

# Wallstation Guide

Please Read Low-Voltage PELV (Class 2: USA) 24 V=== 30 mA

✓ QSWE-2BN
 ✓ QSWE-2BI
 ✓ QSWE-3BN

☑ QSWE-3BI ☑ QSWE-4BN

✓ QSWE-4BL

✓ QSWE-5BBLL

☑ QSWE-5BRLN

🗹 QSWE-5BRI IRI

- 🗹 QSWE-2BI 🛛 🗹 QSWE-6BRLI
  - 🗹 QSWE-7BRLN

☑ QSWE-6BRLN

- 🗹 QSWE-7BRLI
- 🗹 QSWE-8BRLN
- 🗹 QSWE-8BRLI
- 🗹 QSWE-8BRLIRN
- 🗹 QSWE-8BRLIRI
- 🗹 QSWE-5BRLIRN 🛛 🗹 QSWE-10BRLN
  - 🗹 QSWE-10BRLI









# Wiring Notes

- System Maximums
  - GRAFIK Eye® QS series control units can each power a maximum of 3 wallstations.
  - 610 m (2000 ft.) maximum wiring length
  - 0-40 °C (32-104 °F) operating temperature.
  - 100 devices per link (seeTouch® QS, Stvoia® QS, power panel, and GRAFIKEye QS each count as one device); 100 zones maximum per link
- Refer to the system installation guide for power cable and data ca ble (control link) wiring restrictions and limitations.
- Control Link Wiring
  - Power: Two 1.0 mm<sup>2</sup> (#18 AWG) PELV (Class 2: USA) wires. Connect to terminals 1 and 2.
  - Data: Two shielded 1.0 mm<sup>2</sup> (#22 AWG) PELV (Class 2: USA) wires (twisted, shielded pair). Connect to terminals 3 and 4.

Lutron offers a one-cable, non-plenum, lowvoltage solution (P/N GPX-CBL-346S-500), and a one-cable, plenum, low-voltage solution (P/N GPX-PCBL-346S-500). Check availability outside the U.S.

- Sensor/Contact Closure Input Connector Wiring (optional):
  - Three 1.0 mm<sup>2</sup> (#18 AWG) PELV (Class 2: USA) wires.
- Connect the wallstation to the control link inside the wallstation's wallbox or in a junction box (provided by others).
- Control link wiring must **not** be run in the same raceway as line voltage.
- Control link wiring is **not** to exceed 610 m (2000 ft.).
- The drain/shield wire must be maintained throughout the control link. Do **not** connect the shield to earth/ ground or allow contact with the grounded wallbox.

Wallstation circuits are classified as Class 2 circuits (USA) and PELV circuits (IEC). As Class 2 circuits, they comply with the requirements of NIPA® 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 wallstations, follow all applicable national and/ or local wiring regulations. External circuits connected to input, output, and other communication terminals of wallstations must be supplied from a listed Class 2 source or comply with the requirements for PELV circuits, as applicable in your country.

# Safety Notes

- Read all instructions carefully before starting installation.
- Lutron recommends that wallstations be installed by a qualified electrician.
- Do not connect high-voltage power to lowvoltage terminals. Improper wiring can result in personal injury or damage to the control or to other equipment.
- Use only a cloth with warm water and mild soap to clean faceplates (no chemical cleaners).

# Installation



Warning! Shock hazard. May result in serious injury or death. Always turn OFF the circuit breaker/MCB or remove the main fuse from the power line before doing any work.

1. Turn Power OFF. Turn power OFF as circuitbreaker/MCB (or remove fuse).

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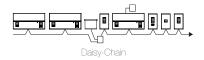
- Mount Wallbox. Wallstations mount in a Lutron wallbox (P/N 241-683) or in German and UK backboxes (60.30 mm measured center to center of mounting holes).
- 3. **Prepare Wallstations.** Remove the faceplate and set aside.

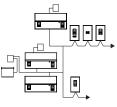
4. **Prepare wires.** Strip insulation from wires so that 9.5 mm (3/8 in.) of bare wire is exposed.



Each wallstation terminal accepts up to two 1.0 mm<sup>2</sup> (#18 AWG) wires.

Note: Wiring may be done in a Daisy-Chain or T-Tap configuration, as shown below.

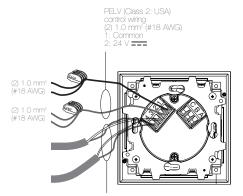




T-Tap

5. Connect the Wallstation to the Control Link.

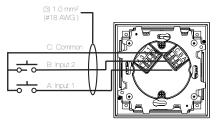
Connect two 1.0 mm<sup>2</sup> (#22 AWG) shielded, twisted pair wires to terminals 3 and 4 of the wallstation's control link connector. Shielding (drain) of the twisted pair wires must be connected together as shown, but do **not** connect the shielding to earth/ground or the wallstation and do not allow it to contact the grounded wallbox. Connect the Wallstation to external contact closure inputs (optional). If using one contact closure input, connect the input to terminal A of the wallstation sensor/contact closure input connector. If using two contact closure inputs, connect the inputs to terminals A and B. Connect the common side of the contact closure inputs to terminal C.



Data link: (1) twisted, shielded pair 1.0 mm² (#22 AWG) 3: <u>MUX</u> 4: <u>MUX</u>

#### **Control Link Wiring**

Note: Use the wire connector required by local code (those shown are common in the US).



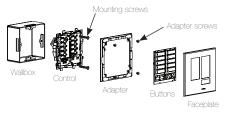
#### **Contact Closure Input Wiring**

#### Notes for Contact Closure Inputs:

Verify compatibility of external contact closure input devices. The contact closure inputs can be used with either dry contact closures or ground-referenced solid-state outputs. The outputs must stay in the closed or open states for at least 40 msec in order to be recognized by the wallstation. If there is any question as to whether the device is compatible with these specifications, contact the manufacturer.

Contact closure input function is determined by the programming of the top and bottom buttons of the left column of the wallstation.

 Mount Wallstation. Carefully mount and align the wallstation as shown. Screw top and bottom mounting screw into the control and wallbox. Replace the adapter (for insert versions) with the adapter screws. Then snap in the buttons and faceplate.



#### Typical Mounting Diagram (Exploded View)

8. Turn Power ON. Turn ON control breaker, or replace main fuse.

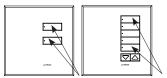
#### Notes

 Unprogrammed (out of the box) QS wallstations and control units will all work together until they are reprogrammed otherwise.

# System Communications

In order for wallstations to communicate with a control unit, each wallstation must be individually configured to "talk" to a "listening" control unit. In order for shade wallstations to control exclusively a given group of window treatments (as opposed to all window treatments in the system), each shade wallstation must be individually configured to "talk" to its respective window treatments. (Only one wallstation can be in setup mode at a time.)

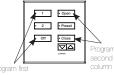
 Enter Setup Mode. Press and hold simultaneously for 3 seconds the top and bottom buttons (not including raise/lower buttons) on the wallstation.



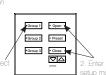
Press and hold the top and bottom buttons on your wallstation for 3 seconds to enter setup mode.

# Note: For wallstations

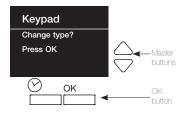
with two columns of buttons, you will program each set as if each were its own wallstation.



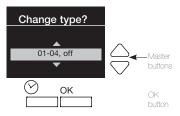
Note: For multigroup shade wallstations, first select the group, then program the wallstation for that group.



 Select wallstation function (optional). The info screen on the GRAFIK Eye® QS control unit will display a prompt to change your wallstation's function (type).



Press the OK button on the QS control unit to display the current wallstation function/type. To change, use the master buttons to scroll through the available choices until the function you want displays on the info screen.



The keypad menu will display only functions that are available for the wallstation model that is "talking" to it. The example shown here is for a 5-button wallstation with raise/lower buttons.

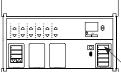
Press the OK button to accept and save your highlighted choice.

#### Installation Instructions

### Programming

The next step is to configure which GRAFIK Eye<sub>20</sub> QS control unit or window treatment "listens" when the wallstation "talks", depending on your wallstation's function. You will perform only one of Steps 3a through 3e for each wallstation.

3a. For wallstations with scene, panic, or sequence functions: Press and hold the top button on the GRAFIK Eye QS control unit lighting column until its LEDs flash in unison. Repeat for each control unit you want to "listen" to the wallstation for the selected function.



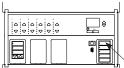
Press and hold the top button on the lighting column for 3 seconds to make control unit "listen".

Note: To stop a control unit from "listening" to a wallstation, put the wallstation in setup mode, and press and hold (for 3 seconds) the **bottom** button on the lighting keypad of the control unit you want to stop listening.



## 3b For wallstations with partition function:

2-button wallstations that control one partition: The LEDs on the wallstation will alternately blink. On each *GRAHKEye* QS control unit within the partitioned space, press and hold the top button on the lighting column until its LEDs flash in unison. The control units will then function together when the partition is open.



Press and hold the top button on the lighting column for 3 seconds to make control unit "listen".

<u>All other partition wallstations</u>: On the wallstation, press the button you want to use to control partition function. Its LED will blink slowly. Then, on each *GRAFIK\_Eye* QS control unit that is related to that partitioned space, press and hold the top button on the lighting column until its LEDs flash in unison. For multiple partitions, repeat for additional buttons on the partition wallstation, and the related control units.

Note: To stop a control unit from "listening" to a wallstation, put the wallstation in setup mode, then press and hold (for 3 seconds) the **bottom** button on the lighting keypad of the control unit you want to stop listening. Proceed to Step 4.

Proceed to Step 4.

- 3c. For wallstations with fine tune function: On the GRAFIK Eye® QS control unit, press simultaneously the raise and lower buttons for the zone you want the wallstation to fine tune. Repeat for each zone you wish to "listen" to the selected wallstation, or for zones on additional control units. When listening, zone LEDs flash. When unassigned (not "listening"), the 3 middle zone LEDs light.
- Note: To stop a zone from listening to a wallstation, put the wallstation in setup mode, and press simultaneously the raise and lower buttons on the zone you want to stop listening.



Proceed to Step 4.

#### 3d For wallstations with zone toggle function:

On the wallstation, press the button you want to program to toggle (alternate between) zones. Its LED will blink slowly.

On the GRAFIKEye QS control unit, for the zone you want to "listen" to the wallstation, use the raise and lower buttons to set the desired levels. The LEDs will indicate the level. Then, press simultaneously those raise and lower buttons to listen that zone to the wallstation. When listening, zone LEDs flash. When not listening (unassigned), the 3 middle zone LEDs light.

Repeat for each zone you wish to assign to the selected wallstation, or for zones on additional control units.

Finally, repeat to program the remaining buttons on the wallstation with their respective zones.

Note: To stop a zone from listening to a wallstation, put the wallstation in setup mode, and press simultaneously the raise and lower buttons on the zone you want to stop listening. Proceed to Step 4.

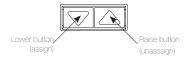
# 3e For wallstations configured for shade function:

Note: Entering setup mode will cause the window treatments to move between their open and close limits. Be sure that the open and close limits have been set correctly (see page 12). Because your wallstation is configured for shade function, upon entering setup mode, EDUs (electronic drive units of window treatments) assigned to that wallstation will move to their close limit, and EDUs not assigned to it will move to their open limit. To assign an EDU to the wallstation that is in setup mode, use one of the following methods:

Either -Press the top button on the wallstation. Each time you press the top button, a different EDU that is assigned to that wallstation will open and close in an 203 mm (8 in.) range. Press the top button until the EDU you wish to assign to the wallstation moves. (You can also use the bottom button, which moves through the EDUs in the opposite order.)

Assign or unassign the currently selected EDU to the wallstation using the raise and lower buttons:

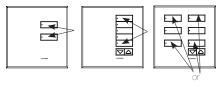
The lower button assigns the selected EDU. The raise button unassigns the selected EDU.



- Or -Press any button on an EDU to toggle between unassignment and assignment for that EDU's window treatment to the wallstation. Check window treatment assignments: EDUs for window treatments assigned to the wallstation will be at their close limit, and EDUs for window treatments not assigned to the wallstation will be at their open limit.
- Note: Once you have assigned window treatments to a wallstation and exited setup mode, you will notice the following additional functionality:
  When some or all EDUs assigned to a wallstation are moving, press any button on the wallstation to immediately stop all assigned EDUs.
  - -The position that each EDU moves to when any but the top or bottom button is pressed is now programmable (see page 13).
  - -No matter how or from where their movement is commanded, whenever all the assigned EDUs come to a stop and match their programmed positions for one of the buttons on the wallstation, the LED next to that button will automatically light.

Proceed to Step 4.

 Exit Setup Mode. Press and hold the top and bottom buttons on the wallstation simultaneously for 3 seconds. The LEDs will return to normal.



Press and hold the top and bottom buttons for 3 seconds to exit setup mode.

# International seeTouch® QS Wallstation Button Functions

The following functions are menu choices when the walistation is in setup mode and the GRAFIK Eye® QS is displaying the keypad menu. Each function choice is explained below. See the next page for a summary table of wallstations and their function choices.

Scenes: Choose from the list of preset groups of scenes to assign to the buttons on this wallstation. See the next page for a list of available scene groupings for each keypad.

Zone: Assigns control of one or more zones on one or more *GRAFIK Eye* QS control units to the selected wallstation button. Pressing a zone control button on a wallstation causes all assigned zones to go to the set level, with a fade time of 3 seconds (if all assigned zones are currently off). If any assigned zone is currently on (at any level), the LED for that zone will be lit, and pressing the wallstation button that controls that zone will cause all assigned zones to fade to off over 3 seconds. The 3-second fade time cannot be adjusted.

Partition: Used for rooms that can be divided by one or more partitions into smaller spaces. The LED on the assigned button indicates whether the partition should be considered open (LED is lit; control units work together as one) or closed (LED is off; control units work independently in separate spaces). A contact closure will open the partition; a contact opening will close the partition. Wallstations programmed for partitioning are only used for partitioning, and each button is configured to control different combinations of control units. When the partition between two *GRAFIKEye* QS control units is open, the control units act together. **2B Partition:** 2-button wallstations only. The top button indicates partition open, and the bottom button indicates partition closed.

**2B Fine Tune:** 2-button wallstations only. The buttons function as raise and lower buttons for the assigned zones. Zones are assigned by pressing the raise and lower buttons simultaneously; repeat to change assignments.

**2B Sequence:** 2-button wallstations only. This function scrolls through scenes 5 through 16 using their assigned fade rates, then repeats. For showroom-type applications. Program as you would for the Scene function.

**2B Panic:** 2-button wallstations only. Pressing the button sends all assigned zones immediately to scene 16, and locks out all button presses on all connected wallstations and control units. Program as you would for the Scene function.

Window treatments: Assign control of a group of shades to a wallstation.

Note: If a control unit has devices connected to it through contact closure inputs, CCI1 follows the top button and CCI2 follows the bottom button of the left column. The contact closure is equivalent to a button press. Exception: On a 2-button wallstation, CCI1 closure action follows the top button and opening action follows the bottom button.

## International seeTouch® QS Wallstation Button Functions Summary

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Button Configuration	2B	3B	4B	5BRL 5BRLIR	6BRL		7BRL		8BRL 8BRLIR		10BRL	
					Left	Right	Left	Right	Left	Right	Left	Right
EGN Functionality	1, Off	1, 2, 0ff	1, 3, 0ff	1-4, Off	See 3B	WT*	See 2B	WT*	See 3B	WT*	1-9	Off
E01 Functionality				WT	WT: 3 Groups		WT: 2 Groups		WT: 3	Groups	See 5B	WT*
NST Options												
Scene Options	1, Off 5, Off 9, Off 13, Off 1, 2 5, 6 9, 10 13, 14	1, 2, 0ff 5, 6, 0ff 9, 10, 0ff 13, 14, 0ff 1-3 5-7 9-11 13-15	1, 3, 0ff 5, 7, 0ff 9, 11, 0ff 13, 15, 0ff 1-4 5-8 9-12 13-16	1-4, Off 5-8, Off 9-12, Off 13-16, Off 1-5 5-9 9-13	See 3B	See 3B	See 3B	See 3B	See 3B	See 3B	1-9, 1-1	
Zone	х	х	х	х	x	х	х	х	х	х	х	
Partition Function		х	х	х	x	х		х	x	х	x	
2B Partition Function	х						х					
Zone Lockout Function	х						х					
Fine Tune Function	х						х					
Sequence Function	х						х					
Panic Function	х						х					
Window Treatments Function				х		x		х		х		

\*WT - Window Treatments

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# Adjusting Window Treatment Settings

## Setting Limits

Note: Entering Limit Setup mode may cause window treatments to move approximately 203 mm (8 in.) up or down. Be sure that each window treatment is positioned so that the fabric can safely move 203 mm (8 in.) up or down before entering Limit Setup mode.

To be able to adjust window treatment limits, your wallstation must have raise and lower buttons. If your model does not have these, please contact Lutron Technical Support or refer to your window treatment documentation to use the buttons on your EDU to manually set limits.



 On your shade keypad, press and hold the top and raise buttons simultaneously for 3 seconds. The LEDs next to the top and bottom buttons will cycle.

- Note: At any time while in Limit Setup mode, you can move all window treatments together to their current open limit by slowly double-pressing the top button, or to their current close limit by slowly double-tapping the bottom button.
- Note: Once EDUs (electronic drive units of the window treatment) have been assigned to shade keypads, limits can be set for an EDU only using the shade keypad it is assigned to, and a shade keypad can set limits only for those EDUs assigned to it.

2. Select the EDU you want to to adjust using the top button on the shade keypad. Each time you press the top button, a different EDU that is assigned to that shade keypad will open and close in an 203 mm (8 in.) range to indicate it is selected. Press the top button until the EDU for the window treatment you wish to adjust moves. (You can also use the bottom button, which moves through the assigned EDUs in the opposite order.)



- Adjust the currently selected EDU to the desired level for the open limit (the maximum the window treatment is allowed to open) using the raise and lower buttons.
- Press and hold the top button on the shade keypad simultaneously for 3 seconds to store the current position as the open limit. The LED next to the top button will flash quickly for 2 seconds.
- Adjust the currently selected EDU to the desired level for the close limit (the maximum the window treatment is allowed to close) using the raise and lower buttons.
- Press and hold the bottom button on the shade keypad for 3 seconds to store the current position as the close limit. The LED next to the bottom button will flash quickly for 2 seconds.
- Repeat steps 2 through 6 to set the open and close limits for each window treatment assigned to the shade keypad.
- Press and hold the top and raise buttons on the shade keypad simultaneously for 3 seconds to exit Limit Setup mode.

# Preset Adjustment: Simple Method

Note: The top button will always open the shades fully, and the bottom button will always close the shades fully. Only the shade presets activated by the intermediate buttons can be reprogrammed.



 Use the raise and lower buttons on the shade keypad to set all EDUs (electronic drive units of the window treatments) to the desired preset levels.



- Press and hold the respective preset button on the shade keypad for 3
   seconds to save the EDU preset positions. The LED next to the button will flash and then light continuously, indicating the preset has been stored.
- Note: Once EDU presets have been assigned to buttons on a shade keypad, those presets are accessible for an EDU only using the shade keypad it is assigned to, and a shade keypad can access preset levels only for those EDUs assigned to it.

# Preset Adjustment: Advanced Method

- Note: The advanced method for adjusting presets is needed only if you wish to have the window treatments assigned to the shade keypad set at different positions in the preset. If, however, you wish all the window treatments in the group to be lined up with one another in the preset, you should use the Simple Method above.
- Note: Entering Assignment mode will cause the window treatments to move between their open and close limits. Be sure that the open and close limits have been set correctly.



- On the shade keypad whose preset you wish to adjust, press and hold the top and bottom buttons simultaneously for 3 seconds. The LEDs next to the buttons will flash. EDUs (electronic drive units) for the assigned window treatments will move to their closed limits, and EDUs for unassigned window treatments will move to their open limits.
- Press the preset button you wish to adjust on that shade keypad. The adjacent LED will blink rapidly. EDUs for assigned window treatments will automatically move to their current preset settings.



- Use the raise and lower buttons to move all EDUs for assigned window treatments together to the desired preset setting.
- 4. To move an EDU individually to its desired preset setting, select the EDU using the top button on the shade keypad. Each time you press the top button, a different EDU that is assigned to that shade keypad will open and close in an 203 mm (8 in.) range. Press repeatedly until the EDU for the window treatment you wish to adjust moves. Adjust that EDU to the desired height using the raise and lower buttons.

Repeat this step for all assigned EDUs you wish to adjust.

- Once you are satisfied that all the assigned EDUs are set to the positions you want to assign as the preset, press and hold the respective preset button on the shade keypad for 3 seconds. The preset will be saved.
- Press and hold the top and bottom buttons on the shade keypad simultaneously for 3 seconds to exit to normal mode. The LEDs next to the buttons will stop flashing.

Troubleshooting	
Symptom	Possible Causes
No communication with GRAFIK Eye⊚ control unit.	<ul> <li>Miswire or loose connection at the control link data lines 3 and 4.</li> <li>Wallstation has not been programmed or has been programmed incorrectly.</li> </ul>
Wallstation buttons do not work; LEDs do not track.	<ul> <li>Wallstation is miswired.</li> <li>Wallstation is not powered.</li> <li>Wallstation is not wired to the correct set of lights.</li> <li>Wallstation is not programmed to the correct device.</li> <li>Column is not programmed.</li> </ul>
LEDs do not light.	<ul> <li>Miswire or loose connection at wallstation(s) or processor on the control link common and power connections 1 and 2.</li> <li>Wallstation has been programmed incorrectly.</li> <li>Column is not programmed.</li> </ul>
Contact closure inputs or sensor input do not produce the desired result in the system.	<ul> <li>Miswire or loose connection at wallstation sensor/CCl connector.</li> <li>Wallstation has not been programmed or has been programmed incorrectly.</li> </ul>
Wallstation buttons do not function as intended.	• Wallstation has not been programmed or has been programmed incorrectly.

# Troubleshooting: Window Treatment Functions

Symptom	Possible Causes	Remedy
EDU (electronic drive unit of the window treatment) will not move	EDU is not powered Window treatment fabric is caught on something EDU is not assigned to a keypad	Check EDU power Check and unbind window treatment fabric Assign the EDU to a keypad
EDU (electronic drive unit of the window treatment) does not fully open or fully close	Presets have been set incorrectly Limits have been set incorrectly Window treatment fabric is caught on something	Try using raise/lower buttons on keypad Set limits correctly Check and unbind window treatment fabric
Window treatment moves in the opposite direction when raise/lower buttons are pushed	Open and close limits have been reversed	Set limits correctly
Keypad LEDs are off and keypad will not control any window treatment	No power is going to keypad	Check and wire power to keypad
Keypad LEDs are on but keypad will not control any window treatment	All presets are set to the same height Communications link is not wired to the EDU EDU has been unassigned from keypad Open and close limits are the same	Try using raise/lower buttons on keypad Check and wire the EDU link Reassign the EDU to the keypad Set limits correctly
Keypad does not operate all the window treatments it is assigned to	EDU has been unassigned from keypad All presets are set to the same height EDU is not wired correctly Keypad is not wired correctly	Reassign the EDU to the keypad Try using raise/lower buttons on keypad Check and rewire EDU Check and rewire keypad
Window treatments in a room move on their own	EDUs are assigned to a keypad in another room	Reassign the EDU to the correct keypad

#### Warranty Lutron Electronics Co., Inc. Limited Warranty

Lutron EA Ltd. ("Lutron EA") warrants each unit to be free from defects in material and workmanship and to perform under normal use and service. To the extent permitted by law. Lutron EA and Lutron Electronics Co. Inc. ("Lutron") make no warranties or representations as to the units except as set forth herein. This warranty shall run for a period of two years from the date of purchase and Lutron's obligations under this warranty are limited to remedving any defect, replacing any defective part or replacement (at Lutron EA's sole option) and shall be effective only if the defective unit is shipped to Lutron EA postage prepaid within 24 months after purchase of the unit. Repair or replacement of the unit does not affect the expiry date of the warranty. This warranty does not cover damage or deficiencies due to abuse, misuse, inadequate wiring or insulation or use or installation other than in accordance with instructions accompanying the unit.

To the extent permitted by law, neither Lutron EA nor Lutron stable bials for any other loss or damage including consequential or special loss or damages, loss of profits, loss of income, or loss of contacts arising out of or realing to the supply of the unit or the use of the unit and the purchaser assumes and will hold harmless. Lutron EA and Lutron in respect of all such loss or damage.

Nothing in this warranty shall have the effect of limiting or excluding Lutron EA's or Lutron's liability for fraud or for death or personal injury resulting from its own negligence, or any other liability, if and to the extent that the same may not be limited or excluded as a matter of law.

#### This warranty does not affect the statutory rights of consumer purchasers of this product.

Although every attempt is made to ensure that catalogue information is accurate and up-to-date, please check with Lutron EA before specifying or purchasing this equipment to confirm availability, exact specifications, and suitability for your application.

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#### WORLD HEADQUARTERS

#### USA

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Lutron Electronics Co., Inc. Vlade and printed in U.S.A. P/N 030-1005 Rev. A: 06/10



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