

# Power Accessories

## For AC and DC Drives

### DYNAMIC BRAKING (DB) RESISTORS

The DC bus voltage level of a drive increases while the motor is re-generating, i.e. ramping to a stop. Dynamic braking resistors provide a means of rapidly stopping a rotating motor and load while maintaining an acceptable bus voltage level. The mechanical energy stored in the spinning mass is converted into electrical energy and quickly dissipated as heat through a resistor. Control Techniques offers resistor kits available for both AC and DC drives.

#### Dynamic Braking for DC Drives

DC drives provide an exponential stopping profile when a dynamic brake resistor is applied across the motor's armature circuit (when the motor acts as a DC generator). This type of braking can occur only when the drive is configured for coast stop and power has been removed from the motor (stop commanded). To apply a dynamic brake resistor to a DC drive, a motor contactor with a DB pole is required. This motor contactor is standard on Quantum III DC drives up through 250 hp.

Regen to line is also a preferred way to handle dynamic braking and is an option on Fincor 2230, Mentor II and Quantum III DC drives.



Galvanized NEMA1 with Normally Closed Thermostat

#### Dynamic Braking for AC Drives

AC drives provide a constant torque stopping profile when a dynamic brake resistor is applied across the DC bus circuit. Dynamic braking can be employed under a stop command or anytime a decrease in motor speed is commanded, provided the AC drive is enabled and programmed for ramp stop (fast ramp mode).

Control Techniques offers two types of dynamic braking kits for AC Drives. The E-stop duty kits provide a means of quickly stopping a motor / load as well as providing the ability to dissipate energy created by either a change in motor speed or a line transient.

The cyclic duty kits are intended for more severe applications that need the capability to dissipate regenerated energy on a more continuous or repetitive basis such as indexers, feeders and dynamometers.

### E-STOP DUTY

E-stop duty DB resistors are designed for non-cyclic use where energy dissipation from an active drive is required. Resistors are supplied with mounting hardware unless otherwise noted.

These kits are designed to meet or exceed NEMA standard 7-15-1970, which states "DB resistors will not exceed their rated temperature rise when the drive is braked from maximum speed to standstill three times in rapid succession with a load inertia equal to or less than the motor inertia". They are designed to provide 150% braking torque (peak at max speed for DC drives, constant for AC drives) for 1800 rpm base speed motors.

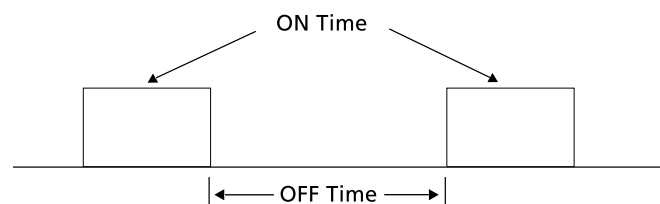
### CYCLIC DUTY

NEMA 1 DB resistor kits include a wall mount enclosure with built-in junction box, a terminal strip, a normally closed thermal contact (klixon switch) and resistors pre-wired with high-temperature Teflon wire.

These heavy-duty kits have been designed to provide dynamic braking for cyclic and continuous braking applications. There are three levels available: 10%, 25% and 50%. These levels refer to the continuous allowable braking level (ie. 25% equals 25% of rated motor braking torque) or the maximum allowable duty cycle rates with maximum specified "on-time" limitations (refer to illustration below).

#### Duty Cycle

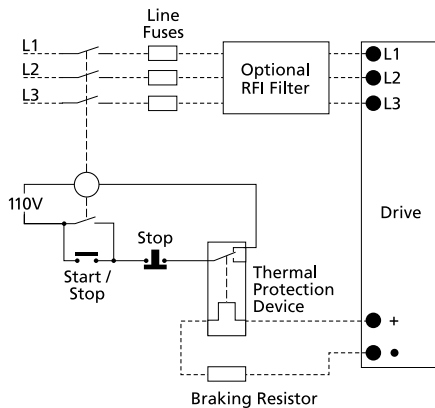
$$\text{Duty Cycle} = \frac{\text{On Time } (\leq \text{max "on" time})}{\text{On Time} + \text{Off Time}}$$



## DB Resistors for AC Drives

The brake is active anytime the system is enabled. Therefore, the braking circuit must be protected with an overload device. The Commander SK, Commander GP20 and Unidrive SP drives are equipped standard with built-in dynamic braking transistors. Simply select the proper braking resistor needed for the size of drive and duty cycle.

### Overload Protection



### E-STOP DUTY - PANEL MOUNT

Control Techniques E-Stop duty panel mount dynamic braking resistors provide the energy dissipation required for a drive system while keeping the installation as compact as possible.



## Panel Mounted DB Resistor Specifications for AC Drives

Panel Mounted, 18" High Temperature Silicone Leads

Drive Order Code	Case Resistor Order Code	Dimensions (in.) H x W x D
DST12xx	DBR-0500-00300-P	9 x 3 x 1.5
SKA1xxxxxx	DBR-1200-00300-P	9 x 3 x 1.5
SKB1xxxxxx	DBR-0500-00300-P	9 x 3 x 1.5
SKBDxxxxxx	DBR-0500-00300-P	9 x 3 x 1.5
SKCD200220	DBR-0500-00300-P	9 x 3 x 1.5
SKDD200300	DBR-0300-00400-P	12 x 3 x 1.5
SKD3200400	DBR-0300-00400-P	12 x 3 x 1.5
SP0xxx	DBR-0500-00300-P	9 x 3 x 1.5
z12xx	DBR-0500-00300-P	9 x 3 x 1.5
y22xx	DBR-0300-00400-P	12 x 3 x 1.5
SKB34xxxxx	DBR-1200-00300-P	9 x 3 x 1.5
SKC3400220	DBR-1200-00300-P	9 x 3 x 1.5
SKC3400300	DBR-0600-00400-P	12 x 3 x 1.5
SKC3400400	DBR-0600-00400-P	12 x 3 x 1.5
SKD34xxxxx	DBR-0600-00400-P	12 x 3 x 1.5
SP04xx	DBR-1200-00300-P	9 x 3 x 1.5
z1401	DBR-1200-00300-P	9 x 3 x 1.5
z1402	DBR-1200-00300-P	9 x 3 x 1.5
z1403	DBR-1200-00300-P	9 x 3 x 1.5
z1404	DBR-1200-00300-P	9 x 3 x 1.5
z1405	DBR-0600-00400-P	12 x 3 x 1.5
z1406	DBR-0600-00400-P	12 x 3 x 1.5

### INTERNAL DYNAMIC BRAKING RESISTORS

The Commander SK, Commander GP20 and Unidrive SP Size 0, 1 and 2 can be equipped with a zero-space, heatsink mountable DB resistors.



Size 1 Unidrive SP heatsink shown

### INTERNAL DYNAMIC BRAKING RESISTORS

Commander SK (size 2), GP20 and Unidrive SP

Frame Size	DC Resistance	Power Rating	Order Code
0	70 Ω	50W	SM-Heatsink-DBR0
1	75 Ω	50W	SM-Heatsink-DBR1
2	37.5 Ω	100W	SM-Heatsink-DBR2

#### DRIVE ORDER CODE LEGEND

y= SK for Commander SK, or CGP for Commander GP20, or SP for Unidrive SP

z= CGP for Commander GP20, or SP for Unidrive SP

# Enclosed DB Resistor Specifications for AC Drives

Galvanized NEMA1 with Normally Closed Thermostat



**DRIVE ORDER CODE LEGEND**  
 y= SK for Commander SK, or CGP for Commander GP20,  
 or SP for Unidrive SP  
 z= CGP for Commander GP20, or SP for Unidrive SP

## COMMANDER SK, COMMANDER GP20 & UNIDRIVE SP DRIVES

230 VAC Drive Order Code	Duty Cycle / Order Code / Dimensions (H x W x D in inches)							
	E-Stop Duty Order Code	Dimensions HxWxD	10% Duty Cycle Order Code	Dimensions HxWxD	25% Duty Cycle Order Code	Dimensions HxWxD	50% Duty Cycle Order Code	Dimensions HxWxD
SKB1100075*	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0400-00500-ENC	5x14x7	DBR-0400-00500-ENC	5x14x7
SKB1100110*	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0400-00500-ENC	5x14x7	DBR-0400-01000-ENC	5x14x10
SKA1200025	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4
SKA1200037	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4
SKA1200055	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4
SKA1200075	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4	DBR-0800-00600-ENC	5x14x7
SKBD200110	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0400-00500-ENC	5x14x7	DBR-0400-01000-ENC	5x14x10
SKBD200150	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0400-00500-ENC	5x14x7	DBR-0400-01000-ENC	5x14x10
SKCD200220	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0400-01000-ENC	5x14x10	DBR-0400-01000-ENC	5x14x10
SKDD200300	DBR-0200-00400-ENC	5x14x4	DBR-0200-00600-ENC	5x14x7	DBR-0200-01500-ENC	5x14x13	DBR-0200-01500-ENC	5x14x13
SKD3200400	DBR-0200-00400-ENC	5x14x4	DBR-0200-00600-ENC	5x14x7	DBR-0200-01500-ENC	5x14x13	DBR-0200-03000-ENC	5x28x13
SP0201	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4
SP0202	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0400-00500-ENC	5x14x7
SP0203	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0400-00500-ENC	5x14x7	DBR-0400-00500-ENC	5x14x7
SP0204	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0400-00500-ENC	5x14x7	DBR-0400-00500-ENC	5x14x7
SP0205	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0400-00500-ENC	5x14x7	DBR-0500-01500-ENC	5x14x13
z1201	DBR-0500-00300-ENC	5x14x4	DBR-0500-00300-ENC	5x14x4	DBR-0500-00500-ENC	5x14x7	DBR-0500-01500-ENC	5x14x13
z1202	DBR-0500-00300-ENC	5x14x4	DBR-0500-00300-ENC	5x14x4	DBR-0500-00500-ENC	5x14x7	DBR-0500-01500-ENC	5x14x13
z1203	DBR-0500-00300-ENC	5x14x4	DBR-0500-00300-ENC	5x14x4	DBR-0500-00500-ENC	5x14x7	DBR-0500-01500-ENC	5x14x13
z1204	DBR-0400-00300-ENC	5x14x4	DBR-0400-00300-ENC	5x14x4	DBR-0350-01500-ENC	5x14x13	DBR-0350-01500-ENC	5x14x13
y2201	DBR-0200-00400-ENC	5x14x4	DBR-0200-00600-ENC	5x14x7	DBR-0200-01500-ENC	5x14x13	DBR-0200-01500-ENC	5x14x13
y2202	DBR-0200-00400-ENC	5x14x4	DBR-0200-00600-ENC	5x14x7	DBR-0200-01500-ENC	5x14x13	DBR-0200-03000-ENC	5x28x13
y2203	DBR-0200-00400-ENC	5x14x4	DBR-0200-00600-ENC	5x14x7	DBR-0200-01500-ENC	5x14x13	DBR-0200-03000-ENC	5x28x13
y3201	DBR-0055-00600-ENC	5x14x7	DBR-0055-02000-ENC	5x14x13	DBR-0055-03000-ENC	5x21x13	DBR-0055-04500-ENC	5x28x13
y3202	DBR-0055-00600-ENC	5x14x7	DBR-0055-02000-ENC	5x14x13	DBR-0055-03000-ENC	5x21x13	DBR-0055-06000-ENC	7x29x18
y4201	DBR-0055-02000-ENC	5x14x13	DBR-0055-02000-ENC	5x14x13	DBR-0055-04500-ENC	5x28x13	DBR-0055-09000-ENC	7x29x18
y4202	DBR-0055-02000-ENC	5x14x13	DBR-0055-03000-ENC	5x21x13	DBR-0055-06000-ENC	7x29x18	DBR-0055-09000-ENC	7x29x18
y4203	DBR-0055-02000-ENC	5x14x13	DBR-0055-03000-ENC	5x21x13	DBR-0055-06000-ENC	7x29x18	DBR-0055-12000-ENC	14x29x18
SP5201	DBR-0055-02000-ENC	5x14x13	DBR-0055-03000-ENC	5x21x13	DBR-0055-09000-ENC	7x29x18	DBR-0055-18000-ENC	14x29x18
SP5202	DBR-0055-02000-ENC	5x14x13	DBR-0055-04500-ENC	5x28x13	DBR-0055-12000-ENC	14x29x18	DBR-0055-18000-ENC	14x29x18

\*115V input

For larger drives and SPM modules please consult factory.

# Enclosed DB Resistor Specifications for AC Drives

Galvanized NEMA1 with Normally Closed Thermostat



## COMMANDER SK, COMMANDER GP20 & UNIDRIVE SP DRIVES

460 VAC Drive Order Code	Duty Cycle / Order Code / Dimensions (H x W x D in inches)							
	E-Stop Duty Order Code	Dimensions HxWxD	10% Duty Cycle Order Code	Dimensions HxWxD	25% Duty Cycle Order Code	Dimensions HxWxD	50% Duty Cycle Order Code	Dimensions HxWxD
SKB3400037	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4
SKB3400055	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00800-ENC	5x14x7
SKB3400075	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00800-ENC	5x14x7	DBR-1200-00800-ENC	5x14x7
SKB3400110	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00800-ENC	5x14x7	DBR-1200-01500-ENC	5x14x13
SKB3400150	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00800-ENC	5x14x7	DBR-1200-01500-ENC	5x14x13
SKC3400220	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-01500-ENC	5x14x13	DBR-1200-01500-ENC	5x14x13
SKC3400300	DBR-0600-00400-ENC	5x14x4	DBR-0600-00400-ENC	5x14x4	DBR-0600-01500-ENC	5x14x13	DBR-0600-01500-ENC	5x14x13
SKC3400400	DBR-0600-00400-ENC	5x14x4	DBR-0600-00400-ENC	5x14x4	DBR-0600-01500-ENC	5x14x13	DBR-0600-03000-ENC	5x28x13
SKD3400550	DBR-0600-00400-ENC	5x14x4	DBR-0600-01000-ENC	5x14x10	DBR-0600-01500-ENC	5x14x13	DBR-0600-03000-ENC	5x28x13
SKD3400750	DBR-0600-00400-ENC	5x14x4	DBR-0600-01000-ENC	5x14x10	DBR-0600-01500-ENC	5x14x13	DBR-0600-04500-ENC	7x29x18
SP0401	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4
SP0402	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00800-ENC	5x14x7
SP0403	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00800-ENC	5x14x7	DBR-1200-00800-ENC	5x14x7
SP0404	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00800-ENC	5x14x7	DBR-1200-00800-ENC	5x14x7
SP0405	DBR-1200-00300-ENC	5x14x4	DBR-1200-00300-ENC	5x14x4	DBR-1200-00800-ENC	5x14x7	DBR-1200-01500-ENC	5x14x13
z1401	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4	DBR-0800-00600-ENC	5x14x7	DBR-0800-00600-ENC	5x14x7
z1402	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4	DBR-0800-00600-ENC	5x14x7	DBR-0800-00600-ENC	5x14x7
z1403	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4	DBR-0800-00600-ENC	5x14x7	DBR-0800-01500-ENC	5x14x13
z1404	DBR-0800-00300-ENC	5x14x4	DBR-0800-00300-ENC	5x14x4	DBR-0800-01500-ENC	5x14x13	DBR-0800-01500-ENC	5x14x13
z1405	DBR-0600-00400-ENC	5x14x4	DBR-0600-00600-ENC	5x14x7	DBR-0600-01500-ENC	5x14x13	DBR-0600-01500-ENC	5x14x13
z1406	DBR-0600-00400-ENC	5x14x4	DBR-0600-00600-ENC	5x14x7	DBR-0600-01500-ENC	5x14x13	DBR-0600-03000-ENC	5x28x13
y2401	DBR-0200-00600-ENC	5x14x7	DBR-0200-00600-ENC	5x14x7	DBR-0200-01500-ENC	5x14x13	DBR-0200-03000-ENC	5x28x13
y2402	DBR-0200-00600-ENC	5x14x7	DBR-0200-01500-ENC	5x14x13	DBR-0200-03000-ENC	5x28x13	DBR-0200-04500-ENC	7x29x18
y2403	DBR-0200-01500-ENC	5x14x13	DBR-0200-01500-ENC	5x14x13	DBR-0200-03000-ENC	5x28x13	DBR-0200-06000-ENC	7x29x18
y2404	DBR-0200-01500-ENC	5x14x13	DBR-0200-01500-ENC	5x14x13	DBR-0200-04500-ENC	7x29x18	DBR-0200-09000-ENC	7x29x18
y3401	DBR-0200-01500-ENC	5x14x13	DBR-0200-01500-ENC	5x14x13	DBR-0200-04500-ENC	7x29x18	DBR-0200-09000-ENC	7x29x18
y3402	DBR-0200-01500-ENC	5x14x13	DBR-0200-03000-ENC	5x28x13	DBR-0200-06000-ENC	7x29x18	DBR-0200-09000-ENC	7x29x18
y3403	DBR-0200-01500-ENC	5x14x13	DBR-0200-03000-ENC	5x28x13	DBR-0200-06000-ENC	7x29x18	DBR-0200-12000-ENC	14x29x18
y4401	DBR-0120-03000-ENC	5x21x13	DBR-0120-03000-ENC	5x21x13	DBR-0120-09000-ENC	7x29x18	DBR-0120-18000-ENC	14x29x18
y4402	DBR-0120-03000-ENC	5x21x13	DBR-0120-04500-ENC	5x28x13	DBR-0120-12000-ENC	14x29x18	DBR-0120-18000-ENC	14x29x18
y4403	DBR-0100-03000-ENC	5x21x13	DBR-0100-06000-ENC	7x29x18	DBR-0100-12000-ENC	14x29x18	DBR-0100-24000-ENC	14x29x18
y5401	DBR-0100-04500-ENC	5x28x13	DBR-0100-06000-ENC	7x29x18	DBR-0100-18000-ENC	14x29x18	DBR-0100-36000-ENC	21x29x18
y5402	DBR-0100-06000-ENC	7x29x18	DBR-0100-09000-ENC	7x29x18	DBR-0100-24000-ENC	14x29x18	DBR-0100-36000-ENC	21x29x18
y6401	DBR-0055-06000-ENC	7x29x18	DBR-0055-12000-ENC	14x29x18	DBR-0055-24000-ENC	14x29x18	DBR-0055-50000-ENC	28x29x18
y6402	DBR-0055-09000-ENC	7x29x18	DBR-0055-12000-ENC	14x29x18	DBR-0055-36000-ENC	21x29x18	DBR-0055-60000-ENC	35x29x18

**DRIVE ORDER CODE LEGEND**  
 y= SK for Commander SK, or CGP for Commander GP20,  
 or SP for Unidrive SP  
 z= CGP for Commander GP20, or SP for Unidrive SP

# Enclosed DB Resistor Specifications for AC Drives

Galvanized NEMA1 with Normally Closed Thermostat



## UNIDRIVE SP DRIVES

460 VAC Drive Order Code	Duty Cycle / Order Code / Dimensions (H x W x D in inches)							
	E-Stop Duty Order Code	Dimensions HxWxD	10% Duty Cycle Order Code	Dimensions HxWxD	25% Duty Cycle Order Code	Dimensions HxWxD	50% Duty Cycle Order Code	Dimensions HxWxD
SP6411	DBR-0055-06000-ENC	7x29x18	DBR-0055-12000-ENC	14x29x18	DBR-0055-24000-ENC	14x29x18	DBR-0055-50000-ENC	28x29x18
SP6412	DBR-0055-09000-ENC	7x29x18	DBR-0055-12000-ENC	14x29x18	DBR-0055-36000-ENC	21x29x18	DBR-0055-60000-ENC	35x29x18
SP7411	DBR-0055-12000-ENC	14x29x18	Call Factory					
SP7412	DBR-0055-12000-ENC	14x29x18						
SP8411	2x DBR-0055-06000-ENC	7x29x18						
SP8412	2x DBR-0055-09000-ENC	7x29x18						
SP8413	2x DBR-0055-12000-ENC	14x29x18						
SP8414	2x DBR-0055-12000-ENC	14x29x18						
SP9411	4x DBR-0055-06000-ENC	7x29x18						
SP9413	4x DBR-0055-09000-ENC	7x29x18						
SP9414	4x DBR-0055-12000-ENC	14x29x18						
SP9415	4x DBR-0055-12000-ENC	14x29x18						

575 VAC Drive Order Code	Duty Cycle / Order Code / Dimensions (H x W x D in inches)							
	E-Stop Duty Order Code	Dimensions HxWxD	10% Duty Cycle Order Code	Dimensions HxWxD	25% Duty Cycle Order Code	Dimensions HxWxD	50% Duty Cycle Order Code	Dimensions HxWxD
SP3501	DBR-0200-00600-ENC	5x14x7	DBR-0200-00600-ENC	5x14x7	DBR-0200-00600-ENC	5x14x7	DBR-0200-01500-ENC	5x14x13
SP3502	DBR-0200-00600-ENC	5x14x7	DBR-0200-00600-ENC	5x14x7	DBR-0200-01500-ENC	5x14x13	DBR-0200-01500-ENC	5x14x13
SP3503	DBR-0200-00600-ENC	5x14x7	DBR-0200-00600-ENC	5x14x7	DBR-0200-01500-ENC	5x14x13	DBR-0200-03000-ENC	5x28x13
SP3504	DBR-0200-00600-ENC	5x14x7	DBR-0200-00600-ENC	5x14x7	DBR-0200-01500-ENC	5x14x13	DBR-0200-03000-ENC	5x28x13
SP3505	DBR-0200-01500-ENC	5x14x13	DBR-0200-01500-ENC	5x14x13	DBR-0200-03000-ENC	5x28x13	DBR-0200-04500-ENC	7x29x18
SP3506	DBR-0200-01500-ENC	5x14x13	DBR-0200-01500-ENC	5x14x13	DBR-0200-03000-ENC	5x28x13	DBR-0200-06000-ENC	7x29x18
SP3507	DBR-0200-01500-ENC	5x14x13	DBR-0200-01500-ENC	5x14x13	DBR-0200-04500-ENC	7x29x18	DBR-0200-09000-ENC	7x29x18

575 VAC or 690 VAC Drive Order Code	Duty Cycle / Order Code / Dimensions (H x W x D in inches)							
	E-Stop Duty Order Code	Dimensions HxWxD	10% Duty Cycle Order Code	Dimensions HxWxD	25% Duty Cycle Order Code	Dimensions HxWxD	50% Duty Cycle Order Code	Dimensions HxWxD
SP4601	DBR-0150-01500-ENC	5x14x13	DBR-0150-01500-ENC	5x14x13	DBR-0150-04500-ENC	5x28x13	DBR-0150-09000-ENC	7x29x18
SP4602	DBR-0150-01500-ENC	5x14x13	DBR-0150-03000-ENC	5x21x13	DBR-0150-06000-ENC	7x29x18	DBR-0150-09000-ENC	7x29x18
SP4603	DBR-0150-01500-ENC	5x14x13	DBR-0150-03000-ENC	5x21x13	DBR-0150-06000-ENC	7x29x18	DBR-0150-12000-ENC	14x29x18
SP4604	DBR-0150-03000-ENC	5x21x13	DBR-0150-03000-ENC	5x21x13	DBR-0150-09000-ENC	7x29x18	DBR-0150-18000-ENC	14x29x18
SP4605	DBR-0150-03000-ENC	5x21x13	DBR-0150-04500-ENC	5x28x13	DBR-0150-12000-ENC	14x29x18	DBR-0150-18000-ENC	14x29x18
SP4606	DBR-0150-03000-ENC	5x21x13	DBR-0150-06000-ENC	7x29x18	DBR-0150-12000-ENC	14x29x18	DBR-0150-24000-ENC	21x29x18
SP5601	DBR-0120-4500-ENC	5x28x13	DBR-0120-06000-ENC	7x29x18	DBR-0120-18000-ENC	14x29x18	DBR-0120-36000-ENC	21x29x18
SP5602	DBR-0120-4500-ENC	5x28x13	DBR-0120-09000-ENC	7x29x18	DBR-0120-24000-ENC	14x29x18	DBR-0120-36000-ENC	21x29x18
SP6601	DBR-0130-06000-ENC	7x29x18	DBR-0120-12000-ENC	14x29x18	DBR-0120-24000-ENC	14x29x18	DBR-0120-50000-ENC	28x29x18
SP6602	DBR-0130-06000-ENC	7x29x18	DBR-0120-12000-ENC	14x29x18	DBR-0120-36000-ENC	21x29x18	DBR-0130-60000-ENC	35x29x18

**DRIVE ORDER CODE LEGEND**  
 y= SK for Commander SK, or CGP for Commander GP20,  
 or SP for Unidrive SP  
 z= CGP for Commander GP20, or SP for Unidrive SP

For larger drives and SPM modules please consult factory.

# Enclosed DB Resistor

## Specifications for Servo Drives

DIGITAX ST, EPSILON EP, MDS & EN DRIVES



Galvanized NEMA1 with Normally Closed Thermostat

DB Resistor Options												
				Heatsink/Internally Mounted			500 Watt (UL Listed)			500 Watt		
Drive/Module Order Code	Drive Kw	Internal Energy Absorption (Joules)	Min resistance (Ohm)	Order Code (UL Listed)	Watts	Ohms	Order Code	Ohms	Dimensions (HxWxD)	Order Code	Ohms	Dimensions (HxWxD)
DST1201	0.5	26/7 (115V/230V)	23	DBR0**	50	70	MS-530-00-000	30	13.7x3.4x9.7	DBR-0400-00500-ENC	40	5x14x7
DST1202	1.2	52/14 (115V/230V)	23	DBR0**	50	70	MS-530-00-000	30	13.7x3.4x9.7	DBR-0400-00500-ENC	40	5x14x7
DST1203	1.6	52/14 (115V/230V)	23	DBR0**	50	70	MS-530-00-000	30	13.7x3.4x9.7	DBR-0400-00500-ENC	40	5x14x7
DST1204	2.3	78/21 (115V/230V)	16	DBR0**	50	70	MS-530-00-000	30	13.7x3.4x9.7	DBR-0400-00500-ENC	40	5x14x7
DST1401	0.8	13/4 (115V/230V)	111	DBR0**	50	70				DBR-1200-00800-ENC	120	5x14x7
DST1402	1.4	13/4 (115V/230V)	111	DBR0**	50	70				DBR-1200-00800-ENC	120	5x14x7
DST1403	2	13/4 (115V/230V)	75	DBR0**	50	70				DBR-0800-00600-ENC	80	5x14x7
DST1404	3	13/4 (115V/230V)	28	DBR0**	50	70	MS-530-00-000	30	13.7x3.4x9.7	DBR-0400-00500-ENC	40	5x14x7
DST1405	4.1	13/4 (115V/230V)	28	DBR0**	50	70	MS-530-00-000	30	13.7x3.4x9.7	DBR-0400-00500-ENC	40	5x14x7
EP202	0.77	39/8 (115V/230V)	30									
EP204	1.27	58/12 (115V/230V)	30	DBR1**	50	33	MS-530-00-000	30	13.7x3.4x9.7	DBR-0400-00500-ENC	40	5x14x7
EP206	1.77	97/20 (115V/230V)	30	DBR1**	50	33	MS-530-00-000	30	13.7x3.4x9.7	DBR-0400-00500-ENC	40	5x14x7
EP209	2.32	117/24 (115V/230V)	30	DBR1**	50	33	MS-530-00-000	30	13.7x3.4x9.7	DBR-0400-00500-ENC	40	5x14x7
EP216	2.32/4.8	132/28 (115V/230V)	20	DBR1**	50	33	MS-530-00-000	30	13.7x3.4x9.7	DBR-0200-00600-ENC	20	5x14x7
MP-1250	12.5	236/110 (230V/460V)	30				MS-530-00-000	30	13.7x3.4x9.7	DBR-0400-00500-ENC	40	5x14x7
MP-2500	25	393/183(230V/460V)	30				MS-530-00-000	30	13.7x3.4x9.7	DBR-0400-00500-ENC	40	5x14x7
MP-5000	50	629/293(230V/460V)	9				MS-510-00-000	30	13.7x3.4x9.7	DBR-0200-00600-ENC	20	5x14x7
EN-204*	1.8	150/79 (115V/230V)	20				ES-20-500	20	7x14x5			
EN-208*	3.6	150/79+50W (115V/230V)	20				ES-20-500	20	7x14x5			
EN-214*	5.2	150/79+50W (115V/230V)	20				ES-20-500	20	7x14x5			

DB Resistor Options												
	1k Watt				2k Watt				3k Watt			
Drive/Module Order Code	Order Code	Watts	Ohms	Dimensions (HxWxD)	Order Code	Watts	Ohms	Dimensions (HxWxD)	Order Code	Watts	Ohms	Dimensions (HxWxD)
DST1201												
DST1202												
DST1203	DBR-0400-01000-ENC	1000	40	5x14xx10								
DST1204	DBR-0400-01000-ENC	1000	40	5x14xx10								
DST1401												
DST1402												
DST1403												
DST1404												
DST1405												
EP202												
EP204												
EP206												
EP209	DBR-0400-01000-ENC	1000	40	5x14xx10								
EP216	DBR-0200-01500-ENC	1500	20	5x14xx13	DBR-0200-03000-ENC	3000	20	5x28x13				
MP-1250	DBR-0400-01000-ENC	1000	40	5x14xx10	DBR-0300-02000-ENC	2000	30	5x21x10				
MP-2500	DBR-0400-01000-ENC	1000	40	5x14xx10	DBR-0300-02000-ENC	2000	30	5x21x10				
MP-5000	DBR-0200-01500-ENC	1500	20	5x14xx13	DBR-0100-02000-ENC	2000	10	5x14x13	DBR-0150-03000-ENC	3000	15	5x21x13
EN-204*	ES-20-1K	1000	20	13x14x5	ES-20-2K	2000	20	13x14x5				
EN-208*	ES-20-1K	1000	20	13x14x5	ES-20-2K	2000	20	13x14x5				
EN-214*	ES-20-1K	1000	20	13x14x5	ES-20-2K	2000	20	13x14x5				

\* Requires RSR-2 Module and External Resistor

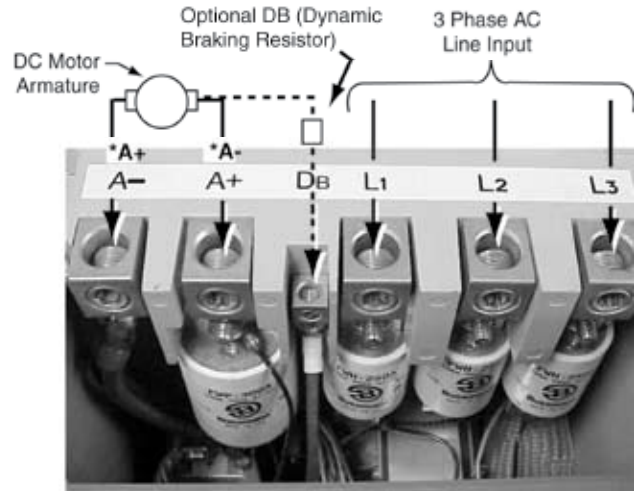
\*\*For the complete order code add the prefix SM-HEATSINK — i.e. SM-HEATSINK-DBR0 or SM-HEATSINK-DBR1

## DB Resistors for DC Drives

E-stop duty dynamic braking resistors are available to provide for the fast stopping of DC motors.

Quantum III DC drives come supplied with a DB Resistor Pole, which is conveniently located adjacent to the either A- on non-regen models, or A+ in regen models.

DB resistors are shipped loose and mounted external to the drive (by customer). NEMA 1 Enclosure is Galvanized Steel and meets UL508A standard.



230 VAC DB Resistors				
HP	Chassis		NEMA 1	
	Order Code	Dimensions (in.) H x W x D	Order Code	Dimensions (in.) H x W x D
5	8200-00100	10.25 x 2 x 2.75	005-4301	5 x 14 x 4
7.5	8200-00101		005-4302	
10	8200-00102		005-4303	
15	8200-00103		005-4304	
20	8200-00104		005-4305	
25	8200-00105		005-4306	
30	8200-00106*	14 x 4 x 5	005-4307	5 x 14 x 7
40	8200-00107*		005-4308	
50	8200-00108*		005-4309	
60	8200-00109*		005-4310	
75	8200-00110*		005-4311	
100	8200-00111*	14 x 10 x 5	005-4312	5 x 14 x 10
125	8200-00112*	14 x 13 x 5	n/a	

460 VAC DB Resistors				
HP	Chassis		NEMA 1	
	Order Code	Dimensions (in.) H x W x D	Order Code	Dimensions (in.) H x W x D
5-7.5	8200-00115	10.25 x 2 x 2.75	005-4351	5 x 12 x 4
10	8200-00116		005-4352	
15	8200-00117		005-4353	
20	8200-00118		005-4354	
25	8200-00119	10.25 x 2 x 5.5	005-4355	5 x 14 x 7
30	8200-00120		005-4356	
40	8200-00121		005-4357	
50	8200-00122		005-4358	
60	8200-00124*		14 x 7 x 5	
75		005-4360		
100	8200-00125*	14 x 10 x 5	005-4361	5 x 14 x 13
125	8200-00126*	14 x 13 x 5	005-4362	5 x 21 x 10
150	8200-00127*		005-4363	
200	8200-00128*		005-4364	
250	8200-00129*		005-4365	

The DC Dynamic braking components have been sized for occasional non-repeated use, assuming load inertia is equal to or less than motor inertia. The Dynamic resistor will be sized at approximately 150% of rated motor current. The DB enclosures are galvanized NEMA 1

enclosure shipped loose and mounted external to the drive to meet UL508A standard. The DC drive will also require a DB contactor option for dynamic braking action.

\* Resistor is wall mounted, not panel mounted.