



The DB3a provides 5 Amps of additional power to an SB3a Smart Booster or other 5 Amp DCC system to run trains and accessories.

Power Supply:

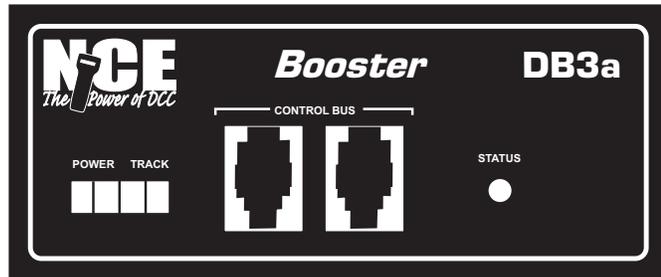
The DB3a requires a 14-18 Volt AC transformer (or 18-24 Volt DC power supply) capable of supplying 5 or more Amps. Under no circumstances should the voltage be greater than 24 VAC or 30VDC or certain damage will occur. Always use separate transformers for each booster. A suitable transformer is the NCE P515.

Power Terminals:

The two transformer or power supply wires connect here. DO NOT CONNECT the power wires to 120 Volts wall (mains) power.

Track Terminals

The two wires to your railroad track should be connected here. DO NOT CONNECT the transformer power to the TRACK terminals or damage will likely result (we can tell).



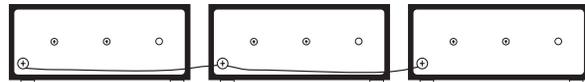
DB3a Face Plate

Control Bus - 4 Wire RJ-H Socket

Connect the 4 pin cable from one of these sockets to the SB3a and any additional DB3a Boosters used. This is the low level DCC signal that will be amplified by the power booster(s).

Status Light - This light is always on (except when a short circuit occurs).

Ground Screw - The screw on the rear of the DB3a is used to connect the SB3a to other ground screws on DB3a Boosters. We do not recommend connecting to earth ground or house ground.

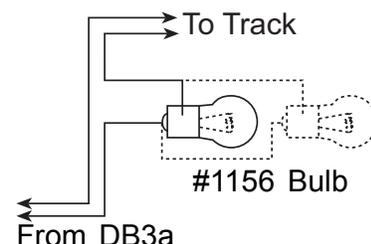


Short Circuit protection:

The DB3a incorporates internal short circuit protection that will shut down the track power in the event of a short circuit. The unit will attempt to re-energize the track every 3-4 seconds until the short is cleared. The track power LED conveys status of the track power. The LED will 'blip' each time the DB3a attempts to restore track power, steady 'on' of the LED indicates track power is restored.

The internal circuit protection of the DB3a is not intended to protect the booster from long term short circuits. Do not allow a long term short circuit to persist for more than 3 or 4 minutes or damage may result.

Therefore we strongly recommend an external short circuit protection device. This can be as simple as one or more automotive tail light bulbs such as an #1156 or similar wired in series with the track power output of the booster (see diagram). NCE makes a variety of circuit protection devices and circuit breakers such as the CP6, EB1 and the EB3. This



provides a means to divide your layout into separate power “districts.” A short or derailment in one district will only affect that section of track without shutting down other sections of the layout.

Connecting additional boosters:

The Control Bus output connector is used to connect additional boosters to the DB3a. See diagram on page 6.

Layout Wiring:

For runs up to about 25 feet (8 meters), we recommend #16 gauge wire as a layout “track power bus”. If you need more than 25 feet #14 gauge is a better choice. For power drops from the track to the bus #22 or #24 gauge wire is sufficient if you keep the length to 18 inches or less. With code 83 or larger rail keep your drops 6 feet (2 meters) or less apart. Code 70 and smaller rail should be about every 3 feet (1 meter).

While it is not absolutely required, we suggest twisting the track power bus wires together (2 to 4 turns per foot). Don’t bother twisting short power runs or power drops.

Electrical Specifications:

Input power requirement: 14-18 Volts AC (50/60Hz), 5 or more Amps
Maximum continuous track current (with ventilation) 5.1 Amps.

Available connections:

- 1- Four position AC POWER input/TRACK output power connector
- 2- CONTROL BUS output connectors
- 1- Ground screw on rear of box

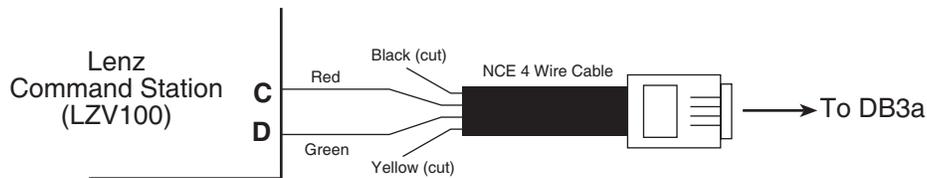
Indicator lights:

- 1- DC power on (red LED)

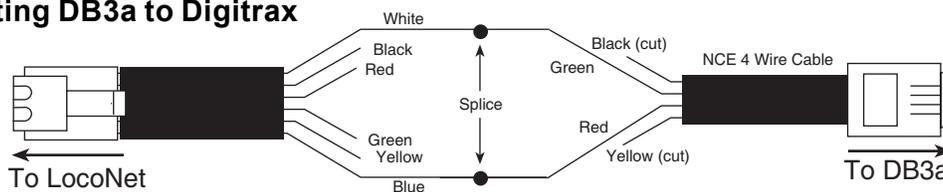
DCC Track Voltage:

13.8 Volts (factory setting)

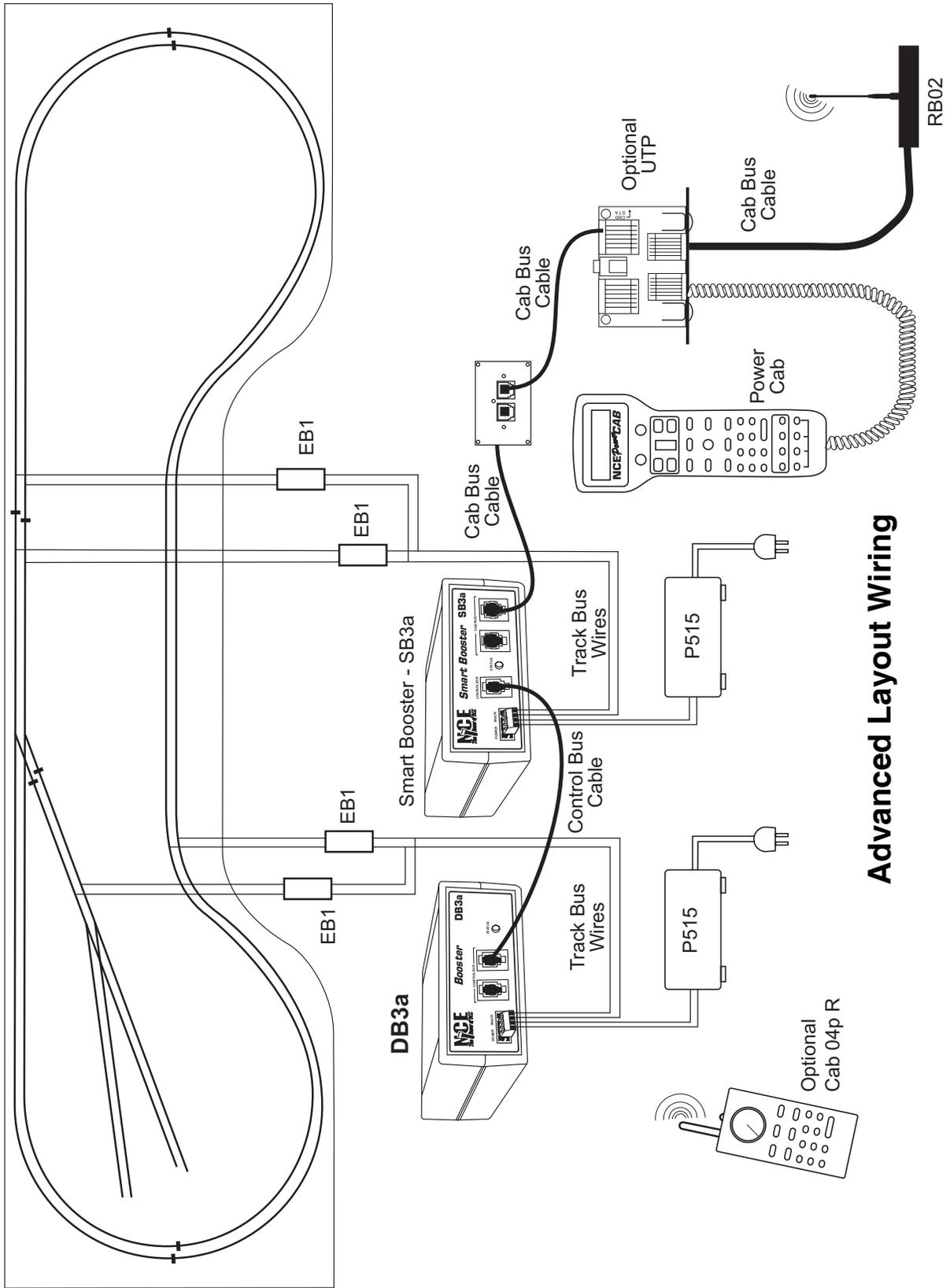
Connecting DB3a to Lenz



Connecting DB3a to Digitrax



Note: Connect Ground Screw to “E” on Lenz or “Ground” on Digitrax



Advanced Layout Wiring

SB3a and DB3a System Accessories

UTP Cab Bus Panel - 524-207

This is our low cost, easy to use cab bus panel. All four RJ-12 jacks are wired in parallel for easy plug and play use. Includes a black anodized fascia plate.



EB3

EB3™ - 524-217

Provides short circuit protection for up to three power districts. Can be used with any DCC command system rated at 3 or more Amps.



EB1

EB1™ - 524-225

Provides short circuit protection for a single power district. Can be used with any DCC command system rated at 3 to 10 Amps.

P515 - Power Supply - 524-215

Five Amp Power Transformer used with the SB3a and DB3a systems.



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Limited Warranty

NCE guarantees that every Power Cab and Smart Booster DCC System is free from physical defects in material and workmanship for a period of 1 year.

Within the first year full repair or replacement will be made to the original purchaser of any item that has failed due to manufacturer defect. Should the item no longer be produced and the item not repairable a similar item will be substituted at the manufacturer's discretion. The customer pays only shipping to the NCE Warranty Center. Please save your original receipt as a photocopy of it may be requested. NCE returns the items UPS ground unless other arrangements are made in advance. After the first year a fair and reasonable service charge may be placed on each failed item returned for repair.

This warranty is not valid if the customer has intentionally misused, miswired, performed any unauthorized alterations to the product or removed any product protection devices. In this case a service charge will be applied for all repairs and replacements. To protect the warranty, please contact the Warranty Center for authorization prior to altering any product. In no event will NCE's liability exceed the price paid for the product from direct, indirect, special, incidental or consequential damages resulting from the use of the product, its accompanying software or its documentation. NCE makes no warranty or representation, expressed, implied or statutory with respect to its products or the contents or use of this documentation and accompanying software and specifically disclaims its quality, performance, merchantability, or fitness for any particular purpose. NCE reserves the right to revise or update its products, software, or documentation without obligation to notify any individual or entity.

Please contact the Warranty Center for specific shipping instructions and any service charges before returning any product for service.

NCE Warranty Center - 585-265-0230

Power Cab and SB3a System Accessories



Pro Cab™ - 524-10

Our deluxe Pro Cab provides the most user-friendly access to all system features. Uncomplicated menus on the easy to read, backlit LCD display guide you through the most advanced operations with a minimum of fuss. Our **Pro Cab-R™** - 524-11 is also available radio equipped.

Engineer/Operator Cabs

The **Cab04™** and **Cab05™** are our most popular engineer cabs. Both cabs feature easy selection of locos/consists, single button operation of decoder functions, momentary HORN button. Our unique OPTION button that can be programmed to act as any button you wish, even those found on a much larger cab.

The **Cab04™** uses a more conventional knob for speed control and is available with either a potentiometer (**Cab04p™** - 524-12) or digital encoder (**Cab04e™** - 524-14). Both varieties of the Cab04 can be set to YARD mode. Yard mode makes the speed knob act as a “center off” speed control.

The **Cab05™** - 524-16 uses pushbuttons for loco speed control.

Cab 04p™ is also available radio equipped (524-13).

CP6 Circuit Protection - 524-227

Circuit protection for up to 6 sections of your railroad. Operates with ANY DCC system. Factory set to 1 Amp per section. Sections can be connected together for more power per section. See optional lamp packs below for 1.75 Amps per section.



USB Interface - 524-223

Add this USB computer interface for computer programming and/or operation of your Power Cab equipped layout. Requires USB cable, computer and railroad computer program such as JMRI Decoder Pro and Panel Pro.



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