

High-power Braking Resistors

1 – 4 kW, DB / 10 – 40 kW, KB

Series BW 700
Type BW 701/...

Applications:

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.

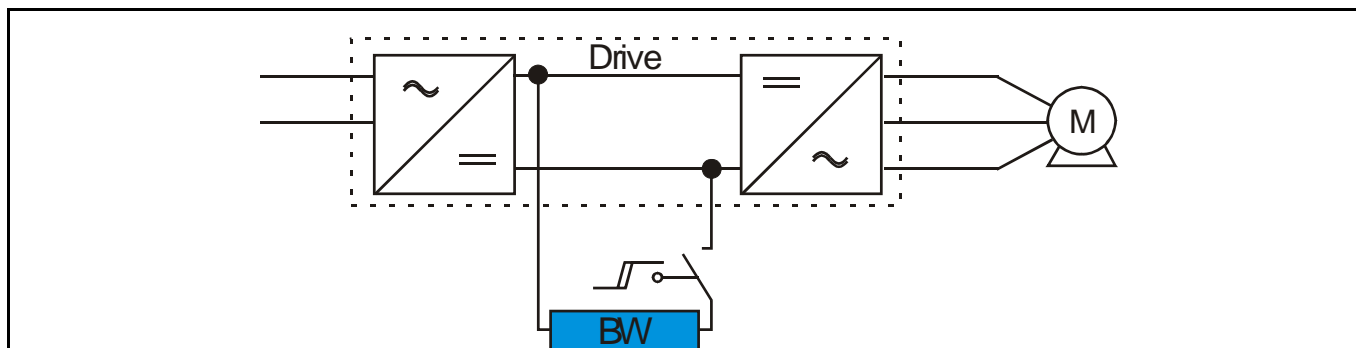
The braking resistor is connected in the DC link, between the rectifier and the switching semiconductors. When the DC voltage rises, to a pre-selected limit, a chopper circuit switches in the braking resistor thereby allowing excess energy to be “dumped” in the form of heat, instead of causing damage 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.



Protection IP 20	Test voltage 2.5 kV
Max .temperature Enclosure 120 °C/ Air 290 °C	Ambient temperature -10...+40 °C

Circuit example



Benefits:

- Decelerating a load with large inertia
- Increase the control torque of the inverter
- For frequently repeated ON/OFF cycles
- Compact construction
- Easy installation
- Suitable for the use with any frequency drive
- Compact design
- Continuous power: Max. 40kW
- High temperature wire
- CE Marked
- DIN 41 480 compliant

Technical data

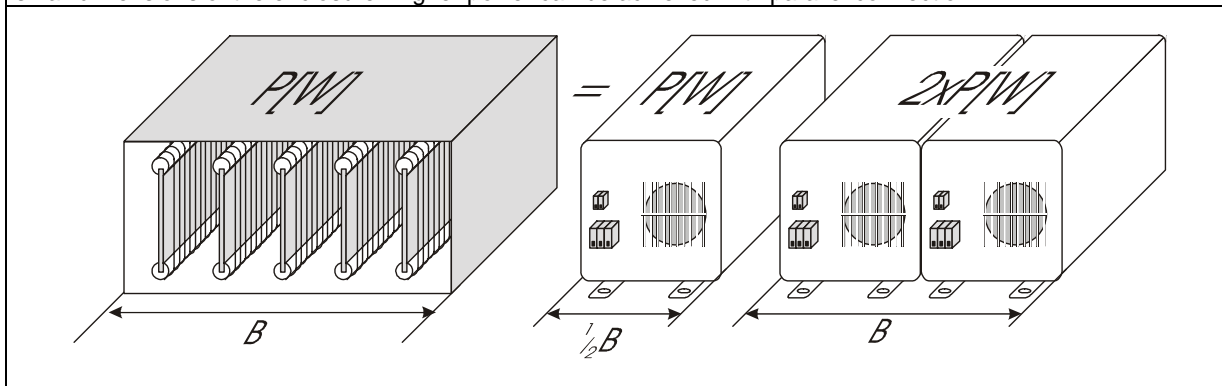
Type	BW 701/1/R[Ω]	BW 701/2/R[Ω]	BW 701/3/R[Ω]	BW 701/4/R[Ω]
Resistance values [Ohm]	2.5 - 250	3 - 125	4- 80	6- 60
Continuous power [W]	1000	2000	3000	4000
Max. Operating voltage [V]	700	700	700	700

Resistance values conforming to E 6

Other power ratings on request

Active cooling provides savings in volume

With natural cooling, limits are set. The high-power fan used keeps the enclosure temperature low even with very small dimensions of the enclosure. Higher power can be achieved with parallel connection.



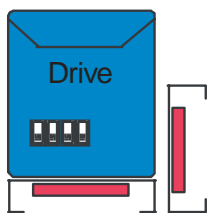
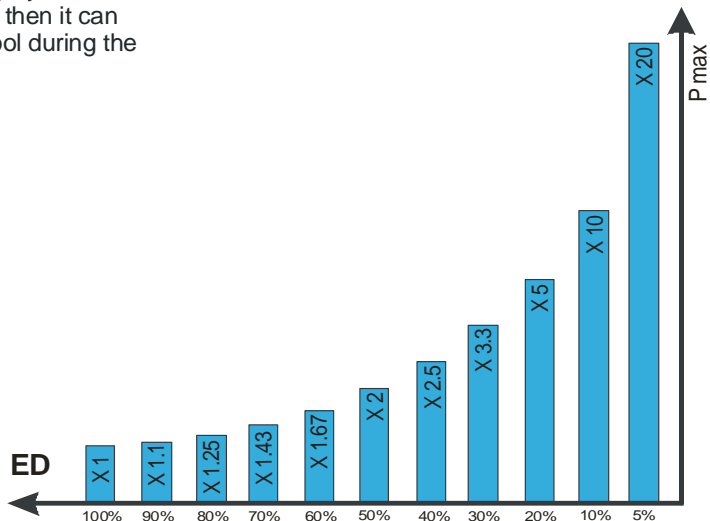
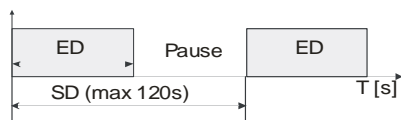
Power Rating Calculation

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.

