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#### LIMITED WARRANTY

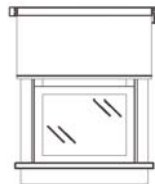
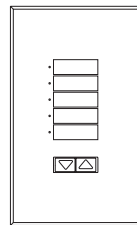
Lutron will, at its option, repair or replace any unit that is defective in materials or manufacture within one year after purchase. For warranty service, return unit to place of purchase or mail to Lutron at 7200 Suter Rd., Coopersburg, PA 18036-1299, postage pre-paid.

**This warranty is in lieu of all other express warranties, and the implied warranty of merchantability is limited to one year from purchase. This warranty does not cover the cost of installation, removal, or reinstallation, or damage resulting from misuse, abuse, or improper or incorrect repair, or damage from improper wiring or installation. This warranty does not cover incidental or consequential damages. Lutron's liability on any claim for damages arising out of or in connection with the manufacture, sale, installation, delivery, or use of the unit shall never exceed the purchase price of the unit.**

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GRAFIK Eye.



seeTouch™

# GRAFIK Systems Sivoia QED® Controller

for use with GRAFIK Eye® 3000/4000  
Series Systems

☑ SG-SVC

for use with GRAFIK 5000™ GRAFIK 6000®  
and GRAFIK 7000™ Series Systems

☑ SO-SVC

#### Software Note:

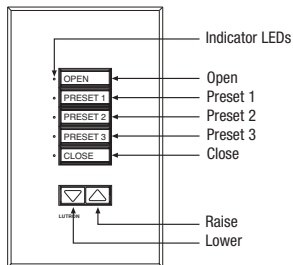
For *GRAFIK Eye* 3000/4000 Series Systems: *GRAFIK Eye* Control Unit Software revision 7-1 or greater.

For *GRAFIK5000/GRAFIK6000/GRAFIK7000* Series Systems: The operating code of the Central Processor must be o300 or later revision. The database must be created using Setup software version 3.xx or later and Operate software version 3.xx or later.

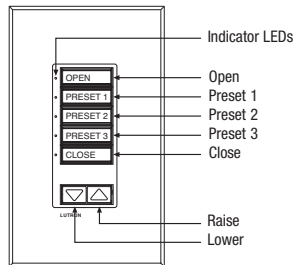
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## SG/SO-SVCN (non-insert version)



## SG/SO-SVCI (insert version)



## NOTES

### Button Functionality

Pressing the Open, Close, or Preset button will cause the window treatment to move to the selected position. Pressing the *same* Open, Close, or Preset button a second time while the window treatments are moving will stop the window treatments. Pressing the Raise/Lower buttons will open or close the window treatments while the Raise/Lower button is pressed.

**Open** - Pressing the Open button once will cause the window treatments to move to the open position.

**Presets** - Pressing one of the preset buttons (Preset 1, Preset 2, or Preset 3) will cause the window treatments to move to their programmed preset level.

**Close** - Pressing the Close button once will cause the window treatments to move to the closed position.

**Raise** - Holding the Raise button will cause the window treatments to move towards the open position. Releasing the Raise button will cause the window treatments to stop.

**Lower** - Holding the Lower button will cause the window treatments to move towards the closed position. Releasing the Lower button will cause the window treatments to stop.

**Note:** Open, Preset, Close, Raise, and Lower buttons affect all *Sivoia QED* Motorized Window Treatments that are connected to the *Sivoia QED* Controller.

### LED Functionality

An indicator LED is ON when all of the *Sivoia QED* Motorized Window Treatments are at the corresponding Open, Close, or Preset position. Otherwise, the indicator LED is OFF.

Wallstation and *Sivoia QED* Controller circuits are classified as Class 2 circuits (U.S.A.) and PELV circuits (IEC). Unless otherwise specified, the voltages do not exceed 12-35 V $\overline{\text{---}}$  or 24 V $\sim$ . As Class 2 circuits, they comply with the requirements of NFPA® 70 National Electrical Code® (NEC®). As PELV circuits, they comply with the requirements of IEC 60364-4-41, VDE 0100 Part 410, BS7671:1992 and other equivalent standards. When installing and wiring to these *Sivoia QED* Controllers, follow all applicable national and/or local wiring regulations. External circuits connected to input, output, RS232, DMX512, and other communication terminals of Wallstations and *Sivoia QED* Controllers, must be supplied from a Listed Class 2 source or comply with the requirements for PELV circuits, as applicable in your country.

## CAUTION!

- Read all instructions before starting installation.
- Lutron recommends that *Sivoia QED* Controllers be installed by a qualified electrician.
- Do not connect line voltage power to PELV (Class 2: USA) terminals. Improper wiring can result in personal injury or damage to the control or to other equipment.
- Controllers must be connected to the *GRAFIK Eye* Control Unit or Central Processors by using PELV (Class 2: USA) wiring methods per the *National Electrical Code*. Check with your local electrical inspector for the local code requirements and wiring practices allowed in your area.
- Use only a cloth with warm water and mild soap to clean faceplates (do not use chemical cleaners).

## Wiring Notes

### **GRAFIK Eye 3000/4000 Series Wiring**

- System Maximums:
  - 8 Unique *GRAFIK Eye* addresses per system.
  - 16 Accessory Controls per system.
  - 8 *GRAFIK Eye Motorized Window Treatment controllers* per system.
  - *GRAFIK Eye* 3000 Series Control Units can power a maximum of 3 Wallstations.
  - 0 °C - 40 °C operating temperature.
- Control Link Wiring
 

#### **GRAFIK Eye Link**

  - 3000 Series: Four #18 AWG (1.0 mm<sup>2</sup>) PELV (Class 2: USA) wires (2 twisted, pair). Lutron offers a one-cable, non-plenum, low-voltage solution (P/N GRX-CBL-346S-500), and a one-cable, plenum, low-voltage solution (P/N GRX-PCBL346S-500). Other suggested cables are Belden No. 9156, Alpha No. 1132, or equivalent, for *GRAFIK Eye* 3000 Series Control Units.
  - 4000 Series: Two #12 AWG (2.5 mm<sup>2</sup>) PELV (Class 2: USA) wires and two shielded #18 AWG (1.0 mm<sup>2</sup>) PELV (Class 2: USA) wires (twisted, shielded pair). Lutron offers a one-cable (non-plenum), low-voltage solution (P/N GRX-CBL-46L).
  - Maximum wiring length: 2000 ft. (600 m).
  - Power: wires 1 & 2; 12 VDC-24 VFW.
  - Data: wires 3 & 4; twisted, shielded pair.

#### **Sivoia QED Electronic Drive Unit Link**

  - Seven conductors (four shielded #18 AWG, two #16 AWG and one #18 AWG) PELV (Class 2: USA). Lutron offers a one-cable, low voltage solution (P/N SVQ-CBL-250). Note: Drain is not connected at the *GRAFIK Eye Sivoia QED* Controller.
  - Power: wires 5 & 6; 24 V $\sim$ .
  - Data: wires 1, 3, & 4; twisted, shielded cable.
- Power to the *Sivoia QED* Controller is supplied by the *Sivoia QED* Electronic Drive Unit link (24 V $\sim$ ).
- Terminal 2 (power) must not be connected between *GRAFIK Eye* 3000 Series Control Units.

- Control Link Wiring  
**GRAFIK 5000/6000/7000 Wallstation Link**  
 — Two #12 AWG (2.5 mm<sup>2</sup>) PELV (Class 2: USA) wires and two shielded #18 AWG (1.0 mm<sup>2</sup>) PELV (Class 2: USA) wires (twisted, shielded pair). Lutron offers a one-cable, non-plenum, low-voltage solution (P/N GRX-CBL-46L), and a one-cable, plenum, low-voltage solution (P/N GRX-PCBL-46L).  
 — Power: wires 1 & 2, 12-35 V $\sim$ .  
 — Data: wires 3 & 4, twisted, shielded pair.

**Sivoia QED Electronic Drive Unit Link**

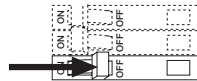
- Seven conductors (four shielded #18 AWG, two #16 AWG and one #18 AWG) PELV (Class 2: USA). Lutron offers a one-cable, low voltage solution (P/N SVQ-CBL-250). Note: Drain is not connected at the *GRAFIK Eye Sivoia QED* Controller.  
 — Power: wires 5 & 6; 24 V $\sim$ .  
 — Data: wires 1, 3, & 4; twisted, shielded cable.

- Power to the *Sivoia QED* Controller is supplied by the *Sivoia QED* Electronic Drive Unit link (24 V $\sim$ ).
- Connection of the Wallstation to the Control Link should be made inside the Wallstation's wallbox or in a junction box (provided by others) located no more than 8 ft. from control.
- Control Link wiring must **not** be run in the same raceway as line voltage wiring.
- Total Control Link length is **not** to exceed 2000 ft. (610 m) unless the signal is boosted using a link booster (P/N MX-RPTR).
- The shield/drain wire must be maintained throughout the Control Link. Do **not** connect the shield to earth ground.
- Refer to the Installation Guide and *Lutron* job drawings for power cable and data cable (Control Link) wiring specifications.
- Control Link requires a link terminator (LT-1) at each end of the Control Link. Refer to the LT-1 instruction sheet for location and installation information.

**Installation**



Warning: Always turn Off the circuit breaker or remove the main fuse from the power line before doing any work. Failure to do so can result in serious personal injury.



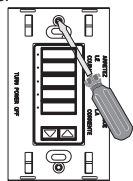
1. Turn power Off to both the *GRAFIK Eye* 3000/4000 or *GRAFIK 5000/GRAFIK 6000/GRAFIK 7000* system and the *Sivoia QED* system.
2. Mount standard U.S. 1-gang wallbox, 2.75 in. (70 mm) deep (available from Lutron P/N 241-519).
3. Strip insulation from wires so that 3/8 in. (10 mm) of bare wire is exposed for #18 AWG (1.0 mm<sup>2</sup>) wire.



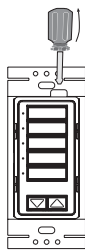
4. Remove the faceplate, adapter (if applicable), and button assembly from the *Sivoia QED* Controller to access Address switches.



Faceplate



Faceplate Adapter



Button Assembly

Communication between *Sivoia QED* Controller and G5000/G6000/G7000 Central Processor must be established prior to normal operation. Please refer to the Operate and Maintenance Manual for more information.

**Sivoia QED Preset Programming**

Preset 1, 2, and 3 are programmable *Sivoia QED* presets. Preset positions are stored in the *Sivoia QED* Motorized Window Treatments. All *GRAFIK Eye* Control Units, G5000/G6000/G7000 Central Processors, and *Sivoia QED* keypads/IR transmitters command the *Sivoia QED* Motorized Window Treatments to travel to the same set of presets. Communication between *Sivoia QED* Controller and Control Unit or Central Processor must be established prior to programming the presets. Set each preset as follows:

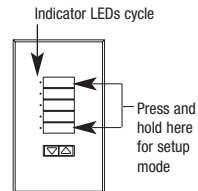
1. **Adjust the window treatments to the desired position.** To adjust window treatments individually, use the Open/Close buttons on the *Sivoia QED* Electronic Drive Unit. To adjust all window treatments simultaneously, use the Raise/Lower buttons on the *Sivoia QED* Controller.
2. **Press and hold the desired preset button for a minimum of 4 seconds.** 'PR' will flash on EDU-20 Electronic Drive Unit display or green LED on EDU will flash for 5 seconds and the button LED will flash on the *Sivoia QED* Controller indicating that the preset has been saved.

**Note:** This preset change will only affect Electronic Drive Units that are connected to the *Sivoia QED* Controller.

**Button Backlight Intensity**

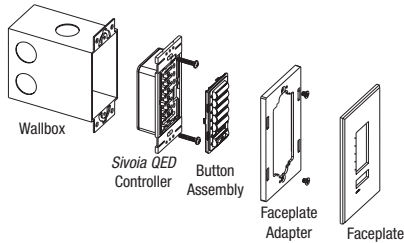
To change the intensity of the button backlights, follow these steps:

1. **Put the *Sivoia QED* Controller in setup mode** (only one *Sivoia QED* Controller or Wallstation may be in setup mode at a time). Press and hold the Open and Close buttons for about 3 seconds, until the indicator LED(s) start to cycle.

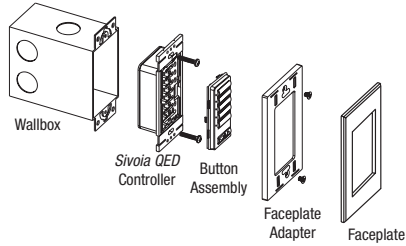


2. **Adjust the button backlight intensity to the desired level** using the Raise/Lower buttons on the *Sivoia QED* Controller. To turn the backlight on, press and hold the Raise button. To turn the backlight off, press and hold the Lower button.
3. **Exit setup mode.** Press and hold the Open and Close buttons for about 3 seconds until the indicator LEDs stop cycling.

- Mount *Sivoia QED* Controllers as shown below. Attach faceplate by pressing in at each corner, one corner at a time. Restore power.



Mounting Diagram (non-insert version)

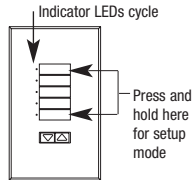


Mounting Diagram (insert version)

## GRAFIK Eye 3000/4000 System Communications

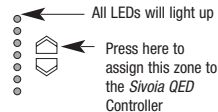
Communication between *Sivoia QED* Controller and *GRAFIK Eye* Control Unit must be established prior to normal operation. Follow these steps:

- Put the *Sivoia QED* Controller in setup mode (only one *Sivoia QED* Controller or Wallstation may be in setup mode at a time). Press and hold the Open and Close buttons for about 3 seconds, until the indicator LED(s) start to cycle.



- Identify the individual zone on a *GRAFIK Eye* Control Unit to be associated with the *Sivoia QED* Controller (All Units must be addressed!) Press the ZONE ▲ button for the zone to control the *Sivoia QED* Controller. The zone's entire column of zone LEDs will light when it has been assigned. Only one zone can be set to control any one *Sivoia QED* Controller.

**Note:** To remove a zone from a *Sivoia QED* Controller: Put the *Sivoia QED* Controller in setup mode, then press the ZONE ▼ button. Once the zone's entire column of zone LEDs has turned OFF, the *Sivoia QED* Controller has been unassigned.

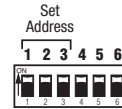


- Exit setup mode. Press and hold the Open and Close buttons for about 3 seconds until the indicator LEDs stop cycling.

- Address *Sivoia QED* Controllers. Note that the Address switch addressing is different for 3000/4000 Series and 5000/6000/7000 Series.

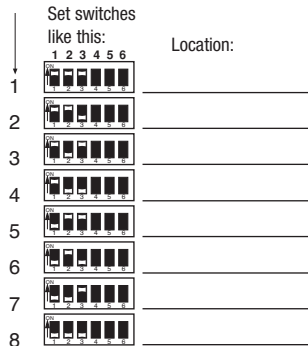
### GRAFIK Eye 3000/4000 Series Addressing.

Each *Sivoia QED* Controller in a *GRAFIK Eye* 3000/4000 system must be assigned a unique window treatment controller address. Set Address Switches 1-3 of each *Sivoia QED* Controller to one of the positions illustrated below and record its location.



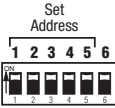
**Note:** For 3000/4000 Series, the *Sivoia QED* Controller does not occupy one of the 16 standard accessory control addresses. There is a maximum of 8 Window Treatment Controllers per *GRAFIK Eye* 3000/4000 system.

For this window treatment controller address

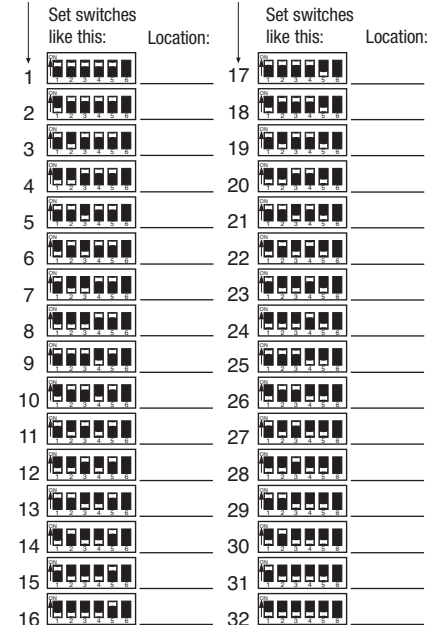


### GRAFIK 5000/6000/7000 Series Addressing.

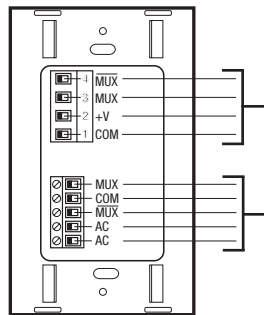
Each *Sivoia QED* Controller in a 5000/6000/7000 Series system occupies one of 32 addresses on the Wallstation link. Refer to Lutron job drawings for any preassigned job specific address for each control. For proper system operation, each Wallstation or *Sivoia QED* Controller on a link **must** have a unique address. Set Address Switches 1-5 on each control to one of the positions illustrated below.



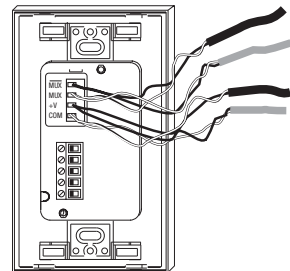
For this window treatment controller address



6. LED Nightlight Option. The nightlight option can be switched on or off by setting DIP switch 6. When the nightlight option is on, the status LEDs will be dimly lit at all times.



Rear View of Sivoia QED Controller



GRAFIK Eye 3000 Series System Wiring

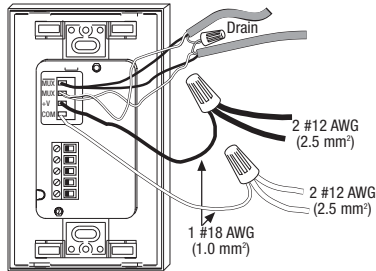
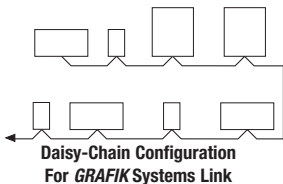
**GRAFIK Control Link PELV (Class 2: USA) Wiring** connections to *GRAFIK Eye* Control Units, G5000/G6000/G7000 Central Processors, Wallstations, and other *Sivoia QED* Controllers

**Sivoia QED EDU Link PELV (Class 2: USA) Wiring** connections to *Sivoia QED* Electronic Drive Units

7. For the *GRAFIK* control link, wiring must be done in a daisy-chain and 1-to-1 configuration. The *GRAFIK* control link terminal (gray connector) on the *Sivoia QED* Controller will accept up to two #18 AWG (1.0 mm<sup>2</sup>) wires.

**GRAFIK Eye 3000 Series System Wiring.** Connect four #18 (1.0 mm<sup>2</sup>) twisted pair wires to the *GRAFIK* link terminal block.

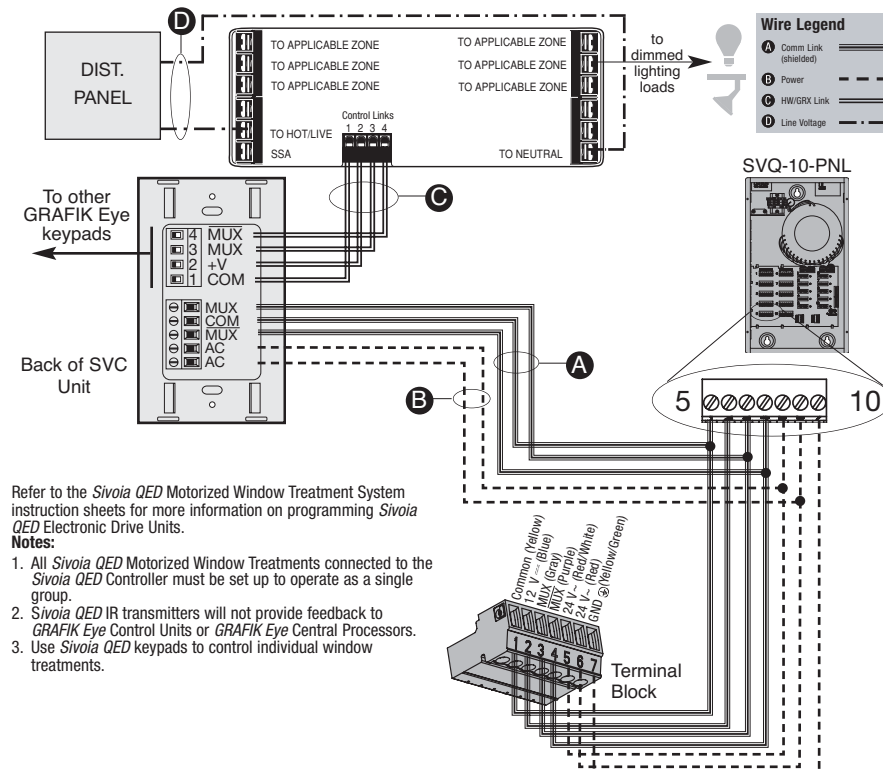
**GRAFIK Eye 4000, GRAFIK 5000, GRAFIK 6000 and GRAFIK 7000 Series System Wiring.** Connect two #18 (1.0 mm<sup>2</sup>) shielded, twisted pair wires to terminals 3 and 4 of the *GRAFIK* control link terminal block. Connect the drain as shown, but do not connect to Earth/Ground or *Sivoia QED* Controller. Two #12 AWG (2.5 mm<sup>2</sup>) power wires will not fit in the terminal blocks. Refer to the diagram shown to make the connections in the wallbox.



GRAFIK Eye 4000, GRAFIK 5000, GRAFIK 6000 and GRAFIK 7000 Series System Wiring

8. **Sivoia QED Electronic Drive Unit (EDU) Link Wiring.** Each *Sivoia QED* Controller may be wired in a daisy chain, star, or t-tap configuration to connect to up to 96 *Sivoia QED* EDUs. Total length of wire on this link should not exceed 4000 ft. (1220 m). Power (12 V~) is supplied to the *Sivoia QED* Controller from the *Sivoia QED* EDU.

Connect one pair #18-22 AWG to terminals 1 and 2 on the Controller's *Sivoia QED* EDU link terminal block (white). Connect two #24 AWG shielded, twisted wires to terminals 3 and 4 of the *Sivoia QED* link terminal block.



Refer to the *Sivoia QED* Motorized Window Treatment System instruction sheets for more information on programming *Sivoia QED* Electronic Drive Units.

**Notes:**

1. All *Sivoia QED* Motorized Window Treatments connected to the *Sivoia QED* Controller must be set up to operate as a single group.
2. *Sivoia QED* IR transmitters will not provide feedback to *GRAFIK Eye* Control Units or *GRAFIK Eye* Central Processors.
3. Use *Sivoia QED* keypads to control individual window treatments.