

Description

The GRX-CCO-8 provides eight dry contact closure outputs that integrate the control of customer-supplied audio/visual equipment to GRAFIK Eye® (GRX) Control Units. In addition, the GRX-CCO-8 can control Motorized Window Treatment (MWT) controllers that accept dry contact closures as inputs.

The GRX-CCO-8 may operate in one of two control methods: Scene Control or Zone Control. In Scene Control, the GRX-CCO-8 is assigned to one or more GRX Control Units, and a single output is closed when the corresponding GRX Control Unit scene is selected. Only one output may be closed at any given time.

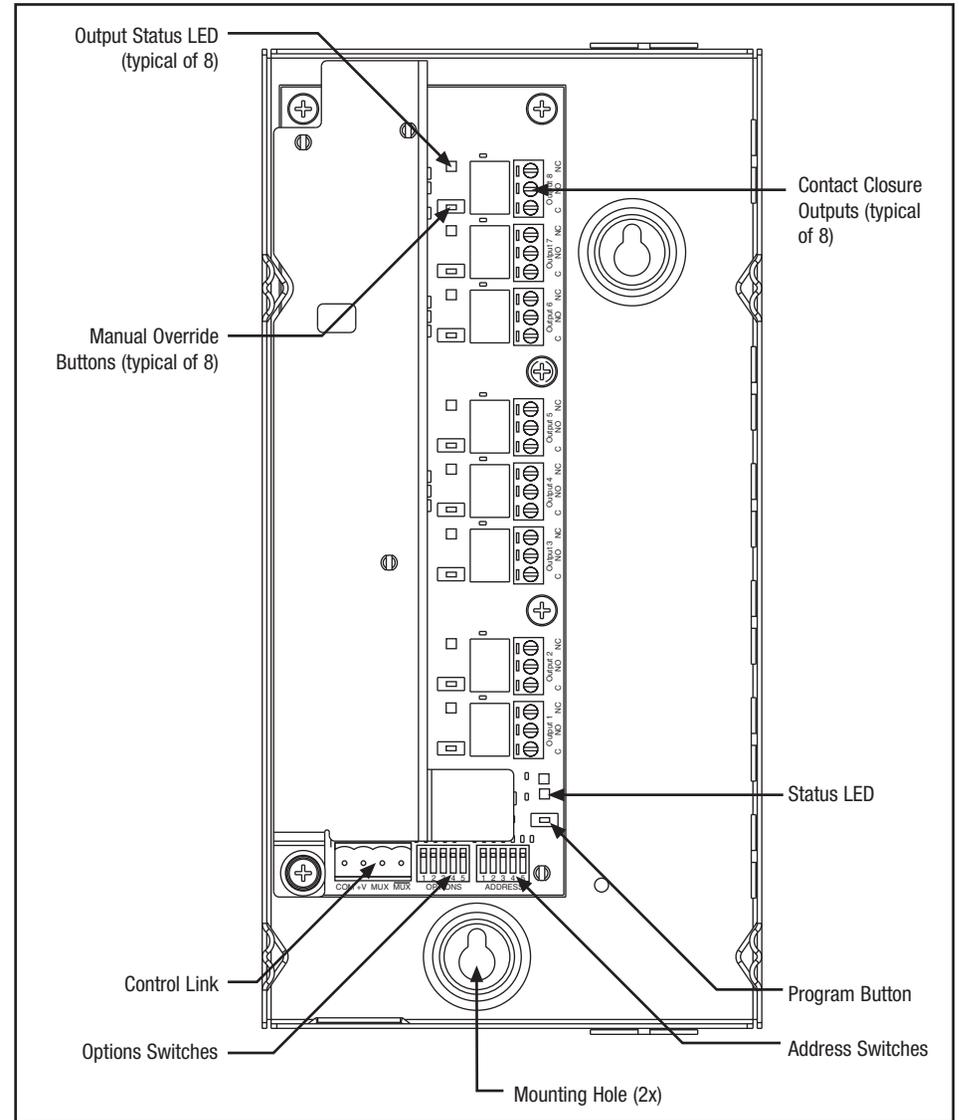
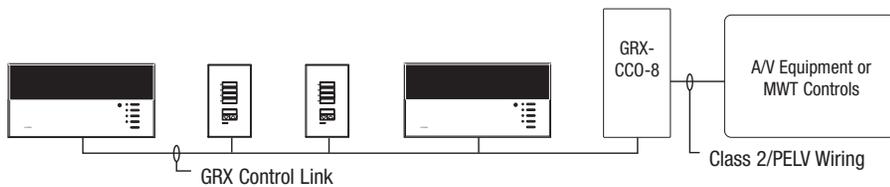
In Zone Control, one or more GRX-CCO-8 outputs are assigned to a zone on a GRX Control Unit. Different GRX-CCO-8 outputs may be assigned to zones on different GRX Control Units. A GRX-CCO-8 output is opened or closed based on the intensity of the GRX Control Unit zone to which it is assigned. To control MWTs, operate the GRX-CCO-8 in Zone Control.

Note: If the GRX-CCO-8 is to control Motorized Window Treatments, use one of the following GRAFIK Eye model numbers: GRX-350X-X-XX-CPN1622, GRX-450X-X-XX-CPN1623

Features

- The GRX-CCO-8 provides both normally open (NO) and normally closed (NC) contacts.
- The GRX-CCO-8 may be set to momentary or maintained outputs.
- In Scene Control, the outputs may be associated with different GRX scene ranges.
- In Zone Control, the outputs may be set as individual outputs or MWT channels.
- Outputs set as MWT channels may be set to have OPEN and CLOSE outputs or OPEN, STOP, and CLOSE outputs.
- Manual override buttons allow for testing the system wiring.

System Diagram



Output Ratings

| Supply Voltage | Resistive Load |
|----------------|----------------|
| 0-30 V | 1.0 A |
| 30-42 V | 0.5 A |

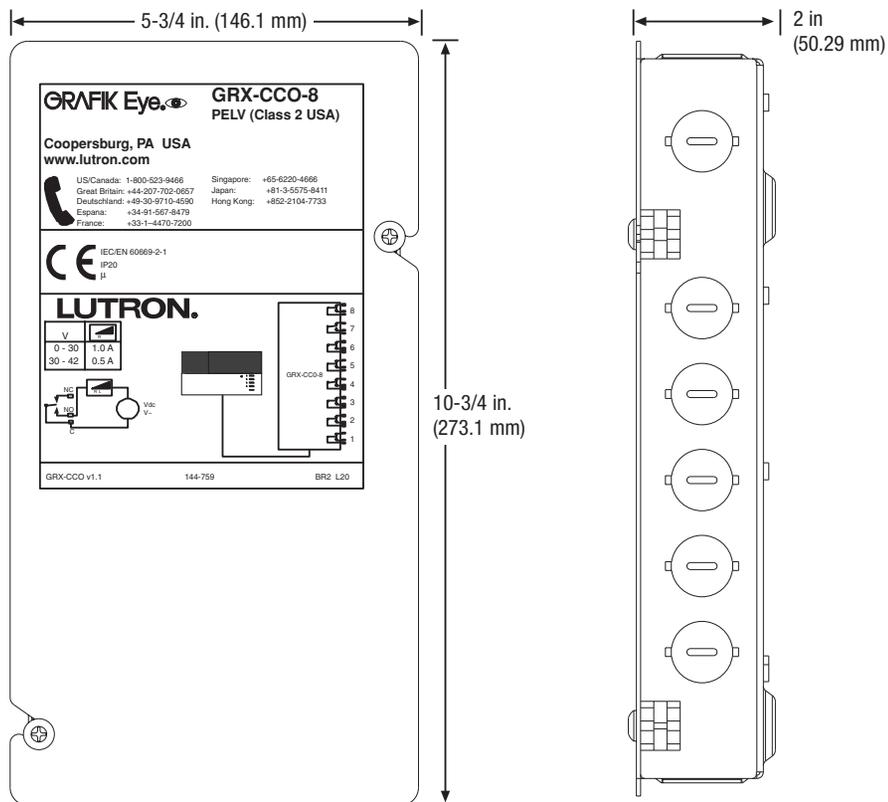
Installation

Mounting

- Lutron recommends that the GRX-CCO-8 be installed by a qualified electrician.
- The environment where the GRX-CCO-8 is placed must have an ambient temperature range of 32—104 °F (0—40 °C).
- Mount the enclosure on clean, dry surface.
- Mounting method must be able to support weight and forces applied during installation.
- Mount the GRX-CCO-8 no further away than the maximum wire length specified by the AV equipment or MWT controller, if applicable.

1. Remove the top cover by loosening the two screws.
2. Mark two holes in the mounting surface using the GRX-CCO-8 as a template.
3. Drill the holes.
4. Mount the GRX-CCO-8 using 2 #8 screws (not supplied)

GRX-CCO-8 (shown with cover attached)



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.

- Do not connect line/mains voltage power to low-voltage terminals. Improper wiring can result in personal injury or damage to the control or to other equipment.
- Refer to the GRX Control Unit Installation Guide and/or *Lutron* job drawings for power cable and data cable (GRX Control Link) wiring specifications.
- The GRX-CCO-8 must be connected to the GRX Control Unit 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.

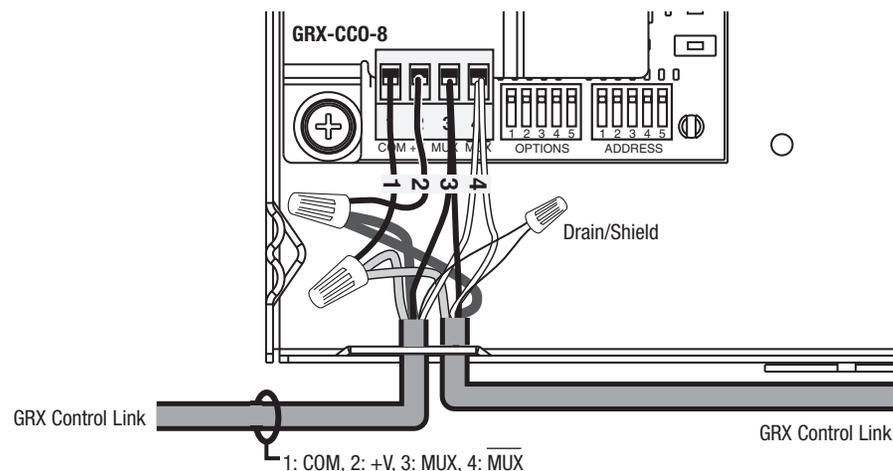
GRX Control Link - GRX-CCO-8 to GRX Control Unit

Proper wiring of the GRX-CCO-8 is dependent upon the GRX Control System that is providing power. *GRAFIK Eye* 3000 Series and *GRAFIK Eye* 4000 Series Control Units have different power specifications and wiring techniques. Please confirm the type of GRX Control Unit to which the GRX-CCO-8 is being wired and use the corresponding instructions that follow.

1. Turn power Off.
2. Strip insulation from wires so that 3/8 in. (10 mm) of bare wire is exposed for #18 AWG (1.0 mm²) wire.
3. Wiring must be done in a daisy-chain configuration (please see Installer's Guide included with GRX Control Unit for more information).

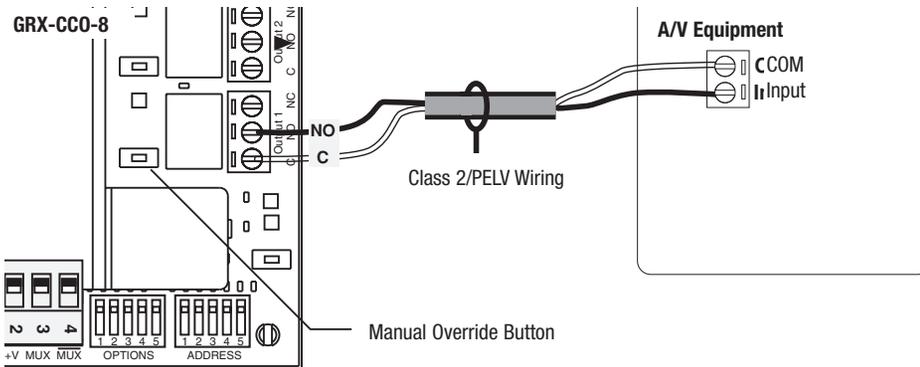
3000 Series System Wiring. Connect two twisted pair of wires (four #18 AWG [1.0 mm²]) to the GRX-CCO-8's terminal block.

4000 Series System Wiring. Connect one twisted pair of wires (two #18 AWG [1.0 mm²]) to terminals 3 and 4 of the GRX-CCO-8's terminal block. For terminals 1 and 2, the use of #12 AWG (2.5 mm²) is required. Refer to the diagram below for proper wiring.



Contact Closure Outputs - GRX-CCO-8 to A/V Equipment

1. Refer to the A/V equipment installation guide to determine which contact to wire, normally open (NO) or normally closed (NC). The diagram below shows wiring with normally open contacts.
2. The GRX-CCO-8 terminal blocks will accept #16–#22 AWG wire. Use the appropriate wire gauge for your application. Connect the GRX-CCO-8 and the A/V Equipment as shown in the diagram below.
3. After wiring, use the manual override buttons to verify proper system operation. Press the button associated with the desired output to close the relay. The manual override buttons operate the GRX-CCO-8 according to how the OPTIONS switches are set (see *Set Options - Zone Control*).
4. Replace the cover when wiring is complete.



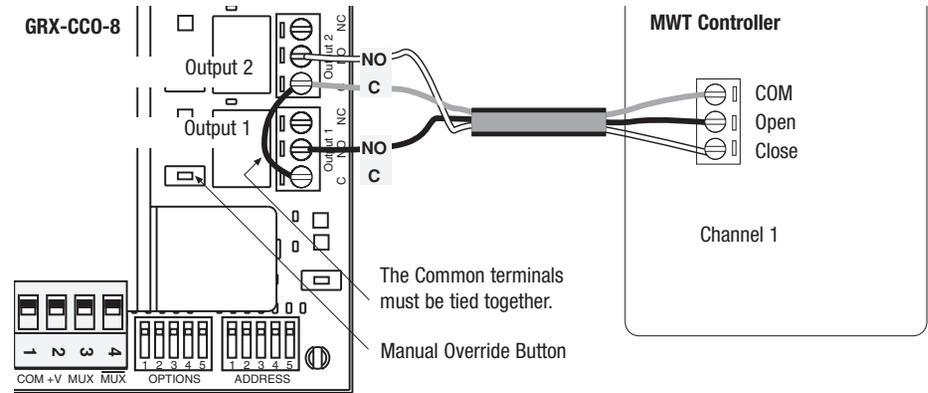
Contact Closure Outputs - GRX-CCO-8 to MWT Controllers

Note: The number of MWT channels and the number of outputs per MWT channel must be set. This will affect how the GRX-CCO-8 is wired. Refer to Set Options for more information.

1. Refer to the manufacturer's MWT Controller installation guide to determine which contacts to wire, normally open (NO) or normally closed (NC). The diagram at right shows wiring with normally open (NO) contacts.
2. The GRX-CCO-8 terminal blocks will accept #16–#22 AWG wire. Use the appropriate wire gauge for your application. Connect the GRX-CCO-8 and the MWT Controllers as shown in the diagram at right.

Note: The Common terminals must be tied together as shown.

3. After wiring, use the manual override buttons to verify proper system operation. Press the button associated with the desired output to close the relay. The manual override buttons operate the GRX-CCO-8 according to how the OPTIONS switches are set (see *Set Options - Zone Control*).
4. Replace the cover when wiring is complete.



Set Options

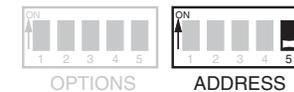
Warning! When controlling MWTs, the GRX-CCO-8 can be set up to have both OPEN and CLOSE outputs closed simultaneously. Some MWT controllers cannot have both OPEN and CLOSE inputs closed simultaneously, as this will damage the motor. Refer to your MWT controller's installation guide to make certain that the GRX-CCO-8 is set up properly for your MWT controller.

Set Control Method (Zone vs. Scene)

The GRX-CCO-8 may operate in one of two ways: Zone Control or Scene Control. In Zone Control, the outputs of the GRX-CCO-8 are controlled by zones on a GRX Control Unit. Also, the outputs may be set as MWT channels or individual outputs. See *Set Options – Zone Control* for further description.

In Scene Control, a single output on the GRX-CCO-8 will be closed based on which scene is selected on the GRX Control Unit. See *Set Options – Scene Control* for further description.

To operate in Zone Control, set Address Switch #5 to OFF. Proceed to *Set Number of MWT Groups*.



To operate the GRX-CCO-8 in Scene Control, set Address Switch #5 to ON. Proceed to *Set Options – Scene Control*.

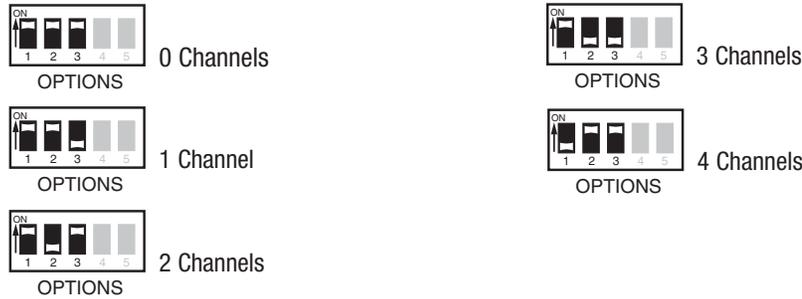


Set Number of MWT Channels (Zone Control Only)

If the Control Method is set to Scene Control, refer to *Set Options – Scene Control*.

The number of MWT channels may be set from 0 to 4. If the GRX-CCO-8 will not be controlling any MWTs, set the number of channels to 0.

Set the number of channels using switches 1, 2, and 3 on the OPTIONS switch (see diagram below).



Set Options – Zone Control

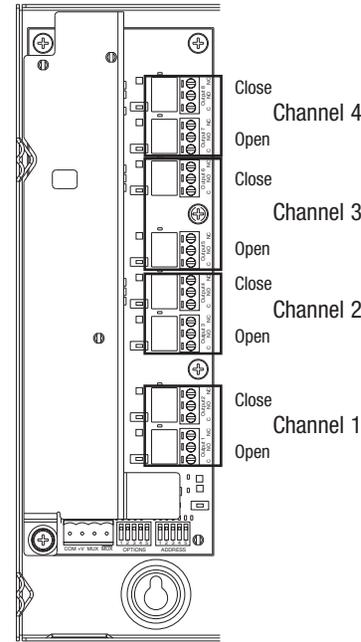
- Set the OPTIONS switches to select the operating mode that is appropriate for your application.
- The outputs may be set to either all momentary or all maintained.
- The MWT channel(s) may be set to have Open and Close outputs, or Open, Stop and Close outputs. Refer to the manufacturer's MWT Controller Installation Guide to determine how many outputs per MWT channel are appropriate.
- Set the appropriate Stop function. Refer to the manufacturer's MWT Controller Installation Guide.
- Outputs not used as MWT channels may be controlled as individual outputs (e.g., if the GRX-CCO-8 is set to have 2 channels of MWT controllers, and each channel has 2 outputs, then there will be 4 outputs left over to act as individual outputs). The output will be closed when the GRX Control Unit zone to which it is assigned has an intensity greater than zero.

| | OPTIONS | OPTIONS | OPTIONS | OPTIONS |
|-------------------------------|---------------------|---------------------------------------|---------------------------|------------------------------|
| Output configuration for MWTs | Open Close | Open Close | Open Close | Open Stop Close |
| Output Type | Maintained | Momentary | Momentary | Momentary |
| Stop Function | Both outputs opened | Open and Close pulsed simultaneously* | Most recent output pulsed | Dedicated Stop output pulsed |

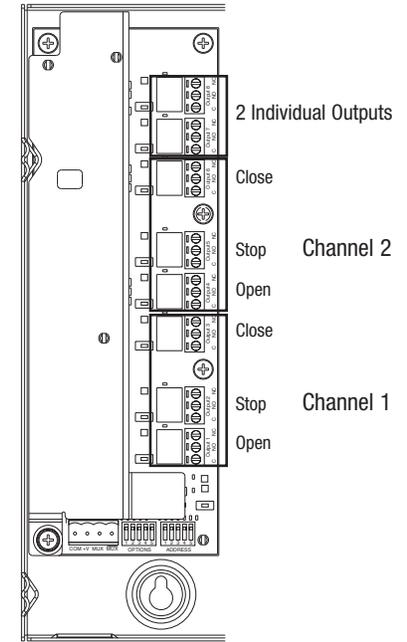
* Please refer to **Warning** at the beginning of *Set Options* section.

Note: If channels are configured to have three outputs per MWT channel, then the maximum number of MWT channels is two.

2 Outputs per Channel



3 Outputs per Channel



Set Options – Scene Control

- Set the OPTIONS switches to select the GRX Control Unit scene range that is appropriate for your application. See the chart on the next page.
- Set which scene applies which outputs. Only one output may be closed at any given time.

| | Outputs | | | | | | | |
|--|----------|----------|----------|----------|----------|----------|----------|----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | Scene 1 | Scene 2 | Scene 3 | Scene 4 | Scene 5 | Scene 6 | Scene 7 | Scene 8 |
| | Scene 5 | Scene 6 | Scene 7 | Scene 8 | Scene 9 | Scene 10 | Scene 11 | Scene 12 |
| | Scene 9 | Scene 10 | Scene 11 | Scene 12 | Scene 13 | Scene 14 | Scene 15 | Scene 16 |
| | Scene 13 | Scene 14 | Scene 15 | Scene 16 | Scene 1 | Scene 2 | Scene 3 | Scene 4 |
| | Scene 1 | Scene 2 | Scene 3 | Scene 4 | Scene 5 | Scene 6 | Scene 7 | Off |
| | Scene 5 | Scene 6 | Scene 7 | Scene 8 | Scene 9 | Scene 10 | Scene 11 | Off |
| | Scene 9 | Scene 10 | Scene 11 | Scene 12 | Scene 13 | Scene 14 | Scene 15 | Off |
| | Scene 13 | Scene 14 | Scene 15 | Scene 16 | Off | Scene 1 | Scene 2 | Scene 3 |

- The GRX-CCO-8 may be set to either momentary or maintained outputs.

Maintained. The appropriate GRX-CCO-8 output is closed as long as the corresponding GRX Control Unit scene is selected.

Momentary. The appropriate GRX-CCO-8 output is closed for 1/2 second when the corresponding GRX Control Unit scene is selected.

- Select how the GRX-CCO-8 will control its outputs. Refer to *Assign GRX-CCO-8 to GRX Control Units (Scene Control)* for further details.

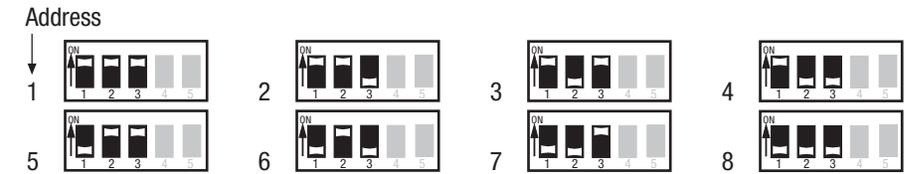
All GRX Control Units to which the GRX-CCO-8 is assigned must be in the same scene to close the corresponding output..

Any scene changes on any GRX Control Unit to which the GRX-CCO-8 is assigned will close the corresponding output. The GRX-CCO-8 will activate the output associated with the most recent GRX Control Unit scene selection.

Set GRX-CCO-8 Address

The GRX-CCO-8 requires a unique address to operate properly with GRX Control Units. This is accomplished by setting the ADDRESS Switches appropriately.

- The GRX-CCO-8 occupies one of eight shade control addresses.

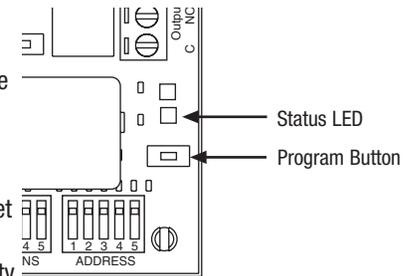


Assign Outputs to Zones (Zone Control Only)

1. Set GRX Control Unit load types.

- For each output of the GRX-CCO-8 that is going to control MWTs, set the load type on the desired zone of the GRX Control Unit to AC Shades; refer to the *GRAFIK Eye Installer's Guide* for more details.

- For each output of the GRX-CCO-8 that is going to act as an individual output, the load type may be set to any load type *other than* AC Shades or *Sivoia™*. Outputs are closed when the assigned zone intensity is greater than zero.

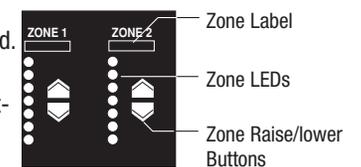


2. Enter Programming Mode.

- Press and hold the Program Button on the GRX-CCO-8 for about 3 seconds, until the Status LED stops blinking and the Output Status LED(s) for the first Channel start to cycle (or blink if the output is an individual output).

3. Assign MWT Channels or Individual Outputs to a *GRAFIK Eye* Zone

- Press the ZONE Raise (▲) button on the desired zone of the GRX Control Unit to which this output will be assigned. The zone LEDs on the GRX Control Unit will be lit. (Press the ZONE Lower (▼) button to unassign the selected output). See diagram at right.



4. Select the next GRX-CCO-8 MWT Channel or Individual Output

- Press the GRX-CCO-8 Program button to select the next output to be assigned. All LEDs for this Channel will start cycling (or blink if the output is an individual output).

5. Assign the remaining GRX-CCO-8 MWT Channels or Individual Outputs

- Repeat Steps 3 and 4 to assign the remaining GRX-CCO-8 channels or outputs.

6. Exit Programming Mode.

- Press and hold the Program Button on the GRX-CCO-8 for about 3 seconds, until the Status LED starts blinking and the Output Status LEDs stop cycling.

Assign GRX-CCO-8 to GRX Control Units (Scene Control)

1. Enter Programming Mode

- Press and hold the Program Button on the GRX-CCO-8 for about 3 seconds, until the Status LED stops blinking and all Output Status LEDs begin cycling.

2. Assign GRX-CCO-8 to GRX Control Unit

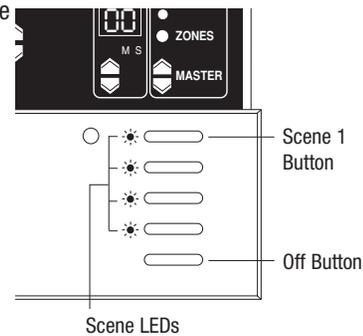
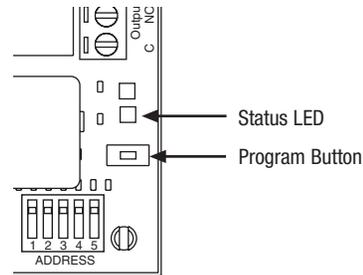
- Press and hold the Scene 1 button on the desired GRX Control Unit to which the GRX-CCO-8 will be assigned until the Scene LEDs flash in unison. (Press the Off button to unassign the GRX-CCO-8). See diagram at right.

3. Assign GRX-CCO-8 to remaining GRX Control Units

- Repeat the Step 2 for each GRX Control Unit to which the GRX-CCO-8 will be assigned.

4. Exit Programming Mode

- Press and hold the Program Button on the GRX-CCO-8 for about 3 seconds, until the Status LED starts blinking and the Output Status LEDs stop cycling.



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.

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

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