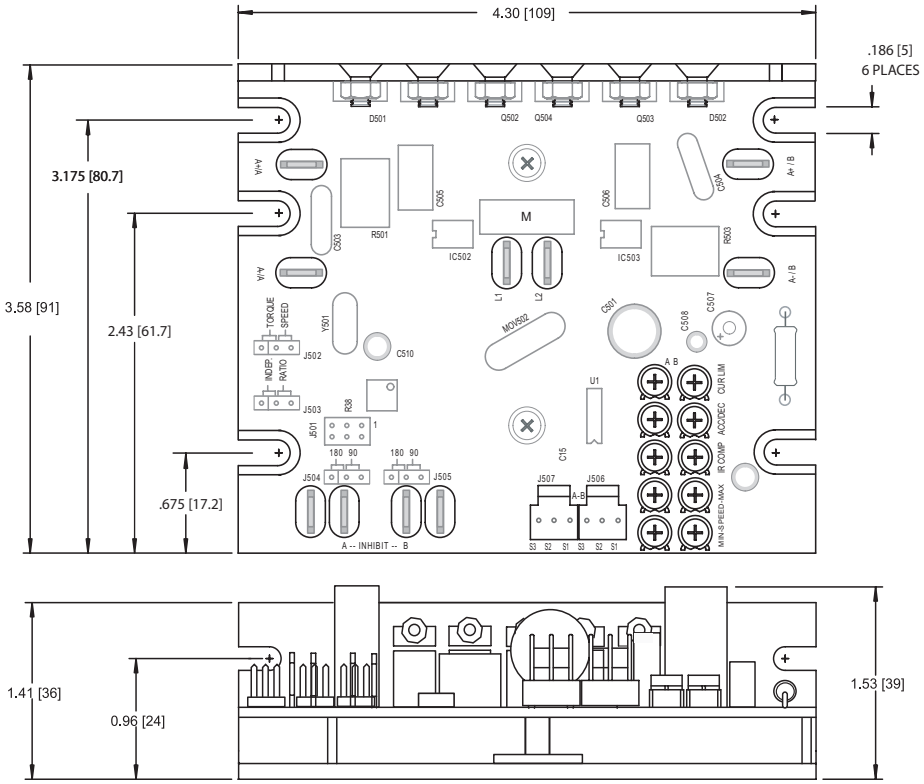
M2-D

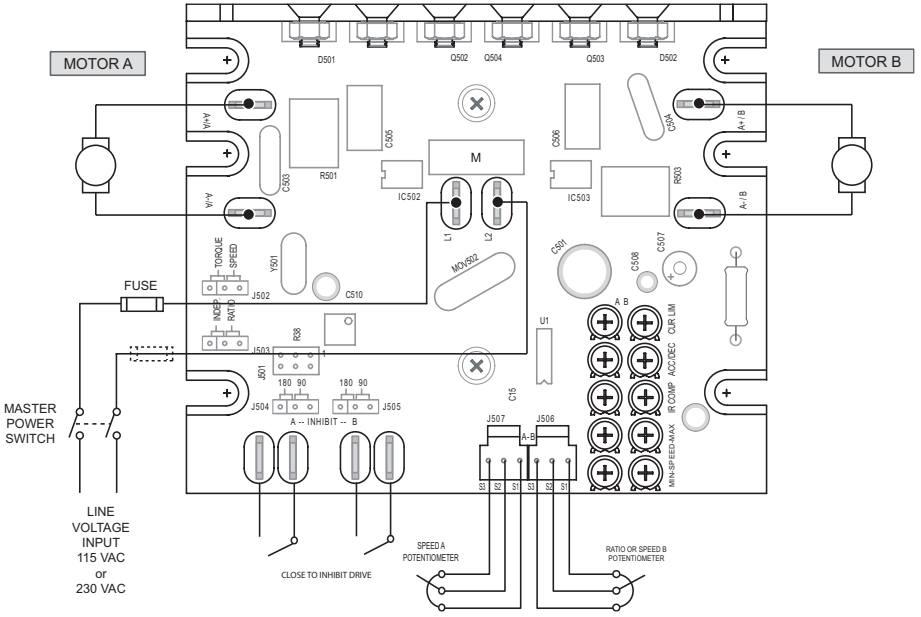
Dual Motor Control SCR DC Drive

QUICK START GUIDE

DIMENSIONS



CONNECTIONS



SPECIFICATIONS

	* Without Heatsink		* With Heatsink	
Input Voltage +/- 10%, 50/60 Hz	115 VAC	230 VAC	115 VAC	230 VAC
Output Voltage (VDC)	0 - 90	0 - 180	0 - 90	0 - 180
Maximum Continuous Output from each side (Amps)	5	5	10	10
Maximum Total output from both sides (Amps)	6.5	6.5	11.5	11.5
HP Rating for each side	1/15 - 1/2	1/8 - 1	1/15 - 1	1/8 - 2
Maximum Total HP rating of both sides	5/8	1 1/4	1 1/8	2 1/4
Form Factor	1.37		1.37	

* Heatsink (part number 223-0159) is required if one side provides more than 5A or the total output of both sides is more than 6.5A.

Motor Connections

M2-D drives supply motor voltage from A+ and A- terimnals. It is assumed that when A+ is positive with respect to A-, the motor will rotate clockwise (CW) while looking at the output of the shaft protruding from the front of the motor. If this is opposite of the desired rotation, reverse the wiring of the A+ and A- terminals.

Power Input

Connect the AC power leads to terminals L1 and L2, or to a double-pole single-throw master power switch (recommended). Suitable for use on a circuit capable of delivering not more than 5000 rms symetrical Amperes, 240 Volt maximum.

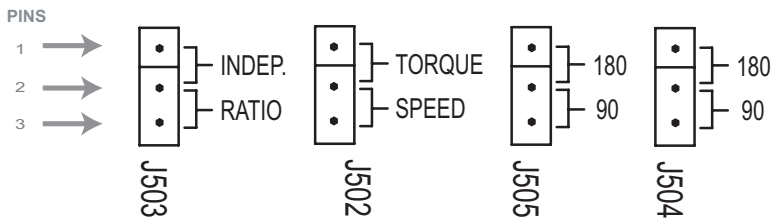
Line Fuse

If 115 VAC input line is used, wire an external line fuse in the hot leg between the stop switch (if installed) and the L1 terminal. If 230 VAC input is used, fuse both legs.

Speed Potentiomenter Connections

Speed adjustments are supplied by speed potentiometers connected to J507 and J506 (Factory supplied pot kit includes two sets of potentiometer hardware. Part number: 202-0112).

Rotation: CW = Clockwise CCW = Counterclockwise



MOTOR VOLTAGE SELECTION
Use J504 to match the motor voltage rating for motor A and J505 for motor B. (Jumper on pins 1 & 2 for 180 VDC, 2 & 3 for 90 VDC.

INDEPENDENT MODE (Jumper on pins 1 & 2 of J503)
There are two sets of potentiometers independently used to adjust each motor operation. Each set consists of five on board trimmer potentiometers and one external potentiometer (commonly called SPEED POT). To calibrate one side (A or B), use the following procedure for speed mode:

1. Turn the SPEED POTENTIOMETER A (B) to full CCW. Use MIN SPEED A (B) trimmer potentiometer to adjust minimum speed for motor A (B).
2. Turn the SPEED POTENTIOMETER A (B) to full CW. Use MAX SPEED A (B) trimmer potentiometer to adjust maximum speed for motor A (B). Repeat steps 1 and 2 a few times due to a level of interaction between MIN SPEED and MAX SPEED pots.
3. Set the CUR LIM A (B) to full CCW. Turn the SPEED POTENTIOMETER A (B) to full CW. Stall the motor shaft and turn the CUR LIM A (B) CW until the desired current limit is reached.
4. Set the IR COMP A (B) to full CCW. Set the motor speed at approximately half of the rated speed. Load motor to its full load. Keep turning the IR COMP CW until the speed equals the no load speed.
5. Use ACC/DEC A (B) trimmer potentiometer to adjust acceleration (deceleration) ramp time.

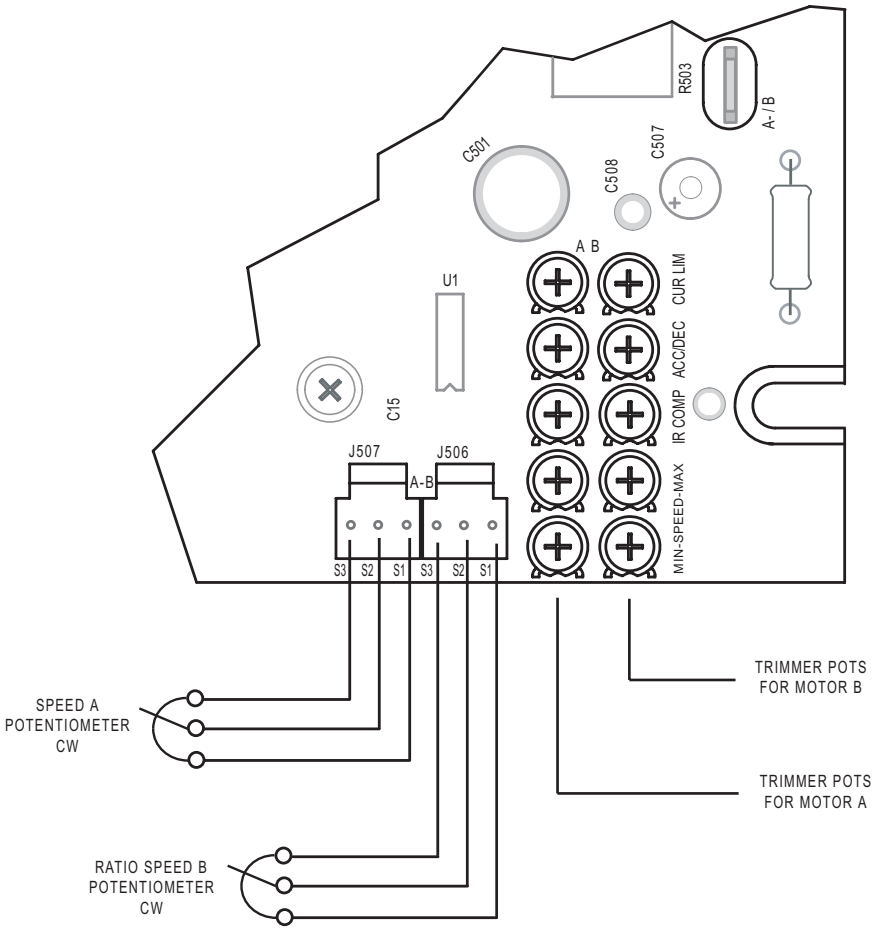
RATIO MODE (Jumper on pins 2 & 3 of J503)
In RATIO MODE, SPEED POT A is used to adjust the speed of both motors, while SPEED POT B sets the ratio between speeds. Turning the SPEED POT B CW will increase speed of motor B thus increasing the ratio speed B/speed A. MIN SPEED B and MAX SPEED B are now used to adjust minimum and maximum ratio.

INHIBIT
Short inhibit terminals A(B) to bring motor A(B) to a stop. Inhibit A(B) is independant of inhibit B(A). The inhibit A and inhibit B can be paralleled together.

J501
J501 is used by the factory to program the M2-D drive. Do NOT add any jumpers to J501.

TORQUE MODE (Jumper on pins 1 & 2 of J502 and pins 1 & 2 on J503)
TORQUE MODE regulates motor current (torque). In TORQUE MODE, the external potentiometer A (B) sets the torque reference for Motor A (B) and the CUR LIM trimmer potentiometer A (B) sets the speed limit for Motor A (B). The MIN SPEED A (B) and MAX SPEED A (B) are used to adjust the minimum and maximum torque available.

M2-D POTENTIOMETER CONNECTIONS



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