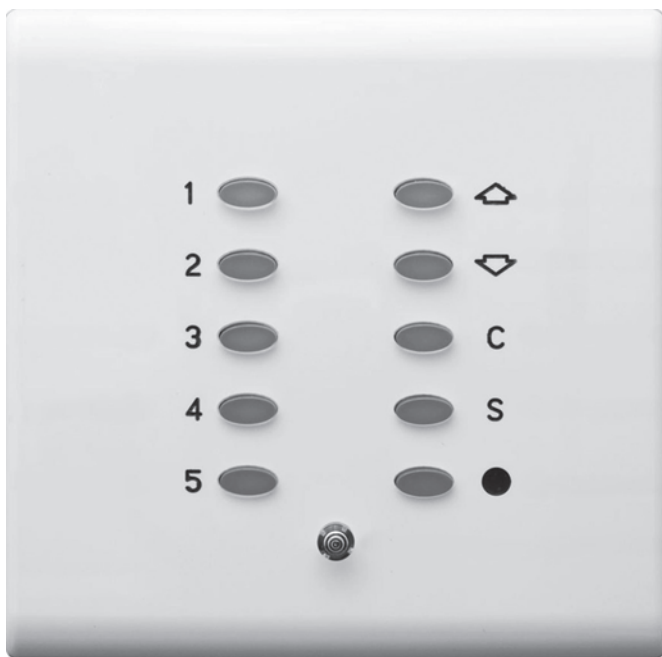


Control Stations

INSTALLATION GUIDE



For Technical Assistance 1-800-959-6004
LESTechSupport@Leviton.com

www.leviton.com

WEB VERSION

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WARNINGS AND CAUTIONS

- **WARNING: TO AVOID SERIOUS PERSONAL INJURY** never push objects of any kind into this product through openings, as they may touch dangerous voltages.
- **WARNING: TO AVOID SERIOUS PERSONAL INJURY** never touch uninsulated wires or terminals unless the wiring has been disconnected at the network interface.
- Read and understand all instructions. Follow all warnings and instructions marked on the product.
- Do not use this product near water - e.g., near a tub, wash basin, kitchen sink or laundry tub, in a wet basement, or near a swimming pool.
- Never install communications wiring or components during a lightning storm.
- Never install communications components in wet locations unless the components are designed specifically for use in wet locations.
- Use caution when installing or modifying communications wiring or components.
- **SAVE THESE INSTRUCTIONS.**

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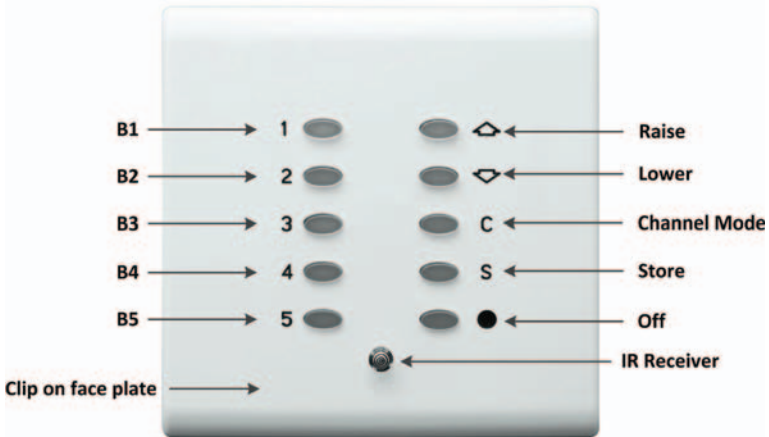
Luma-Net is a registered trademark of Leviton Mfg. Co., Inc. in United States.

Quantran is a registered trademark in Australia, Bahrain, China P.R., Great Britain, Hong Kong, India, Jordan, Kuwait, Malaysia, New Zealand, Oman, Qatar, Saudi Arabia, South Africa, Vietnam, and other countries pending.

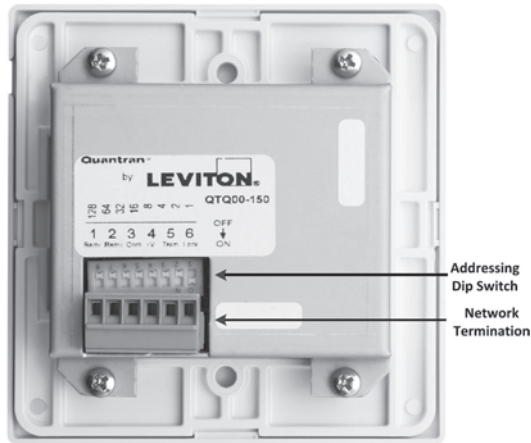
INSTALLATION

- Product is designed to fit into a single gang 3" x 3" back box, not included.
- Follow best industry practices for installation
- Product requires commissioning by a Leviton field commissioning agent after installation.

FRONT



BACK



NOTE: The mounting surface must be flat to avoid distortion of the back plate, which may prevent the cover plate fitting correctly. For the same reason, do not over-tighten the fixing screws.

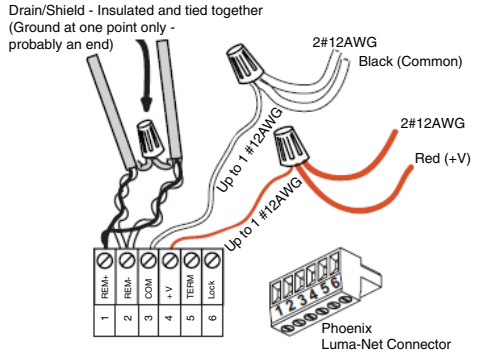
TERMINATIONS

Luma-Net™/QS-Net Termination

Wire the Luma-Net™/QS-Net Connector.

1. Connect the leads per wiring diagram as shown in Figure 1.
2. Twist strands of each lead tightly (making sure that there are no stray strands) and push firmly into appropriate plug connector location.
3. Tighten the screws on the plug connector making sure that no bare conductor is showing.
4. Tie the drain/shield wires together and insulate using a small piece of heat shrink tubing. Shield should be connected to ground only at one point in the system, usually at the controller or dimmer rack.
5. Install termination jumpers as required.

Figure 1



Luma-Net™ Wire Connections

NOTE: Termination is required at both ends of the Luma-Net™/QS-Net run.

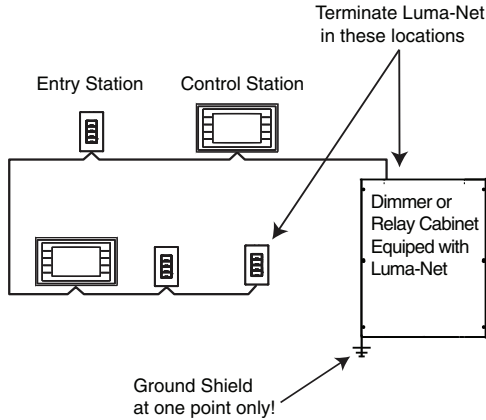
Table 1

Pin #	Function	Notes
1	Data +	Connect on every station, use one conductor of a twisted pair
2	Data -	Connect on every station, use the second conductor of a twisted pair
3	Common	Connect on every station – even if not using power
4	+V	+12-24Vdc
5	Term	Connect at end of run for station termination
6	Lock	Hardware lock, active when connected to ground (active low)
-	Drain/Shield	Tie together and connect to common only at one point in the system

TERMINATION REQUIREMENTS

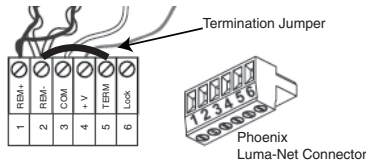
Each end of the control run must be terminated. Nodes between the two end points must not be terminated (figure 2).

Figure 2



For most of Luma-Net™/QS-Net devices, termination can be achieved by connecting a short piece of wire between the “TERM” and “REM-“ terminals (figure 3).

Figure 3



On other devices, like relay and dimmer cabinets, termination can be achieved by installing the termination jumper located adjacent to the Luma-Net™/QS-Net connector inside the relay cabinet or other device (figure 3).

NOTE: Missing termination, extra termination, or lack of termination can cause sporadic or even non-existent data communication. Carefully plan out where termination must occur and executed.

LUMA-NET™/QS-NET NETWORK NOTES

Luma-Net™/QS-Net networks require a daisy chain topology.

- Recommended wire is Leviton # WIRLN-500. Also approved is Belden #1502R or #1502P for inter-connection of devices. Belden #9829, #9729, & #88102 are also supported wire types, however, an additional pair of (2) #18AWG wires are required. Alternate cables having the following characteristics can be used:
 1. RS-485 compatible cabinet designed for use with data communication networks.
 2. Capacitance shall be 15pF/ft or less.
 3. Nominal impedance shall be between 100-120ohms.
 4. Drain/Shield to be tied together, insulated, and grounded at one point only per network.
- A maximum run length of 2000 feet is supported on the data pair.
- Torque terminals to 7in-lbs.
- 75° min insulation temperature rating.
- Remove 3/8" insulation from each circuit conductor.
- Only 1 power supply is allowed on any network segment. If other power supplies are already supplying power to the network segment, do not connect +V between sources. Consult factory if unsure as to the proper power routing or connections for the network.
- Terminals support 30-12AWG stranded wire.

POWER CONSIDERATIONS

Input:

+10-24Vdc power required

Current draw:

LCD Station

75mA @ +12Vdc, (3 unit loads)

50mA @ +24Vdc (2 unit loads)

Button Station

50mA @ +12Vdc (2 unit loads)

25mA @ +24Vdc (1 unit load)

Standard DC Voltage Drop must be considered to ensure that all devices along the length of the Power Segment, especially at the end, have sufficient power to operate. If devices do not have sufficient power, the network will be unreliable and you will have problems. The solution to lack of voltage caused by too much voltage drop is to inject additional power into your network at necessary points. To determine voltage drop on your network, use the following formula:

$$V_{\text{drop}} = \text{Current (amps)} * \text{Run Length} * \text{Wire Resistance}$$

Terminology:

V_{drop} : Difference in voltage along the distance of the conductors

Current (I): Total current in the circuit

Run Length: Total length of the conductors

Wire Resistance: Total resistance per foot of the conductors

For Belden 1502R wire, common resistance is: 6.9ohms/1000ft , or, 0.0069ohms/foot

NOTE: For other wire types, update with the appropriate resistance per foot.

For example, if you have:

- (4) LCD stations, (12) button stations
- Run Length 1,354 feet
- Belden 1502R Wire
- +24Vdc supply

Total load on the network is:

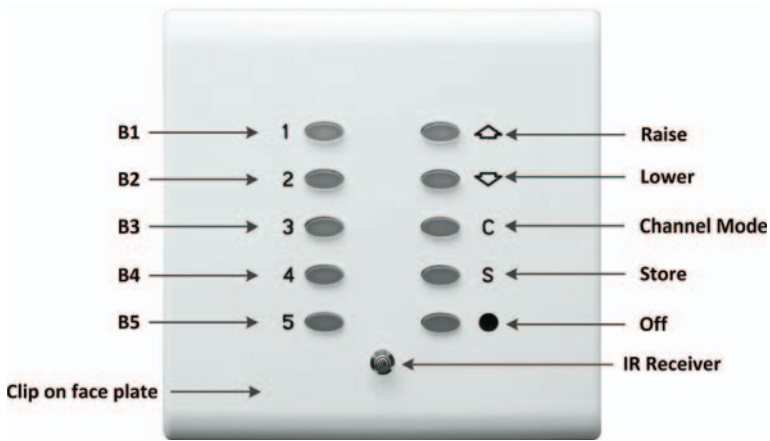
- (4) LCD Stations X 50mA + (12) button stations X 25mA=500mA
- 500mA= 0.500A

Voltage Drop

- $V_{\text{drop}} = 0.500A \times 1,354ft \times 0.0069ohms/foot = 4.67V$
- Your system voltage will be $+24V - 4.67V = +19.3V$ which is well above the 10V minimum for QS-Net stations, so, you have no problems

OPERATIONS

Manual Programming



Keys to programming

- B1 – B5 are dual programming buttons for both scene and channel data.
- C - Channel Mode toggles between programming channel or scene data.
- S - Store saves programming data.
- Raise and Lower buttons have dual functions.
 - a. Indicate the channel set that is active for programming.
 - b. Adjust light levels for scene/channel programming.

Scene Programming

1. Select the scene to program by pressing the corresponding button, (for example push 1 to select scene 1), selected scene will illuminate.
2. Adjust the light level for the scene using the raise and lower buttons.
3. Once the desired scene light level is reached push the 'S' button.
4. An LED sequence will flash to indicate data stored successfully.

Channel Programming

1. Select the scene that is currently being programmed by pressing the corresponding button, (for example push 1 to select Scene 1).
2. Toggle to channel mode by pressing the 'C' button.

NOTE: the channel mode button will illuminate when the control stations is in channel mode.
3. Buttons 1 – 5 are now active channel numbers 1 – 5.
4. Select the channel to program by pressing the corresponding button, (for example push 1 to select channel 1), Selected channel will illuminate.
5. Adjust the light level for the channel using the raise and lower buttons.
6. Select the next channel to program by pressing the corresponding button, (for example push 2 to select channel 2, selected channel will illuminate.
7. Repeat for channels 3, 4 and 5.

OPERATIONS CONTINUED

To program channels 6-10

1. Press the 'C' button. **NOTE:** if 5 or less channels are accessible pressing the 'C' button will make the control station exit channel mode.
2. The raise button will illuminate to confirm that buttons 1-5 are now channels 6-10.
3. Select each channel and adjust the light level using the raise and lower buttons.

To program channels 11 – 15

1. Press the 'C' button. **NOTE:** if 10 or less channels are accessible pressing the 'C' button will make the control station exit channel mode.
2. The lower button will illuminate to confirm that buttons 1-5 are now channels 11-15.
3. Select each channel and adjust the light level using the raise and lower buttons.

To program channels 16-20

1. Press the 'C' button. **NOTE:** if 15 or less channels are accessible pressing the 'C' button will make the control station exit channel mode.
2. The raise and lower buttons will illuminate to confirm that buttons 1-5 are now channels 16-20.
3. Select each channel and adjust the light level using the raise and lower buttons.
4. Once the desired light level for all channels is reached push the 'S' button.
5. An LED sequence will flash to indicate data successfully stored.
6. Scene 1 has now been programmed.
7. Repeat for all additional scenes.

NOTE: Up to 20 channels on a 5 scene and up to 40 channels on a 10 scene plate can individually be selected and programmed.

Programming a 10 button station

Programming is the same as for a 5 button station, with the exception of the channel selections.

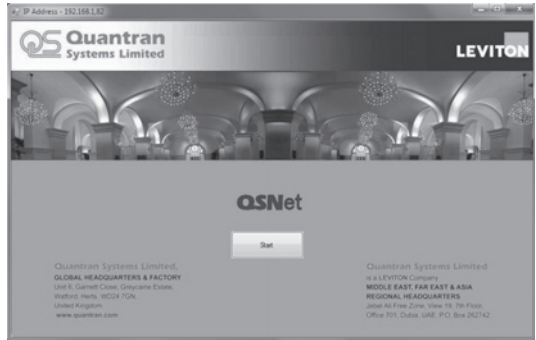
- The first press of the 'C' button will activate buttons 1-10 for programming channels 1 - 10
- The second press of the 'C' button will activate buttons 1 – 10 for programming channels 11 – 20
- The third press of the 'C' button will activate buttons 1-10 for programming channels 21 – 30
- The fourth press of the 'C' button will activate buttons 1-10 for programming channels 31 – 40

QS-NET SOFTWARE PROGRAMMING

Download and Install the QS-Net application from www.Leviton.com/Quantran
Install the application to the computer.

Launch QS-Net

1. Select the Start button.

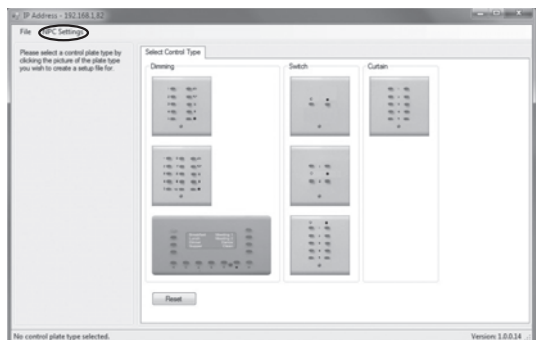


- The following screen will display the screen below.



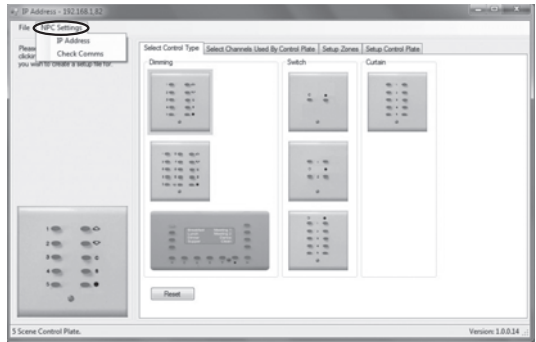
NPC Settings

1. Select 'NPC Settings' from the top menu.



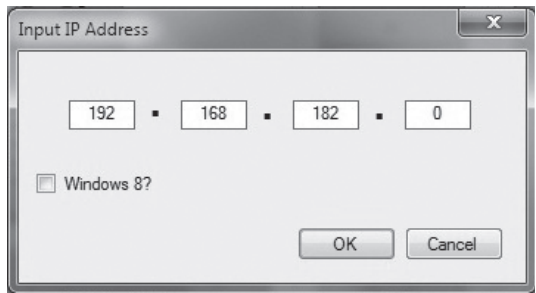
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2. Select 'IP Settings' from the 'NPC Settings' drop down menu.



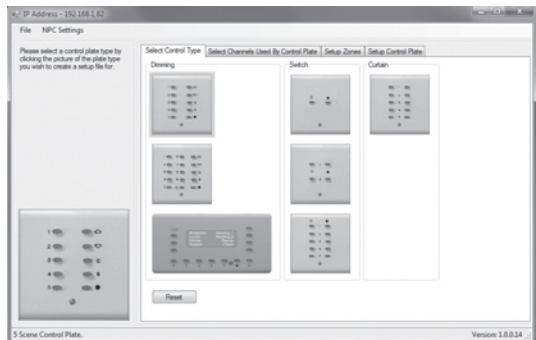
Set IP address

1. Enter IP address for the system controller.
 - If the computer is operating with Windows 8, select the check box, if not leave blank.
2. Select OK.
3. The program will return to the 'Select Control Type' tab.



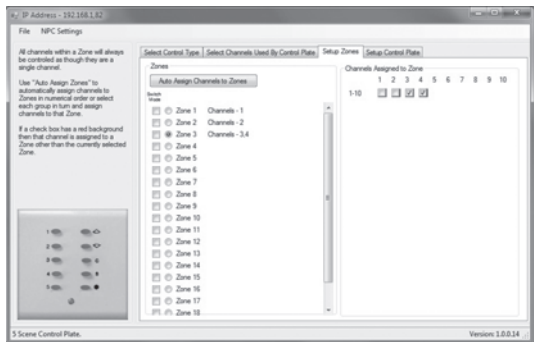
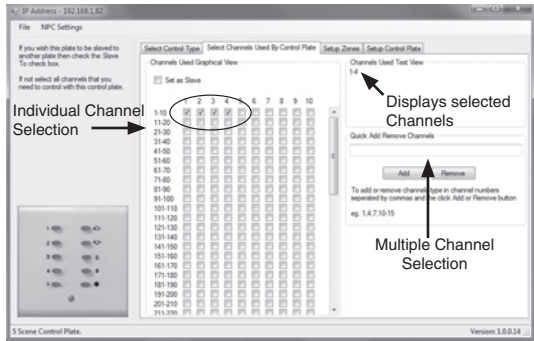
Selecting control type for programming

1. Select the image of the control plate you would like to program.
 - The selected control plate will be highlighted with a green border.
2. If the incorrect control plate is selected either select the reset button or simply select the correct control plate type.



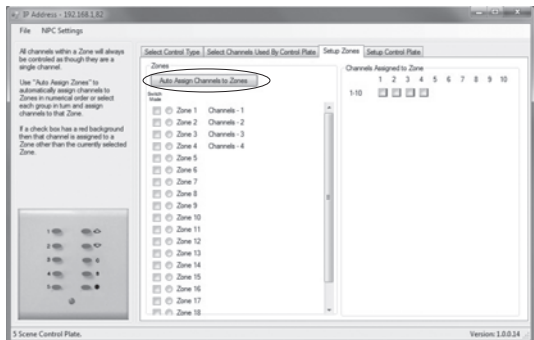
Channel Programming

1. If the control plate is a slave, select the 'Set as Slave' box in the top left corner and continue to settings zones.
2. Select the 'Select Channels Used by Control Plate' tab.
3. Select the channels to program for the control plate by selecting the appropriate box/boxes, in the example shown channels 1 – 4 have been selected.
 - To add/remove multiple channels at once, enter the channel numbers separated by commas under the 'Quick Add Remove channels' heading. It is also possible to select blocks of channels. Example: "1-12" will select channels 1 through to 12.
4. Review and confirm all appropriate channels have been selected for the control plate in the 'Channels Used Text View' section in the top right corner.



Setting Zones

1. Select the 'Setup Zones' tab.
2. To program first select the zone and then select the channels that should be assigned to that zone by selecting the corresponding channel box.
 - Once a channel has been assigned to a zone the box will have a red border.
3. Repeat for all zones.
 - Zones can also be auto assigned by selecting the 'Auto Assign Channels to Zones' button.
 - This assigns channel 1 to zone 1, channel 2 to zone 2 and so on.
4. Any zone can be set to switch mode by selecting the 'Switch Mode' check box to the right of the zone.



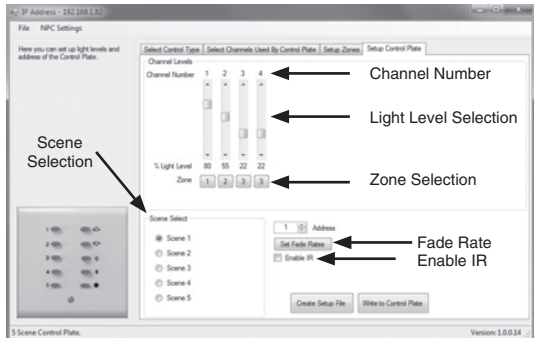
Setup control plate

1. Select the 'Setup Control Plate' tab.
2. Using the up and down arrows select the address of the control plate.



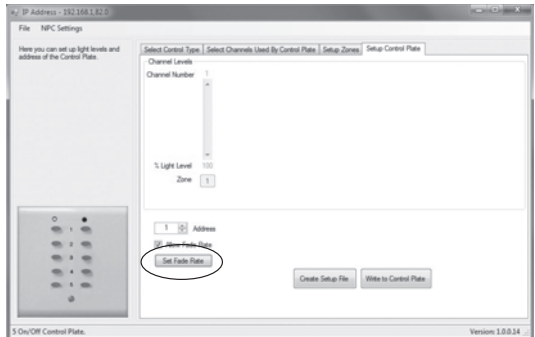
Scene setup for dimming control plates

1. Select scene 1.
2. Select zone 1.
3. Adjust the channel light level for zone 1 by dragging the slider to the appropriate light level percentage.
4. Repeat for additional zones.

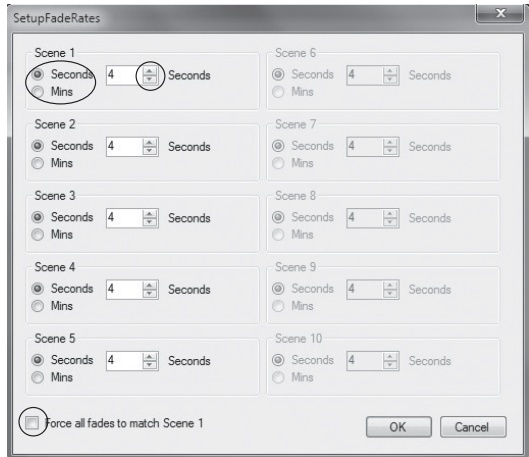


Fade rate setup

1. To set the scene fade rate for dimming control plates select the 'Set Fade Rates' button, as shown.
2. To set the scene fade rate for switch control plates select the box to the left of allow fade rate, as shown.
3. The 'Set Fade Rates' button will now appear, select 'Set Fade Rate' to set the scene fade rate.

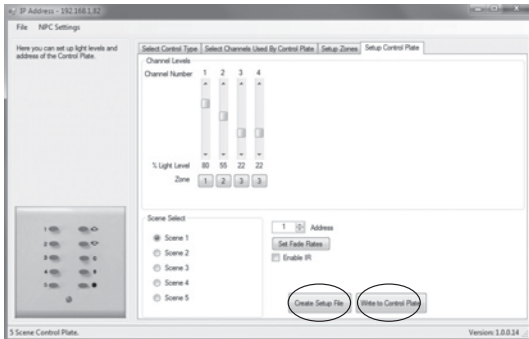


4. After the 'Set Fade Rates' button has been selected the SetupFadeRates window will display.
5. Using the up and down arrows select the appropriate fade rate for Scene 1.
 - Fade rates can be set in seconds or minutes.
6. Repeat for additional scenes.
 - If all fade rates should be the same as Scene 1, check the box in the bottom left to 'Force all fades to match Scene 1'.
7. Select OK.



IR Setup

1. To enable IR select the 'Enable IR' box, this option will only display for those control plates that have IR capability.

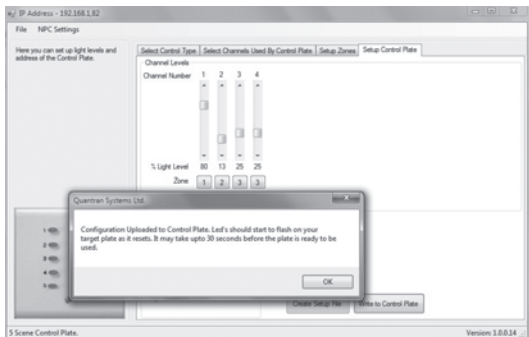


Create Setup File

1. Select 'Create Setup File' button.
2. A windows dialogue box will open, enter file name and address and select save.
 - The saved setup file can be loaded for additional control stations to expedite system programming.

Write to Control Plate

1. Select 'Write to Control Plate' button.
 - A message will appear to confirm if configuration upload was successful.
2. Select OK.
3. The control plate is now programmed, repeat for all control plates that require programming.



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Scene and zone naming

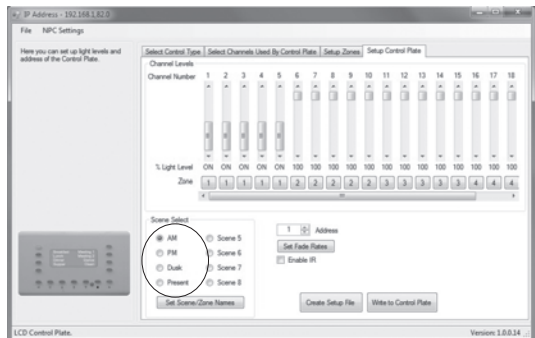
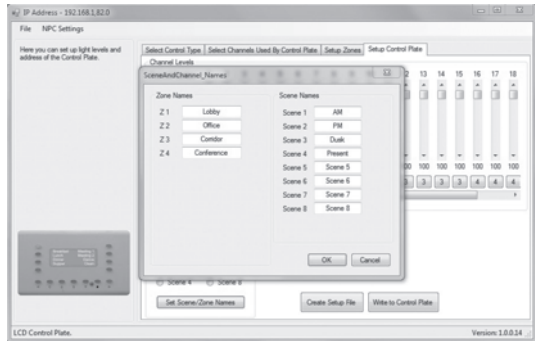
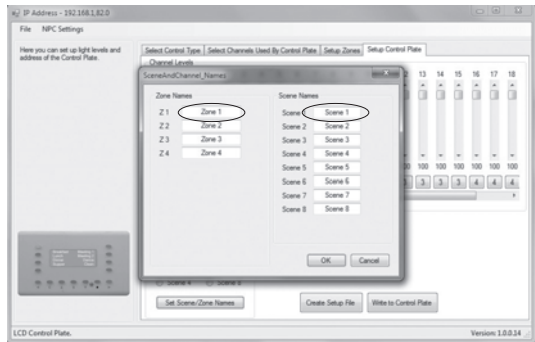
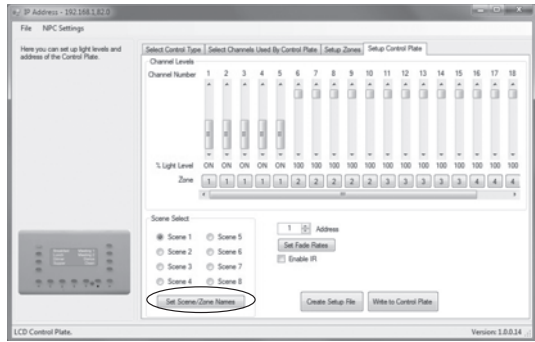
The LCD control plate offers the option to name scenes and zones.

- Scene/Zone names are specified on the 'Setup Control Plate' tab.

1. Select 'Set Scene/Zone Names' button.
2. Place your cursor in the zone or scene text box to update, select OK when finished.
3. Any updates to the scene names will display in the 'Setup Control Plate' tab

Program Curtain Control Plate

1. On the 'Select Control Type' tab select the curtain control plate
2. Select 'Setup Control Plate' tab

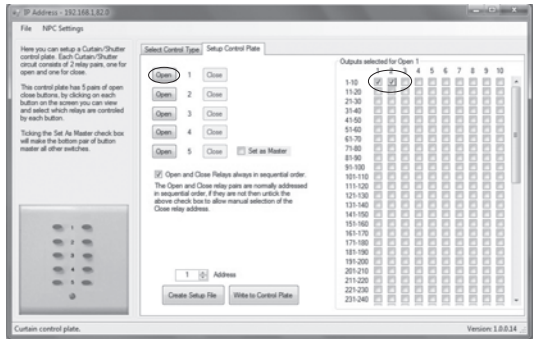
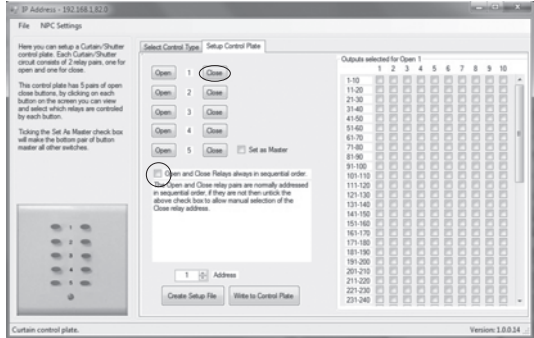
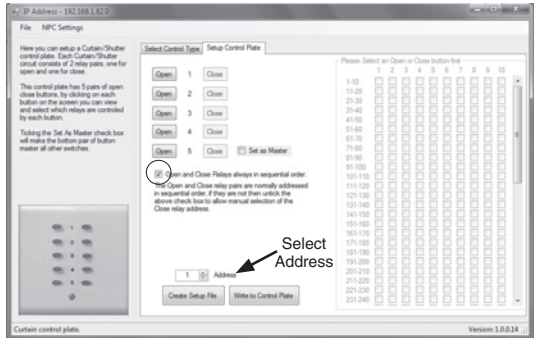
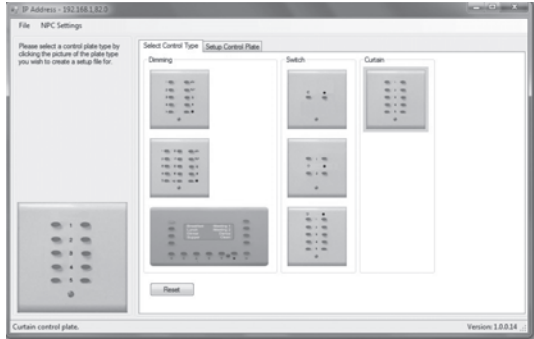


Relay Assignment

Programming default is to open and close relays in sequential order, if this is not correct for the system, deselect the box to the left of 'Open and Close Relays always in sequential order',

NOTE: Now the close relays are active for channel assignment.

1. Select the Relay for channel assignment
2. Assign channels to selected relay by selecting the box the channel, for example channel 1 and 2 have been assigned to Relay 1 open below
3. To complete setup follow instructions in sections "Create Setup file" and "Write to Control Plate".



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NOTES

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LIMITED 2 YEAR WARRANTY AND EXCLUSIONS

Leviton warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Leviton is free of defects in materials and workmanship under normal and proper use for two years from the purchase date. Leviton's only obligation is to correct such defects by repair or replacement, at its option.

For details visit www.leviton.com or call 1-800-824-3005. This warranty excludes and there is disclaimed liability for labor for removal of this product or reinstallation. This warranty is void if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with any labels or instructions.

There are no other or implied warranties of any kind, including merchantability and fitness for a particular purpose, but if any implied warranty is required by the applicable jurisdiction, the duration of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to two years. **Leviton is not liable for incidental, indirect, special, or consequential damages, including without limitation, damage to, or loss of use of, any equipment, lost sales or profits or delay or failure to perform this warranty obligation.** The remedies provided herein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.

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