

The Fundamentals of Circuit Breakers

What is a Circuit Breaker

A circuit breaker is an automatic device used to stop the flow of current as a safety measure. It will prevent damage caused by excess current from an overload or short circuit. Its basic function is to interrupt current flow after a fault is detected.

In our industry, we use two different types of circuit breakers; auto-reset and manual reset.

Types

Typically, the Type 1 auto-reset circuit breaker is used to support applications like noseboxes.

Auto-reset means the circuit breaker keeps cycling on and off until the overload is removed. The most commonly used are the 15v, 20v & 30v circuit breakers.



Higher Amp Type III (Type 3) circuit breakers are for liftgates and other high amperage draw applications. These are available in automatic and manual reset styles from 50 amp – 200 amp.

Circuit Protection

It's a good idea to allow for a cushion to prevent a circuit breaker from shutting off. Looking at circuit breakers, a 20-amp circuit breaker is the most often used for standard industry trailer lighting. However, it's suggested to expose the breaker to a maximum of 75-80% of the rated amperage on the circuit. For example, if a circuit is drawing 15 amps, it is suggested to use a 20-amp circuit breaker as you will likely not reach its full capacity. The best way to be sure you are using the proper size is to always replace the existing circuit breaker with a new one carrying the same amperage. If you are adding to a circuit or creating a new one, add up the amperage draw from each light and use the nearest circuit breaker with an amp rating roughly 20% more than that.

TIPS

- Circuit breakers are automatic devices used to stop the flow of current to prevent damage caused by excess current.
- Remember, Type I circuit breakers are used for applications like noseboxes whereas Type III circuit breakers are used for other high amperage draw applications like liftgates.
- If your tractor and/or trailer comes standard with LED lamps, be sure to replace with LED's. LED lamps draw approximately 85 – 90% less amperage & the manufacturer may have used lighter gauge wire.

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