



## LOR160xW Light Controller

based on the

**CTB16D Controlled Triac Card**



The LOR160xW (Model 2) light controller is a 16 channel light controller that is based on the CTB16D Controlled Triac Card. The CTB16D is available as a component in the Light-O-Rama Hobbyist product line. The LOR160xW is available in a 30 amp version (LOR1602W) and a 15 amp version (LOR1600W).

To operate a LOR160xW Modular Controller you will also need the Light-O-Rama software package and a Light-O-Rama SC485 RS232/RS485 adaptor to communicate with a PC.

### **FOR USE WITH INCANDESCENT LIGHT ONLY**

### **NEMA 3R ENCLOSURE FOR INDOOR/OUTDOOR USE**

**Mount the LOR160xW so that the pigtail outlets are at least 1ft off the ground. The unit must be mounted with the wires pointed down. Keep the unit out of areas with heavy splashing of water or direct contact with forced water flow such as irrigation sprinklers.**

**Anchor communication cables using wire ties to a stable point such as the top mounting tab. Place a small piece of duct tap over the hole in the bottom of the unit once communication cables have been installed. Do not seal entire unit with tape. It needs to breath.**

**To connect the communications link and to set the Unit Id, you must remove the cover. With the cover removed there will be exposed high voltage connections. Make sure that the unit is not plugged in when removing the cover, replacing the cover or when reaching into the unit.**

# GETTING STARTED WITH THE LOR160xW

There are three steps to making the LOR160xW useful. First: It must be connected to an AC power source and AC lights connected to the 16 output circuits. Second: It must be connected to a computer to receive commands. Third: Using the Light-O-Rama Sequence Editor, a sequence must be created on the PC.

**For the PC to talk to the LOR160xW, the LOR160xW must be assigned an unique Unit ID.** This is accomplished by setting the two hex rotary dip switches located inside the enclosure to the correct value.

Once AC power has been supplied to the right side power line, the **red LED** located inside the enclosure will begin to blink. This is an indication that the Unit is functioning and that there is NO COMMUNICATION. Once communications is established, the LED will stop blinking and it will light steadily.

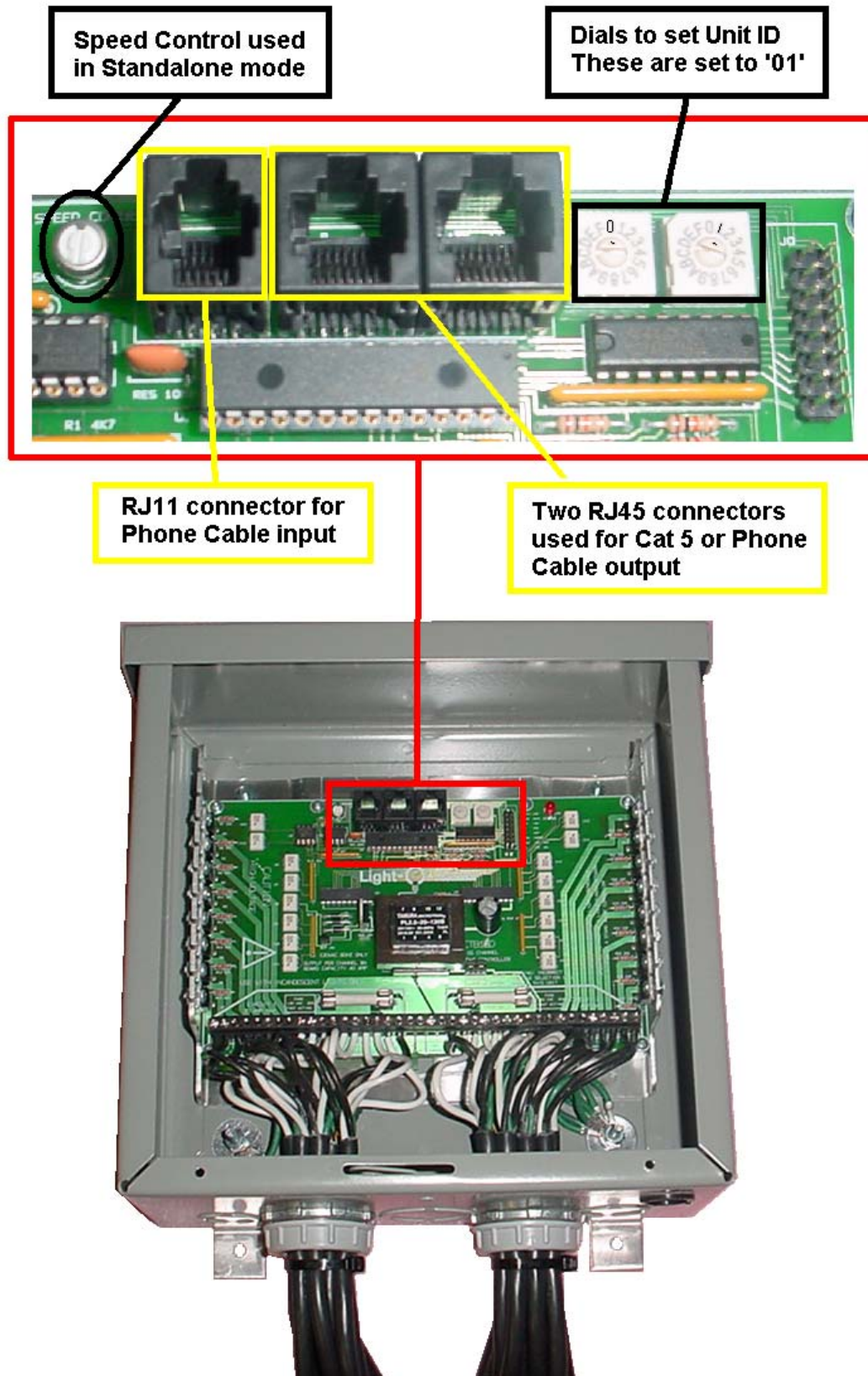
Connect the **LOR160xW** to a PC using the SC485 adaptor and a cable. Using the Light-O-Rama Hardware Utility Click **REFRESH** and verify that the Hardware Utility can locate the unit and that the Unit ID is correctly set. **TIP:** The **REFRESH** command can take a long time so to speed things up, set the max units to a number less than the maximum Unit ID you plan on using.

**When developing a Sequence to control the lights, the sequence must refer to the LOR160xW's Unit ID or the lights will not blink. This is true if the sequenced is going to be downloaded as a standalone sequence as well as if the LOR160xW is controlled via the PC.**

In the Sequence Editor, click on a channel box ( on the left of the screen ). In the menu that pops up, select *Change Channel Options*. You can then Set the Device type to Light-O-Rama Controller and the Unit to the ID that you picked for this Unit. You will also notice that you can specify a Circuit Number. Circuit number 1 corresponds to Output Circuit 1 on the board.

Once you have selected a Unit ID, have the lights connected to the LOR160xW and have a cable connected to the PC via the SC485, you can control your lights. ( have fun ! )

## INSIDE VIEW OF THE LOR160xW

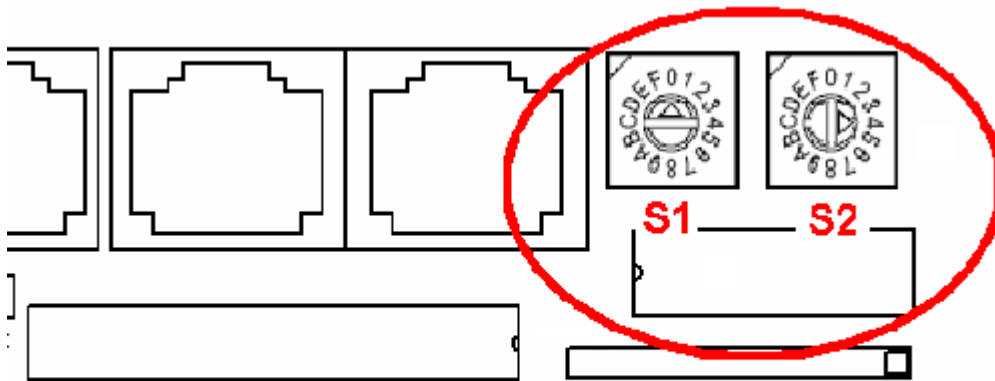


## IDENTIFYING THE UNIT

Each Light O Rama light controller used in a network must have a unique ID assigned. Every channel that you control in a sequence has to identify a particular channel on a particular Unit.

For example, in a sequence that you construct, channel 32 may be assigned to Unit 03 circuit 10. Because the controllers are daisy chained together, every controller sees every command sent but Unit 03 will only react to commands that are marked “for Unit 03”.

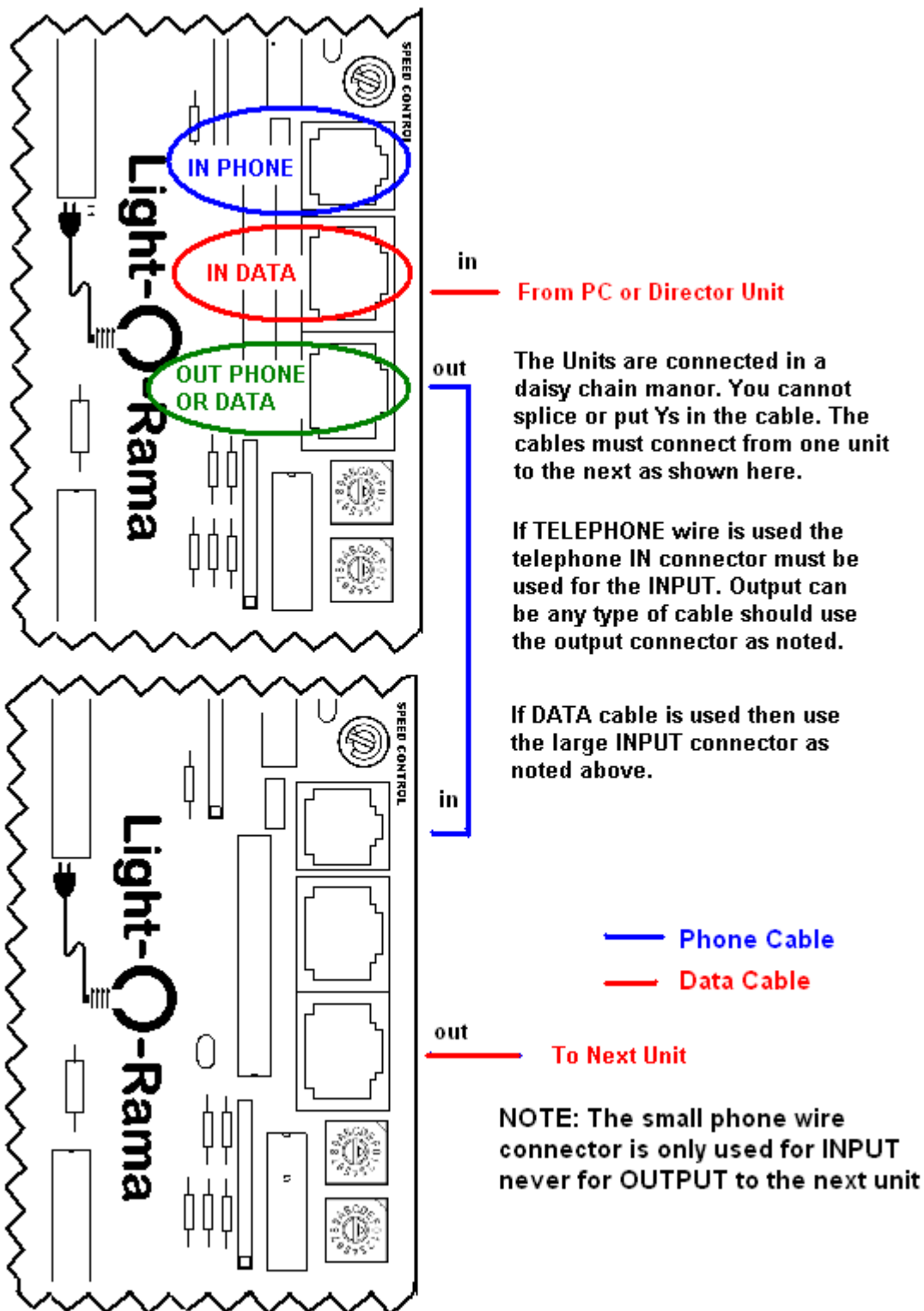
The two hex, rotary dip switches (circled in red) are used to set a controller’s Unit Id. Valid Unit Id values are 01-F0... 00 is not a valid Unit Id.



**TO SET UNIT ID TO “04” SET **S1**=0 and **S2**=4**

# LOR160xW DATA CONNECTION

## Inside the cover locate the comm connectors



## OPERATING IN STANDALONE MODE

The LOR160XW can operate without a connection to the PC. To operate in this mode, an animation sequence must be installed on the LOR160XW using the Light-O-Rama Hardware Utility. See the HELP files with the Hardware Utility for sequence download instructions.

Once a standalone sequence has been loaded by the Light-O-Rama Hardware Utility, the Input connector is used to start and stop the sequence. Generally the supplied jumper will remain in place on the connector. With the jumper in place, the standalone sequence will operate anytime the unit is powered.

A normally open switch can be attached to the jumper to provide low voltage control of the unit. Once activated (closed connection) the unit will operate for one pass through the downloaded sequence.

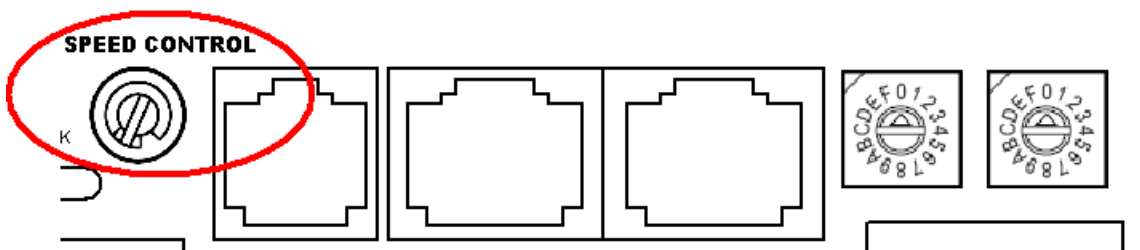
### Directing other controllers

The LOR160XW can direct other controllers as well as itself when running in standalone mode. You could for example download a 48 channel sequence to the LOR16D. In this sequence a number of different Units would be identified as being part of the sequence.

When a LOR16D runs in standalone mode, commands in the sequence that are not addressed to it are broadcast on the daisy chain connection for other controllers to perform.

### Speed Control

The LOR160XW has a speed control that regulates the speed at which a standalone sequence is executed. In the center position the sequence will execute at the rate specified in the sequence. That is 1 second in the sequence will take 1 second to execute. You may notice that sequence pause slightly when adjusting the speed. This is normal operation.



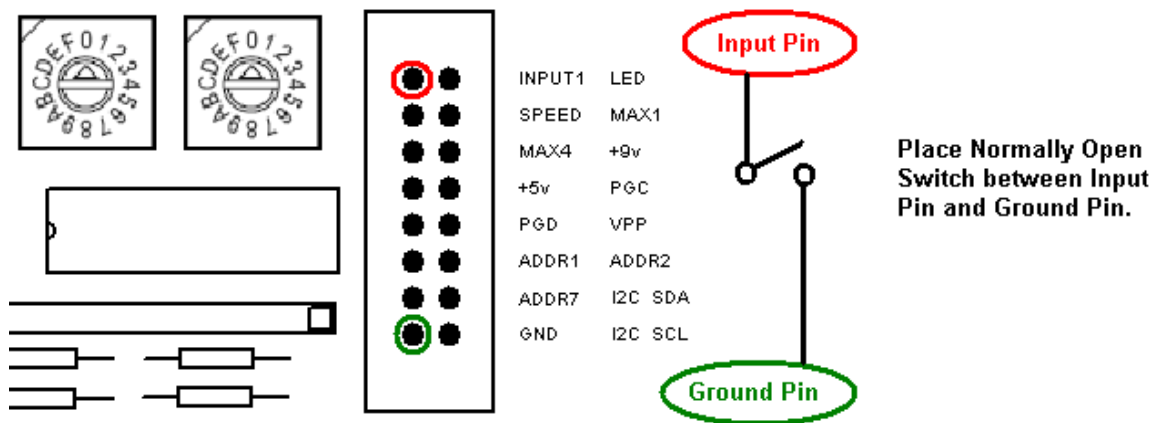


## Triggering ( Starting ) a Sequence

In the Hardware Utility, when you download a sequence you can specify what trigger condition will be used to start that sequence. A sequence can be triggered one of two ways: *Power on* and *Input Control*.

**Power On** mode simply implies that the sequence will run anytime that power is supplied to the controller. You plug it in and it goes until you unplug it.

**Input Control** mode uses an input pin on the controller to determine when the sequence will run. When this pin is connected to the ground pin the sequence will run one time and then check to see if the pin is connected to ground. For more information on trigger conditions see the help for the Hardware Utility.





Electrical Specifications	Features
<ul style="list-style-type: none"> <li>• <b>Channel Capacity:</b> 8 amps per channel with heatsink installed( 16 amp triacs are used.)</li> <li>• <b>Board Capacity:</b> Board can be wired 20 or 40 amps (LOR160xW is down-rated to 15 or 30 amps)</li> <li>• <b>Isolation:</b> Opto isolators are used to isolate high and low voltage sides. Triacs are isolated. Parts are UL listed.</li> <li>• <b>Supply Voltage:</b> 120/240VAC 50/60Hz</li> <li>• <b>Connections:</b> Terminal Strips – 20amp 12AWG max.</li> <li>• <b>Control Input:</b> RS485 – RJ45 or RJ11</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Director:</b> Unit can control other units as well as its own 16 channels.</li> <li>• <b>Input:</b> Unit can monitor inputs to start sequences.</li> <li>• <b>Addressing:</b> Up to 240 possible addresses. Each address can represent up to 8000 circuits.</li> <li>• <b>Fading:</b> 256 levels used for smooth fading effects. Fades from 0.1 to 25 seconds.</li> <li>• <b>Dimming:</b> 100 levels (0% ... 100%)</li> <li>• <b>Effects:</b> Ramp, Fade, Flicker, Shimmer</li> <li>• <b>Sequences:</b> Multiple internal sequences</li> <li>• <b>Presets:</b> High-burn and low-burn settings.</li> </ul>

**WARNING:** The LOR160XW can pose a dangerous electrical hazard if not used properly. Care should be taken to keep the LOR160XW dry. When the LOR160XW is directly connected to a PC via a SC485 adaptor, there is a direct electrical connection between the logic side of the LOR160XW and the PC. If the LOR160XW is physically damaged causing traces to short or the Unit is allowed to get wet either through direct contact with water or condensation, the logic side of the LOR160XW can receive direct 120VAC. In that case damage to any connected hardware such as a PC can occur.

**IN NO EVENT SHALL BUYER BE ENTITLED TO INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES, NOR SHALL LIGHT-O-RAMA'S LIABILITY EXCEED THE PURCHASE PRICE OF THE GOODS.**