M3452

Heavy Duty Braking Transistor Modules

Overvoltage Solutions for AC Drives

Braking Transistor and Braking Resistor modules are used with AC drives to eliminate overvoltage faults. The use of these modules permits controlled braking of the AC drive and dramatically shortens the time required for motor stopping as opposed to coasting.

Bonitron M3452 Heavy Duty Braking transistors are used in applications that have continuous or high duty cycle requirements. The modules are used with drives that have inadequate or no internal braking transistor. They work with any AC drive system with DC bus field terminals. The Bonitron M3452 Braking Transistor modules monitor the drive DC bus levels and control an IGBT power switch which is connected to a resistive load for dissipating the regenerated energy.

Standard modules are available rated up to 1200 Amps DC and Braking Duty Cycles up to 100%.

Features

- 50 - 100% Braking Duty, 0-1200 HP, 230 - 575 VAC line voltages available
- Module status output contacts, DC bus set points available
- UL & CUL Certified modules available
- Wall or cabinet mountable
- Compatible with any variable frequency drive (VFD)
- Only 4 connections

Advantages

- High horsepower and continuous duty cycles available
- Versatility of status output contacts and DC bus set points
- Can be installed as retrofit or with initial installation to existing cabinet or drive location
- Fits any VFD DC bus electrical configuration
- Status indicators for visual module status monitoring

Benefits

- No additional hardware required which lowers installation costs
- Certification UL & CUL program adds to unit reliability
- Model Number Selection Table makes selecting a model number simple
- Rapid installation saving production downtime
- Stock to 2 weeks available

Industry Applications

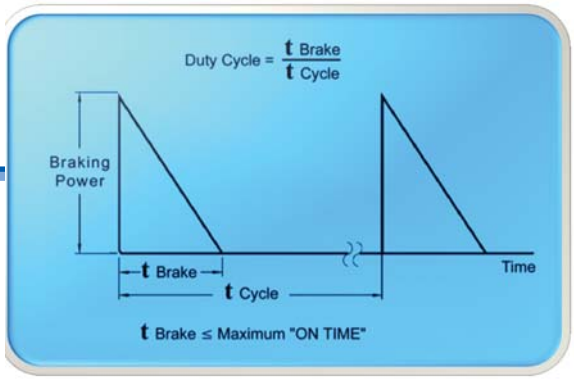
Automotive.....Pick and Place
Paint Booths
Assembly Lines
Glass Handling
Downhill Conveyers
Elevators.....Industrial Elevators
Cranes.....Shipyard Cranes
Industrial Hoists
Food
Processing.....Food Byproduct Separating
Pharmaceutical....Centrifuges
Rail Road.....Rail Dumping Cars
Testing.....Dynamometers
Sports
Stadiums.....Retracting Stadium Ceilings
Fibers.....Web Presses
Printing.....Paper Roller
Tension Controllers

Specifications

Voltages.....230, 380, 460, 575 VAC
Connections.....Drive DC Bus
Input AC Line (single phase +10% / -20% 50 / 60 Hz)
Ground
Package.....Open
Panel Indicators.....DC Bus,
Control Power
Active Braking
Duty Cycle.....Up to 50% or 100%
Maximum 'On-Time'.....60 Seconds or Continuous
Adjustments.....None
Operating Temp.....0 to 50° C
Storage Temp.....-20 to +65° C
Humidity.....Below 90%,
Noncondensing
Atmosphere.....Corrosive Gas & Dust Free

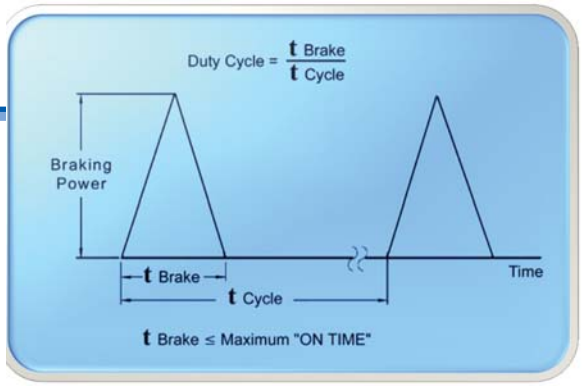
Deceleration

During deceleration, the braking resistor is used to stop or reduce the speed of the motor. The required braking torque reduces with speed, therefore approximately one-half the power of an overhauling load cycle is required of the braking resistor. Most drives require braking resistors only for stopping.



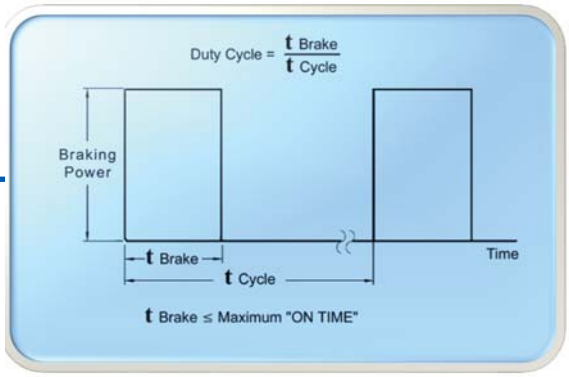
Eccentric

For some applications braking resistors are required because of torque or load fluctuations while the speed remains constant. Some examples of this are tumblers, punch presses and pump jacks.



Overhauling

During an overhauling load cycle, the braking resistor keeps the motor speed from increasing beyond the speed set by the drive. The required braking torque remains constant, therefore approximately twice the power of a deceleration braking cycle is required of the braking resistor.



Model Number Selection Table

BONITRON

M3452

Model Number	DC Threshold Voltage	DC Current	Duty Cycle	Fuse Rating	MIN Required Load in Ohms
115 VAC Drives					
M3452-U200HK3	190 VDC	200 A	100%	FWP-200	3.8
M3452-U200HK6	190 VDC	200 A	100%	FWP-200	3.8
M3452-U300HK3	190 VDC	300 A	100%	FWP-300	2.5
M3452-U300HK6	190 VDC	300 A	100%	FWP-300	2.5
M3452-U600HK3	190 VDC	600 A	50%	A70QS600	1.25
M3452-U600HK6	190 VDC	600 A	50%	A70QS600	1.25
M3452-U800HK9	190 VDC	800 A	50%	A70QS800	0.93
M3452-1200HK10	190 VDC	1200 A	50%	A70QS800	0.63
M3452-U075CB7	190 VDC	75 A	100%	FWP-80	13
M3452-U150CB7	190 VDC	150 A	100%	FWP-150	6.3
M3452-U200CK3	190 VDC	200 A	100%	A100P200	4.7
M3452-U200CK6	190 VDC	200 A	100%	A100P200	4.7
M3452-U300CK3	190 VDC	300 A	100%	A100P300	3.2
M3452-U300CK6	190 VDC	300 A	100%	A100P300	3.2
M3452-U600CK3	190 VDC	600 A	50%	A70QS600	1.6
M3452-U600CK6	190 VDC	600 A	50%	A70QS600	1.6
M3452-U800CK9	190 VDC	800 A	50%	A70QS800	1.2
M3452-1200CK10	190 VDC	1200 A	50%	A70QS800	0.78
400 VAC Drives					
M3452-E300K3	620 VDC	300 Amps	100%	FWP-300	2
460 VAC Drives					
M3452-H75B7	750 VDC	75 Amps	100%	FWP-80	10
M3452-H150B7	750 VDC	150 Amps	100%	FWP-150	5
M3452-H200K3	750 VDC	200 Amps	100%	FWP-200	3.8
M3452-H200K6	750 VDC	200 Amps	100%	FWP-200	3.8
M3452-H300K3	750 VDC	300 Amps	100%	FWP-300	2.5
M3452-H300K6	750 VDC	300 Amps	100%	FWP-300	2.5
M3452-H600K3	750 VDC	600 Amps	50%	A70QS600	1.3
M3452-H600K6	750 VDC	600 Amps	50%	A70QS600	1.25
575 VAC Drives					
M3452-C75B7	940 VDC	75 Amps	100%	FWP-80	13
M3452-C150B7	940 VDC	150 Amps	100%	FWP-150	6.3
M3452-C200K3	940 VDC	200 Amps	100%	A100P200	4.7
M3452-C200K6	940 VDC	200 Amps	100%	A100P200	4.7
M3452-C300K3	940 VDC	300 Amps	100%	A100P300	3.2
M3452-C300K6	940 VDC	300 Amps	100%	A100P300	3.2
M3452-C600K3	940 VDC	600 Amps	50%	A70QS600	1.6
M3452-C600K6	940 VDC	600 Amps	50%	A70QS600	1.6
M3452-C800K9	940 VDC	800 Amps	50%	A70QS800	1.2
M3452-C1200K10	940 VDC	1200 Amps	50%	A70QS800	0.78

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Determining which Bonitron M3452 Series Control Board to Use

Control Board Version	STD (R2)	A	R5	R6	R6E
OUTPUTS					
Logic Power OK			x		x
Not IGBT Open			x		x
Not IGBT Shorted			x		x
Not Overtemp			x		x
Not Blown Fuse			x		x
Control Ready				x	x
Master / Slave Status				x	x
Power Stage Ready				x	x
Not Instantaneous Overcurrent				x	x
Module Ready		x			
INPUTS					
Enable				x	x
Master / Slave Select				x	x
DC Bus Discharge			x		x
Fault Reset				x	x
Master / Slave Option	x	x	x	x	x

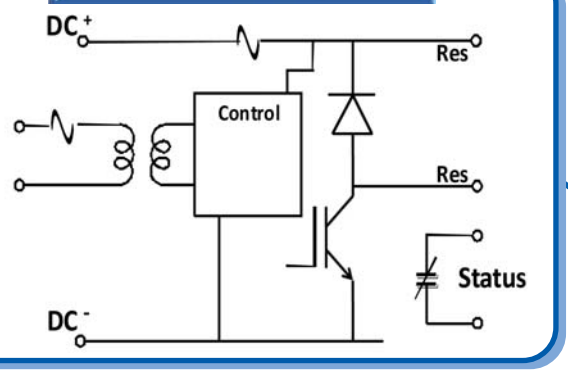
Note:
Option A is an add on board for the Standard and R5 control boards only. Module Ready means fuse is not blown, IGBT is not open or shorted, control power is on, load is not open and module temperature is OK. Master / Slave option available on 200A+ modules.

Chassis Dimensions

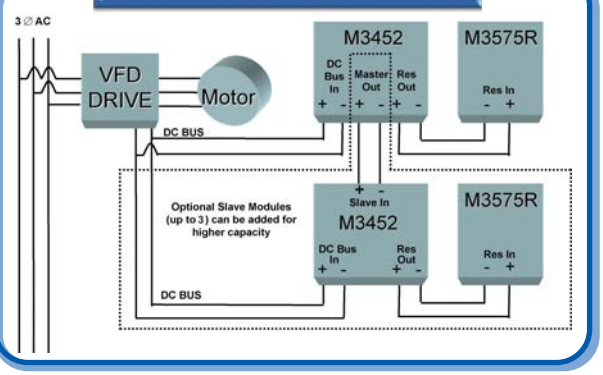
Chassis Code	Current (Amps)	Type	Dimensions (H x W x D)
B7	75-150	TYPE-1	17.75 x 7.00 x 8.10"
K3	200-600	Open Backplate	16.00 x 15.00 x 8.00"
K6	200-600	Open Chassis	20.00 x 7.12 x 10.50"
K9	800	Open Chassis	20.00 x 9.05 x 10.25"
K10	1200	Open Chassis	20.00 x 10.00 x 10.50"

HIGH DUTY CYCLE SOLUTIONS

M3452 Schematic



M3452 Application



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