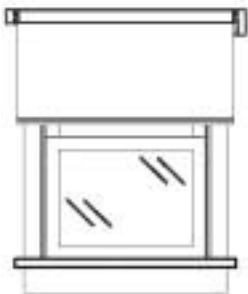
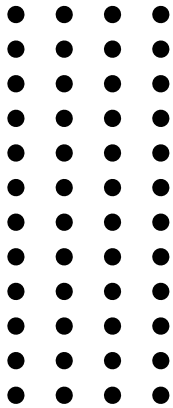
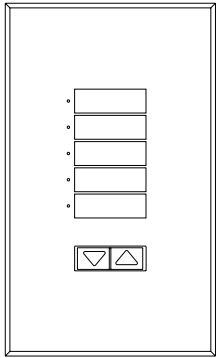


GRAFIK Eye®



seeTouch™

GRAFIK™ Systems

Sivoia® Controller

for use with GRAFIK Eye® 3000/4000 Series Systems

SG-SVC

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

SO-SVC

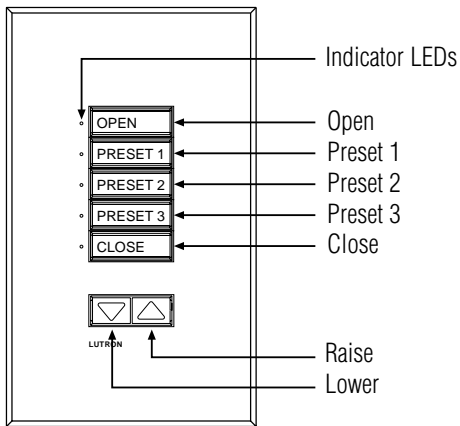
Software Note:

For *GRAFIK Eye* 3000/4000 Series Systems: *Sivoia* Controllers can only control zones on Control Units with software revision 7-1 or higher. *Sivoia* Controllers will not function correctly with Control Units with lower software revisions.

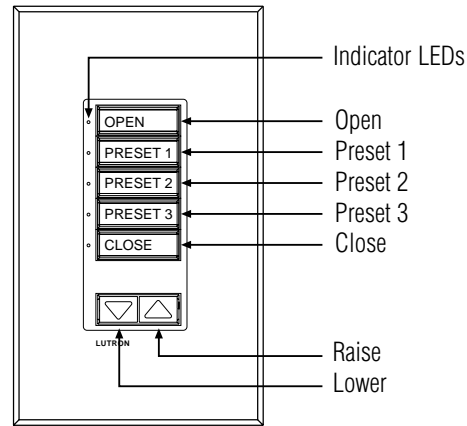
For *GRAFIK 5000*/*GRAFIK 6000* Series Systems: The operating code of the Central Processor must be o2_300.mot or later revision. The database must be created using Set Up software version 3.10 or higher and Operate software version 3.10 or higher.

LUTRON®

SG/SO-SVCN (non-insert version)



SG/SO-SVCI (insert version)



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 and holding the Raise/Lower buttons will open or close the window treatments.

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* Motorized Window Treatments that are connected to the *Sivoia* Controller.

LED Functionality

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

Wallstation and *Sivoia* 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 VDC or 24 VAC. 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* 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* 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* Controllers be installed by a qualified electrician.
- Do not connect high-voltage power to low-voltage terminals. Improper wiring can result in personal injury or damage to the control or to other equipment.
- *Sivoia* Controllers must be connected to the *GRAFIK Eye* Control Unit or G5000/G6000 Central Processors by using Class 2/PELV 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 (no 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 Sivoia* Controllers per system.
 - *GRAFIK Eye* 3000 Series Control Units can power a maximum of 3 Wallstations or *Sivoia* Controllers.
 - 0 °C—40 °C operating temperature.
- Control Link Wiring
 - GRAFIK Eye* Link**
 - 3000 Series: Four #18 AWG (1.0 mm²) Class 2/PELV 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 mm²) Class 2/PELV wires and two shielded #18 AWG (1.0 mm²) Class 2/PELV 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* Motor Drive Unit Link**
 - Six conductors (three shielded #24 AWG and one pair #18-22 AWG with ground) Class 2. Lutron offers a one-cable, low voltage solution (P/N SV-CBL-MDU-250). Note: ground is not connected at the *GRAFIK Eye Sivoia* Controller.
 - Power: wires 6 & 8; 24 VAC.
 - Data: wires 3, 4, & 5; twisted, shielded cable.
- Power to the *Sivoia* Controller is supplied by the *Sivoia* Motor Drive Unit link (24 VAC).
- Terminal 2 (power) must **not** be connected between *GRAFIK Eye* 3000 Series Control Units.

GRAFIK 5000/GRAFIK 6000 Series Wiring

■ Control Link Wiring

GRAFIK 5000/GRAFIK 6000 Wallstation Link

- Two #12 AWG (2.5 mm²) Class 2/PELV wires and two shielded #18 AWG (1.0 mm²) Class 2/PELV 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 VDC.
- Data: wires 3 & 4, twisted, shielded pair.

Sivoia Motor Drive Unit Link

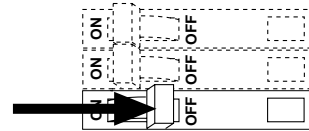
- Six conductors (three shielded #24 AWG and one pair #18-22 AWG with ground) Class 2. Lutron offers a one-cable, low voltage solution (P/N SV-CBL-MDU-250). Note: ground is not connected at the *GRAFIK Eye Sivoia* Controller.
- Power: wires 6 & 8; 24 VAC.
- Data: wires 3, 4, & 5; twisted, shielded cable.

- Power to the *Sivoia* Controller is supplied by the *Sivoia* Motor Drive Unit link (24 VAC).
- 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 120VAC or 277VAC.
- 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 *GRAFIK 6000* Installation Guide and *Lutron* job drawings for power cable and data cable (Control Link) wiring restrictions and limitations.
- 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.

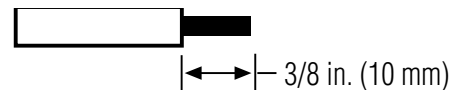
Installation



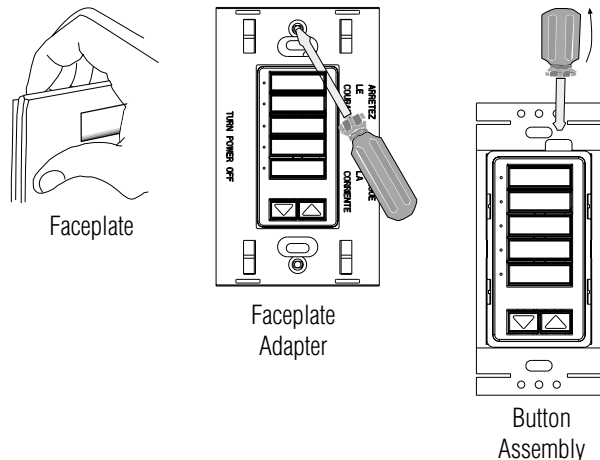
Warning: Always turn Off the circuit breaker/MCB or remove the main fuse from the power line before doing any work. Failure to do so can result in serious personal injury.



1. Turn power Off to both the *GRAFIK Eye* 3000/4000 or *GRAFIK 5000/GRAFIK 6000* system and the *Sivoia* 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 mm²) wire.



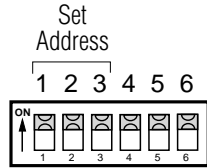
4. Remove the faceplate, adapter (if applicable), and button assembly from the *Sivoia* Controller to access DIP switches.



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

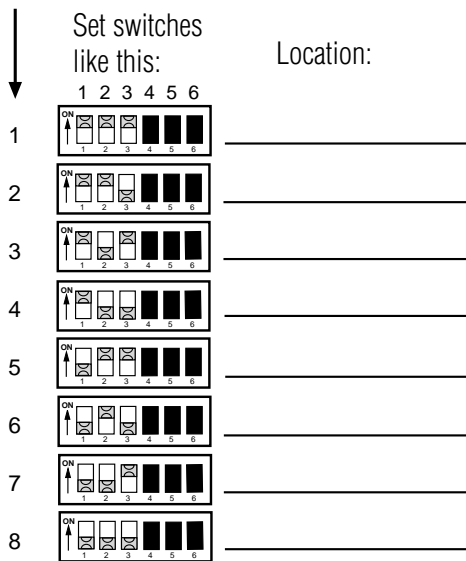
GRAFIK Eye 3000/4000 Series Addressing.

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



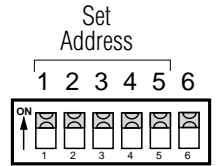
Note: For 3000/4000 Series, the *Sivoia* Controller does not occupy one of the 16 standard accessory control addresses. There is a maximum of 8 Window Treatment Controllers per *GRAFIK Eye* 3000/4000 system.

For this window treatment controller address

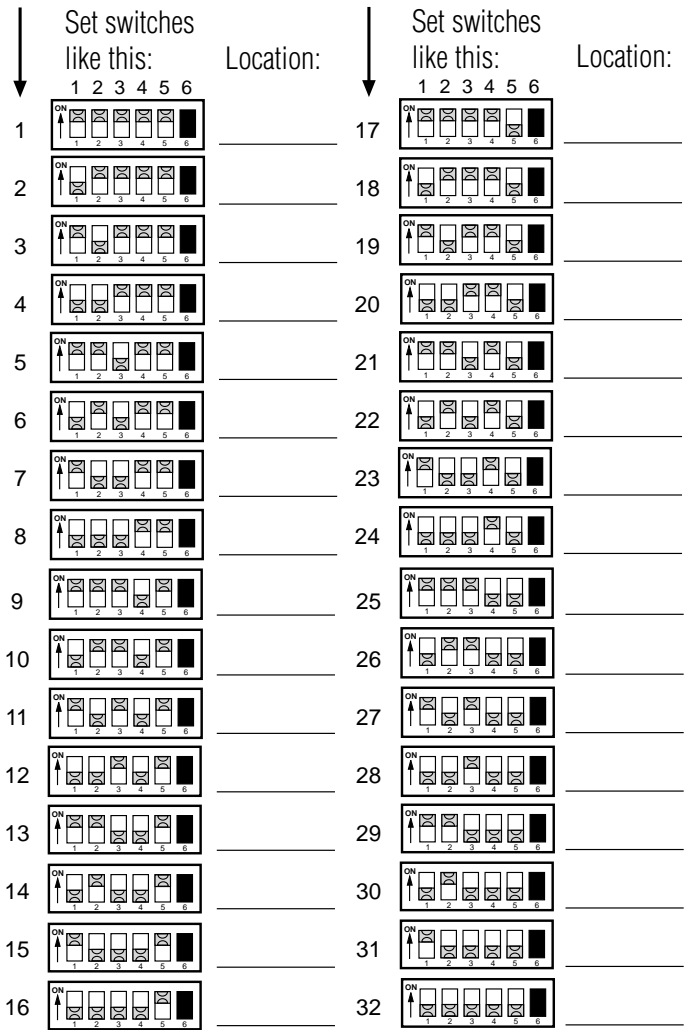


GRAFIK 5000/GRAFIK 6000 Series Addressing.

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



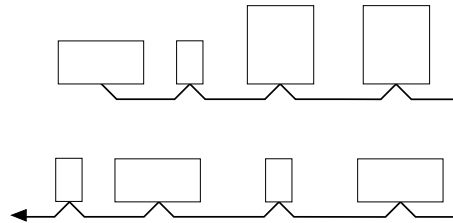
For this window treatment controller address



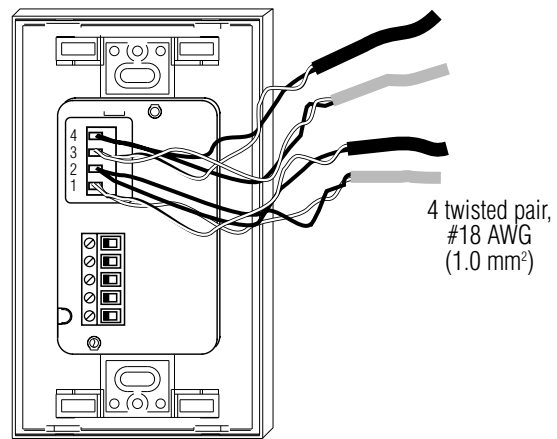
6. For the *GRAFIK* link, wiring must be done in a daisy-chain and 1-to-1 configuration. The *GRAFIK* link terminal on the *Sivoia* Controller will accept up to two #18 AWG (1.0 mm²) wires.

GRAFIK Eye 3000 Series System Wiring. Connect four #18 (1.0 mm²) twisted pair wires to the *GRAFIK* link terminal block.

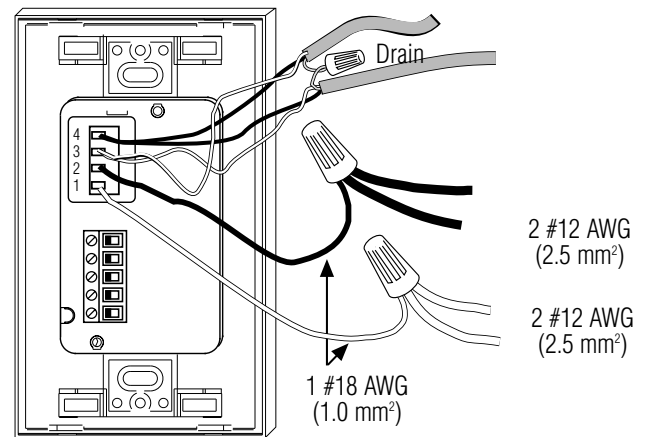
GRAFIK Eye 4000, GRAFIK 5000, and GRAFIK 6000 Series System Wiring. Connect two #18 (1.0 mm²) shielded, twisted pair wires to terminals 3 and 4 of the *GRAFIK* link terminal block. Shielding must be connected as shown, but do not connect to Earth/Ground or *Sivoia* Controller. Two #12 AWG (2.5 mm²) power wires will not fit in the terminal blocks, however, #12 AWG (2.5 mm²) is necessary due to voltage drop on the wire. Use the diagram shown to make the connections in the wallbox.



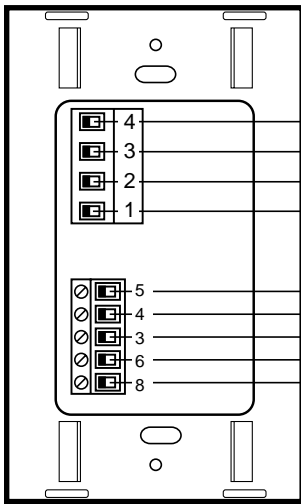
Daisy-Chain Configuration For GRAFIK Systems Link



GRAFIK Eye 3000 Series System Wiring



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



Rear View of Sivoia Controller

GRAFIK Link

Class 2/PELV Wiring connections to *GRAFIK* Eye Control Units, G5000/G6000 Central Processors, Wallstations, and other *Sivoia* Controllers

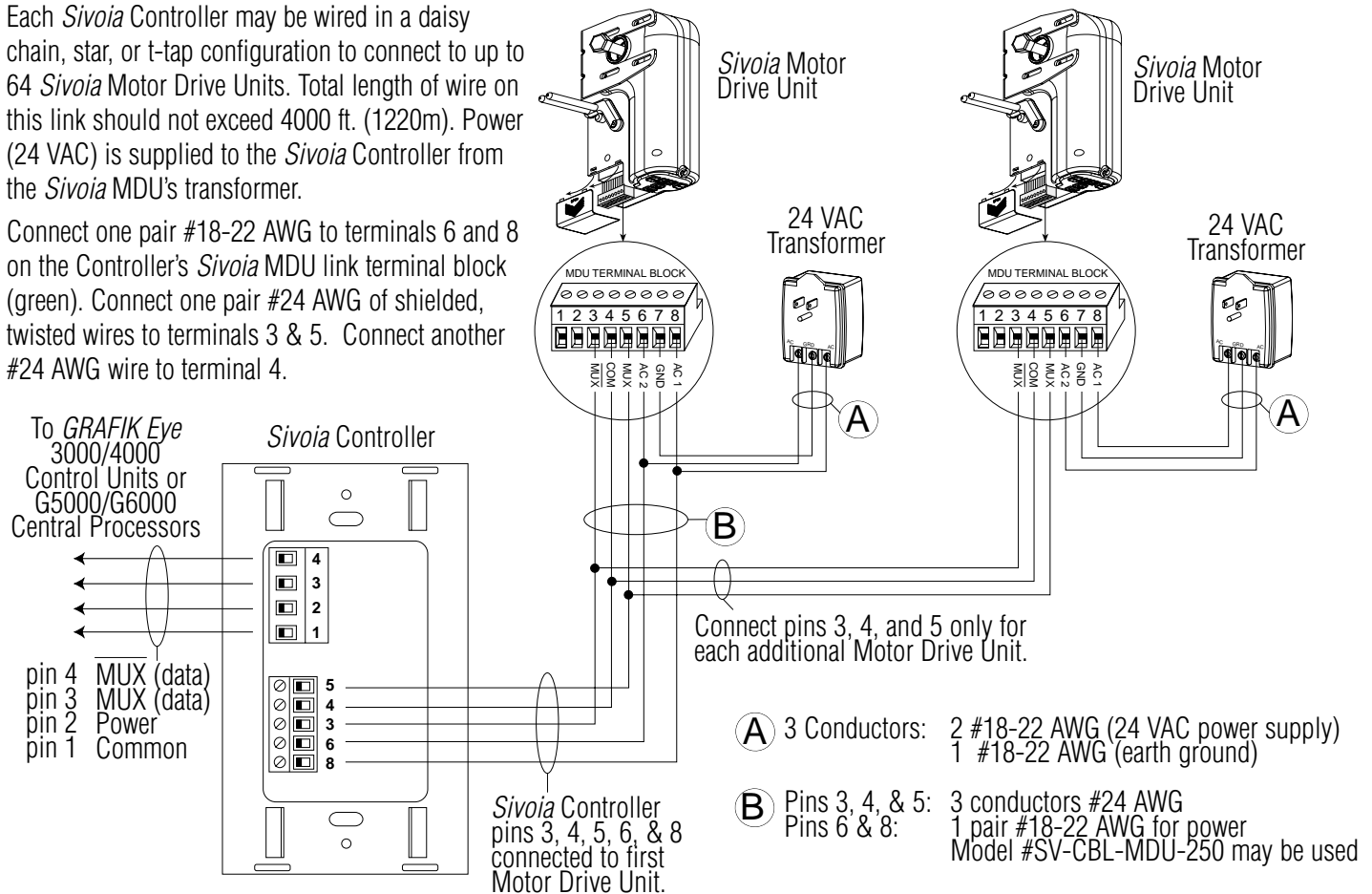
Sivoia MDU Link

Class 2/PELV Wiring connections to *Sivoia* Motor Drive Units

7. Sivoia Motor Drive Unit (MDU) Link Wiring.

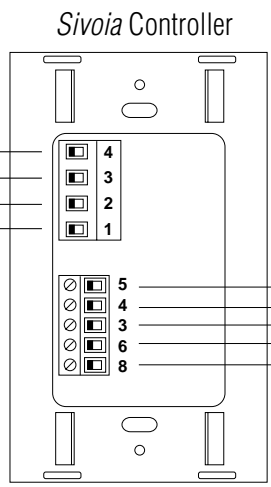
Each *Sivoia* Controller may be wired in a daisy chain, star, or t-tap configuration to connect to up to 64 *Sivoia* Motor Drive Units. Total length of wire on this link should not exceed 4000 ft. (1220m). Power (24 VAC) is supplied to the *Sivoia* Controller from the *Sivoia* MDU's transformer.

Connect one pair #18-22 AWG to terminals 6 and 8 on the Controller's *Sivoia* MDU link terminal block (green). Connect one pair #24 AWG of shielded, twisted wires to terminals 3 & 5. Connect another #24 AWG wire to terminal 4.



To *GRAFIK Eye*
3000/4000
Control Units or
G5000/G6000
Central Processors

pin 4 MUX (data)
pin 3 MUX (data)
pin 2 Power
pin 1 Common



Sivoia Controller
pins 3, 4, 5, 6, & 8
connected to first
Motor Drive Unit.

- A** 3 Conductors: 2 #18-22 AWG (24 VAC power supply)
1 #18-22 AWG (earth ground)
- B** Pins 3, 4, & 5: 3 conductors #24 AWG
Pins 6 & 8: 1 pair #18-22 AWG for power
Model #SV-CBL-MDU-250 may be used

Sivoia Motorized Window Treatments that are controlled by the same *Sivoia* Controller must have their settings programmed with the following parameters:

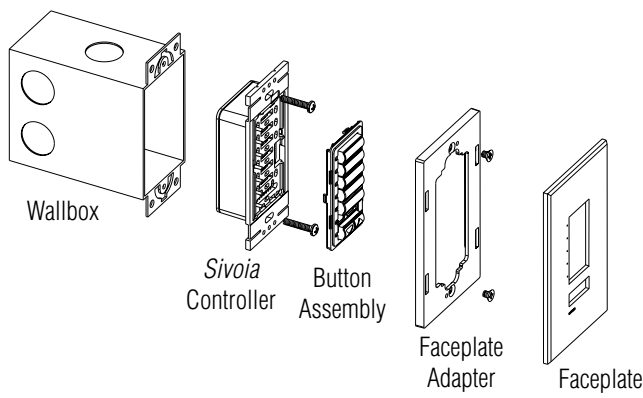
- w *Sivoia* Link address must be unique for each MDU.
- w Room address for each MDU must be set to "01" (default).
- w Infrared address for each MDU must be set to "1F" (default).
- w Control station setting for each MDU must be set to "00" (default).

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

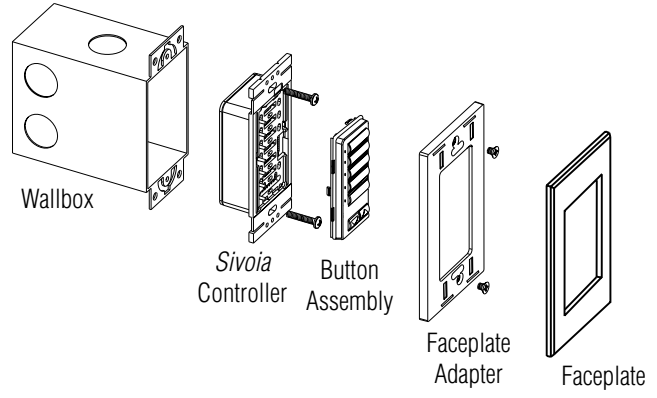
Notes:

1. All *Sivoia* Motorized Window Treatments connected to the *Sivoia* Controller must be set up to operate as a single group and contain no subgroups.
2. Some *Sivoia* IR transmitters will not provide proper feedback to *GRAFIK Eye* Control Units or Central Processors.
3. Do not use *Sivoia* keypads which control individual window treatments.

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



Mounting Diagram (non-insert version)

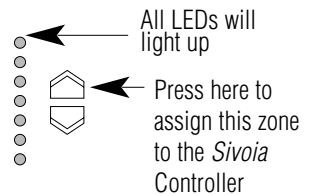
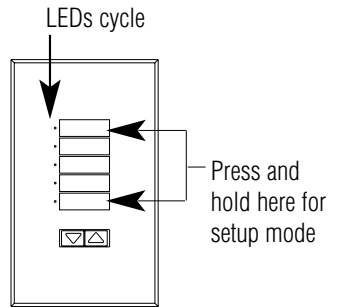


Mounting Diagram (insert version)

GRAFIK Eye 3000/4000 System Communications

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

1. **Put the *Sivoia* Controller in setup mode** (only one *Sivoia* Controller or Wallstation can be in setup mode at a time). Press and hold the Open and Close buttons for about 3 seconds until the LED(s) begin cycling.
2. **Assign the *Sivoia* Controller to a zone on a Control Unit.** *Important: Make sure that the desired Control Unit's zone load type is set as Sivoia Motorized Window Treatments prior to completing this step.* Go to the desired Control Unit and press the ZONE 5 button for the desired zone to assign to the *Sivoia* Controller. The zone's entire column of zone LEDs will light up when it has been added. The load type for the zone must be configured as a *Sivoia* Motorized Window Treatment.



Notes:

1. To unassign the *Sivoia* Controller from a zone, just press the ZONE 6 button. Once the zone's entire column of zone LEDs has turned OFF, the *Sivoia* Controller has been removed.
 2. A *Sivoia* Controller may be assigned to only one zone on a Control Unit. However, a single zone on a Control Unit may control any or all *Sivoia* Controllers.
 3. For more information, refer to the *GRAFIK Eye* 3000 Installation Manual Addendum for Window Treatments (P/N 032-105) or the *GRAFIK Eye* 4000 Installation Manual Addendum for Window Treatments (P/N 032-106).
3. **Exit setup mode.** Press and hold the Open and Close buttons for about 3 seconds until the scene LEDs stop cycling.

GRAFIK 5000/GRAFIK 6000 System Communications

Communication between *Sivoia* Controller and G5000/G6000 Central Processor must be established prior to normal operation. Please refer to the *GRAFIK 5000/GRAFIK 6000* Operate and Maintenance Manual for more information.

Sivoia Preset Programming (for 3000/4000 Series and 5000/6000 Series)

Preset 1, 2, and 3 are programmable *Sivoia* window treatment positions. These preset positions may be set using the *Sivoia* Controller. Please note that the preset position information is stored in the *Sivoia* Motor Drive Unit. Therefore, recalling presets from *GRAFIK Eye* Control Units, G5000/G6000 Central Processors, and *Sivoia* keypads/IR transmitters will cause the *Sivoia* Motorized Window Treatments to travel to the same set of presets. Communication between *Sivoia* Controller and Control Unit or Central Processor must be established prior to programming the presets. Set each preset as follows:

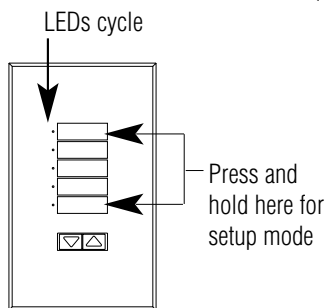
1. **Adjust the window treatments to the desired position.** To adjust window treatments individually, use the Open/Close buttons on the *Sivoia* Motor Drive Unit. To adjust all window treatments simultaneously, use the Raise/Lower buttons on the *Sivoia* Controller.
2. **Press and hold the desired preset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

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

Button Backlight Intensity

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

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



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