



# Guaranteed Broadway Ltd and Sound Decoder Programming!

Having trouble programming your Broadway Ltd locos?  
The PowerPax DCC Programming Booster makes BLI and Soundtraxx programming a snap!

The evolution of hi-tec DCC decoders has outpaced the programming power most DCC Systems can provide!

The Power Pax safely boosts programming power and gives you hassle free programming of BLI, Soundtraxx and multiple decoder/loco combinations.



Easy to Install!

Recommended for and compatible with Digitrax, Lenz, MRC, NCE and all other DCC systems.

Designed by Larry Maier and developed by DCCSpecialties.



# Installation and Programming

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## Tools Required:

Fine Tip Flat Bladed Screwdriver and Wire Stripper.

## Installation:

**(You may leave the unit permanently installed for all programming.)**

The **PowerPax** connects in series between the programming track output of your DCC System and your isolated Programming Track. **Warning: Do not connect to DCC track output or use for Operations Mode (Mainline) programming or unit will be damaged.**

Use 16-20 AWG wire to connect from your DCC System programming terminals to the **left**, input terminals of the **PowerPax** marked "From DCC Programming Terminals." Any polarity is acceptable. Then connect the terminals on the **right** side of your **PowerPax** marked "To Programming Track" to your programming track. Any polarity is acceptable. Plug in the DC connector of the **PowerPax** power supply to connector J1 and the AC plug to a suitable 120 VAC outlet. Inspect all your connections!

**WARNING:** If the PowerPax output is energized inadvertently by contact to an external power source the unit will be **DAMAGED**. This can occur if a PowerPax assisted program track, even though isolated, makes connection to the mainline by dragging or running a loco across the gap ... the loco will transfer current from the mainline to the program track. You can prevent this by installing a dead unpowered section of track between the programming track and the mainline longer than your longest loco! **Do not use a DPDT switch unless it has Center OFF.**

## Special Application Notes:

For **BLI Switchers and Proto GP9:** We found that sometimes a 12 Ohm 1 Watt resistor (Digikey P12W-1BK-ND or equivalent) placed between the PowerPax and the programming track in series with one of the PowerPax output leads solves the problem. With the resistor installed, all three systems were able to read and write CV values correctly. This may be made as a permanent change to your programming track setup if it does not appear to affect the programming performance of other decoders.

## Programming:

Use the same programming track procedures for your DCC System as before. All features are the same including read-back if available. Read-back does not work for programming two decoders at once. **For all Digitrax and Atlas Systems use the Direct Programming Mode!**

The **PowerPax** status **LED** has two indications: **Led steady-on**, all normal. **Led blinking**, short or overload detected, programming power terminated. This indicates either an internal decoder short, a wiring short or a device connected to the decoder drawing excessive current.

The **PowerPax** is reset simply by recycling the input power by unplugging and reconnecting J1. The status LED will return to steady on if the problem has been corrected.

## Compatibility:

We have tested the **PowerPax** for compatibility and functionality with Broadway Ltd locos, Digitrax, Lenz, MRC, NCE, TCS and Soundtraxx decoders in both single and dual decoder configurations with complete success. **PowerPax** also works with programming software, RR&Co (Train Programmer) and JMRI (Decoder Pro).

## How PowerPax Works:

**PowerPax** is microprocessor controlled. When hooked up for programming, the **PowerPax** initially provides power to the programming track to charge-up decoder components like capacitors that would otherwise reduce programming energy and cause a programming failure. When you initiate the programming sequence through your DCC System, the **PowerPax** also boosts and controls the programming energy to about 200 mA. In the event of an overload or short the **PowerPax** instantly shuts down to protect the decoder and your DCC System's programming circuits.