

Appendix B 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 460V series, 100hp/75kW, the AC motor drive needs 2 brake units with total of 16 brake resistors, so each brake unit uses 8 brake resistors. The brake unit should be at least 10 cm away from AC motor drive to avoid possible interference. Refer to the "Brake Unit Module User Manual" for further details.

Voltage	Applicable Motor		Full Load Torque Nm	Resistor value spec for each AC Motor Drive	Brake Unit Part No. and Quantity		Brake Resistors Part No. and Quantity	Brake Torque 10%ED	Min. Equivalent Resistor Value for each AC Motor Drive	
	hp	kW								
230V Series	1	0.75	0.427	80W 200Ω			BR080W200	1	125	82Ω
	2	1.5	0.849	300W 100Ω			BR300W100	1	125	82Ω
	3	2.2	1.262	300W 100Ω			BR300W100	1	125	82Ω
	5	3.7	2.080	400W 40Ω			BR400W040	1	125	33Ω
	7.5	5.5	3.111	500W 30Ω			BR500W030	1	125	30Ω
	10	7.5	4.148	1000W 20Ω			BR1K0W020	1	125	20Ω
	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
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	91Ω
10		7.5	4.148	1000W 75Ω			BR1K0W075	1	125	62Ω
15		11	6.186	1000W 50Ω			BR1K0W050	1	125	39Ω
20		15	8.248	1500W 40Ω	4030	1	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	

Appendix B Accessories | VFD-B Series

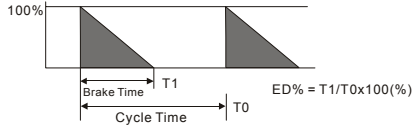
Voltage	Applicable Motor		Full Load Torque Nm	Resistor value spec for each AC Motor Drive	Brake Unit Part No. and Quantity		Brake Resistors Part No. and Quantity	Brake Torque 10%ED	Min. Equivalent Resistor Value for each AC Motor Drive	
	hp	kW								
575V Series	1	0.75	0.427	300W 400Ω			BR300W400	1	125	200Ω
	2	1.5	0.849	300W 250Ω			BR300W250	1	125	200Ω
	3	2.2	1.262	400W 150Ω			BR400W150	1	125	130Ω
	5	3.7	2.080	400W 150Ω			BR400W150	1	125	130Ω
	7.5	5.5	3.111	500W 100Ω			BR500W100	1	125	82Ω
	10	7.5	4.148	500W 100Ω			BR500W100	1	125	82Ω
	15	11	6.186	500W 100Ω			BR500W100	1	125	82Ω
	20	15	8.248	3000W 60Ω	5055	1	BR1K0W020	3	125	60Ω
	25	18.5	10.281	4000W 50Ω	5055	1	BR1K0W050	4	125	50Ω
	30	22	12.338	6000W 40Ω	5055	1	BR1K2W008	5	125	40Ω
	40	30	16.497	6000W 34Ω	5055	1	BR1K2W6P8	5	125	34Ω
	50	37	20.6	7500W 25Ω	5055	1	BR1K5W005	5	125	25Ω
	60	45	24.745	12000W 20Ω	5055	1	BR1K2W008	10	125	20Ω
	75	55	31.11	12000W 17Ω	5055	1	BR1K2W6P8	10	125	17Ω
100	75	42.7	15000W 12.5Ω	5055	2	BR1K5W005	10	125	12.5Ω	

 **NOTE**

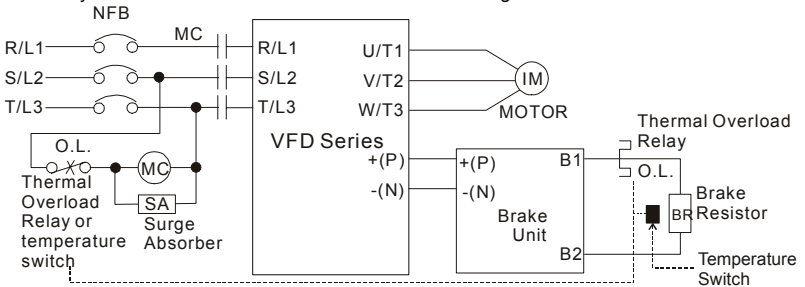
1. Please select the factory setting resistance value (Watt) and the duty-cycle value (ED%).
2. If damage to the drive or other equipment are due to the fact that the brake resistors and the brake modules in use are not provided by Delta, the warranty will be void.
3. Take into consideration the safety 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 Watt figures.
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). An example of 575V 100HP, the min. equivalent resistor value for each AC motor drive is 12.5Ω with 2 brake units connection. Therefore, the equivalent resistor value for each brake unit should be 25Ω.
7. Please read the wiring information in the user manual of brake unit thoroughly prior to taking into operation.

8. Definition for Brake Usage ED%

Explanation: The definition of the braking 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



9. 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 brake 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.