



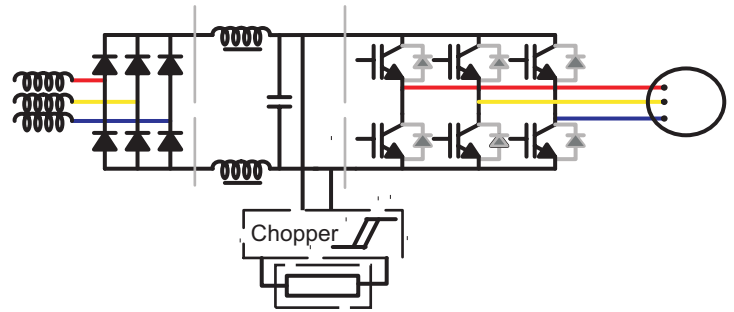
Braking Resistors Application Sheet

Application:

Braking resistors are used with inverters, driving motors with a dynamic load that requires to be stopped quickly, such as lifts, cranes, or high-speed mechanisms.

The braking resistor is connected in the DC link, between the rectifiers and the switching semi-conductors. When the DC voltage rises, to a preselected limit, a chopper circuit switches in the braking resistor thereby allowing excess energy to be "dumped" in the form of heat, instead of causing damage to the inverter.

When the DC level drops to a lower preset minimum limit the braking resistor is switched out of circuit until it is required again.



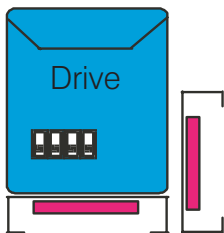
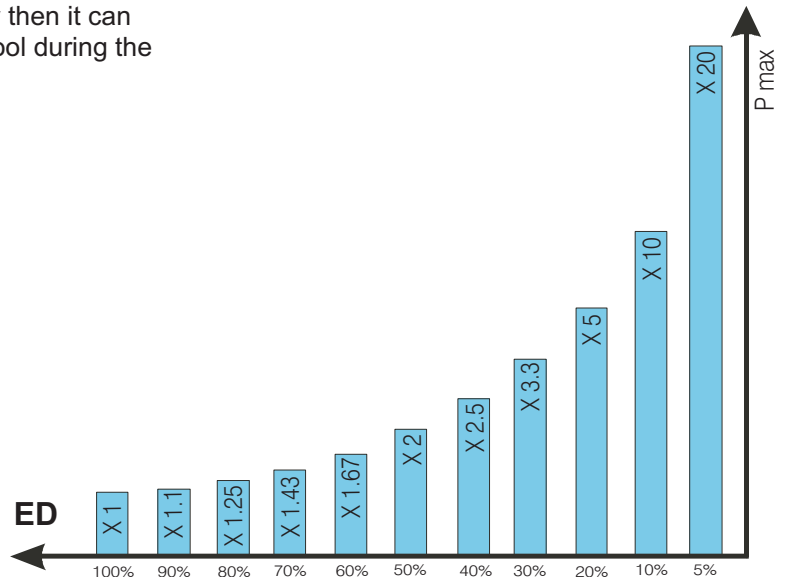
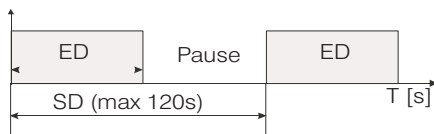
Power Rating Calculation

A braking resistor is selected according to the systems duty cycle requirements. If the resistor is not being used continuously then it can be used for a higher power rating because it has time to cool during the "rest" period. To calculate, the following formula is used:

$$P_{\max} = \frac{P \times 100}{ED [\%]}$$

$$ED\% = \frac{ED[s]}{SD[s]} \times 100$$

Where ED = Duty Cycle
SD = Cycle time



REO-USA, Inc. can offer virtually any braking resistor design to suit any frequency drive, with optional mounting methods: such as footprint, book style, or compact. The footprint version is particularly useful for retrofit applications because no extra panel space is required. Most constructions are in a modular form that is easy to install.

Additional forced air cooling can be fitted to some versions and this greatly increases their power rating, or alternatively enables use within a confined space, such as an IP65 enclosure for food quality or clean room applications.

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