

Northern Virginia NTRAK "How-To" Article

USING POWER POLES
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Anderson Powerpoles have become the standard for connecting the bus wires between NTRAK show modules. They replaced the Cinch Jones connectors used up until about 2010. The Cinch Jones connectors were hard to connect to the recommended 12 gauge wire and did not provide as good a contact area as Powerpoles. This article discusses the process for installing Powerpoles on the bus wire.

The Anderson Powerpoles needed to make the connections on the red, yellow and blue bus wires are shown in the picture to the right. They are available on-line, or from some modular railroading clubs, The three bus wires on the module require:

- Twelve 30-amp contacts. The 30-amp size is designed to fit on 12-gauge wire. It is good to purchase a few extra contacts.
- Twelve housings, including 2 red, 2 yellow, 2 blue and 6 black.

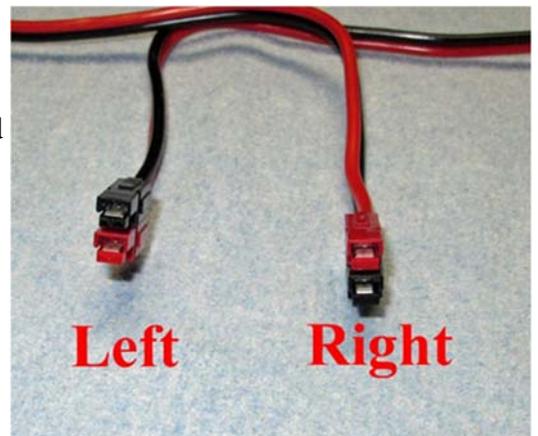
Also shown in the picture is a powerpole crimping tool which needs to be purchased or borrowed from the club. Pliers or other crimpers do not work properly, and the ends will pull off. Soldering the contacts is very difficult and is not recommended.



1. Strip the ends of the bus wire about 3/8 inch, just enough so that it fits all way into a power pole connector.
2. Install power pole connectors on the ends of the wire and crimp in place with a powerpole crimping tool. Use the 30-amp hole on the crimper and crimp until the two handles touch.
3. Insert the connector in the appropriate colored housing, pushing it in until it clicks in place over the tab in the bottom of the housing.
4. The powerpole housings have grooves so they can be connected together. As viewed from the front of the module, for the right end of the bus wires, slide the colored housing over the black housing with the "hood" up as shown in the picture. On the left end the black housing will be on top.

Wiring Convention: Polarity is an important issue, even when we are using DCC. A wiring convention has been established for NTRAK modules so individuals wire the modules the same. A convention can be somewhat arbitrary, but it needs to be consistently followed. For a NTRAK module:

1. As observed from the front of the module, the front rail of each track is positive and the rear rail is negative,
2. The red, or striped, bus wire will be hooked to the front rail and the black, or solid, bus wire will be hooked to the back rail.



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3. The powerpoles on the right side will be hooked together with the red, yellow or blue powerpole, hood up, on top of the black powerpole.
4. The powerpoles on the left side will be hooked together with the black powerpole, hood up, on top of the red, yellow, or blue powerpole,
5. For DC power, a white powerpole is used for the positive lead and a black powerple for the negative lead. They are hooked together with both hoods up and the white power pole on the left side.

The table on the next page provides a summary of the standards and relation to Cinch Jones connectors that may be still found on older modules.

Cinch Jones connectors on older modules should be replaced with powerpoles before the module is placed in a layout.

Power Pole Connectors:

1. **What is up?** Hood is up and the tongue (silver connector) is down.
When describing the arrangement it is hood over hood.

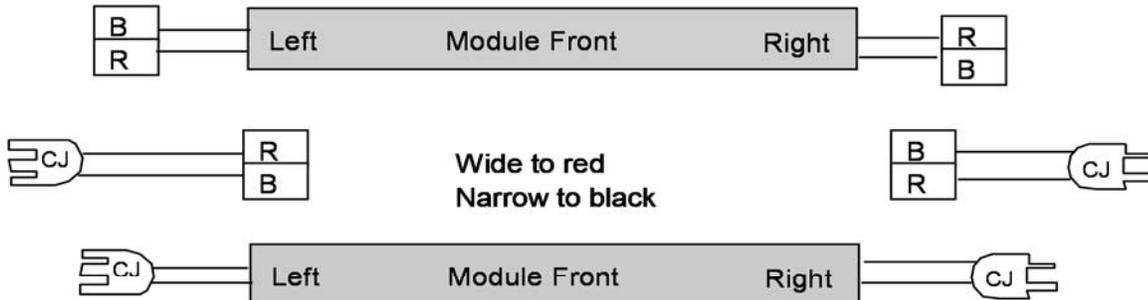


2. **Positive convention:** For purpose of wiring, when viewed from the front-- assume that front rail is positive and back rail is negative.

Polarity	Zip Wire	R/B Wire	Powerpole	DC power	CJ
Positive	Striped	Red	Red, etc.	White	Wide
Negative	solid	Black	Black	Black	Narrow

3. **For module to module connections:**

Application	Left end	Right end
Module PP	Black over Red	Red over Black
Module CJ	Female	Male
Jumper-right	Black over Red	Male
Jumper-left	Female	Red over Black
DC Power	White Left, Black Right	
Throttle	Black over Red	N/A
Y connector	N/A	Red over Black



4. **Throttle power "Y" connector:**

