



Remote Control Panel Installation & Operation Guide

404CP / 408CP

WEB VERSION

Table of Contents

| | |
|--------------------|----|
| INTRODUCTION | 3 |
| IMPORTANT | 3 |
| WIRING..... | 3 |
| PROGRAMMING..... | 5 |
| OPERATION | 12 |

Introduction

The Leviton 404CP and 408CP represents a key part of a state of the art, total lighting control system. Combined with Leviton dimmers and optionally, a Leviton memory control console, a totally integrated system is achieved.

The 404CP can automatically take control and preset the lighting level of up to 100 dimmer channels, while the 408CP will control 45 of 100 dimmer channels. Control is automatically passed between control panels and the memory control console as desired. The 404CP features 4 scene control while the 408CP features 8 scene control. Both units have programmable fade times and are exceptionally easy to operate. Remote lockout capability is also included. Installation is a snap with the simple 4 wire digital connection required.

Important

- Programming differs from other Luma-Net® panels, please read instructions.
 - Luma-Net® control panels with software release 3.00 and higher are not directly compatible and will not operate with older 400CP panels with software prior to release 3.00. Contact dealer or factory for modifications if necessary.
 - Leviton dimming systems used with these release 3.00 panels require the following software releases:
 - 2408CD, 2408CR, 2404CD release 2.30 and above.
 - DDS 8600/8800/9600/9800 release 1.30 and above. *
 - DDS 6000 release 1.30 and above. *
 - DDS 5300/5500/5600 release 1.30 and above. *
- * Optional interface kit required for these units.

Wiring

WIRING

The 404CP and 408CP will only operate with Leviton dimming and control systems explicitly designed for interfacing with it. Communication between the panels and the dimming system is via a 4 wire interface. Three wires carry the RS 422/485 bi-directional data. A fourth wire carries the DC voltage necessary for powering the unit.

Wiring cable between the panels and the dimming system is class 2 and should be at least 22 AWG, 4 conductor shielded, twisted pairs (BELDEN 8302, 8723; 22 AWG).

The 404CP and 408CP may be connected to the dimming system via parallel or daisy-chained wiring. Due to power supply current demands, panels must be limited to 5 units per daisy chain run with 22 AWG wire, or 10 units with 20 AWG wire.

The Luma-Net® panels feature plug on wiring terminals. The terminals may be unplugged from the panel to facilitate ease of wiring and testing. Connect the terminals marked remote+, remote-, common, and +15 VDC to the same respective terminals on the dimming system and other Luma-Net® panels. Use one twisted pair for remote+ and remote- and the other pair for common and +15 VDC.

The wiring to the remote lockout switch, if used, can be simple 2 conductor 22 AWG. Connect the wires from the switch to the lockout+ and lockout- terminals. Any panel or group of panels may be locked-out remotely by interrupting the +15V supply to the panels. This should not affect any other panels still powered, or affect lighting levels currently set.

IMPORTANT: Verify wiring is correct before powering system! Make sure nothing conductive may touch pc board or components!

MOUNTING

The 404CP and 408CP will mount in any standard double-gang electrical box with the 4 screws provided. See below paragraph on system turn-on before final mounting of panels.

SYSTEM TURN-ON

It is very important that the system operation be verified one panel at a time or else an improper connection at one panel would cause the entire system to not operate properly and may be difficult to diagnose.

After all terminal plugs have been wired and the dimmer system has been installed and tested, the installer is ready to connect each panel to the system. Panels may be plugged-in while system is live, but the installer must take care not to touch PC board or connections with fingers or metal objects. On daisy-chain runs, the panels closest to the dimming system should be connected first.

404CP and 408CP panels have dip switches to set network ID number and must have their ID programmed before the system power is connected. It is recommended that the installer review the programming procedures for network ID before proceeding. A duplicate network ID number will cause the entire network to malfunction.

Connect the first panel and immediately notice whether the POWER LED comes on, indicating power to the panel. The BUSY LED should come on momentarily and then go out and stay out. This indicates a successful reconfiguration of the network. If the BUSY LED flashes slowly, this indicates a duplicate ID number or wiring problem. Program the ID number, if not already, and observe the BUSY LED. (Note, the busy LED also flashes quickly when the program jumper is removed).

Now test the dimmer function by programming one scene or zone and operating the panel. If the dimmer responds, then mount the panel and proceed to the next panel in the system and follow the same procedure.

LEDS

The PWR LED indicates the presence of +15VDC to the panel.
The BUSY LED indicates the following:

Off Normal State: When there is no activity.
Short Blinks: A message is being sent on the network.
Steady On or Slow flashing: Network trying to reconfigure (bad ID?)

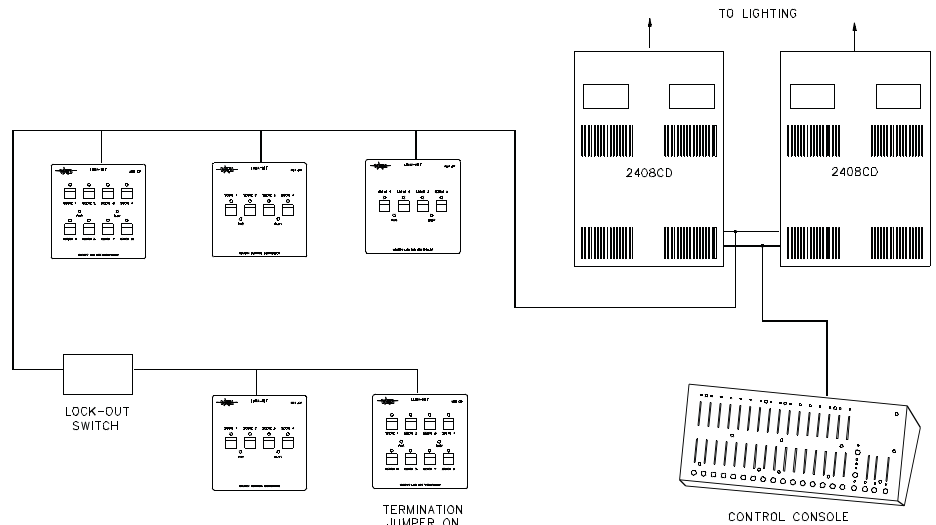
While programming, the following actions are normal:
Quickly flashing Programming mode, no mode selected.
Off Programming mode, mode selected.

LOCKOUT

Any 404CP and 408CP may be disabled from operation with a remote key switch or other contact closure. Several Luma-Net® panels of the same version may be connected to the same contacts in parallel as long as polarity is maintained.

Closing the contact will prevent connected panels from operating, regardless of button presses.

Luma-Net® panels may also be locked out by causing a switch to disconnect the +15V supply to the panels.



Programming

Several parameters must be programmed into the 404CP / 408CP for it to operate properly:

Dimmer channel assignments for each scene.

Dimmer levels for each scene.

Fade time for each scene.

Master / Slave operation.

Network ID number (IMPORTANT).

Optionally, the unit may be ordered preprogrammed from the factory. Any field modifications can be made if necessary.

Factory Default Setting:

The 404CP and 408CP are programmed at the factory for scene 1-3 (1-7) to be set for channel 1-4 (1-8) respectively.

Scene 4 (8) is programmed for dimmers 1-8 off. The fade rate and other parameters are also set to factory defaults. This may be acceptable for initial testing. If necessary to return the 400CP panel to its factory default settings (except network ID), follow this procedure:

1. Remove program jumper block and disconnect plug-in terminal block.
2. Hold down all SCENE 1-4 buttons while connecting terminal block.
3. Setting is complete when busy light begins to flash after several seconds.

Full Memory Clear:

The 404CP does not implement this function. Normally, the 408CP will not require memory clearing. Once the memory is cleared, all parameters, including fade rate, must be reprogrammed. Unless it is necessary to clear memory to remove a large or unknown programming, skip these steps.

1. Remove program jumper block and disconnect terminal block.
2. Hold down all SCENE 5-8 buttons while connecting the terminal block.
3. Setting is complete when busy light begins to flash after several seconds.

Prepare the 404CP and 408CP for reprogramming:

In order to program the panels, a jumper block must be removed from the program jumper pins. This will allow data to be stored in the eeprom memory. At this point the BUSY LED will start flashing, indicating that you are in the program select mode.

IMPORTANT: After programming it is important to replace the programming jumper block so memory will be protected.

Assigning dimmer channels to each scene.

Each of the scenes of the 404CP and 408CP must be programmed with the desired dimmer channel assignments.

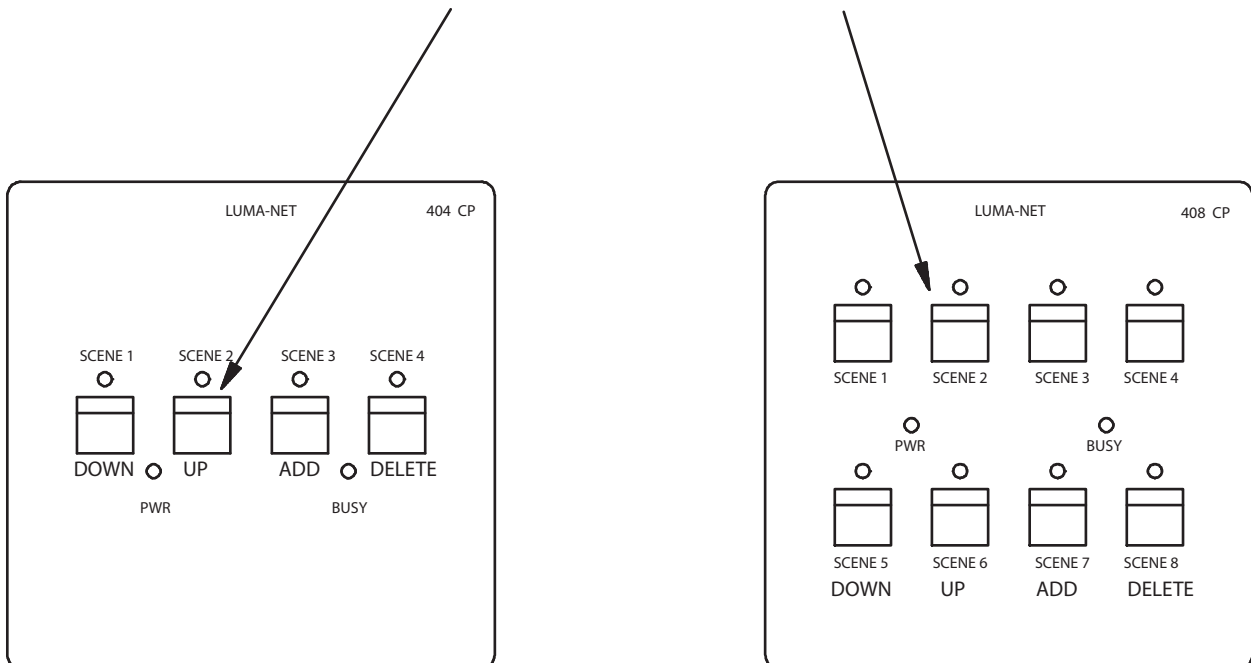
Only the dimmer channels assigned will be affected by each scene button.

In order to easily identify dimmer channels while programming, the system should have all installed lamps or loads operational. If this is not possible, the panel to be programmed should be temporarily connected nearby to the dimmer units so that the control LEDs of the dimmers may be observed to verify channel selection.

To program each scene:

1. Make sure that the 404CP or 408CP is in the program select mode as discussed. The BUSY LED should be flashing.
 2. Press the SCENE 2 button to select “dimmer assignment mode” and the BUSY LED will stop flashing.
 3. Press button representing desired scene to be programmed. At this point, all currently assigned dimmers will come on. The current dimmer selector will be set to one.
 4. Use the buttons marked as UP and DOWN in diagram to increment or decrement the dimmer channel selector.
- Tap the buttons the required number of times to reach the dimmer channel to be assigned.
5. Use the ADD and DELETE buttons to add or delete this dimmer from the zone. The lamps connected to this dimmer channel will come on full when the ADD button is pressed. Observe lamps or dimmer LEDs to verify correct channel has been selected.
 6. Next, exit this programming mode; press both the UP and DOWN buttons at the same time. The BUSY LED will start flashing again when both buttons are released.
 7. A new scene can be programmed at any time by repeating the above procedure.

DIMMER ASSIGNMENT MODE



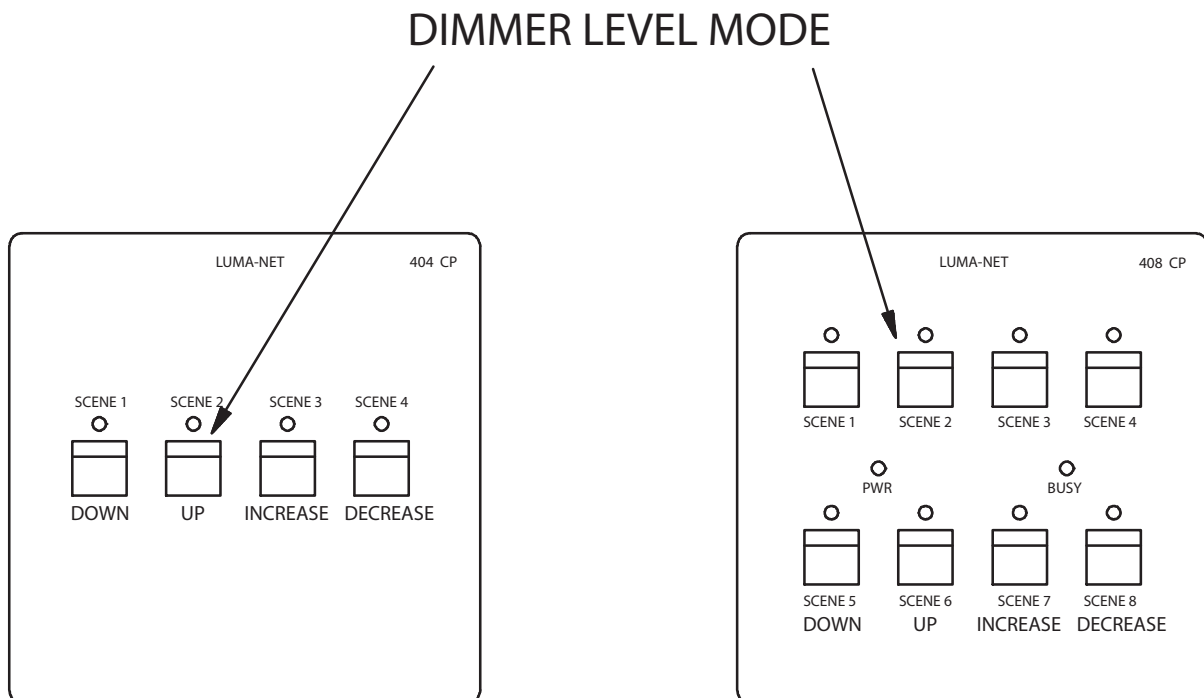
Assigning dimmer channels to each scene.

Each of the scenes of the 404CP and 408CP must be programmed with the desired levels for each dimmer assigned to the scene.

In order to easily identify dimmer channels while programming, the system should have all installed lamps or loads operational. If this is not possible, the panel to be programmed should be temporarily connected nearby to the dimmer units so that the control LEDs of the dimmers may be observed to verify channel selection.

To program each scene:

1. Make sure that the 404CP or 408CP is in the program select mode as discussed. The BUSY LED should be flashing.
2. Press the SCENE 1 button to select “dimmer level mode” and the BUSY LED will stop flashing.
3. Press button representing desired scene to be programmed. At this point, all currently assigned dimmers will come on to the currently programmed levels (normally at zero brightness). The current dimmer selector will be set to the first previously assigned dimmer.
4. Use the buttons marked as UP and DOWN in diagram to increment or decrement the dimmer channel selector through the assigned dimmers. Tap the buttons the required number of times to reach the dimmer channel to be programmed.
5. Use the INCREASE and DECREASE buttons to change the dimmer brightness. The lamps connected to this dimmer channel will come on full when the INCREASE button is pressed and held down. A tap of the INCREASE or DECREASE button will cause a fine change in brightness, a push and hold motion will cause a rapid change. Observe lamps or dimmer LEDs to verify correct channel has been selected.
6. Next, exit this programming mode; press both the UP and DOWN buttons at the same time. The BUSY LED will start flashing again when both buttons are released.
7. A new scene can be programmed at any time by following the above procedure.

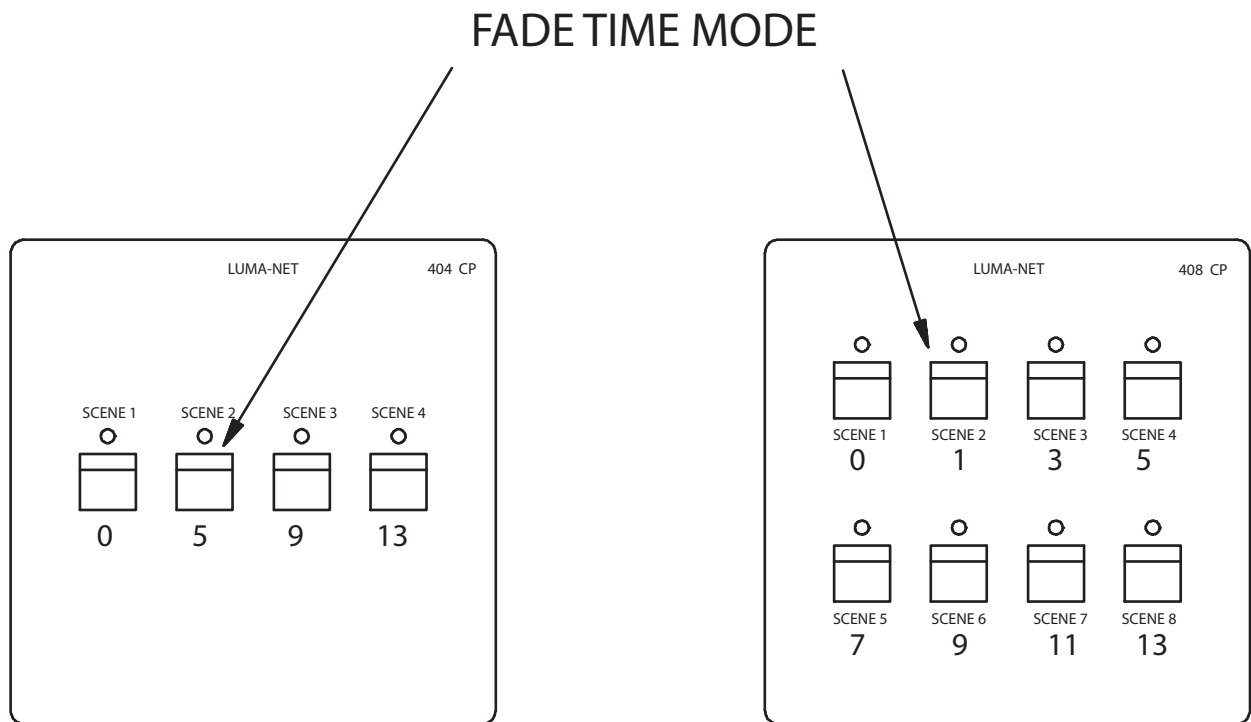


Scene fade time programming.

Each scene may be programmed with an individual fade time. This is the time it will take the dimmer channels assigned to go from full off to full on and visa versa. Fade time can vary from 0 to 13 seconds. A fade time of 0 seconds will cause instant full on or full off operation whenever the scene buttons are pressed. If the factory default setting of 5 seconds is desired for each zone then this step may be ignored.

To program scene fade time:

1. Make sure that the 404CP or 408CP is in the program select mode as discussed.
2. Press the SCENE 3 button to enter the “Fade time mode”, and the BUSY LED will stop flashing.
3. Select the desired scene by pressing the associated button as shown in the diagram.
4. Press button marked with desired fade time in seconds.
5. Unit will exit this programming mode after the release of the button and the BUSY LED will start flashing again.



Master/Slave Mode

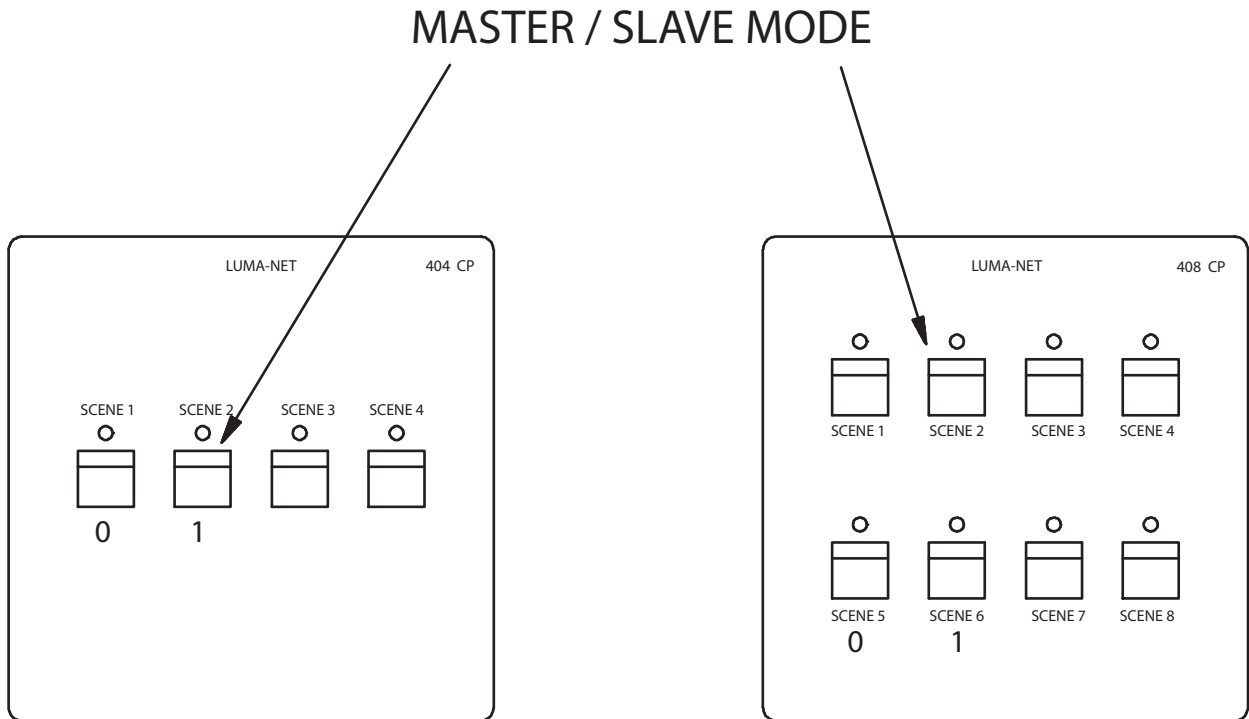
404CP or 408CP panels may be slaved to one another. Several panels may act as slaves to a master panel which contains the programming. The slaves will mimic the master LED's and will operate the scenes and fade times of the master. This is ideal for installations with several panels in one room.

To make a panel into a master (factory default); set the Master/Slave ID to 0. To make a panel into a slave; set the Master/Slave ID to the Network ID of the desired master to slave to.

To set Master/Slave ID number:

1. Make sure that the 404CP or 408CP is in the program mode as discussed.
2. Press the scene 4 button and the BUSY LED will stop flashing
3. Look up the necessary sequence of 1's and 0's for the ID number on the chart at the end of this section.
4. Using the two buttons indicated below, enter the eight number sequence of 1's and 0's.
5. The unit will exit this program mode at the release of the eighth press, and the BUSY LED will start flashing again.

NOTE : All other programming (except network ID) will have no effect if unit is made into a slave. The master unit will contain the programming for all units slaved to it. Slave units must still have a unique Network ID number (see following section).



Network ID number.

Since the Luma-Net® System is a digital network, all panels and devices attached (except dimmers) must have a unique network ID number.

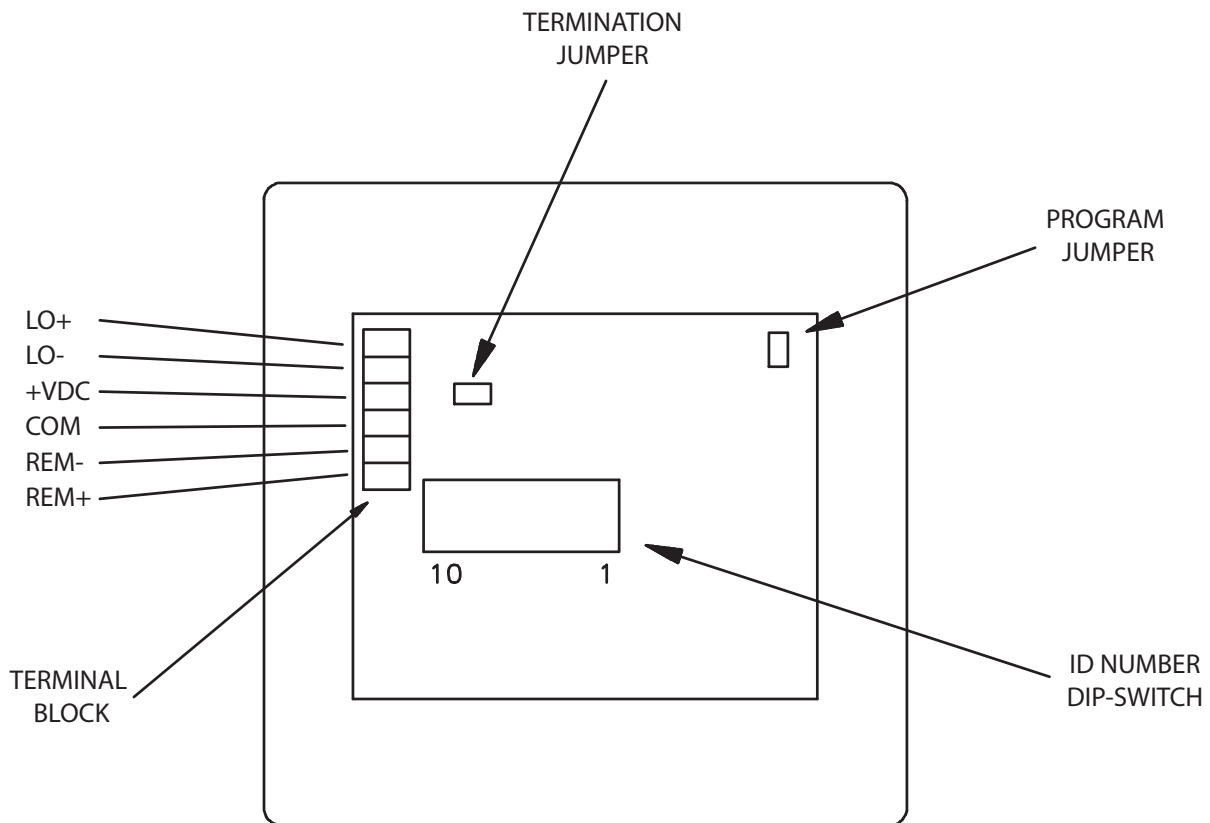
If two panels have the same network ID number, the entire network will stop functioning.

Panels need not be in program mode to change network ID number, since a dipswitch is used.

To set Network ID number:

1. Locate dipswitch on rear of unit as illustrated below.
2. Set the switches as per the chart on the following page.

REAR VIEW OF 404CP / 408CP



ID number codes / dipswitch settings

| ID number | 12345678 | ID number | 12345678 | ID number | 12345678 |
|-----------|----------|-----------|----------|-----------|----------|
| 0 | 00000000 | 1 | 10000000 | 2 | 01000000 |
| 3 | 11000000 | 4 | 00100000 | 5 | 10100000 |
| 6 | 01100000 | 7 | 11100000 | 8 | 00010000 |
| 9 | 10010000 | 10 | 01010000 | 11 | 11010000 |
| 12 | 00110000 | 13 | 10110000 | 14 | 01110000 |
| 15 | 11110000 | 16 | 00001000 | 17 | 10001000 |
| 18 | 01001000 | 19 | 11001000 | 20 | 00101000 |
| 21 | 10101000 | 22 | 01101000 | 23 | 11101000 |
| 24 | 00011000 | 25 | 10011000 | 26 | 01011000 |
| 27 | 11011000 | 28 | 00111000 | 29 | 10111000 |
| 30 | 01111000 | 31 | 11111000 | 32 | 00000100 |
| 33 | 10000100 | 34 | 01000100 | 35 | 11000100 |
| 36 | 00100100 | 37 | 10100100 | 38 | 01100100 |
| 39 | 11100100 | 40 | 00010100 | 41 | 10010100 |
| 42 | 01010100 | 43 | 11010100 | 44 | 00110100 |
| 45 | 10110100 | 46 | 01110100 | 47 | 11110100 |
| 48 | 00001100 | 49 | 10001100 | 50 | 01001100 |
| 51 | 11001100 | 52 | 00101100 | 53 | 10101100 |
| 54 | 01101100 | 55 | 11101100 | 56 | 00011100 |
| 57 | 10011100 | 58 | 01011100 | 59 | 11011100 |
| 60 | 00111100 | 61 | 10111100 | 62 | 01111100 |
| 63 | 11111100 | 64 | 00000010 | 65 | 10000010 |
| 66 | 01000010 | 67 | 11000010 | 68 | 00100010 |
| 69 | 10100010 | 70 | 01100010 | 71 | 11100010 |
| 72 | 00010010 | 73 | 10010010 | 74 | 01010010 |
| 75 | 11010010 | 76 | 00110010 | 77 | 10110010 |
| 78 | 01110010 | 79 | 11110010 | 80 | 00001010 |
| 81 | 10001010 | 82 | 01001010 | 83 | 11001010 |
| 84 | 00101010 | 85 | 10101010 | 86 | 01101010 |
| 87 | 11101010 | 88 | 00011010 | 89 | 10011010 |
| 90 | 01011010 | 91 | 11011010 | 92 | 00111010 |
| 93 | 10111010 | 94 | 01111010 | 95 | 11111010 |
| 96 | 00000110 | 97 | 10000110 | 98 | 01000110 |
| 99 | 11000110 | 100 | 00100110 | 101 | 10100110 |
| 102 | 01100110 | 103 | 11100110 | 104 | 00010110 |
| 105 | 10010110 | 106 | 01010110 | 107 | 11010110 |
| 108 | 00110110 | 109 | 10110110 | 110 | 01110110 |
| 111 | 11110110 | 112 | 00001110 | 113 | 10001110 |
| 114 | 01001110 | 115 | 11001110 | 116 | 00101110 |
| 117 | 10101110 | 118 | 01101110 | 119 | 11101110 |
| 120 | 00011110 | 121 | 10011110 | 122 | 01011110 |
| 123 | 11011110 | 124 | 00111110 | 125 | 10111110 |
| 126 | 01111110 | 127 | 11111110 | | |

For channels 129 - 256 Set dipswitch 1-7 as above and set dipswitch #8 on.

Operation

To select a scene:

Press the button of the scene desired. The LED above each scene indicates that the scene is currently active. The LED will go out when an operation on the same or different panel causes a change to a dimmer contained in the active scene

To restore control from a console:

Simply perform a change in the channel level from the console. The lighting channel will then fade back to the new console level at the factory default fade rate. Once the console level matches or is moved past the lighting level, full console control will be resumed for that channel.

FOR CANADA ONLY

For warranty information and/or product returns, residents of Canada should contact Leviton in writing at **Leviton Manufacturing of Canada Ltd to the attention of the Quality Assurance Department, 165 Hymus Blvd, Pointe-Claire (Quebec), Canada H9R 1E9** or by telephone at **1 800 405-5320**.

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.

For Technical Assistance Call: 1-800-824-3005 (U.S.A. Only) www.leviton.com