

Why do I need a DCC Circuit Breaker? Myth vs. Fact

You can have a short circuit in a decoder but there is no guarantee it will trip a DCC circuit breaker or shutdown a booster. Myth: DCC circuit breakers protect decoders. Fact: DCC circuit breakers protect boosters.

The goal of the DCC circuit breaker is to protect THE BOOSTER by isolating the short locally within the breakers power district so the booster can remain powering the other power districts to keep the other parts of the layout running.

For the DCC circuit breaker to act, a short circuit must meet specific criteria.

- a) The short circuit current must be above the trip point of the DCC circuit breaker.
- b) The short circuit current must last for a certain period.

You MUST use some form of Protection!

All NCE systems and boosters have built in over current sensing for *basic* self-protection that will continuously / automatically try to reset every half second (500ms) until the unit is damaged. They do **not** have manual breakers that will trip or fuses that will blow. The default trip rating of an NCE EB1 DCC circuit breaker is 16ms. That is roughly 30 times faster than the booster overload trip time!

The reason you would add protection of some sort is that you do not want the entire railroad to shut down if you have a short. You break it up into smaller pieces. All our systems will only try to protect themselves and not your locos. Use the EB1 to divide up your layout and protect your trains! Think of this like the breaker panel in your house.