menu

Timeclock
Scene setup

↓

Scene setup

Levels
Labels

↓

Scene setup

▲
Scene 1
▼

↓

Scene 1

← Set zones

↓

Scene 1

Adjust fade
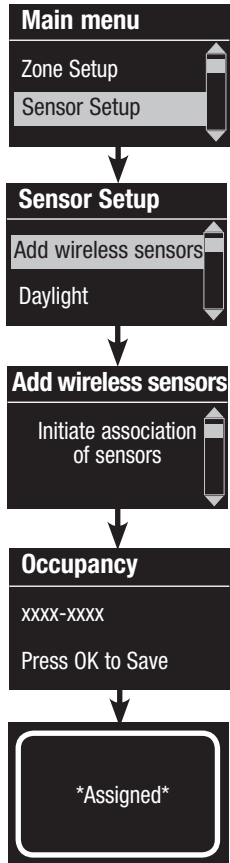3 seconds

↓

Scene 1

Set shade
Groups
↙

↓

Saved

1. Enter programming mode.
2. Use the Master buttons to highlight "Scene setup" and press the OK button to accept.
3. Use the Master buttons to highlight "Levels" to adjust lighting and/or shade levels. Press the OK button to accept. Use the Master buttons to highlight the scene number of your desired scene. Press the OK button to accept.
4. Set each zone to the desired light level for this scene using the zone raise/lower buttons. The info screen will display the zone and percentage as you adjust it.

   To set a zone as unaffected, lower the light levels all the way to off, then hold the zone lower button for 3 seconds. The screen will display "---" and the three middle LEDs for the zone will be lit to indicate this zone is unaffected by the scene (the zone will not change when this scene is initiated).

   When all zones are at the desired level, press the OK button to accept.
5. Use the Master buttons to set the fade time for this scene. Press the OK button to accept.
6. **Note:** This step is applicable only if you have shades on your system. If you do not have or do not wish to set shade groups for this scene, press the OK button to skip this step.

   Set each shade group to the desired level for this scene. When all shade groups are at the desired level, press the OK button to accept.
   For shade programming, see the full installation and operation guide at www.lutron.com/qs.
7. The info screen will confirm that your scene has been saved.
8. Exit programming mode.

Master buttons

OK button

Timeclock (back) button

Shade button group

Zone raise

Zone lower

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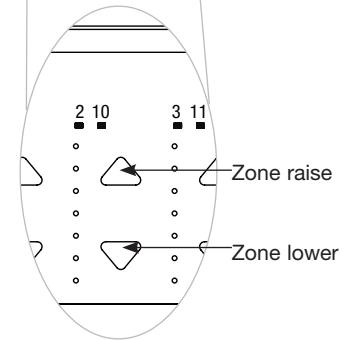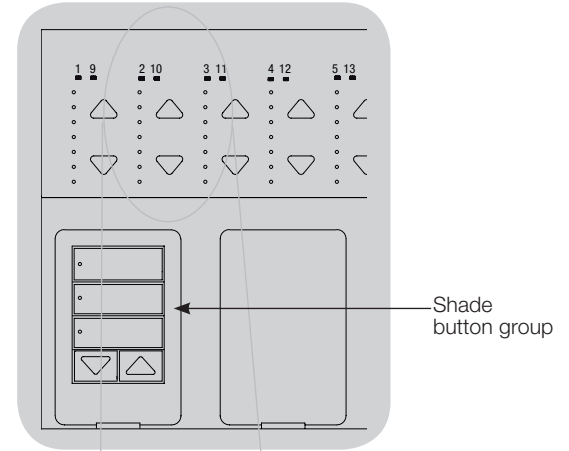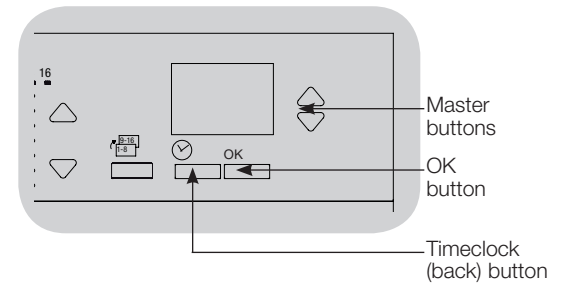
Occupancy Sensor Setup

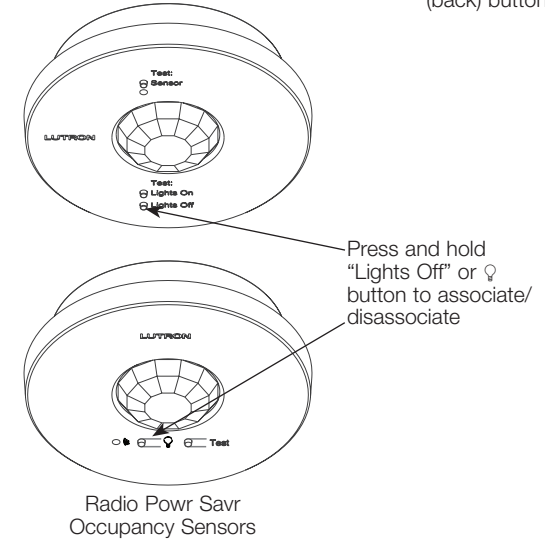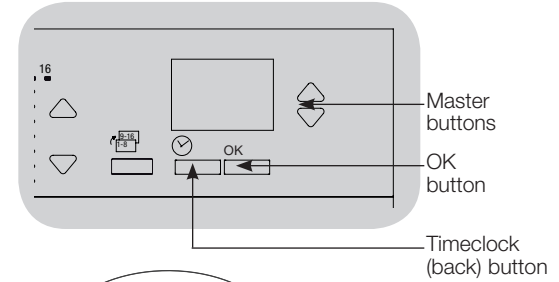**Associating wireless occupancy sensors and GRAFIK Eye QS Wireless control units (for wireless enabled units only):**

Main menu
Zone Setup
Sensor Setup

↓

Sensor Setup
Add wireless sensors
Daylight

↓

Add wireless sensors
Initiate association of sensors

↓

Occupancy
xxxx-xxxx
Press OK to Save

↓

Assigned

1. Make sure the wireless mode of the GRAFIK Eye QS control unit is "Enabled".
2. Enter programming mode.
3. Use the Master buttons to highlight "Sensor setup" and press the OK button to accept.
4. Use the Master buttons to highlight "Add wireless sensors" and press the OK button to accept.
5. Press and hold the "Lights Off" button (💡 on some sensors) on the occupancy sensor for 6 seconds. The lens will start flashing and the info screen on the GRAFIK Eye QS Wireless control unit will display the sensor's serial number.
6. Press the OK button on the GRAFIK Eye QS control unit. A screen will confirm that the sensor has been assigned. (To disassociate a wireless occupancy sensor from the GRAFIK Eye QS control unit, Refer to the Radio Powr Savr occupancy sensor install guide to return the sensor to its "out-of-box" functionality. Doing so will remove its programming from the GRAFIK Eye QS control unit.)
7. Repeat the above steps for all desired sensors.
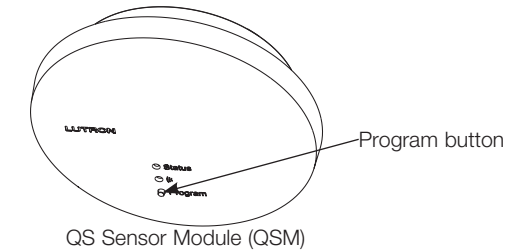8. Exit programming mode.

Associating wireless occupancy sensors through QS Sensor Modules (QSM):

1. Press and hold the Program button on the QSM for 3 seconds to enter programming mode. There will be 1 audible beep and the Status LED will begin flashing. The info screen on the GRAFIK Eye QS control unit will display that the QSM is in programming mode.
2. Press and hold the "Lights Off" button (💡 on some sensors) on the occupancy sensor for 6 seconds. There will be 3 audible beeps from the QSM to verify association.
3. Press and hold the Program button on the QSM for 3 seconds to exit programming mode.

   Note: The wireless signal has a range of 30 ft (9 m) through standard construction or 60 ft (18 m) line of sight.

Master buttons
OK button
Timeclock (back) button

Press and hold "Lights Off" or 💡 button to associate/disassociate

Radio Powr Savr Occupancy Sensors

Program button

QS Sensor Module (QSM)

☀️**LUTRON**
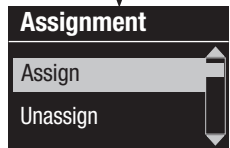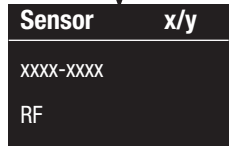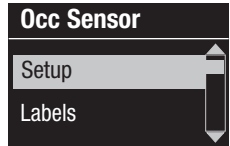
Occupancy Sensor Setup

Scene Mode

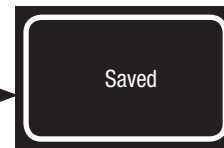This step allows you to assign up to four occupancy sensors to the GRAFIK Eye QS control unit.

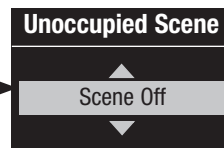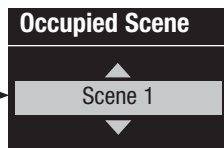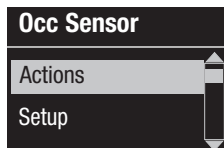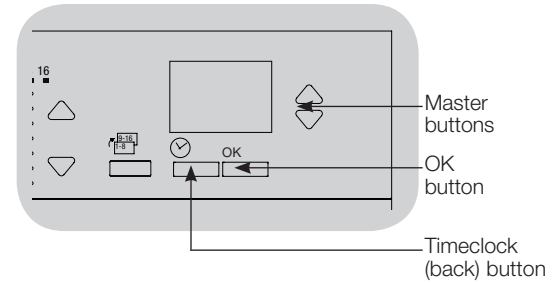Master buttons
OK button
Timeclock (back) button

Selecting Sensors

1. If not already done, associate occupancy sensors and set to "Scene Mode".
2. Use the Master buttons to highlight "Setup" and press the OK button to accept. The info screen will display "Searching" while the unit detects available occupancy sensors.
3. Use the Master buttons to scroll through the list of available occupancy sensors. When the desired sensor is displayed, press the OK button to select it. Then choose "Assign" or "Unassign" from the following menu and press OK. Once a sensor has been assigned, it will appear with an asterisk (*) in the sensor list. Repeat for additional sensors.

   Note: If wireless sensors are not found, verify that they are associated correctly.
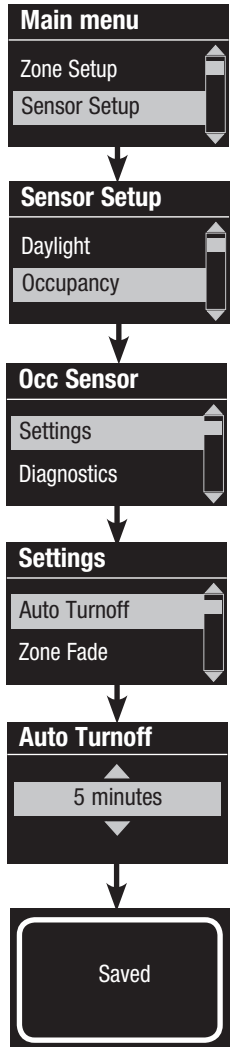
Setting the Sensor Action

1. Press the Timeclock (back) button to return to the Occ Sensor screen. Use the Master buttons to highlight "Actions" and press the OK button. By default, the occupied scene is set to "No Action" and the unoccupied scene is set to "Scene Off".
2. Use the Master buttons to highlight the scene you wish to use for occupied status and press the OK button to accept. Repeat for the scene you wish to use for unoccupied status. Press the OK button to accept.
3. Exit programming mode.

Occ Sensor
Setup
Labels

↓

Searching

↓

Sensor   x/y
xxxx-xxxx
RF

↓

Assignment
Assign
Unassign

↓

Assigned

↓

Sensor   *x/y
xxxx-xxxx
RF

→

Occ Sensor
Actions
Setup

→

Occupied Scene
▲
Scene 1
▼

→

Unoccupied Scene
▲
Scene Off
▼

→

Saved

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Occupancy Sensor Setup

Configuring Occupancy Sensor Settings (optional)

Main menu

Zone Setup

Sensor Setup

↓

Sensor Setup

Daylight

Occupancy

↓

Occ Sensor

Settings

Diagnostics

↓

Settings

Auto Turnoff

Zone Fade

↓

Auto Turnoff

▲

5 minutes

▼

↓

Saved

Occupancy Sensor Settings

Note: These settings affect all sensors assigned to the GRAFIK Eye QS control unit.

Grace Period: If the GRAFIK Eye QS control unit is transitioning to an unoccupied state, motion detected within the grace period will return the lights to the previously occupied level. Range: 15 – 30 seconds (default 15 seconds).

Vacancy Delay: An additional time delay after vacancy is detected and before unoccupied action occurs. Use when occupancy sensor does not provide sufficient delay. Range: 0 – 30 minutes (default 0 minutes).

Auto Turnoff: If lights assigned to an occupancy sensor are turned on manually without the sensor reporting occupancy, the GRAFIK Eye QS control unit can be set to automatically turn off the lights after a set time delay. Disable this feature by setting the time delay to 0 (disabled). Range: Disabled or 1 – 30 minutes (default Disabled).

Zone Fade: When in Zone Mode, lights can be set to fade to the unoccupied levels over this period of time. Range: 0 – 59 seconds; 1 – 10 minutes (default 10 seconds).

Configuring the Sensor Settings:

1. Enter programming mode.
2. Use the Master buttons to highlight "Sensor Setup" and press the OK button to accept.
3. Use the Master buttons to highlight "Occupancy" and press the OK button to accept.
4. Use the Master buttons to highlight "Settings" and press the OK button to accept.
5. Use the Master buttons to highlight the setting you wish to configure. Press the OK button to accept.
6. Use the Master buttons to adjust the value of the selected setting. Press the OK button to accept.
7. The info screen will confirm that your setting has been saved.
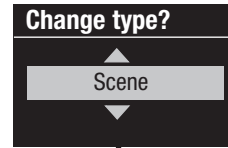8. Exit programming mode.

Master buttons

OK button

Timeclock (back) button

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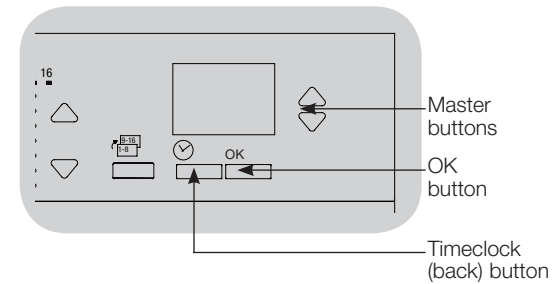
Pico Wireless Control Setup

Associating the Pico wireless control with a GRAFIK Eye QS Wireless control unit:
(for wireless enabled GRAFIK Eye QS control units only)

Pico

Change type?

Press OK

⬇

Change type?
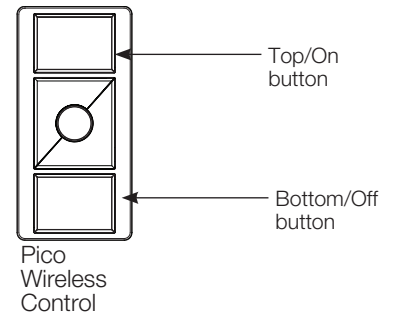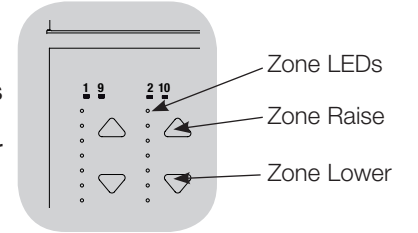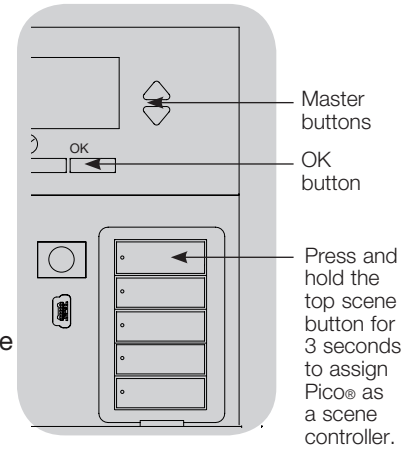
▲

Zone

▼

OR

Change type?

▲

Scene

▼

⬇

Saved
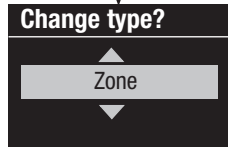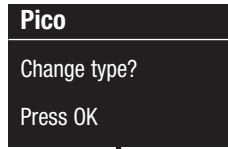
1. Make sure the wireless mode of the GRAFIK Eye QS control unit is "Enabled".
2. On the Pico wireless control, press and hold the top (on) and bottom (off) buttons for 3 seconds. The info screen on the GRAFIK Eye QS control unit will display the Pico options. Press the OK button on the GRAFIK Eye QS control unit to select the desired operation type for the Pico.
3a. To assign the Pico wireless control as a zone controller, use the Master buttons to select "Zone" and press the OK button to accept. Use the zone raise/lower buttons for a zone to select a desired preset level, and then press the zone raise and lower buttons simultaneously for 1 second (until the zone LEDs flash at the programmed preset level). Repeat for all zones you wish to control with the Pico wireless control.

OR

3b. To assign the Pico wireless control as a scene controller, use the Master buttons to select "Scene" and press the OK button to accept. Press and hold the top scene button on the GRAFIK Eye QS control unit for 3 seconds (until the scene LEDs flash).
4. On the Pico wireless control, press and hold the top and bottom buttons for 3 seconds until the LEDs on the GRAFIK Eye QS control unit stop flashing.

   Note: The wireless signal has a range of 30 ft (9 m) through standard construction or 60 ft (18 m) line of sight.

Master buttons

OK button

Press and hold the top scene button for 3 seconds to assign Pico® as a scene controller.

Zone LEDs

Zone Raise

Zone Lower

Top/On button

Bottom/Off button

Pico Wireless Control

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Troubleshooting

Symptom	Possible Causes	Solution
Unit does not power up Unit does not control loads Circuit breaker is tripping	Circuit Breaker is off	Switch circuit breaker on
	Miswire	Verify wiring to unit and loads
	System short circuited	Find and correct shorts
	System overload	Verify zone/unit loading is within ratings (see Zone Setup section)
Zone control does not work Zone control yields incorrect results	Miswire	Make sure loads are connected to the right zones
	Loose or disconnected wire	Connect zone wires to loads
	Burned out lamps	Replace bad lamps
	Incorrect load type selected	Assign the zone to the appropriate load type (see Zone Setup section)
	Dimming limits set incorrectly	Adjust High End/Low End values (see Zone Setup section)
One or more zones are always "full on" and zone intensity is not adjustable Zone control affects more than one zone	Miswire	Make sure loads are connected to the right zones
	Shorted line output	Check wiring; if wiring is correct, call Lutron Customer Assistance
Faceplate is warm	Normal operation	Solid-state controls dissipate about 2% of the connected load as heat. No action is required
Unit does not allow scene change or zone adjustments	Unit is in wrong save mode	Change to correct save mode
	QS device in system has locked the unit	Check programming and state of QS devices
Cannot program fade time from "Scene Off"	Fade time from "Scene Off" is not programmable; can only program fade time to "Scene Off"	Fade time from "Scene Off" is always 3 seconds
Integral (direct-wired) contact closure input does not work	Miswire	Check wiring on contact closure input
	Input CCI signal is not received	Verify the input device is operating properly
	Unit is in wrong CCI mode and/or type	Change to correct CCI mode and/or type for your application
QS devices on link are not working	Miswire or loose connection on QS link	Verify QS link wiring to all devices
	QS device is not associated	Place the QS device into programming mode, and hold the "Scene 1" button on the GRAFIK Eye QS control unit to associate the two devices
	QS device programming is incorrect	Verify the functionality and programming on the QS devices
Timeclock events do not occur Sunrise or sunset events do not occur at the correct time	Timeclock is disabled	Enable the timeclock
	Time/date is not set correctly	Set the time/date
	Location is not set correctly	Set the latitude and longitude of the unit's location
	Holiday schedule is in effect	Normal schedule will resume when the holiday ends

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Troubleshooting: EcoSystem Functions

Symptom	Possible Causes	Solution
"Build System" command does not find EcoSystem loads	E1 and/or E2 are miswired or not connected	Check wiring; if wiring is correct, call Lutron Customer Assistance
Cannot add an EcoSystem device to a zone after a "Build System" or "Address all" command has been run	Zone is not set to Digital	Set the zone to Digital
EcoSystem device at full brightness cannot be controlled	E1 and E2 are not connected	Check E1 and E2 connections on the back of the GRAFIK Eye QS with EcoSystem control unit
	EcoSystem link is overloaded	Reduce number of EcoSystem devices on link to 64 or fewer. Check voltage: Minimum voltage of 12 V===
EcoSystem devices do not flash when running the "Build System" command	EcoSystem devices are not addressed EcoSystem devices are miswired	Address EcoSystem devices Check E1 and E2 wiring, and power wiring to EcoSystem devices
EcoSystem device is not affected by a zone level change	EcoSystem device is not addressed	Run the "Address all" command and assign the EcoSystem device to a zone
	EcoSystem device is not assigned to a zone	Assign EcoSystem device to a zone
System does not recognize sensors connected to a EcoSystem device Sensor wired directly to an EcoSystem device is not found during sensor setup	Sensor is miswired	Check sensor wiring (refer to the sensor manufacturer's instructions)
	Sensor was added after "Build System" command was run or EcoSystem device may not have detected sensor	Create motion (occupancy) or induce light (daylight) within the sensor's range and run the appropriate "Sensor Setup" command
EcoSystem device light levels can be lowered, but not raised to full On	EcoSystem device is being affected by the daylight sensors	Recalibrate the associated daylight sensors

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Warranty

Lutron Electronics Co., Inc.
One Year Limited Warranty

For a period of one year from the date of purchase, and subject to the exclusions and restrictions described below, Lutron warrants each new unit to be free from manufacturing defects. Lutron will, at its option, either repair the defective unit or issue a credit equal to the purchase price of the defective unit to the Customer against the purchase price of comparable replacement part purchased from Lutron. Replacements for the unit provided by Lutron or, at its sole discretion, an approved vendor may be new, used, repaired, reconditioned, and/or made by a different manufacturer.

If the unit is commissioned by Lutron or a Lutron approved third party as part of a Lutron commissioned lighting control system, the term of this warranty will be extended, and any credits against the cost of replacement parts will be prorated, in accordance with the warranty issued with the commissioned system, except that the term of the unit's warranty term will be measured from the date of its commissioning.

EXCLUSIONS AND RESTRICTIONS

This Warranty does not cover, and Lutron and its suppliers are not responsible for:

1. Damage, malfunction or inoperability diagnosed by Lutron or a Lutron approved third party as caused by normal wear and tear, abuse, misuse, incorrect installation, neglect, accident, interference or environmental factors, such as (a) use of incorrect line voltages, fuses or circuit breakers; (b) failure to install, maintain and operate the unit pursuant to the operating instructions provided by Lutron and the applicable provisions of the National Electrical Code and of the Safety Standards of Underwriter's Laboratories; (c) use of incompatible devices or accessories; (d) improper or insufficient ventilation; (e) unauthorized repairs or adjustments; (f) vandalism; or (g) an act of God, such as fire, lightning, flooding, tornado, earthquake, hurricane or other problems beyond Lutron's control.

2. On-site labor costs to diagnose issues with, and to remove, repair, replace, adjust, reinstall and/or reprogram the unit or any of its components.

3. Equipment and parts external to the unit, including those sold or supplied by Lutron (which may be covered by a separate warranty).

4. The cost of repairing or replacing other property that is damaged when the unit does not work properly, even if the damage was caused by the unit.

EXCEPT AS EXPRESSLY PROVIDED IN THIS WARRANTY, THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF ANY TYPE, INCLUDING ANY IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY. LUTRON DOES NOT WARRANT THAT THE UNIT WILL OPERATE WITHOUT INTERRUPTION OR BE ERROR FREE.

NO LUTRON AGENT, EMPLOYEE OR REPRESENTATIVE HAS ANY AUTHORITY TO BIND LUTRON TO ANY AFFIRMATION, REPRESENTATION OR WARRANTY CONCERNING THE UNIT. UNLESS AN AFFIRMATION, REPRESENTATION OR WARRANTY MADE BY AN AGENT, EMPLOYEE OR REPRESENTATIVE IS SPECIFICALLY INCLUDED HEREIN, OR IN STANDARD PRINTED MATERIALS PROVIDED BY LUTRON, IT DOES NOT FORM A PART OF THE BASIS OF ANY BARGAIN BETWEEN LUTRON AND CUSTOMER AND WILL NOT IN ANY WAY BE ENFORCEABLE BY CUSTOMER.

IN NO EVENT WILL LUTRON OR ANY OTHER PARTY BE LIABLE FOR EXEMPLARY, CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFITS, CONFIDENTIAL OR OTHER INFORMATION, OR PRIVACY; BUSINESS INTERRUPTION; PERSONAL INJURY; FAILURE TO MEET ANY DUTY, INCLUDING OF GOOD FAITH OR OF REASONABLE CARE; NEGLIGENCE, OR ANY OTHER PECUNIARY OR OTHER LOSS WHATSOEVER), NOR FOR ANY REPAIR WORK UNDERTAKEN WITHOUT LUTRON'S WRITTEN CONSENT ARISING OUT OF OR IN ANY WAY RELATED TO THE INSTALLATION, DEINSTALLATION, USE OF OR INABILITY TO USE THE UNIT OR OTHERWISE UNDER OR IN CONNECTION WITH ANY PROVISION OF THIS WARRANTY, OR ANY AGREEMENT INCORPORATING THIS WARRANTY, EVEN IN THE EVENT OF THE FAULT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, BREACH OF CONTRACT OR BREACH OF WARRANTY OF LUTRON OR ANY SUPPLIER, AND EVEN IF LUTRON OR ANY OTHER PARTY WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

NOTWITHSTANDING ANY DAMAGES THAT CUSTOMER MIGHT INCUR FOR ANY REASON WHATSOEVER (INCLUDING, WITHOUT LIMITATION, ALL DIRECT DAMAGES AND ALL DAMAGES LISTED ABOVE), THE ENTIRE LIABILITY OF LUTRON AND OF ALL OTHER PARTIES UNDER THIS WARRANTY ON ANY CLAIM FOR DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE MANUFACTURE, SALE, INSTALLATION, DELIVERY, USE, REPAIR, OR REPLACEMENT OF THE UNIT, OR ANY AGREEMENT INCORPORATING THIS WARRANTY, AND CUSTOMER'S SOLE REMEDY FOR THE FOREGOING, WILL BE LIMITED TO THE AMOUNT PAID TO LUTRON BY CUSTOMER FOR THE UNIT. THE FOREGOING LIMITATIONS, EXCLUSIONS AND DISCLAIMERS WILL APPLY TO THE MAXIMUM EXTENT ALLOWED BY APPLICABLE LAW, EVEN IF ANY REMEDY FAILS ITS ESSENTIAL PURPOSE.

TO MAKE A WARRANTY CLAIM

To make a warranty claim, promptly notify Lutron within the warranty period described above by calling Lutron Customer Assistance at 1.844.LUTRON1. Lutron, in its sole discretion, will determine what action, if any, is required under this warranty. To better enable Lutron to address a warranty claim, have the unit's serial and model numbers available when making the call. If Lutron, in its sole discretion, determines that an on-site visit or other remedial action is necessary, Lutron may send a Lutron Services Co. representative or coordinate the dispatch of a representative from a Lutron approved vendor to Customer's site, and/or coordinate a warranty service call between Customer and a Lutron approved vendor.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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Contact Information

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