



MOTORTRONICS

Solid State AC Motor Control

Electronic Brake

3 - 1000HP

208 - 600 Volts

Stop AC Motor Loads Quickly & Safely...

The ABC Series

- Full Wave DC Braking
- Maximizes Safety
- Increases Productivity
- Maintenance-Free
- Easy to Install
- Microprocessor Intelligence



...as Easy as "A-B-C"



Meets OSHA, ANSI, Canadian and other Safety Codes covering the hazards of coasting machinery...

Electronic Braking

by  MOTORTRONICS

Electronic braking stops the load by injecting a controlled amount of DC current into a three phase AC motor. The *ABC Series* "automatic braking controller" features full-wave DC braking which can be adjusted to stop your load quickly, repeatably and reliably...even if load conditions change. The *ABC Series* meets the three main objectives that are important in every industry: Maximized Safety, Increased Productivity and Maintenance-Free Operation.



Maximized Safety

Protect Machinery & Operators

The *ABC Series* is designed to eliminate dangerous coast-to-stop times of rotating machines and equipment. The *ABC Series* also eliminates the dangerous practice of jamming the machine to bring it to a stop, which can present potential danger to operators and passers-by alike.

OSHA and other safety agencies pay close attention to these types of operating conditions and recognize brakes as an important part of a system to guard against potential dangers. The *ABC Series* is an ideal way to add braking and eliminate dangerous "coast-to-stop" times in your application.



Increased Productivity

Stop AC Motors Quickly for a Profitable Operation

Long coast-to-stop times equal lost production time. Now you don't have to wait forever for the load to come to a stop before you make blade changes or change a tool. Simply stop your equipment using an *ABC Series* electronic brake for increased efficiency and product through-put.

The *ABC Series* also eliminates any need for "plug reversing." Reversing a load when it is still spinning creates mechanical shock which can cause equipment breakage and extended downtime. Your machinery can now do what it was designed to do... make product at a profit.



Maintenance Free Operation

Eliminate Costly Down Time

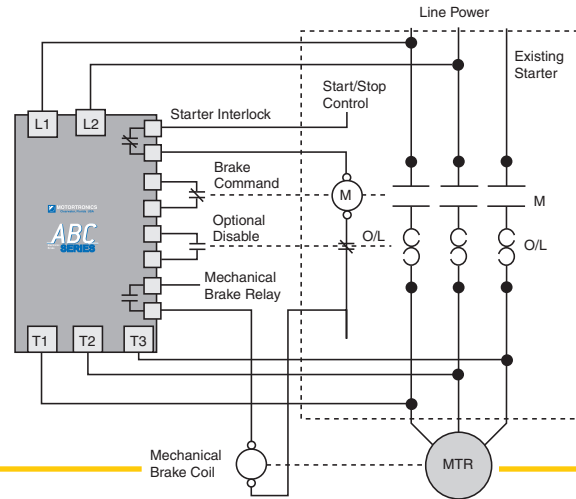
Using the *ABC Series* electronic brake eliminates the wear and tear on mechanical brakes in the system. This means less time and money is spent replacing discs or pads (which is especially important given the "shorter life" material used in today's mechanical brakes). Let the mechanical brake act as a holding brake and let the *ABC Series* do the stopping.

The *ABC Series* eliminates the common (and also dangerous) practice of "jamming" equipment to stop the load. Expensive blades and tooling are no longer "sacrificed" to stop your motor. The *ABC Series* for faster, smoother stopping and maintenance free operation.

As Easy As "A-B-C"

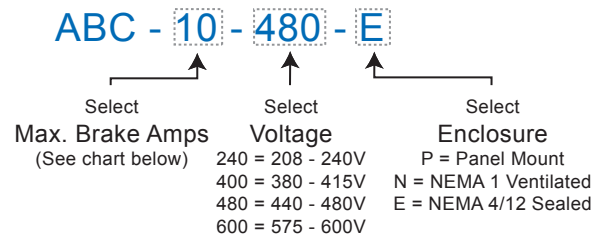
Easy to Install

The *ABC Series* microprocessor insures proper connections and coordinates system operation. Simply wire the *ABC Series* electronic brake into the motor starter circuit for a cost effective, maintenance-free means of bringing the motor and load to a stop. No isolation contactors, no additional logic wiring...it works right off the motor input leads! *It's as easy as A-B-C.*



Easy to Select

The *ABC Series* units are sized by amperage and should be selected based on the application requirements. "Standard Duty" ratings are sized for 95 - 110% of motor FLA. "Extra Duty" ratings are sized for 150 - 250% of motor FLA. Specify maximum braking current and voltage when ordering.



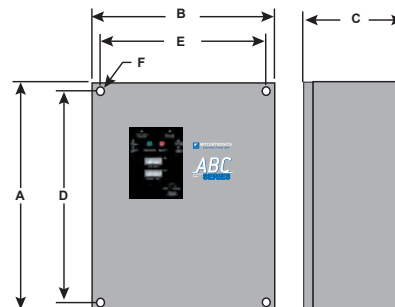
Model Number*	Max Amps	Typical Horsepower Usage								Dim. Ref #	
		208V		240V		480V		600V		Panel	NEMA 4/12
		Standard Duty	Extra Duty	Standard Duty	Extra Duty	Standard Duty	Extra Duty	Standard Duty	Extra Duty		
ABC - 10	10	3	1	3	1	7.5	3	10	5	1	6
ABC - 24	24	7.5	3	10	5	20	10	25	15	1	6
ABC - 50	50	15	7.5	20	10	40	25	50	30	2	7
ABC - 100	100	30	20	40	25	75	50	100	60	2	7
ABC - 200	200	75	40	75	50	150	100	200	125	3	8
ABC - 300	300	100	60	125	75	250	150	300	200	4	9
ABC - 400	400	150	75	150	100	350	200	400	250	4	9
ABC - 550	550	250	125	200	150	500	300	600	350	5	10
ABC - 800	800	350	200	350	200	700	450	900	500	5	10
ABC - 1000	1000	400	250	400	300	900	500	1000	600	5	10

* Specify voltage and enclosure type when ordering

Note: □ Never exceed the Full Load Amp rating of the motor without checking the motor manufacturer's data with regards to appropriateness of the application and duty cycle.

Dim. Ref #	ABC Series Dimensions					
	A	B	C	D	E	F
1*	9.5	7.3	6.2	8	6.9	0.21
2	10.5	7.9	7.2	10	6.8	0.21
3	16.5	10	10	15.9	9	0.28
4	16	16	10	15	15	0.5
5	21	26	10.4	20	25	0.5
6	16	12	9	14.5	10.5	0.5
7	20	16	9	18.5	14.5	0.5
8	24	20	13	22.5	18.5	0.5
9	36	24	13	34.5	22.5	0.5
10	36	30	13	34.5	28.5	0.5

* 10 and 24A models can be ordered in NEMA1 enclosures.
□ Add 1" to Dimension A.



Performance & Specifications

Voltage Rating	Models rated from 208 - 600V \pm 10% Selectable for 50/60Hz \pm 2 Hz
Current Ratings	10 - 1000A in 10 sizes: 10, 24, 50, 100, 200, 300, 400, 550, 800, 1000A
Output Capacity	25% duty cycle at 100% unit rating
Power Circuit	Full wave bridge, 4 SCRs, designed for use without isolation contactors
Transient Protection	RC snubber dv/dt circuit on each SCR device
Fusing	Approved for use with existing motor starter fusing when unit is sized for motor FLA. Consult NEC for any other fusing requirements.
Control Circuit	Self-powered directly from line terminals. No separate control voltage required
Control Method	Microprocessor unit controls sequencing, I/O monitoring and status annunciation. Braking current is adjustable via true RMS regulated control using phase angle firing of SCRs.
Operator Adjustments	Brake Time and Jog Time = 7 position binary dipswitch Brake Current = potentiometer
Adjustment Ranges	Brake Jog Times = 0 - 127 seconds in 1 sec. increments Brake Current = Up to 100% unit rating
Inputs	Starter Monitor = Dry input for auxiliary contact from motor starter. Jumper selectable for N.O. or N.C. contact.
	Brake Disable = Dry input for N.O. contact to disable braking before or during operation. Can be wired to the starter thermal overload N.O. auxiliary contact to prevent braking of overloaded motor.
	Motor Power Sensor (T3) = voltage input used for sensing motor power presence in sequencing/status circuit and for zero speed sensing during braking
Outputs	Starter Coil Interlock = Two sets of FORM "C" relay contacts for use in interlocking the starter coil and/or other devices to prevent energizing as the braking power is applied.
	Mechanical Brake Release = N.O. relay contact for use in controlling electro-mechanical brake as a holding brake. When the <i>ABC Series</i> is "disabled," this circuit controls the mechanical brake normally as if it is the only brake in the system.
Aux Contact Ratings	5 amps, 250VAC max
LED Status Indicators	Large LEDs: Braking = green; Fault = red
	Small LEDs: Power On, Jog/Armed, Brake Off, Disabled, Over Temp, and Wiring Error
Operating Design Temperature	0 - 50 C (32-122 F) open 0 - 40 C (32 - 104) enclosed
Ambient Conditions	0 - 95% relative humidity 0 - 3300ft (1000M) elevation
Approvals	UL, cUL Listed, CE pending

Saws
Chippers
Cutting
Molding
Grinders
Bench
Slicing Machinery
Punch Presses
Power Tools
Batch Processing
Conveyors & Shakers
Light Curtains
Reversing Applications

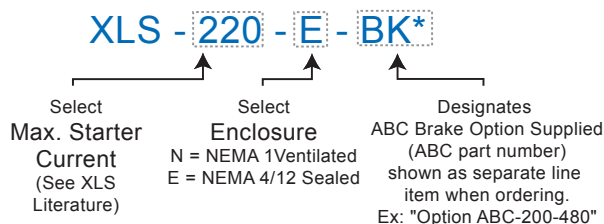
Easy to Combine

Starter/Brake Combo Packages

Motortronics solid state soft starters can be ordered with the *ABC Option*.

This starter-brake combination provides a complete pre-packaged unit without the hassle of field wiring and additional controls.

Easy installation is guaranteed since all connections are simplified to line-in, load-out, and start-stop control.



*□ Any size brake option can be ordered with any size starter.
**Refer to XLS/MAXL literature for proper soft starter sizing.



XLS Series Starter with ABC Brake Option

Simple, Safe & Reliable

Zero Speed Sense that REALLY WORKS

An exceptionally accurate method of microprocessor controlled sensing determines when the motor shaft has come to a stop. Braking current is removed when the motor stops, eliminating excess braking current which means longer motor life.

Jog Feature for Easy Setup

Built-in jogging circuitry allows you to select the time you need for machine setup and positioning without applying DC current to the motor windings. DC current is only applied when system setup is complete... no excess current, no excess heating, no premature motor failure.

The Credentials to do the Job

The *ABC Series* has been designed and tested to meet the most stringent industry standards.



Full-Wave DC Braking

More braking capability than similarly rated half-wave brakes...faster stopping and more effective overall performance. The *ABC Series* provides smooth, low level peak braking current for smooth stopping and minimal motor heating.

Current Control for Better Performance

Unlike other brakes that only provide voltage control, the *ABC Series* is a current regulated brake. It automatically adjusts for resistance changes in the motor windings due to any input voltage fluctuations. What does this mean? Repeatable, reliable operation every time you stop your motor.

Works Hand in Hand with Your Mechanical Brake

The *ABC Series* has a built-in feature to control a mechanical holding brake. Easy to connect and setup, any fault indication automatically enables the mechanical brake for fail-safe operation.

Operator Interface Offers Finger Safe Design...

An isolated operator interface module is mounted on the dead-front panel of the *ABC Series* chassis/NEMA 1 units. Setup of jog time, brake time and brake current are made right on the face of the brake. No covers to remove, no internal adjustments to be made, no chance of accidental contact with live power components.

...Easy to Read LED Status Indicators...

Power On, Braking and Fault indicators make set-up, operating and troubleshooting easy as "A-B-C". An additional status display module can also be mounted on the enclosure door of NEMA 4/12 enclosed units (optional).



Operator Interface Module

...and Simple to Use Adjustments

Jog Time - allows you to select the time needed for machine setup or motor rotation check prior to normal braking operation. During this time, the *ABC Series* will not "arm" or go to the braking routine when a stop command is given.

Brake Time - sets the maximum amount of time the *ABC Series* will be allowed to inject DC braking current into the motor. This setting is used as a "back-up" to the Zero Speed Sense and provides reliable, repeatable stopping every time.

Brake Current - adjusts the level of DC braking current injected into the motor windings. Current controlled braking provides smoother, more effective braking torque throughout the stop cycle. Closed loop feedback prevents injecting more current than the unit is capable of handling. It automatically adjusts to compensate for changes in motor winding resistance and any changes in input voltage so that braking time and torque is the same every time you stop your motor.

A Wide Range of Products

The Product You Need...

Motortronics has been a manufacturer of solid state motor controls for over fifteen years. During this time, Motortronics has gained a reputation for providing high quality, cost-effective products for a wide range of motor starting applications. With one of the broadest lines of solid state AC motor controls on the market today, Motortronics has the product to meet your needs.



Low Voltage Soft Starters

A Company You Can Count On...

From our staff of knowledgeable sales and application engineers to our strong network of qualified representatives and distributors around the world...you can count on getting the service you deserve. You can always expect the best from Motortronics...in our products, our prices, our service and our support.



Medium Voltage Soft Starters

With the Experience to Do it Right...

The company has become a leading supplier of solid state controls for some of the most demanding industries... from custom products for use in semiconductor equipment to standard "off-the-shelf" products for general industrial applications...we know how to do it right.



AC Drives

Distributed by:



Motor Protection



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