

Compact Braking Resistors

0.45 – 7.5 kW, DB / 4.5 – 75 kW, KB

Series BW 600
Type BW 603/....
Type BW 604/....

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.

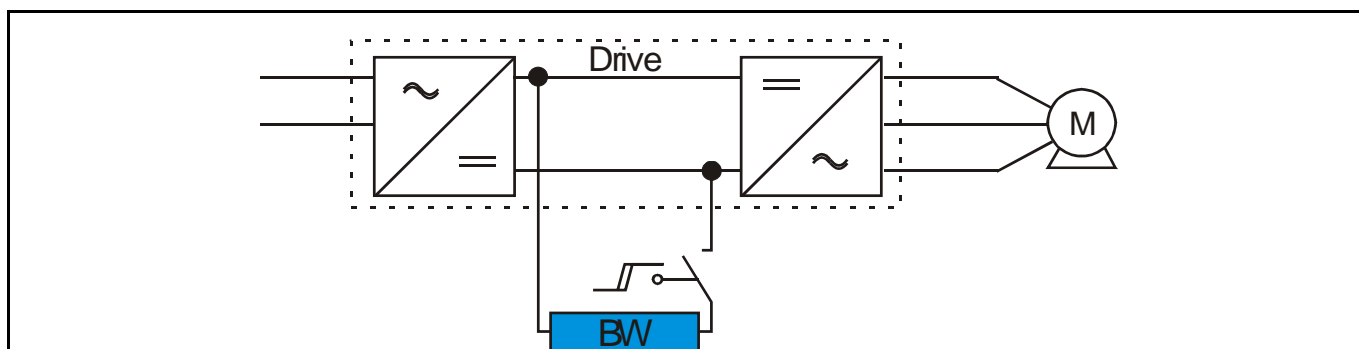
The braking resistor is connected in the DC link, between the rectifier and the switching semiconductors. When the DC voltage rises, to a pre-selected limit, a chopper circuit switches in the braking resistor thereby allowing excess energy to be “dumped” in the form of heat, instead of causing damage 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...IP 22	Test voltage 3.5 kV
Max. temperature 300 °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. 75kW
- High temperature wire
- CE Marked
- DIN 41 480 compliant

Technical Data

Natural cooling		Forced cooling			
Type	Continuous Power [W]	Type	Continuous Power [W]	Resistance values [Ω]	Max. Operating voltage [V]
BW 603/0.45/R[Ω]	450	BW 604/0.65/R[Ω]	650	3.8 – 1500	1000
BW 603/0.9/R[Ω]	900	BW 604/1.35/R[Ω]	1350	1.8 – 740	
BW 603/1.35/R[Ω]	1350	BW 604/2/R[Ω]	2000	1.2 – 500	
BW 603/1.8/R[Ω]	1800	BW 604/2.7/R[Ω]	2700	0.9 – 370	
BW 603/2.5/R[Ω]	2500	BW 604/3.7/R[Ω]	3700	0.65 – 270	
BW 603/3.4/R[Ω]	3400	BW 604/5/R[Ω]	5000	0.5 – 200	
BW 603/4.2/R[Ω]	4200	BW 604/6.3/R[Ω]	6300	0.4 – 160	
BW 603/5.0/R[Ω]	5000	BW 604/7.5/R[Ω]	7500	0.33 – 130	

Resistance values conforming to E 6
 Other power ratings on request
 Option: Connecting strands
 Low-inductance winding

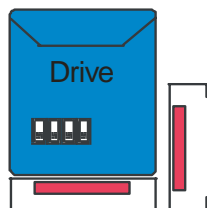
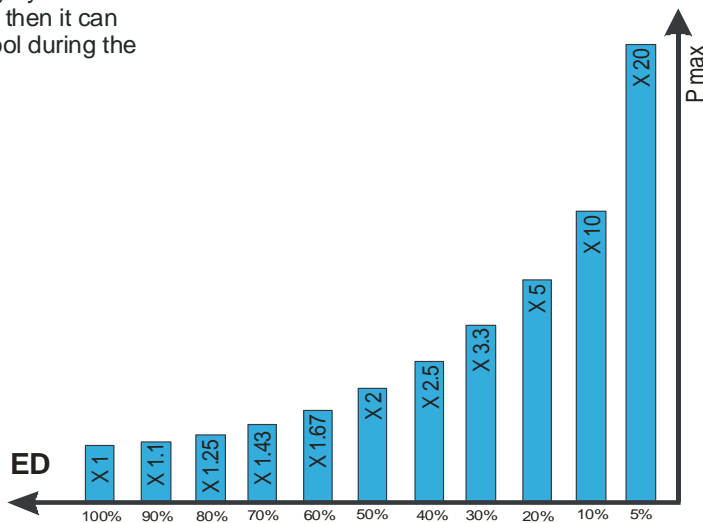
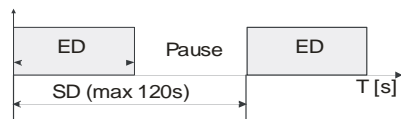
Power Rating Calculation

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:

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

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

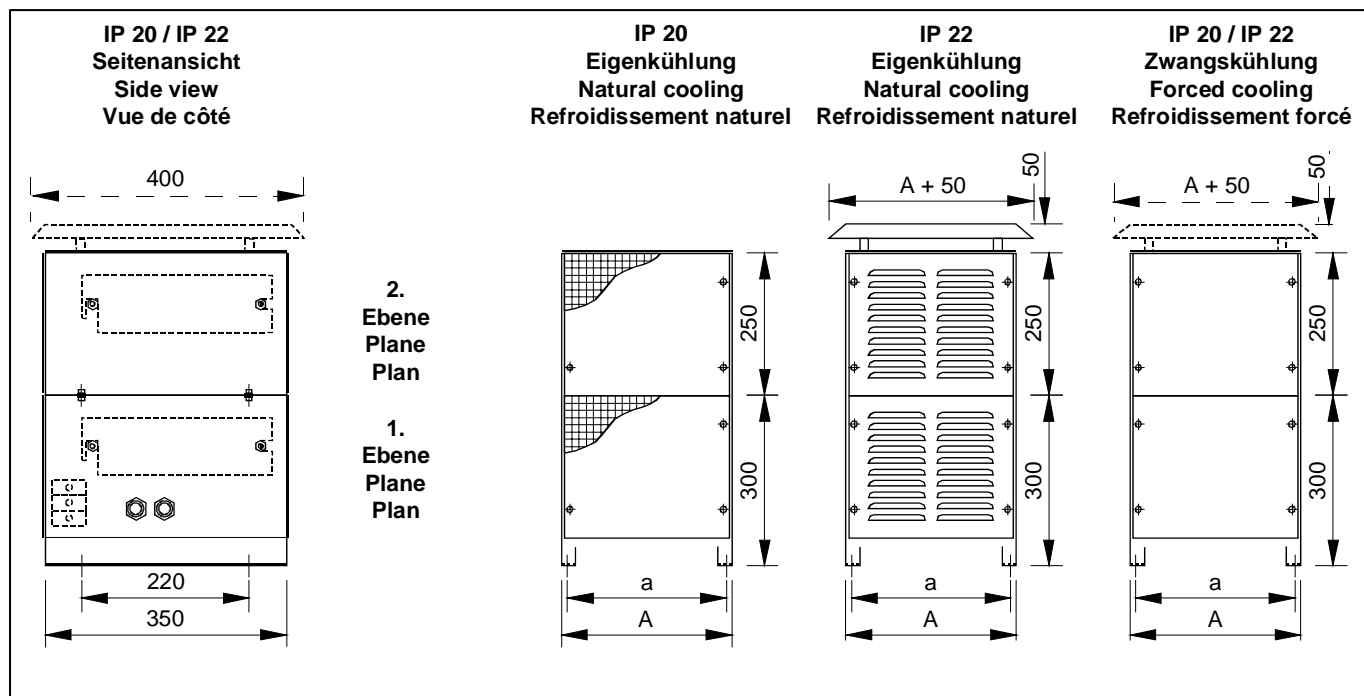
Where ED = Duty Cycle
 SD = Cycle time



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.

Dimension Drawing



Type		Number registers	Number Planes	Dimensions		
Natural cooling	Forced cooling			A	a	Total height
				[mm]	[mm]	[mm]
BW 603/0.45/R[Ω]	BW 604/0.65/R[Ω]	1	1	210	180	300
BW 603/0.9/R[Ω]	BW 604/1.35/R[Ω]	2				
BW 603/1.35/R[Ω]	BW 604/2/R[Ω]	3				
BW 603/1.8/R[Ω]	BW 604/2.7/R[Ω]	4				
BW 603/2.5/R[Ω]	BW 604/3.7/R[Ω]	6	2	410	380	550
BW 603/3.4/R[Ω]	BW 604/5/R[Ω]	8				
BW 603/4.2/R[Ω]	BW 604/6.3/R[Ω]	10				
BW 603/5.0/R[Ω]	BW 604/7.5/R[Ω]	12				