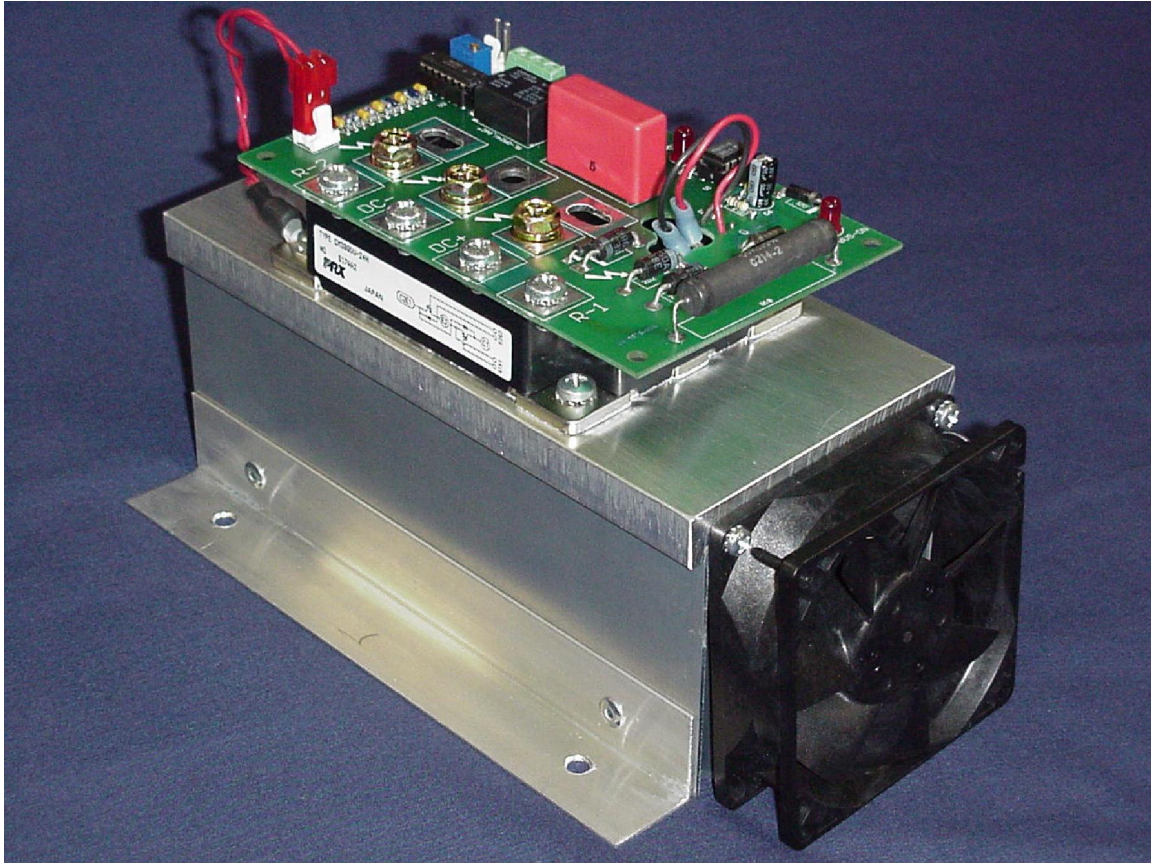


## **BRAKE CHOPPER MODULE**



The Brake Chopper Module is an open style (chassis mount) assembly that can be used with properly sized braking resistors to increase the braking torque capability of the Phoenix DS and ES drives. When the drive detects a regeneration condition, a control signal is sent to the brake chopper. The brake chopper uses pulse width modulation to optimize the resistor power dissipation capability. The drive controls the chopper turn-on pulse width based on the regeneration level required increasing the utilization of the brake resistor and providing smooth speed control. Other brake choppers on the market use a dc bus voltage threshold to turn-on the brake. This "bang-bang" control method creates rough speed control and torque pulsations and can mis-operate when the plant voltage increases during light load conditions. The control method used in US Drives, Inc. brake chopper prevents mis-operation due to changing plant voltage. The Brake Chopper is designed to operate only when regeneration is required. Brake Chopper modules can be operated in parallel without programming. The same control signal is repeated to all brake choppers to insure that all parallel brake choppers operate at the same duty ratio. There are no jumpers to move or pots to adjust.

## SELECTION TABLES FOR 208/230/240VAC DRIVES

Brake Copper Module Selection Table										
HP	Chopper Catalog Number 100% Braking Torque					Chopper Catalog Number 150% Braking Torque				
	Duty Cycle Rating					Duty Cycle Rating				
	10%	20%	30%	50%	100%	10%	20%	30%	50%	100%
3	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45
5	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45
7.5	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45
10	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45-C	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45-C
15	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45-C	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45-C
20	BC2-45	BC2-45	BC2-45	BC2-45	BC2-45-C	BC2-60	BC2-60	BC2-60	BC2-60-C	BC2-60-C
25	BC2-60	BC2-60	BC2-60	BC2-60-C	BC2-60-C	BC2-90	BC2-90	BC2-90	BC2-90-C	BC2-90-C
30	BC2-60	BC2-60	BC2-60	BC2-60-C	BC2-60-C	BC2-90	BC2-90	BC2-90-C	BC2-90-C	BC2-90-C
40	BC2-90	BC2-90	BC2-90	BC2-90-C	BC2-90-C	BC2-120	BC2-120	BC2-120-C	BC2-120-C	BC2-120-C
50	BC2-120	BC2-120	BC2-120-C	BC2-120-C	BC2-120-C	BC2-180	BC2-180-C	BC2-180-C	BC2-180-C	BC2-180-C
60	BC2-120	BC2-120	BC2-120-C	BC2-120-C	BC2-120-C	BC2-180	BC2-180-C	BC2-180-C	BC2-180-C	BC2-180-C
75	BC2-180	BC2-180-C	BC2-180-C	BC2-180-C	BC2-180-C	2 x BC2-120	2 x BC2-120	2 x BC2-120-C	2 x BC2-120-C	2 x BC2-120-C
100	2 x BC2-120	2 x BC2-120	2 x BC2-120-C	2 x BC2-120-C	2 x BC2-120-C	2 x BC2-180	2 x BC2-180-C	2 x BC2-180-C	2 x BC2-180-C	2 x BC2-180-C
125	2 x BC2-120	2 x BC2-120	2 x BC2-120-C	2 x BC2-120-C	2 x BC2-120-C	2 x BC2-180	2 x BC2-180-C	2 x BC2-180-C	2 x BC2-180-C	2 x BC2-180-C
150	2 x BC2-180	2 x BC2-180-C	2 x BC2-180-C	2 x BC2-180-C	2 x BC2-180-C	3 x BC2-180	3 x BC2-180-C	3 x BC2-180-C	3 x BC2-180-C	3 x BC2-180-C
200	3 x BC2-180	3 x BC2-180-C	3 x BC2-180-C	3 x BC2-180-C	3 x BC2-180-C					
250	3 x BC2-180	3 x BC2-180-C	3 x BC2-180-C	3 x BC2-180-C	3 x BC2-180-C					

Resistor Selection Table										
HP	Resistor Package 100% Braking Torque					Resistor Package 150% Braking Torque				
	Duty Cycle Rating					Duty Cycle Rating				
	10%	20%	30%	50%	100%	10%	20%	30%	50%	100%
3	62.5R6A10%	62.5R6A20%	62.5R6A30%	62.5R6A50%	62.5R6A100%	41.7R9A10%	41.7R9A20%	41.7R9A30%	41.7R9A50%	41.7R9A100%
5	37.5R10A10%	37.5R10A20%	37.5R10A30%	37.5R10A50%	37.5R10A100%	25R15A10%	25R15A20%	25R15A30%	25R15A50%	25R15A100%
7.5	25R15A10%	25R15A20%	25R15A30%	25R15A50%	25R15A100%	16.7R22.5A10%	16.7R22.5A20%	16.7R22.5A30%	16.7R22.5A50%	16.7R22.5A100%
10	18.8R20A10%	18.8R20A20%	18.8R20A30%	18.8R20A50%	18.8R20A100%	12.5R30A10%	12.5R30A20%	12.5R30A30%	12.5R30A50%	12.5R30A100%
15	12.5R30A10%	12.5R30A20%	12.5R30A30%	12.5R30A50%	12.5R30A100%	8.3R45A10%	8.3R45A20%	8.3R45A30%	8.3R45A50%	8.3R45A100%
20	9.4R40A10%	9.4R40A20%	9.4R40A30%	9.4R40A50%	9.4R40A100%	6.3R60A10%	6.3R60A20%	6.3R60A30%	6.3R60A50%	6.3R60A100%
25	7.5R50A10%	7.5R50A20%	7.5R50A30%	7.5R50A50%	7.5R50A100%	5R75A10%	5R75A20%	5R75A30%	5R75A50%	5R75A100%
30	6.3R60A10%	6.3R60A20%	6.3R60A30%	6.3R60A50%	6.3R60A100%	4.2R90A10%	4.2R90A20%	4.2R90A30%	4.2R90A50%	4.2R90A100%
40	4.7R80A10%	4.7R80A20%	4.7R80A30%	4.7R80A50%	4.7R80A100%	3.1R120A10%	3.1R120A20%	3.1R120A30%	3.1R120A50%	3.1R120A100%
50	3.8R100A10%	3.8R100A20%	3.8R100A30%	3.8R100A50%	3.8R100A100%	2.5R150A10%	2.5R150A20%	2.5R150A30%	2.5R150A50%	2.5R150A100%
60	3.1R120A10%	3.1R120A20%	3.1R120A30%	3.1R120A50%	3.1R120A100%	2.1R180A10%	2.1R180A20%	2.1R180A30%	2.1R180A50%	2.1R180A100%
75	2.5R150A10%	2.5R150A20%	2.5R150A30%	2.5R150A50%	2.5R150A100%	(2) 3.3R113A10%	(2) 3.3R113A20%	(2) 3.3R113A30%	(2) 3.3R113A50%	(2) 3.3R113A100%
100	(2) 3.8R100A10%	(2) 3.8R100A20%	(2) 3.8R100A30%	(2) 3.8R100A50%	(2) 3.8R100A100%	(2) 2.5R150A10%	(2) 2.5R150A20%	(2) 2.5R150A30%	(2) 2.5R150A50%	(2) 2.5R150A100%
125	(2) 3R125A10%	(2) 3R125A20%	(2) 3R125A30%	(2) 3R125A50%	(2) 3R125A100%	(2) 2R188A10%	(2) 2R188A20%	(2) 2R188A30%	(2) 2R188A50%	(2) 2R188A100%
150	(2) 2.5R150A10%	(2) 2.5R150A20%	(2) 2.5R150A30%	(2) 2.5R150A50%	(2) 2.5R150A100%	(3) 2.5R150A10%	(3) 2.5R150A20%	(3) 2.5R150A30%	(3) 2.5R150A50%	(3) 2.5R150A100%
200	(3) 2.8R133A10%	(3) 2.8R133A20%	(3) 2.8R133A30%	(3) 2.8R133A50%	(3) 2.8R133A100%					
250	(3) 2.3R167A10%	(3) 2.3R167A20%	(3) 2.3R167A30%	(3) 2.3R167A50%	(3) 2.3R167A100%					

## SELECTION TABLES FOR 380/415/480VAC DRIVES

Brake Chopper Module Selection Table										
HP	Chopper Catalog Number 100% Braking Torque					Chopper Catalog Number 150% Braking Torque				
	Duty Cycle Rating					Duty Cycle Rating				
	10%	20%	30%	50%	100%	10%	20%	30%	50%	100%
5	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30
7.5	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30
10	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30
15	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30
20	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30-C
25	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30-C	BC4-45	BC4-45	BC4-45	BC4-45	BC4-45-C
30	BC4-30	BC4-30	BC4-30	BC4-30	BC4-30-C	BC4-45	BC4-45	BC4-45	BC4-45	BC4-45-C
40	BC4-45	BC4-45	BC4-45	BC4-45	BC4-45-C	BC4-60	BC4-60	BC4-60	BC4-60-C	BC4-60-C
50	BC4-60	BC4-60	BC4-60	BC4-60	BC4-60-C	BC4-90	BC4-90	BC4-90	BC4-90-C	BC4-90-C
60	BC4-60	BC4-60	BC4-60	BC4-60-C	BC4-60-C	BC4-90	BC4-90	BC4-90-C	BC4-90-C	BC4-90-C
75	BC4-90	BC4-90	BC4-90	BC4-90-C	BC4-90-C	BC4-120	BC4-120	BC4-120-C	BC4-120-C	BC4-120-C
100	BC4-120	BC4-120	BC4-120-C	BC4-120-C	BC4-120-C	BC4-180	BC4-180-C	BC4-180-C	BC4-180-C	BC4-180-C
125	BC4-120	BC4-120	BC4-120-C	BC4-120-C	BC4-120-C	BC4-180	BC4-180-C	BC4-180-C	BC4-180-C	BC4-180-C
150	BC4-180	BC4-180-C	BC4-180-C	BC4-180-C	BC4-180-C	2 x BC4-120	2 x BC4-120	2 x BC4-120-C	2 x BC4-120-C	2 x BC4-120-C
200	2 x BC4-120	2 x BC4-120	2 x BC4-120-C	2 x BC4-120-C	2 x BC4-120-C	2 x BC4-180	2 x BC4-180-C	2 x BC4-180-C	2 x BC4-180-C	2 x BC4-180-C
250	2 x BC4-120	2 x BC4-120	2 x BC4-120-C	2 x BC4-120-C	2 x BC4-120-C	2 x BC4-180	2 x BC4-180-C	2 x BC4-180-C	2 x BC4-180-C	2 x BC4-180-C
300	2 x BC4-180	2 x BC4-180-C	2 x BC4-180-C	2 x BC4-180-C	2 x BC4-180-C	3 x BC4-180	3 x BC4-180-C	3 x BC4-180-C	3 x BC4-180-C	3 x BC4-180-C
350	2 x BC4-180	2 x BC4-180-C	2 x BC4-180-C	2 x BC4-180-C	2 x BC4-180-C	3 x BC4-180	3 x BC4-180-C	3 x BC4-180-C	3 x BC4-180-C	3 x BC4-180-C
400	3 x BC4-180	3 x BC4-180-C	3 x BC4-180-C	3 x BC4-180-C	3 x BC4-180-C					
450	3 x BC4-180	3 x BC4-180-C	3 x BC4-180-C	3 x BC4-180-C	3 x BC4-180-C					
500	3 x BC4-180	3 x BC4-180-C	3 x BC4-180-C	3 x BC4-180-C	3 x BC4-180-C					

Resistor Selection Table										
HP	Resistor Package 100% Braking Torque					Resistor Package 150% Braking Torque				
	Duty Cycle Rating					Duty Cycle Rating				
	10%	20%	30%	50%	100%	10%	20%	30%	50%	100%
5	150R5A10%	150R5A20%	150R5A30%	150R5A50%	150R5A100%	100R7.5A10%	100R7.5A20%	100R7.5A30%	100R7.5A50%	100R7.5A100%
7.5	100R7.5A10%	100R7.5A20%	100R7.5A30%	100R7.5A50%	100R7.5A100%	66.7R11.3A10%	66.7R11.3A20%	66.7R11.3A30%	66.7R11.3A50%	66.7R11.3A100%
10	75R10A10%	75R10A20%	75R10A30%	75R10A50%	75R10A100%	50R15A10%	50R15A20%	50R15A30%	50R15A50%	50R15A100%
15	50R15A10%	50R15A20%	50R15A30%	50R15A50%	50R15A100%	33.3A22.5A10%	33.3A22.5A20%	33.3A22.5A30%	33.3A22.5A50%	33.3A22.5A100%
20	37.5R20A10%	37.5R20A20%	37.5R20A30%	37.5R20A50%	37.5R20A100%	25R30A10%	25R30A20%	25R30A30%	25R30A50%	25R30A100%
25	30R25A10%	30R25A20%	30R25A30%	30R25A50%	30R25A100%	20R37.5A10%	20R37.5A20%	20R37.5A30%	20R37.5A50%	20R37.5A100%
30	25R30A10%	25R30A20%	25R30A30%	25R30A50%	25R30A100%	16.7R45A10%	16.7R45A20%	16.7R45A30%	16.7R45A50%	16.7R45A100%
40	18.8R40A10%	18.8R40A20%	18.8R40A30%	18.8R40A50%	18.8R40A100%	12.5R60A10%	12.5R60A20%	12.5R60A30%	12.5R60A50%	12.5R60A100%
50	15R50A10%	15R50A20%	15R50A30%	15R50A50%	15R50A100%	10R75A10%	10R75A20%	10R75A30%	10R75A50%	10R75A100%
60	12.5R60A10%	12.5R60A20%	12.5R60A30%	12.5R60A50%	12.5R60A100%	8.3R90A10%	8.3R90A20%	8.3R90A30%	8.3R90A50%	8.3R90A100%
75	10R75A10%	10R75A20%	10R75A30%	10R75A50%	10R75A100%	6.7R113A10%	6.7R113A20%	6.7R113A30%	6.7R113A50%	6.7R113A100%
100	7.5R100A10%	7.5R100A20%	7.5R100A30%	7.5R100A50%	7.5R100A100%	5R150A10%	5R150A20%	5R150A30%	5R150A50%	5R150A100%
125	6R125A10%	6R125A20%	6R125A30%	6R125A50%	6R125A100%	4R188A10%	4R188A20%	4R188A30%	4R188A50%	4R188A100%
150	5R150A10%	5R150A20%	5R150A30%	5R150A50%	5R150A100%	(2) 6.7R113A10%	(2) 6.7R113A20%	(2) 6.7R113A30%	(2) 6.7R113A50%	(2) 6.7R113A100%
200	(2) 7.5R100A10%	(2) 7.5R100A20%	(2) 7.5R100A30%	(2) 7.5R100A50%	(2) 7.5R100A100%	(2) 5R150A10%	(2) 5R150A20%	(2) 5R150A30%	(2) 5R150A50%	(2) 5R150A100%
250	(2) 6R125A10%	(2) 6R125A20%	(2) 6R125A30%	(2) 6R125A50%	(2) 6R125A100%	(2) 4R188A10%	(2) 4R188A20%	(2) 4R188A30%	(2) 4R188A50%	(2) 4R188A100%
300	(2) 5R150A10%	(2) 5R150A20%	(2) 5R150A30%	(2) 5R150A50%	(2) 5R150A100%	(3) 5R150A10%	(3) 5R150A20%	(3) 5R150A30%	(3) 5R150A50%	(3) 5R150A100%
350	(2) 4.3R175A10%	(2) 4.3R175A20%	(2) 4.3R175A30%	(2) 4.3R175A50%	(2) 4.3R175A100%	(3) 4.3R175A10%	(3) 4.3R175A20%	(3) 4.3R175A30%	(3) 4.3R175A50%	(3) 4.3R175A100%
400	(3) 5.6R133A10%	(3) 5.6R133A20%	(3) 5.6R133A30%	(3) 5.6R133A50%	(3) 5.6R133A100%					
450	(3) 5R150A10%	(3) 5R150A20%	(3) 5R150A30%	(3) 5R150A50%	(3) 5R150A100%					
500	(3) 4.5R167A10%	(3) 4.5R167A20%	(3) 4.5R167A30%	(3) 4.5R167A50%	(3) 4.5R167A100%					

## SELECTION TABLES FOR 525/575/600VAC DRIVES

Brake Chopper Module Selection Table										
HP	Chopper Catalog Number 100% Braking Torque					Chopper Catalog Number 150% Braking Torque				
	Duty Cycle Rating					Duty Cycle Rating				
	10%	20%	30%	50%	100%	10%	20%	30%	50%	100%
5	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30
7.5	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30
10	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30
15	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30
20	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30
25	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30-C
30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30	BC5-45	BC5-45	BC5-45	BC5-45	BC5-45-C
40	BC5-30	BC5-30	BC5-30	BC5-30	BC5-30-C	BC5-45	BC5-45	BC5-45	BC5-45	BC5-45-C
50	BC5-45	BC5-45	BC5-45	BC5-45	BC5-45-C	BC5-60	BC5-60	BC5-60	BC5-60-C	BC5-60-C
60	BC5-60	BC5-60	BC5-60	BC5-60	BC5-60-C	BC5-90	BC5-90	BC5-90	BC5-90-C	BC5-90-C
75	BC5-60	BC5-60	BC5-60	BC5-60-C	BC5-60-C	BC5-90	BC5-90	BC5-90-C	BC5-90-C	BC5-90-C
100	BC5-90	BC5-90	BC5-90	BC5-90-C	BC5-90-C	BC5-120	BC5-120	BC5-120-C	BC5-120-C	BC5-120-C
125	BC5-120	BC5-120	BC5-120-C	BC5-120-C	BC5-120-C	BC5-180	BC5-180-C	BC5-180-C	BC5-180-C	BC5-180-C
150	BC5-120	BC5-120	BC5-120-C	BC5-120-C	BC5-120-C	BC5-180	BC5-180-C	BC5-180-C	BC5-180-C	BC5-180-C
200	BC5-180	BC5-180-C	BC5-180-C	BC5-180-C	BC5-180-C	2 x BC5-120	2 x BC5-120	2 x BC5-120-C	2 x BC5-120-C	2 x BC5-120-C
250	2 x BC5-120	2 x BC5-120	2 x BC5-120-C	2 x BC5-120-C	2 x BC5-120-C	2 x BC5-180	2 x BC5-180-C	2 x BC5-180-C	2 x BC5-180-C	2 x BC5-180-C
300	2 x BC5-120	2 x BC5-120	2 x BC5-120-C	2 x BC5-120-C	2 x BC5-120-C	2 x BC5-180	2 x BC5-180-C	2 x BC5-180-C	2 x BC5-180-C	2 x BC5-180-C
350	2 x BC5-180	2 x BC5-180-C	2 x BC5-180-C	2 x BC5-180-C	2 x BC5-180-C	3 x BC5-180	3 x BC5-180-C	3 x BC5-180-C	3 x BC5-180-C	3 x BC5-180-C
400	2 x BC5-180	2 x BC5-180-C	2 x BC5-180-C	2 x BC5-180-C	2 x BC5-180-C	3 x BC5-180	3 x BC5-180-C	3 x BC5-180-C	3 x BC5-180-C	3 x BC5-180-C
450	2 x BC5-180	2 x BC5-180-C	2 x BC5-180-C	2 x BC5-180-C	2 x BC5-180-C	3 x BC5-180	3 x BC5-180-C	3 x BC5-180-C	3 x BC5-180-C	3 x BC5-180-C
500	3 x BC5-180	3 x BC5-180-C	3 x BC5-180-C	3 x BC5-180-C	3 x BC5-180-C					
600	3 x BC5-180	3 x BC5-180-C	3 x BC5-180-C	3 x BC5-180-C	3 x BC5-180-C					

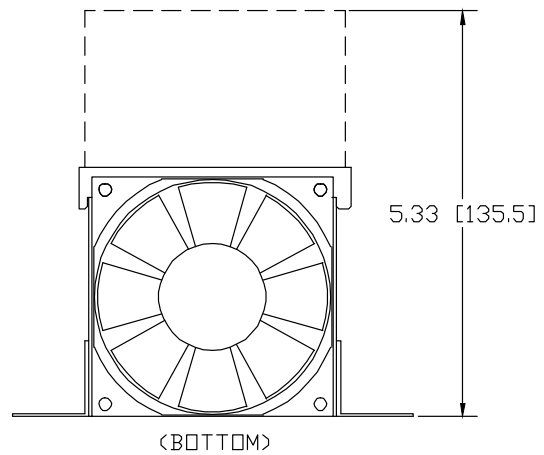
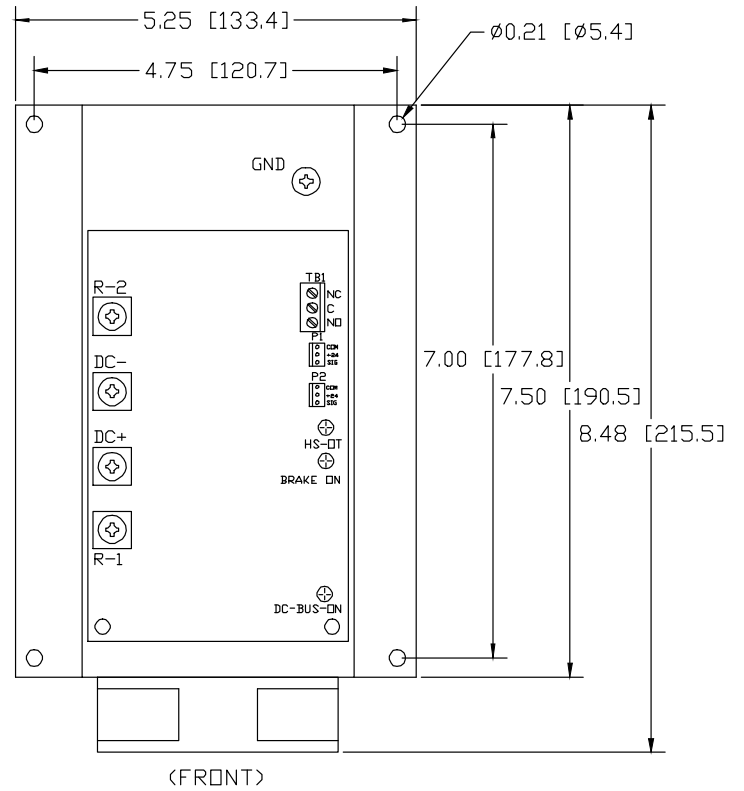
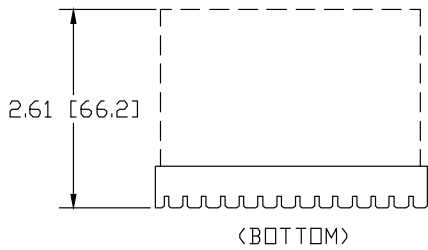
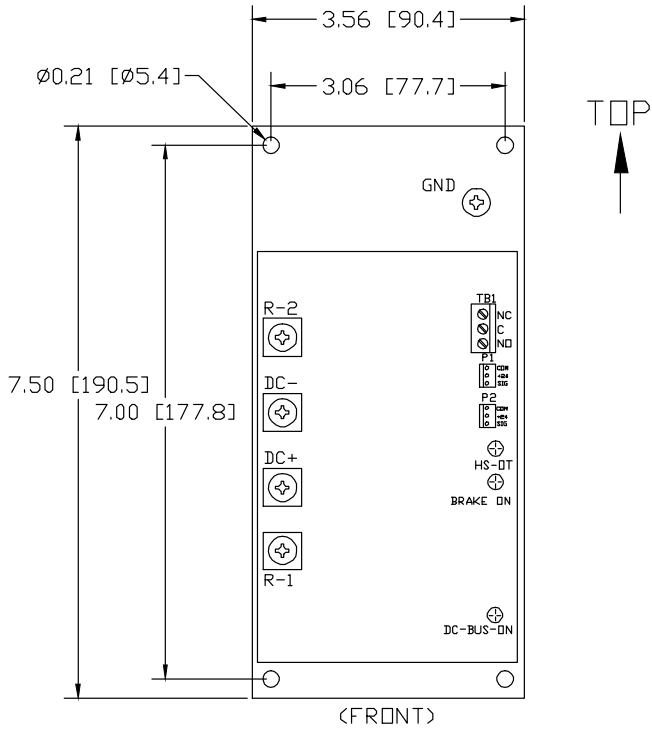
Resistor Selection Table										
HP	Resistor Package 100% Braking Torque					Resistor Package 150% Braking Torque				
	Duty Cycle Rating					Duty Cycle Rating				
	10%	20%	30%	50%	100%	10%	20%	30%	50%	100%
5	233R4A10%	233R4A20%	233R4A30%	233R4A50%	233R4A100%	155R6A10%	155R6A20%	155R6A30%	155R6A50%	155R6A100%
7.5	155R6A10%	155R6A20%	155R6A30%	155R6A50%	155R6A100%	104R9A10%	104R9A20%	104R9A30%	104R9A50%	104R9A100%
10	117R8A10%	117R8A20%	117R8A30%	117R8A50%	117R8A100%	77.7R12A10%	77.7R12A20%	77.7R12A30%	77.7R12A50%	77.7R12A100%
15	77.7R12A10%	77.7R12A20%	77.7R12A30%	77.7R12A50%	77.7R12A100%	51.8R18A10%	51.8R18A20%	51.8R18A30%	51.8R18A50%	51.8R18A100%
20	58.3R16A10%	58.3R16A20%	58.3R16A30%	58.3R16A50%	58.3R16A100%	38.9R24A10%	38.9R24A20%	38.9R24A30%	38.9R24A50%	38.9R24A100%
25	46.6R20A10%	46.6R20A20%	46.6R20A30%	46.6R20A50%	46.6R20A100%	31.1R30A10%	31.1R30A20%	31.1R30A30%	31.1R30A50%	31.1R30A100%
30	38.9R24A10%	38.9R24A20%	38.9R24A30%	38.9R24A50%	38.9R24A100%	25.9R36A10%	25.9R36A20%	25.9R36A30%	25.9R36A50%	25.9R36A100%
40	29.1R32A10%	29.1R32A20%	29.1R32A30%	29.1R32A50%	29.1R32A100%	19.4R48A10%	19.4R48A20%	19.4R48A30%	19.4R48A50%	19.4R48A100%
50	23.3R40A10%	23.3R40A20%	23.3R40A30%	23.3R40A50%	23.3R40A100%	15.5R60A10%	15.5R60A20%	15.5R60A30%	15.5R60A50%	15.5R60A100%
60	19.4R48A10%	19.4R48A20%	19.4R48A30%	19.4R48A50%	19.4R48A100%	13R72A10%	13R72A20%	13R72A30%	13R72A50%	13R72A100%
75	15.5R60A10%	15.5R60A20%	15.5R60A30%	15.5R60A50%	15.5R60A100%	10.4R90A10%	10.4R90A20%	10.4R90A30%	10.4R90A50%	10.4R90A100%
100	11.7R80A10%	11.7R80A20%	11.7R80A30%	11.7R80A50%	11.7R80A100%	7.8R120A10%	7.8R120A20%	7.8R120A30%	7.8R120A50%	7.8R120A100%
125	9.3R100A10%	9.3R100A20%	9.3R100A30%	9.3R100A50%	9.3R100A100%	6.2R150A10%	6.2R150A20%	6.2R150A30%	6.2R150A50%	6.2R150A100%
150	7.8R120A10%	7.8R120A20%	7.8R120A30%	7.8R120A50%	7.8R120A100%	5.2R180A10%	5.2R180A20%	5.2R180A30%	5.2R180A50%	5.2R180A100%
200	5.8R160A10%	5.8R160A20%	5.8R160A30%	5.8R160A50%	5.8R160A100%	(2) 7.8R120A10%	(2) 7.8R120A20%	(2) 7.8R120A30%	(2) 7.8R120A50%	(2) 7.8R120A100%
250	(2) 9.3R100A10%	(2) 9.3R100A20%	(2) 9.3R100A30%	(2) 9.3R100A50%	(2) 9.3R100A100%	(2) 6.2R150A10%	(2) 6.2R150A20%	(2) 6.2R150A30%	(2) 6.2R150A50%	(2) 6.2R150A100%
300	(2) 7.8R120A10%	(2) 7.8R120A20%	(2) 7.8R120A30%	(2) 7.8R120A50%	(2) 7.8R120A100%	(2) 5.2R180A10%	(2) 5.2R180A20%	(2) 5.2R180A30%	(2) 5.2R180A50%	(2) 5.2R180A100%
350	(2) 6.7R140A10%	(2) 6.7R140A20%	(2) 6.7R140A30%	(2) 6.7R140A50%	(2) 6.7R140A100%	(3) 6.7R140A10%	(3) 6.7R140A20%	(3) 6.7R140A30%	(3) 6.7R140A50%	(3) 6.7R140A100%
400	(2) 5.8R160A10%	(2) 5.8R160A20%	(2) 5.8R160A30%	(2) 5.8R160A50%	(2) 5.8R160A100%	(3) 5.8R160A10%	(3) 5.8R160A20%	(3) 5.8R160A30%	(3) 5.8R160A50%	(3) 5.8R160A100%
450	(2) 5.2R180A10%	(2) 5.2R180A20%	(2) 5.2R180A30%	(2) 5.2R180A50%	(2) 5.2R180A100%	(3) 5.2R180A10%	(3) 5.2R180A20%	(3) 5.2R180A30%	(3) 5.2R180A50%	(3) 5.2R180A100%
500	(3) 7R134A10%	(3) 7R134A20%	(3) 7R134A30%	(3) 7R134A50%	(3) 7R134A100%					
600	(3) 5.8R160A10%	(3) 5.8R160A20%	(3) 5.8R160A30%	(3) 5.8R160A50%	(3) 5.8R160A100%					

**BRAKE CHOPPER DIMENSIONS**

"-C" MODELS"

ESTIMATED WEIGHT: 3 LBS. (1.4 KGS)

ESTIMATED WEIGHT: 5 LBS. (2.3 KGS)

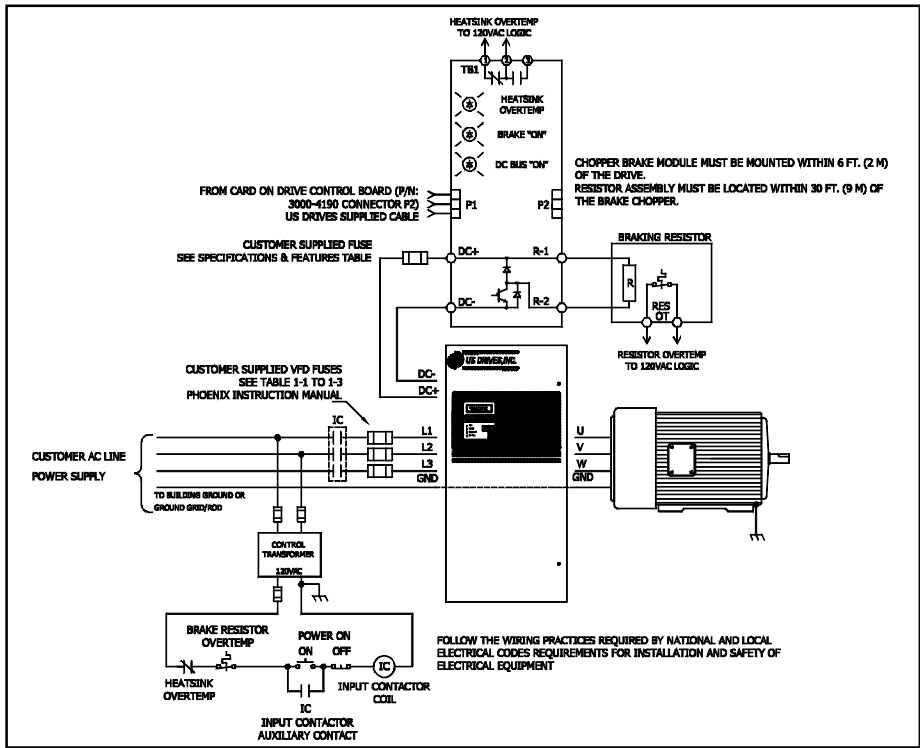


FOR PROPER HEATSINK COOLING, UNIT MUST BE MOUNTED ON FLAT SURFACE USING PROVIDED MOUNTING HOLES

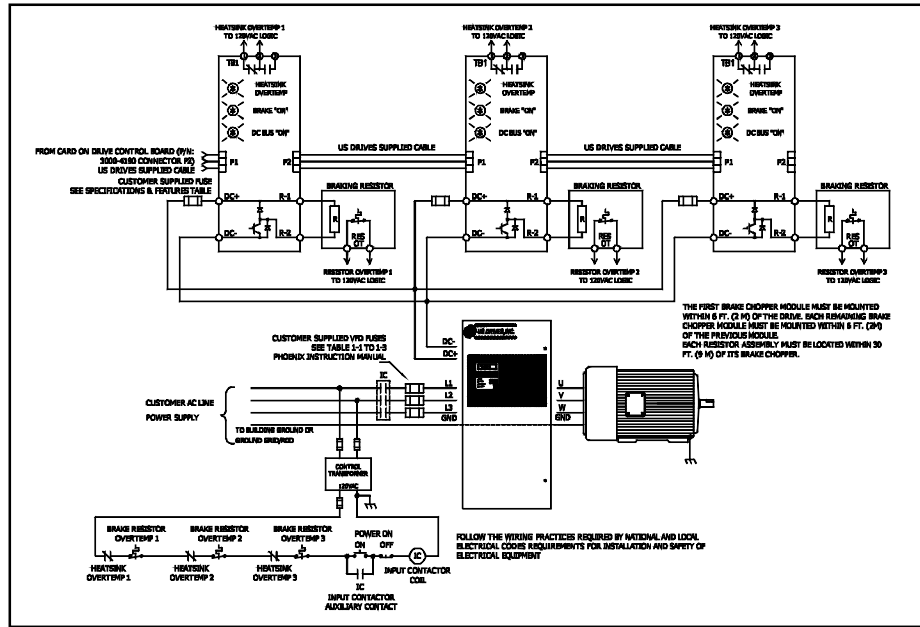
## SPECIFICATIONS AND FEATURES

Drive Voltage		Drive 208/230/240Vac					380/415/480Vac					525/575/600Vac						
Brake Chopper Model Number		BC-2-45	BC-2-60	BC-2-90	BC-2-120	BC-2-180	BC-4-30	BC-4-45	BC-4-60	BC-4-90	BC-4-120	BC-4-180	BC-5-30	BC-5-45	BC-5-60	BC-5-90	BC-5-120	BC-5-180
Rated DC Current		45 A	60 A	90 A	120 A	180 A	30 A	45 A	60 A	90 A	120 A	180 A	30 A	45 A	60 A	90 A	120 A	180 A
Maximum Recommended Bus Fuse*		60 A	80 A	125 A	150 A	225 A	40 A	60 A	80 A	125 A	150 A	225 A	40 A	60 A	80 A	125 A	150 A	225 A
Max Duty Cycle @ Rated DC Current (Cycle time is 60 seconds)		50%	30%	20%	10%	10%	50%	50%	30%	20%	10%	10%	50%	50%	30%	20%	10%	10%
		Duty cycle is 100% @ rated Current when model number is followed by "-C"																
Minimum Brake Resistance		8.3 Ω	6.3 Ω	4.2 Ω	3.1 Ω	2.1 Ω	25 Ω	16.7 Ω	12.5 Ω	8.3 Ω	6.3 Ω	4.2 Ω	31.1 Ω	19.7 Ω	15.5 Ω	10.4 Ω	7.8 Ω	5.2 Ω
Chopper Maximum Heat Loss @ Rated DC Current		90 W	120 W	180 W	240 W	360 W	60 W	90 W	120 W	180 W	240 W	360 W	60 W	90 W	120 W	180 W	240 W	360 W
Environmental Specification	Ambient Temperature	-10°C to 55°C (14°F to 131°F)																
	Storage Temperature	-40°C to 70°C (-40°F to 158°F)																
	Altitude	Sea level to 3000 Feet [1000m] without derating																
	Humidity	5% to 95% relative humidity non-condensing																
	Atmosphere	Non-corrosive & non-hazardous dust vapor or gas																
Physical Attribute	Vibration	9.8m/sec <sup>2</sup> (1.0G) peak																
	Mounting	Panel Mount																
	Enclosure	IP00 (Open)																
Protective Feature		<ul style="list-style-type: none"> <li>• Heatsink over-temperature monitoring</li> <li>• DC bus voltage indication</li> </ul>																
Standard Features		<ul style="list-style-type: none"> <li>• Fourth generation IGBT.</li> <li>• 55°C ambient.</li> <li>• High voltage Application: 250Vac+10%, 500Vac+10% and 600Vac+10%</li> <li>• DC bus Power ON light</li> <li>• Brake ON light.</li> <li>• Heatsink over-temperature light</li> <li>• Form C dry contacts rated 115Vac @ 5A; 30Vdc @ 3.5A.</li> <li>• No programming or hardware jumpers for all models.</li> <li>• No programming or hardware jumpers for parallel operation.</li> <li>• No mis-operation due to changing plant voltage.</li> <li>• No external control power supply required.</li> </ul>																

\*Semiconductor Fuse: Ferraz Shawmut A50P type for 208/230/240Vac application  
A70P type for 380/415/480Vac application  
A70P type for 525/575/600Vac application  
Bussmann FWH type for 208/230/240Vac application  
FWP type for 380/415/480Vac application  
FWP type for 525/575/600Vac application



SINGLE MODULE



MULTIPLE MODULE