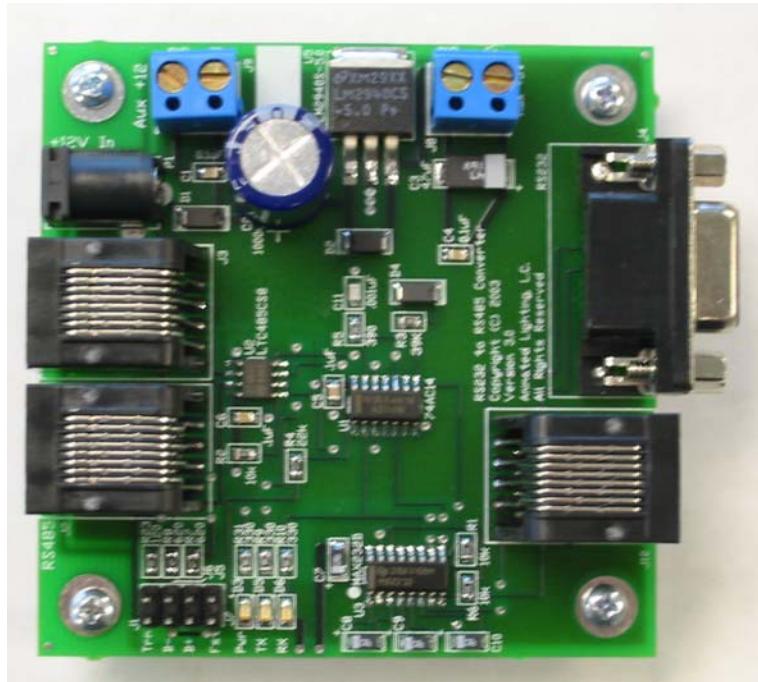




## CONV-2 RS485 Converter Instructions

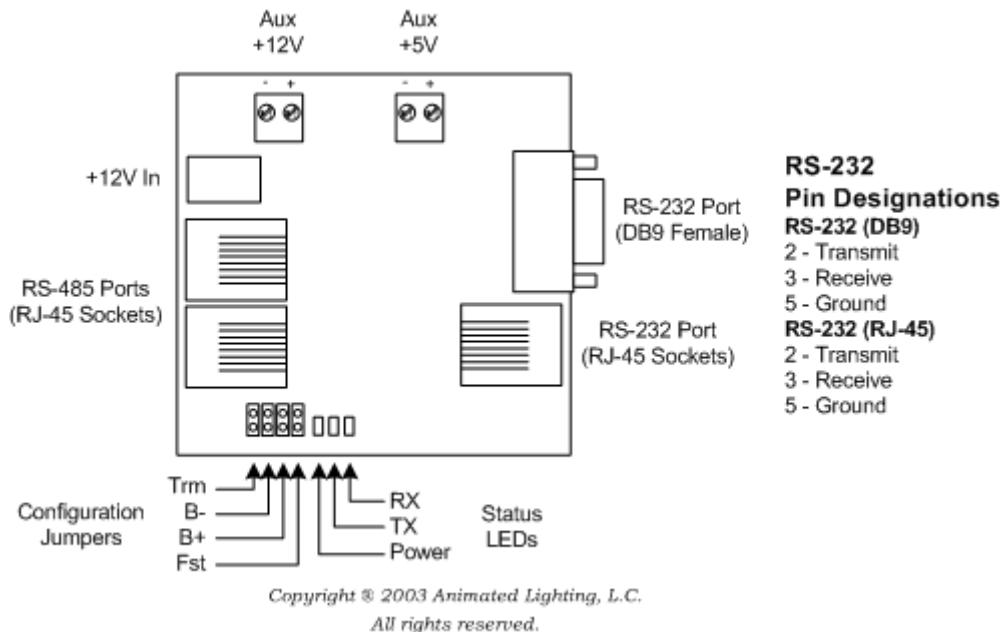


The RS485 Converter board is a bidirectional interface for converting RS232 signals to and from RS485 signals. It can be used in several configurations along with Animated Lighting's other controller boards.

Features include automatic baud rate adjustment; transmit/receive indicator LEDs, and auxiliary power inputs and outputs for connection to other devices. There are two RS232 connectors and two RS485 connectors.

The converter is ideal for connecting a PC to a network of Animated Lighting controllers including the LC-16 light controller as well as digital and sound controllers.

**Connections** – There are several connectors used on the converter board.



**Power In** - Power is typically supplied by a 12 volt DC wall power brick such as those sold by Animated Lighting. This 12 volts is also available on a terminal block to power low-current devices and is protected from reverse polarity connections. The 12VDC terminal block may also be used to power this board from another source (like a LC unit). See below for more information.

**Aux 12 Volts DC out** – This terminal block can be used to power other low current 12 volt DC devices, eliminating multiple power bricks. This output is limited to 500 millamps or less and is not regulated. The power available comes directly from the Power In connector through a diode.

You can also power this converter board using the terminal block as an input – receiving 12 volts DC from another board. This input is not protected from reverse polarity so care should be taken when using it as an input as reversed power could destroy the board.

**Aux 5 Volts DC Out** – This terminal block can be used to power low current 5 volt DC devices. It provides a regulated 5 volts and is limited to 500 millamps. You cannot use this terminal block as an input.

**RS232 (DB9 Connector)** – This DB9 connector is intended to connect to your computer's serial port. It is intended for use with a straight-through male to female serial cable. The pins are wired as follows: Transmit = 2, Receive = 3, Ground = 5.

**RS232 (RJ45 Connector)** – This RJ45 serial (RS232) connector is intended to connect to systems that use modular jacks instead of a DB9 connector. The pins are wired as follows: Transmit = 2, Receive = 3, Ground = 5.

**RS485 In/Out** – These two RJ45 jacks are used to connect the converter to the Animated Lighting controller network. Both connectors are identical so you can use either one. All controllers on the network are connected in a daisy chain. Standard Category 5 network cabling can be used to connect the controllers. These cables are available from your local electronics store, most large hardware stores such as Home Depot or Lowes, or Animated Lighting.

**Jumpers** – There are four jumpers used on the converter board:

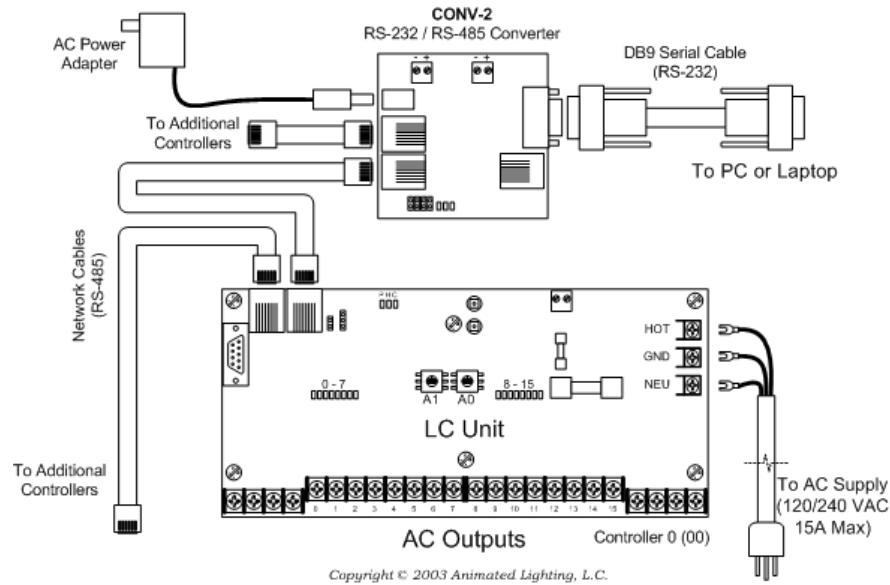
- **RS485 Termination (labeled Trm)** - There is a termination jumper for the RS485 connection. In small setups or short cable runs this jumper doesn't need to be installed. On longer runs, this jumper should be installed on the first and last boards in the daisy chain.
- **B- and B+** – These jumpers are not used in Animated Lighting's network configuration.
- **Fst** – This jumper is not used in Animated Lighting's network configuration.

**Indicator LEDs** – There are three indicator LEDs on the board. The first one is the Red power LED and it lights continually if the board is powered on. The second Green LED lights when data is being received from the RS485 network. The third Yellow LED lights when data is being transmitted to the RS485 network. Note that unless there is a lot of data being transmitted, these LEDs will not light very brightly.

**System Configurations** –There are a variety of different system configurations possible using the converter.

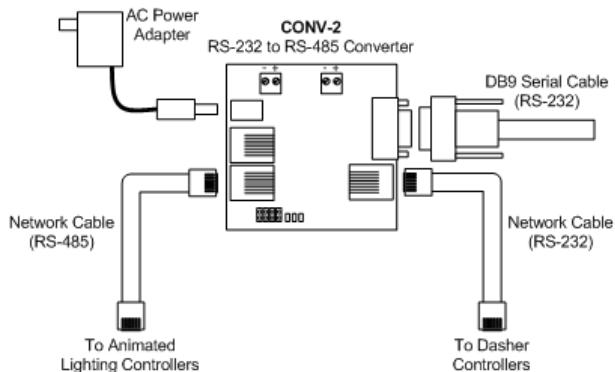
1. PC to Animated Lighting network – This is the most common configuration. This configuration is used when the Animation Director software communicates with controller boards on Animated Lighting's RS485 network without using a Monster Brain™ animation processor. It allows bidirectional communications with all controllers.

### Connecting Controllers Directly to a PC



2. PC to RS232 and RS485 controllers (A) – This configuration can be used when there is a mixture of RS232 and RS485 controllers on the network. The PC RS232 output connects to all of the RS232 controller boards as well as the converter. Only the RS485 controllers can send data back to the PC.

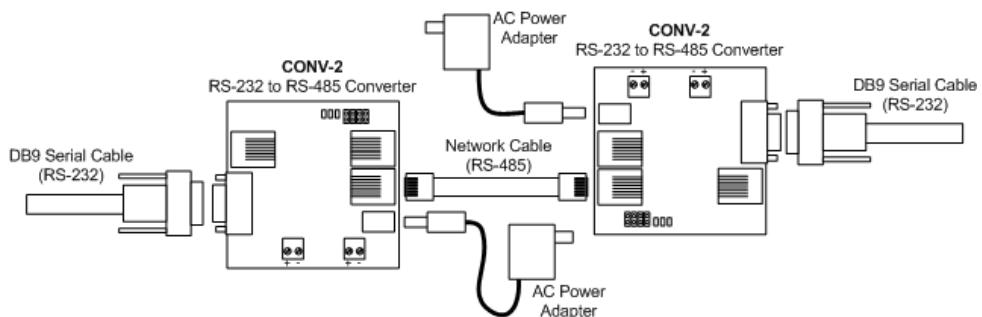
### Using Animated Lighting Controllers and Dasher Controllers Together



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3. PC to RS232 and RS485 controllers (B) – You can use two converter boards to extend your RS232 network. Since RS485 is much better at communicating long distances at high speeds, you can connect one converter to your PC to convert the RS232 to RS485. You can then connect another to convert the RS485 back to RS232 to operate any RS232 controllers.

### Extending RS-232 Signals



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