

ACCESSORIES

B.1 All Brake Resistors & Brake Units Used in AC Motor Drives

Note: Please only use DELTA resistors and recommended values. Other resistors and values will void Delta's warranty. Please contact your nearest Delta representative for use of special resistors. For instance, in 460 V series, 100 HP, AC drive has 2 brake units with total of 16 brake resistors, so each brake unit uses 8 brake resistors. There should be at least 10 cm away from AC drive to avoid possible noise. Refer to the "Brake Unit Module User Manual" for further detail.

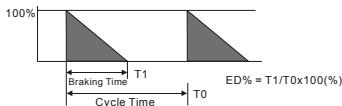
Voltage	Applicable Motor		★ Full Load Torque KG-M	Equivalent Resistors Specification for Each AC Drive	Brake Unit Model VFDB No. of Unit Used		Brake Resistors Model No. of Units Used		Brake Torque 10%ED%	Equivalent Minimum Resistor Value for Each AC Drive	
	HP	KW									
230V series	1	0.75	0.427	80W 200Ω			BR080W200	1	125	80Ω	
	2	1.5	0.849	300W 100Ω			BR300W100	1	125	55Ω	
	3	2.2	1.262	300W 70Ω			BR300W070	1	125	35Ω	
	5	3.7	2.080	400W 40Ω			BR400W040	1	125	25Ω	
	7.5	5.5	3.111	500W 30Ω			BR500W030	1	125	16Ω	
	10	7.5	4.148	1000W 20Ω			BR1K0W020	1	125	12Ω	
	15	11	6.186	2400W 13.6Ω			BR1K2W6P8	2	125	13.6Ω	
	20	15	8.248	3000W 10Ω	2015	1	BR1K5W005	2	125	10Ω	
	25	18.5	10.281	4800W 8Ω	2022	1	BR1K2W008	4	125	8Ω	
	30	22	12.338	4800W 6.8Ω	2022	1	BR1K2W6P8	4	125	6.8Ω	
	40	30	16.497	6000W 5Ω	2015	2	BR1K5W005	4	125	5Ω	
	50	37	20.6	9600W 4Ω	2015	2	BR1K2W008	8	125	4Ω	
	460V Series	1	0.75	0.427	80W 750Ω			BR080W750	1	125	160Ω
		2	1.5	0.849	300W 400Ω			BR300W400	1	125	160Ω
		3	2.2	1.262	300W 250Ω			BR300W250	1	125	160Ω
5		3.7	2.080	400W 150Ω			BR400W150	1	125	130Ω	
7.5		5.5	3.111	500W 100Ω			BR500W100	1	125	60Ω	
10		7.5	4.148	1000W 75Ω			BR1K0W075	1	125	45Ω	
15		11	6.186	1000W 50Ω			BR1K0W050	1	125	50Ω	
20		15	8.248	1500W 40Ω			BR1K5W040	1	125	40Ω	
25		18.5	10.281	4800W 32Ω	4030	1	BR1K2W008	4	125	32Ω	
30		22	12.338	4800W 27.2Ω	4030	1	BR1K2W6P8	4	125	27.2Ω	
40		30	16.497	6000W 20Ω	4030	1	BR1K5W005	4	125	20Ω	
50		37	20.6	9600W 16Ω	4045	1	BR1K2W008	8	125	16Ω	
60		45	24.745	9600W 13.6Ω	4045	1	BR1K2W6P8	8	125	13.6Ω	
75		55	31.11	12000W 10Ω	4030	2	BR1K5W005	8	125	10Ω	
100		75	42.7	19200W 6.8Ω	4045	2	BR1K2W6P8	16	125	6.8Ω	
120		90	52.5	13500W 5Ω	4132	1	BR1K5W005	9	120	5Ω	
150		110	61	21600W 4Ω	4132	1	BR1K2W008	18	120	4Ω	
175		132	73.5	21600W 4Ω	4132	1	BR1K2W008	18	100	4Ω	
215	160	89	21600W 3.4Ω	4132	1	BR1K2W6P8	18	97	3.4Ω		
250	185	103	27000W 2.5Ω	4132	2	BR1K5W005	18	115	2.5Ω		
300	220	122.5	27000W 2.5Ω	4132	2	BR1K5W005	18	96	2.5Ω		

★: Standard 4-pole motor

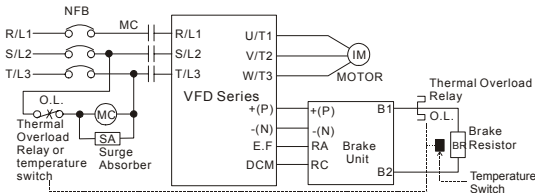
1. Please select the brake unit and/or brake resistor according to the table. "-" means no Delta product. Please use the brake unit according to the Equivalent Resistor Value.
2. If damage to the drive or other equipment is due to the fact that the brake resistors and the brake modules in use are not provided by Delta, the warranty will be void.
3. Take into consideration the safety of the environment when installing the brake resistors.
4. If the minimum resistance value is to be utilized, consult local dealers for the calculation of the power in Watt.
5. Please select thermal relay trip contact to prevent resistor over load. Use the contact to switch power off to the AC motor drive!
6. When using more than 2 brake units, equivalent resistor value of parallel brake unit can't be less than the value in the column "Minimum Equivalent Resistor Value for Each AC Drive" (the right-most column in the table).
7. Please read the wiring information in the user manual of the brake unit thoroughly prior to installation and operation.
8. In applications with brake resistor or brake unit, Pr.06-00 (Over-voltage stall prevention) must be disabled. And Pr.08-18 (AVR function) shall not be used.

9. Definition for Brake Usage ED%

Explanation: The definition of the brake usage ED(%) is for assurance of enough time for the brake unit and brake resistor to dissipate away heat generated by braking. When the brake resistor heats up, the resistance would increase with temperature, and brake torque would decrease accordingly. Suggest cycle time is one minute.



10. For safety reasons, install a thermal overload relay between brake unit and brake resistor. Together with the magnetic contactor (MC) in the mains supply circuit to the drive it offers protection in case of any malfunctioning. The purpose of installing the thermal overload relay is to protect the brake resistor against damage due to frequent braking or in case the brake unit is continuously on due to unusual high input voltage. Under these circumstances the thermal overload relay switches off the power to the drive. Never let the thermal overload relay switch off only the brake resistor as this will cause serious damage to the AC Motor Drive.



Note1: When using the AC drive with DC reactor, please refer to wiring diagram in the AC drive user manual for the wiring of terminal + (P) of brake unit.

Note2: **Do NOT** wire terminal - (N) to the neutral point of power system.