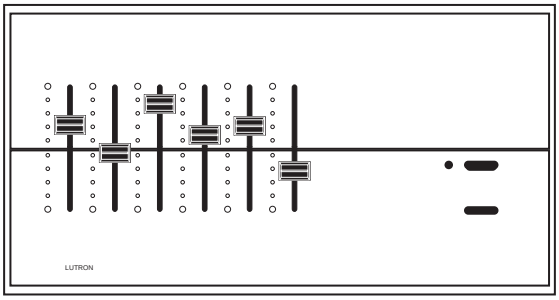
GRAFIK Eye®

Installation Instructions

Occupant Copy

4000 Series Slider Control Units

GRXSLD 4103/4104/4106/4108



GRXSLD-4106 Control Unit

Contents

System Specifications

Input Power:

24VFW from GRAFIK Eye dimming panel

Environmental Temperature Range:

32 °F to 104 °F (0 °C to 40 °C)

Load Types:

Selected at dimming panel only; Incandescent/Tungsten, Magnetic Low-Voltage, Neon/Cold Cathode, Fluorescent, Non-dim

Fade Time:

Adjustable per scene; 0—59 seconds and 1—60 minutes

System Wiring:

Lutron five-conductor cable GRX-CBL-46L, or four-wire daisy-chain of two #12 AWG (2.5 mm^2) Class 2/PELV wires and one #18 AWG (1.0 mm^2) Class 2/PELV twisted, shielded pair (Beldon 9461, Alpha 2211), 2000 ft. for #12 AWG (450 m for 2.5 mm^2) maximum.

CAUTION!

- The GRXSLD Control Units are designed for residential or commercial applications—indoor use only.
- Lutron recommends that the GRXSLD Control Unit be installed by a qualified electrician.
- Install in accordance with all applicable regulations.

Description

The GRAFIK Eye 4000 Series Slider Control Unit (GRXSLD) is a low-voltage control that mounts in a standard U.S. wallbox. GRXSLD Control Units provide preset dimming control of up to 8 zones of lighting, depending on the model number of the unit. A **zone** is a single light or group of lights controlled simultaneously as a single group. A combination of user-defined zone intensities creates a lighting **scene**. GRXSLD Control Units logically replace GRX4000 Control Units and can communicate on the same link as, and operate within its specified functionality with, the same Accessory Controls as GRAFIK Eye 4000 Series products. The GRXSLD does not directly support infrared communications.

The GRXSLD is capable of storing 12 user-programmable scenes, each of which can be programmed with a different fade time. Fade time is the time interval to change from one scene to another and is adjustable from 0—59 seconds and 1—60 minutes. These additional scenes are accessed via an optional Accessory Control (NTGRX-2B-SL, NTGRX-4S, etc.) available from Lutron.

See table below for specific model information.

GRXSLD Model No.	Number of Zones	Wallbox Size*
GRXSLD-4103	3	3-Gang
GRXSLD-4104	4	3-Gang
GRXSLD-4106	6	4-Gang
GRXSLD-4108	8	4-Gang

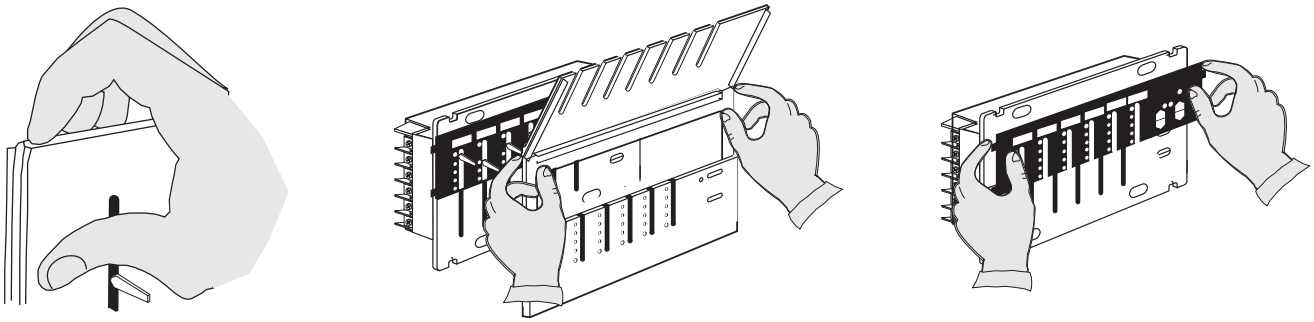
* GRXSLD Control Units mount in standard U.S. wallboxes; 3.5 in. (90 mm) deep recommended, 2.75 in. (70 mm) deep minimum. Wallboxes, if needed, are available from Lutron. For GRXSLD-4103 and GRXSLD-4104, order three P/N 241-519 single-gang wallboxes, and for GRXSLD-4106 and GRXSLD-4108, order one P/N 241-400 four-gang wallbox.

Mounting and Wiring

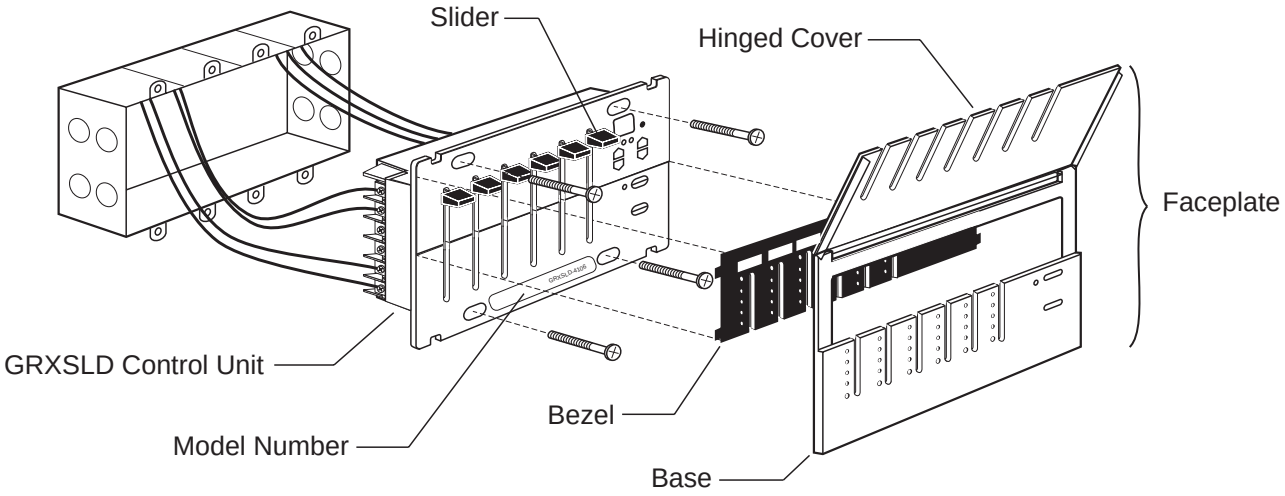
Danger: Always turn Off the circuit breaker or remove the main fuse from the power line before doing any work. Failure to do so can result in serious personal injury.

1. Turn power Off.
2. Mount wallbox. Use standard U.S. wallboxes; 3.5 in. (90 mm) deep recommended, 2.75 in. (70 mm) deep minimum. Wallboxes must **not** be mounted more than 1/8 in. (3 mm) below the finished wall surface, and gaps between the wallbox and finished wall should **not** exceed 1/8 in. (3 mm). For ease of installation, use only the rear knockouts in the wallbox for wiring.
3. Strip insulation from wallbox wires so that 1/2 in. (12 mm) of bare wire is exposed for #12 AWG (2.5 mm^2) and 3/8 in. (10 mm) of bare wire is exposed for #18 AWG (1.0 mm^2).

4. Remove the faceplate by pulling outward at each corner, one corner at a time. Set faceplate aside and remove bezel (see Mounting Diagram below).



5. Connect each wire to the appropriate terminals on the back of the Control Unit (as shown in the Wiring Diagram on Page 3). Each screw terminal will accept up to two #12 AWG (2.5 mm^2) wire.
6. Confirm that all the connections are made according to the Wiring Diagram on Page 3.
7. Attach the Control Unit to the wallbox with the screws provided.
8. Replace the bezel, then mount the faceplate by pressing in at each corner, one corner at a time. Close the hinged cover and restore power to the GRXSLD Control Unit.
9. Attach the Sliders to the GRXSLD Control Unit. It is recommended that a different color Slider knob be used to designate the Master Slider (see Page 6) and that the "Master" label provided be placed in the zone label area located under the hinged cover.



Mounting Diagram

LUTRON®

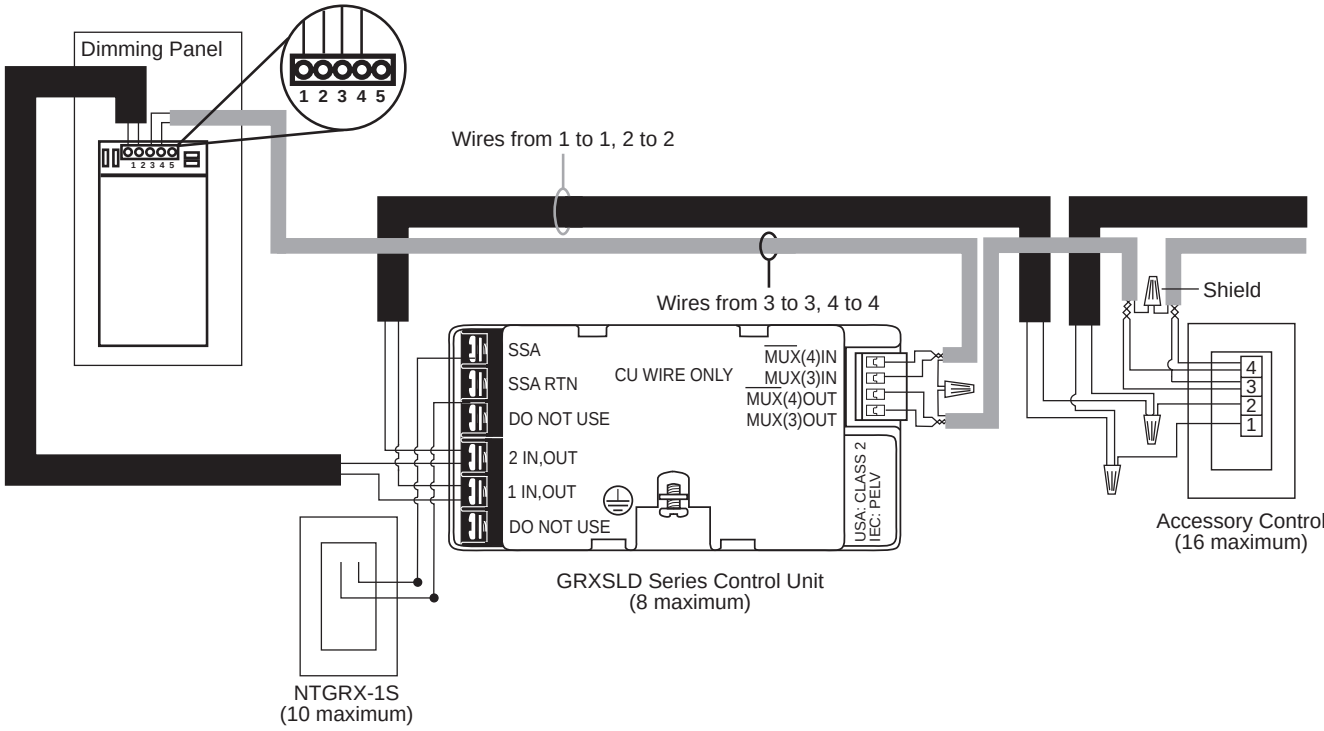
Mounting and Wiring (continued)

1-to-1 Wiring (2-to-2, 3-to-3, . . .)

Caution: Wire in a daisy-chain arrangement as shown. Do not branch or home run wiring. Do not substitute cables!

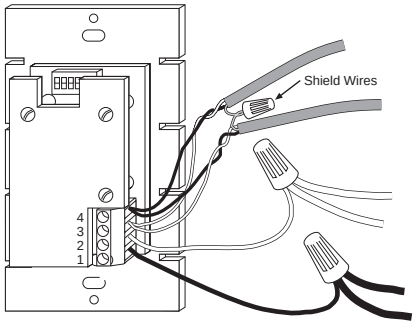
Wires:

— Two #12 AWG (2.5 mm^2) from terminals 1 to 1, and 2 to 2.
— One #18 AWG (1.0 mm^2) twisted, shielded pair from terminals 3 to 3, and 4 to 4. Belden #9461 and Alpha #2211 are made with #22 AWG wire and have been tested and approved. Not all #22 AWG cable will work; however, any #18 AWG twisted, shielded pair is acceptable.
— One #18 AWG (1.0 mm^2), if wiring dimming panel to dimming panel, from terminal 5 to 5.
All five wires (two #12, two #22, and one #18) are available in one cable from Lutron (P/N GRX-CBL-46L).



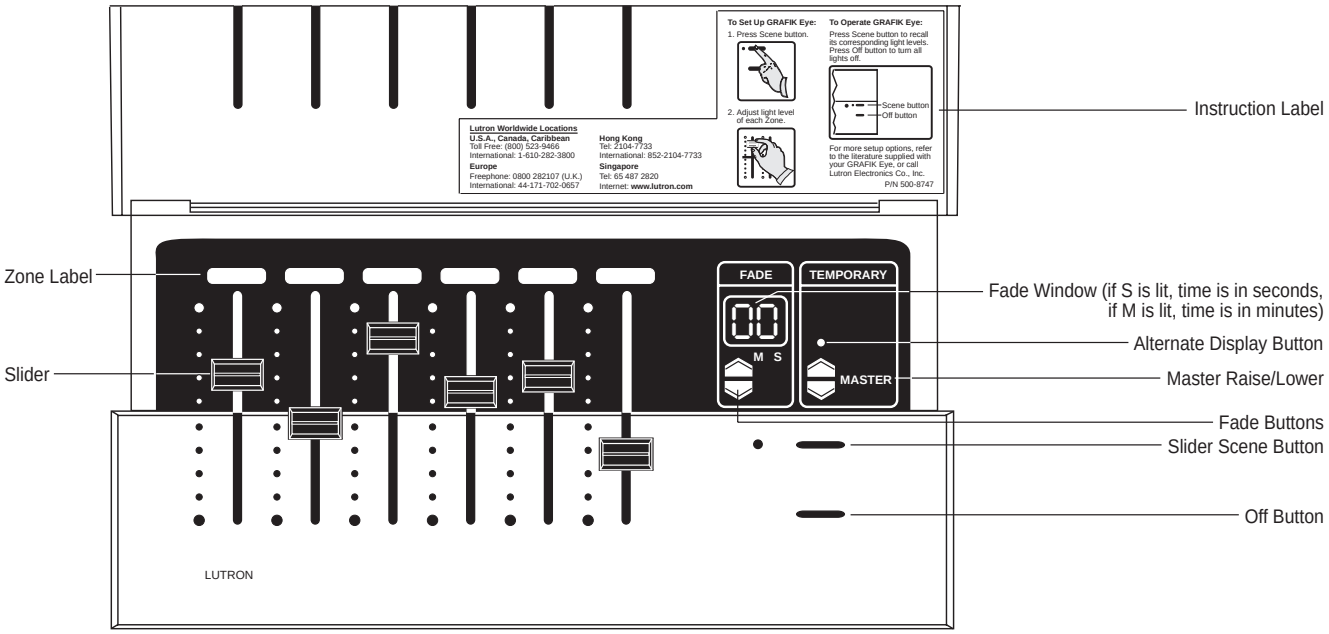
Notes:

1. All control wiring is Class 2/PELV. Do not place any of these wires in with line voltage (mains voltage) wiring.
2. Total length of wire must not exceed 2000 ft. for #12 AWG (450 m for 2.5 mm^2) or #18 AWG (1.0 mm^2). Please see application note W14 for more information on allowable wiring runs.
3. Shielding must be connected as at right, but do not connect to Ground (Earth) or Accessory Control (except for EGRX-4S). It is easiest to connect the bare drain wires and cut off the outside shield.
4. Make wire connections inside the wallbox and dimming panel or in a junction box (provided by others) within 8 ft. (2.4 m) of the terminals.
5. Use wire connector required by local code (those shown are common in the U.S.).



6. Two #12 AWG (2.5 mm^2) wires will not fit in the Accessory Control terminal blocks. Use the diagram shown at right to make the connections in the wallbox. #12 AWG (2.5 mm^2) is necessary due to voltage drop on the wire.
7. Dimming panesl may be placed in the middle of the wiring, as opposed to on the end as shown, but dimming panel to dimming panel wiring may be more difficult.

Setting Up GRXSLD Control Units

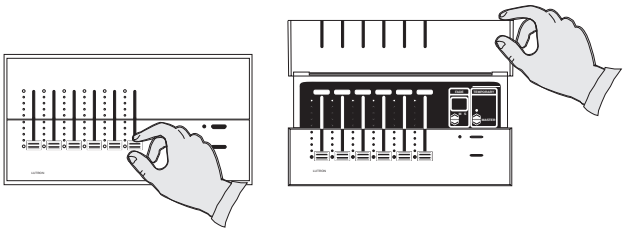


Assign Load Types

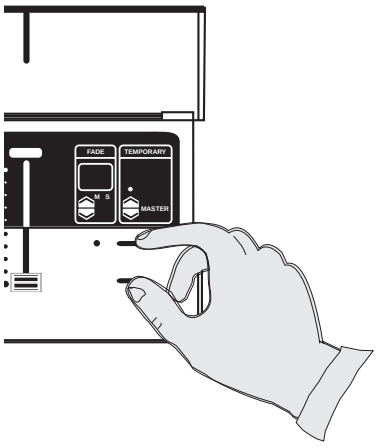
Assigning load types is done by using the Circuit Selector located in each dimming panel. Please refer to the Installation Instructions shipped with each dimming panel.

Address The Control Unit

1. Move the sliders to their bottommost position and open the hinged cover.



2. Enter Setup Mode: Press and hold the Slider Scene button and Off Scene button for about 3 seconds, until the Slider Scene LED begins to flash. A- or A1—A8 is displayed in the FADE window. If the Control Unit is already set to the desired address, go to Step 4.

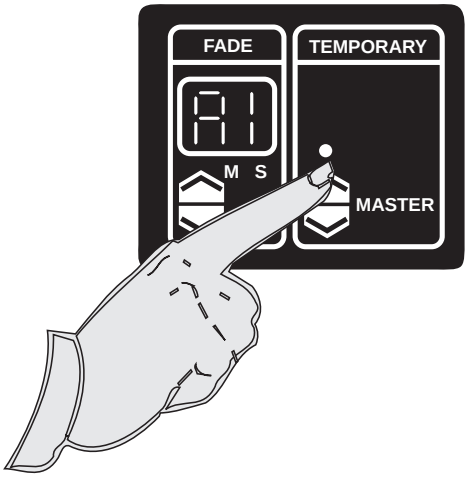


Setting Up GRXSLD Control Units

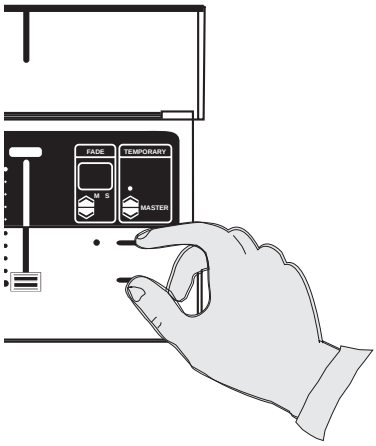
(continued)

3. Assign a Control Unit Address: Press MASTER ⌃ button once. The control will automatically choose the next available address. Note the address of each (A1—A8) on the Control Directory included in the dimming panel Installation Guide.

If a Control or Load Directory already exists in the Installation Guide shipped with the panel, then press MASTER ⌃ or ⌄ buttons until the address matches these directories.



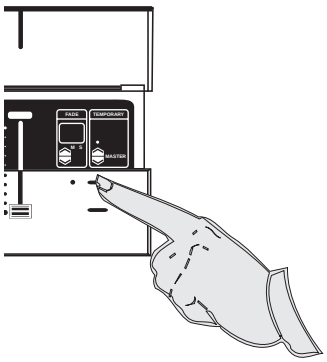
4. Exit Setup Mode: Press and hold the Slider Scene button and Off Scene button for about 3 seconds, until the Slider Scene LED stops flashing.



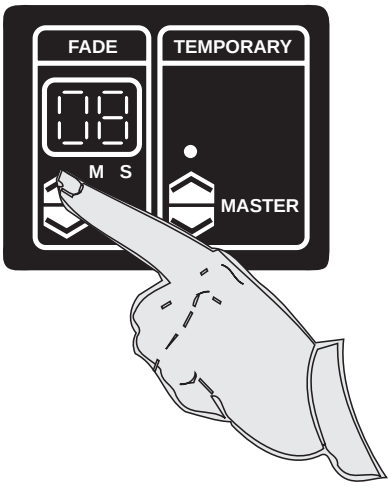
Set Fade Time

Fade Time is the time interval to change from one scene to another and is adjustable from 0—59 seconds or 1—60 minutes. Factory installed defaults are 3 seconds.

1. Adjust Slider Scene Fade Time: Press the Slider Scene button.



2. Press FADE ⌃ or ⌄ to set the Fade Time to anything from 0—59 seconds or 1—60 minutes. The S and M indicators under the FADE window show whether FADE is in "M"inutes or "S"econds. To set the Fade Time in minutes, press FADE ⌃ to scroll through 1—59 seconds until the M lights. Fade Time is now expressed in minutes. To get back to seconds, press FADE ⌄ until the indicator shows "S"econds.



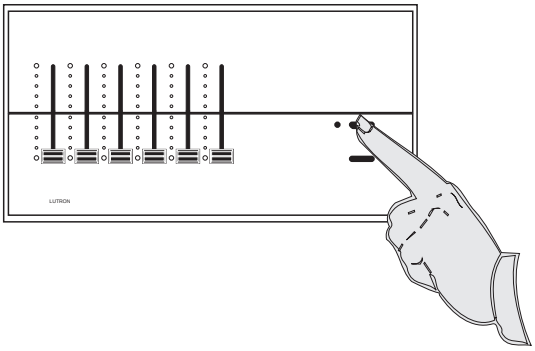
3. Adjust Off Scene Fade Time: The Off Scene Fade Time is programmed by pressing the Off Scene button and following step 2. This sets the time to fade to Off.

The Fade Time from the Off Scene to any other selected scene is a maximum of 5 seconds.

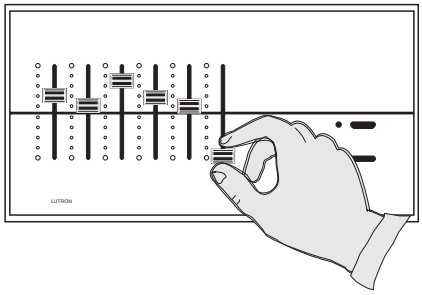
Operating Instructions

The Slider Scene is not a preset stored in memory, rather it is a preset determined by the slider positions. *The sliders are only active while the Slider Scene is selected (Slider Scene LED is lit).* To select the Slider Scene:

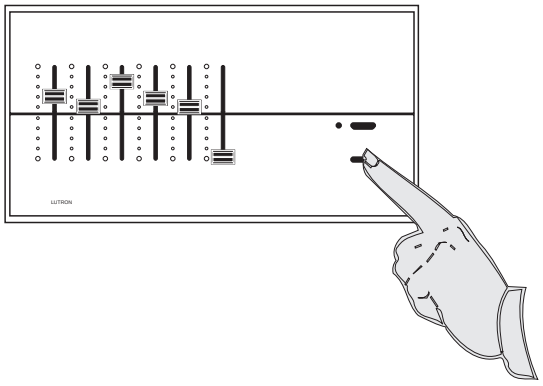
1. Press the Slider Scene button.



2. Adjust the sliders until the desired light levels are achieved.



3. To turn all the lights Off, press the Off Scene button.



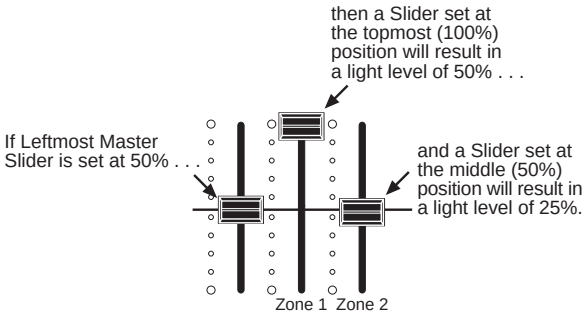
If the Slider Scene is selected and a slider is adjusted before the Fade Time has expired, the Fade Time for that zone is cancelled and the lights immediately track the level of the adjusted slider.

Advanced Programming Options

The GRXSLD Control Unit is capable of storing up to 12 user-programmable scenes in addition to the Slider Scene (Scene 13), two full-on Panic Scenes (Scenes 15 and 16, 3 second and 0 second fade time, respectively), and the Off Scene (Scene 0 or 14). These scene provisions support the functions of the NTGRX-2B-SL Accessory Control. All scenes, except the Slider and Off Scenes, are accessed only with an optional Accessory Control available from Lutron.

Master Slider Option

It is possible to designate one slider, either the rightmost or leftmost slider, as the Master Slider. The Master Slider sets the high-end limit of the remaining sliders. The Master Slider also allows the user to collectively raise and lower the light level of the entire Slider Scene while maintaining the relative light level of each zone. *Assigning a Master Slider necessarily decreases the zone capacity of the Control Unit by one. For example, assigning a Master Slider (rightmost or leftmost) to a 6-zone Control Unit will allow the Master Slider to raise and lower zones 1—5 only.*



Effect of Master Slider in the Slider Scene

In the Slider Scene, positioning the Master Slider at 50% sets the maximum light level of all zones at 50%. If Master Slider is set at 75%, then the maximum light level of all zones is 75%, and so on. For example, with the Master Slider positioned at 50%, placing one of the remaining sliders at the topmost position will result in a light level of 50%, placing it at the middle position will result in a light level of 25%.

Advanced Programming Options

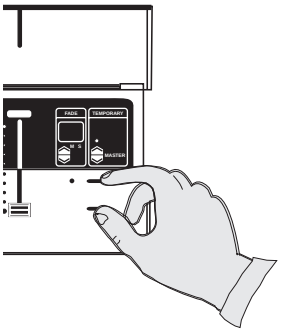
(continued)

Effect of Master Slider in Scenes 1—12 (see Preset Scenes 1—12 Option)

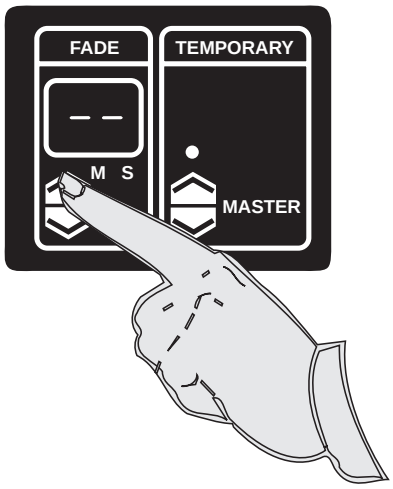
The Master Slider effects Scenes 1—12 **only** in set up mode. If Scene 1 is programmed with the Master Slider positioned at 50%, then the maximum light level for all zones in Scene 1 is 50%. If Master Slider is set at 75%, then the maximum light level for all zones is 75%, and so on. Once a scene is programmed and setup mode is exited, moving the Master Slider has **no** effect on the preset light levels. It is suggested that Scenes 1—12 be programmed with the Master Slider in its topmost position, unless maximum light levels other than 100% are desired.

The procedure to set up a Master Slider is as follows:

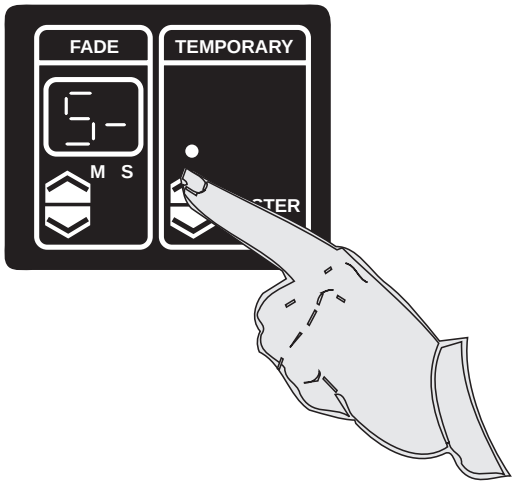
1. Move the sliders to their bottommost position and open the hinged cover.
2. Enter Setup Mode: Press and hold the Slider Scene button and Off Scene button for about 3 seconds, until the Slider Scene LED begins to flash.



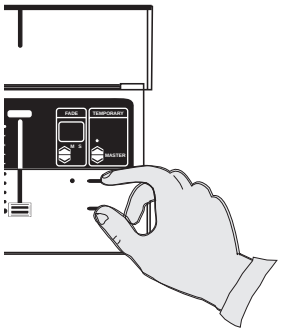
3. Press FADE button once; -- appears in the FADE Window.



4. Select a Master Slider: Press MASTER button to select a Master Slider:
"--" No Master, "S-" Left Master, "-S" Right Master



5. Exit Setup Mode: Press and hold the Slider Scene button and Off Scene button for about 3 seconds, until the Slider Scene LED stops flashing.



The light levels of the active scene may also be raised/lowered using the Master Raise/Lower buttons located under the hinged cover. Pressing these buttons will temporarily raise or lower the light level of the active scene without decreasing the zone capacity of the Control Unit. The relative light level, or dimming profile, of each zone is maintained. Reselecting the active scene will return the light levels to their preset intensities.

Advanced Programming Options

(continued)

Preset Scenes 1—12 Option

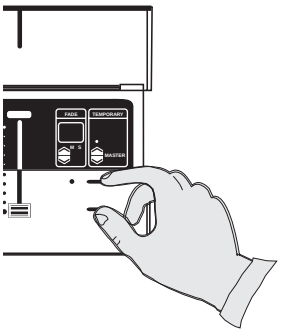
The GRXSLD Control Unit is shipped with Scenes 1—12 preset to the following light intensities:

Scene 1	100%
Scene 2	75%
Scene 3	50%
Scenes 4—12	25%

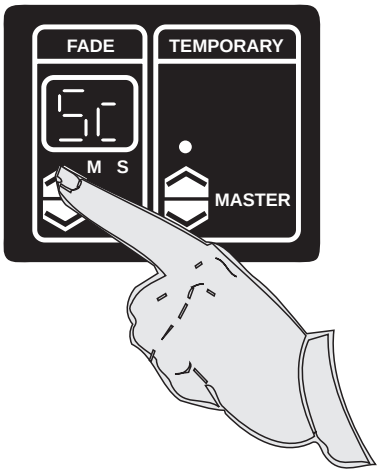
The procedure to customize the light intensities of Scenes 1—12 is as follows:

1. Move the sliders to their bottommost position and open the hinged cover.

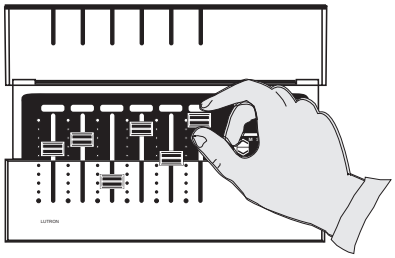
2. Enter Setup Mode: Press and hold the Slider Scene button and Off Scene button for about 3 seconds, until the Slider Scene LED begins to flash.



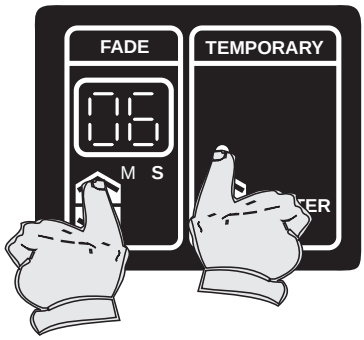
3. Select a Scene: Press FADE ⌃ button twice until Sc (the code for scene set up) and 1 (for Scene 1) alternately flash in the FADE Window. If programming a scene other than Scene 1, press MASTER ⌃ or ⌄ to select that scene.



4. Adjust Zone Intensity: Adjust the Sliders and/or Master Slider (if one has been designated) until the desired light levels are achieved. All changes are saved immediately.

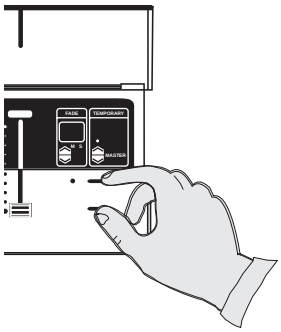


5. Set Scene's Fade Time: Press and hold the ● Alternate Display button located in the Temporary window. The Fade Time for this scene is displayed. While holding the ● Alternate Display button, adjust the Fade Time by using the FADE ⌃ or ⌄ buttons .



Repeat Steps 3—5 to set up the remaining scenes or go to Step 6.

6. Exit Setup Mode: Press and hold the Slider Scene button and Off Scene button for about 3 seconds, until the Slider Scene LED stops flashing.



7. Refer to the Instruction Sheet(s) provided with the optional Accessory Control(s) to access Scenes 1—12.

Advanced Programming Options

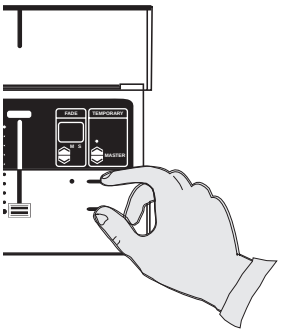
(continued)

Slide-to-Off Option

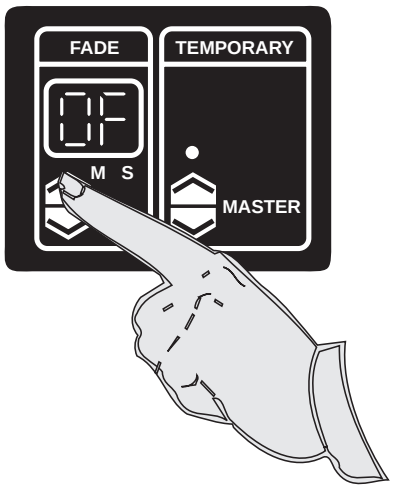
When a slider is placed in its bottommost position, the light level or load associated with that slider will respond by either turning Off or going to its lowest level (without turning Off). This response is based upon the Slide-to-Off option. The GRXSLD is shipped with the Slide-to-Off option enabled. In this mode, the GRXSLD Control Unit responds to a slider in its bottommost position by turning the associated light(s) or load Off. If the Slide-to-Off option is disabled, the GRXSLD responds by dimming the associated light(s) to its lowest level, without turning it Off. The Slide-to-Off option **must** be enabled for the GRXSLD to properly control a non-dim load.

The procedure to enable/disable Slide-to-Off is as follows:

1. Move the sliders to their bottommost position and open the hinged cover.
2. Enter Setup Mode: Press and hold the Slider Scene button and Off Scene button for about 3 seconds, until the Slider Scene LED begins to flash.

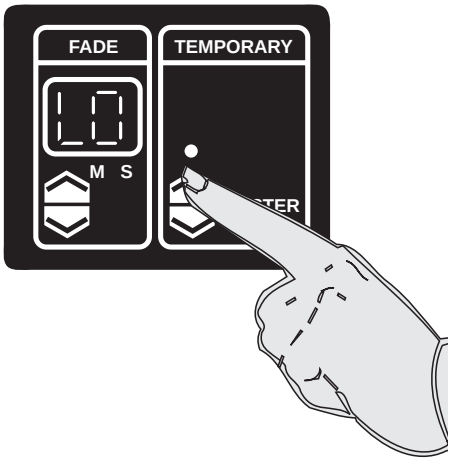


3. View Slide-to-Off Option: Press FADE button three times; OF (Off) is shown in the FADE Window. Slide-to-Off is enabled.

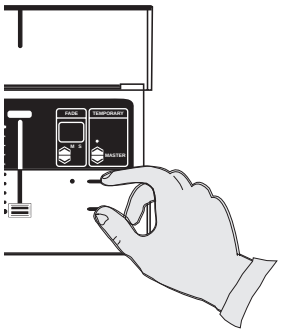


4. To Disable Slide-to-Off: Press MASTER ; LO (lowest light level) is shown in the FADE Window. Slide-to-Off is disabled.

   (Pressing MASTER will return the setting to OF.)



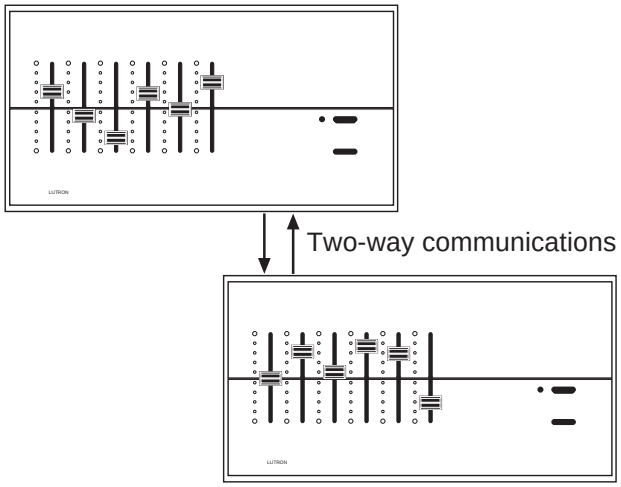
5. Exit Setup Mode: Press and hold the Slider Scene button and Off Scene button for about 3 seconds, until the Slider Scene LED stops flashing.



System Communications

System Communications are set up for two reasons: for linking two or more Control Units to control more than 8 zones, and to assign Accessory Controls to Control Units. For information about Accessory Control communication, please refer to the literature included with the Accessory Control.

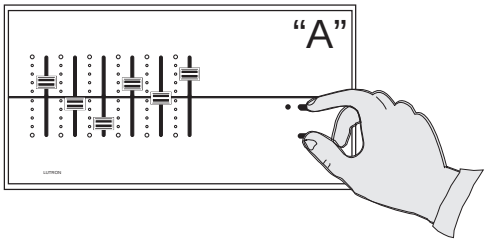
When two-way system communications are set up, selecting a scene at any one Control Unit will automatically select the same scene at the other Control Units. By linking two 6-zone Control Units, for example, scenes can be created that control the intensity of 12 zones. It is important to set up all the user-programmable scenes on all the Control Units involved in system communications. For example: If System Communications are set up between a 4000 Series Control Unit and a GRXSLD Control Unit, remember to set up Scene 1 on the GRXSLD Control Unit because selecting Scene 1 on the 4000 Series Control Unit will select Scene 1 on the GRXSLD Control Unit. Conversely, selecting the Slider Scene on the GRXSLD will select Scene 13 on the 4000 Series Control Unit.



To set up System Communications between GRXSLD Control Units:

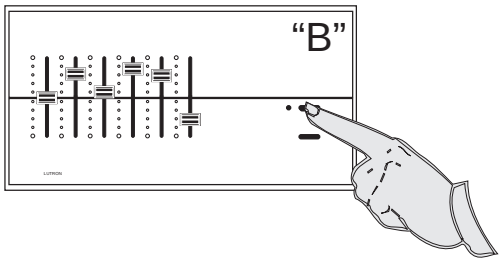
1. Put Control Unit "A" in Setup Mode: Press and hold the Slider Scene and Off Scene buttons on Control Unit "A" for about 3 seconds, until the Slider Scene LED begins to flash.

Put Control Unit "A" in setup mode.



2. Press and hold the top Scene button on Control Unit "B" for about 3 seconds, until its Slider Scene LED begins to flash (faster than Control Unit "A"). Control Unit "B" has been added and will now respond to scene selects made on Control Unit "A".

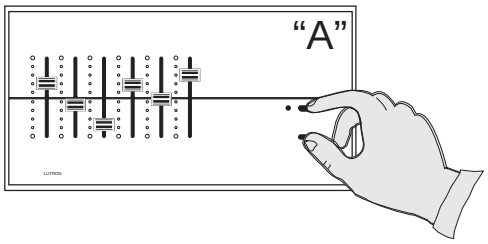
Add Control Unit "B".



Note: To subtract Control Unit "B", press and hold the Off Scene button for about 3 seconds, until its Slider Scene LED stops flashing.

3. Take Control Unit "A" out of setup mode by pressing and holding the Slider Scene and Off Scene buttons for about 3 seconds, until the Slider Scene LED stops flashing.

Take Control Unit "A" out of setup mode.



4. Communication is now set up in one direction (i.e., scene selects on Control Unit "A" will occur on Control Unit "B", but scene selects on Control Unit "B" will not occur on Control Unit "A"). To complete the two-way communication, repeat the process and add Control Unit "A" to Control Unit "B".

Up to 8 Control Units on a link can be involved in two-way system communications, for a total of 64 zones of control.

Function of the Optional NTGRX-2B-SL Accessory Control

Listed below are two examples of how the NTGRX-2B-SL Accessory Control functions differently witht he GRXSLD Control Unit than with other GRAFIK Eye Control Units. For more information, please see the NTGRX-2B-SL Instruction Sheet (P/N 040-140).

Fine Tuning Control

The NTGRX-2B-SL Accessory Control can raise/lower all the zones in the active scene, but is not capable of raise/lower of individual zones with the GRXSLD Control Unit without the use of LIAISON™ 2.1 or newer.

Sequencing

The GRXSLD Control Unit supports sequencing of Scenes 1—4 or Scenes 5—12.

Internet: **www.lutron.com**
E-mail: **product@lutron.com**

WORLD HEADQUARTERS
Lutron Electronics Co. Inc.,
7200 Suter Road, Coopersburg, PA 18036-1299 U.S.A.,
TOLL FREE: (800) 523-9466 (U.S.A., Canada, Caribbean), Tel: (610) 282-3800;
International 1- 610-282-3800, Fax: (610) 282-3090; International 1-610-282-3090

ASIAN HEADQUARTERS
Lutron Asuka Co, Ltd.,
2F, Kowa Shiba-Koen Bldg., 1-11, Shiba-Koen 1 chome, Minato-ku, Tokyo, 105-0011 Japan,
TOLL FREE: (0120) 083417 (Japan), Tel: (03) 5405-7333;
International 81-3-5405-7333, Fax: (03) 5405-7496; International 81-3-5405-7496

EUROPEAN HEADQUARTERS
Lutron EA Ltd.,
Lutron House, 6 Sovereign Close, Wapping, London, E1 9HW, United Kingdom,
FREEPHONE: 0800 282107 (U.K.), Tel: (171) 702-0657;
International 44-171-702-0657, Fax: (171) 480-6899; International 44-171-480-6899

HONG KONG SALES OFFICE
Lutron GL (Hong Kong)
Unit 2911, 29th Floor, Bank of America Tower, Central, Hong Kong,
Tel: 2104-7733; International 852-2104-7733, Fax: 2104-7633; International 852-2104-7633

SINGAPORE
Lutron GL (Singapore)
1002 Tai Seng Ave., #02-2548 Tai Seng Ind. Estate, Singapore 534469,
Tel: 65 487 2820
Fax: 65 487 2825

WARRANTY
Lutron warrants each new unit to be free from defects in materials and workmanship and to perform under normal use and service. This warranty shall run only for a period of one year from the date of purchase and Lutron's obligations under this warranty are limited to remedying any defect or replacing any defective part and shall be effective only if the defective unit is shipped to Lutron postage prepaid within 12 months after purchase. Damage due to abuse, misuse, inadequate wiring or installation is not covered by this warranty.
In no event shall Lutron or any other seller be liable for any other loss or damage, including consequential or special damages that may arise through the use by a purchaser or others of this device and the purchaser assumes and will hold harmless Lutron in respect of all such loss.
Although every attempt is made to ensure that catalogue information is accurate and up-to-date, please check with Lutron before specifying or purchasing this equipment to confirm availability, exact specifications and suitability for your application.

LUTRON®

Lutron Electronics Co., Inc.
Made and printed in U.S.A. 8/98
P/N 032-075 Rev. A