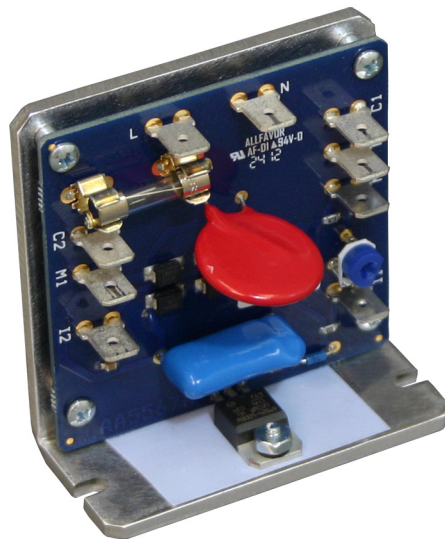


# ACSD050-120051 Series AC Motor Controller

## User's Guide



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## ACSD050-120051 AC Motor Controller Features

- 115 VAC 50/60Hz Input
- Wide Range Speed Control
- Compact Package
- Easy to Use
- Low Cost
- Quick Disconnects for Easy Connections
- Switch Input for RUN/STOP Applications
- Efficient and Durable
- Long Life Expectancy

## General Description

The ACSD050-120051 is a Solid State AC Motor Control. It is designed for various mounting positions. It operates with 115 VAC, 50/60 Hz and is capable of 5.0 Amps RMS @ 50°C. With proper heatsinking, higher operating currents can be obtained. The ACSD050-120051 provides infinitely variable speed motor control for Shaded Pole, Permanent Split Capacitor Motor, Capacitor Run Motor, and Universal Motors. The ACSD050-120051 variable speed motor control provides a basic form of speed control and a switch input for motor RUN/STOP. Applications include range hoods, vibrators, humidifiers, fireplace blowers, fans, laminar flow hoods, heat tunnels and stirrers.

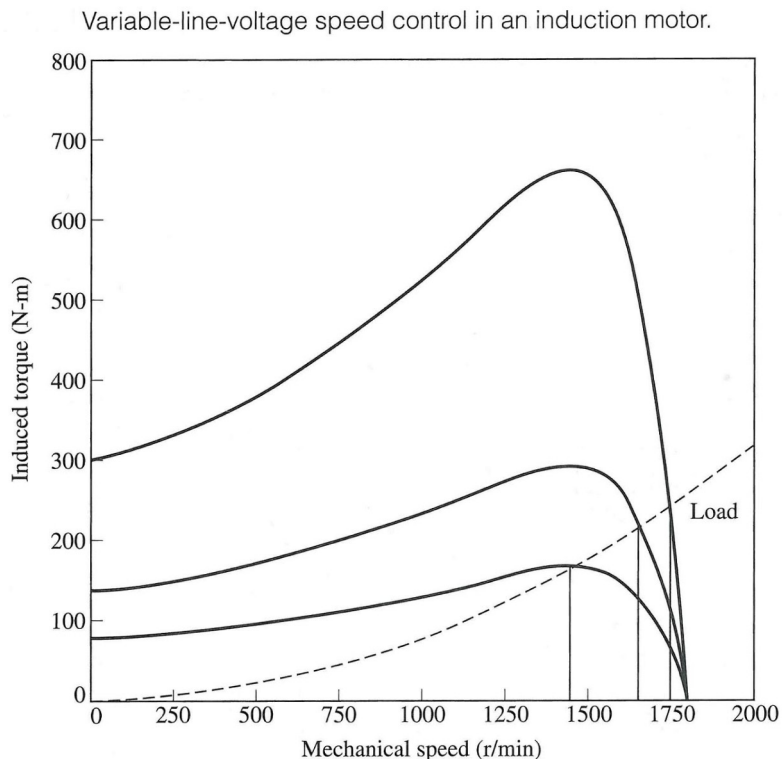


Figure 1: Torque Speed Curve of a Induction Motor Varying line voltage.

## How it Works

The ACSD050-120051 is a simple phase control driver which varies the effective RMS line voltage. The torque developed by an induction motor is proportional to the square of the applied voltage. If the load has a torque-speed characteristic such as shown in Figure 1, then the speed of the motor can be controlled over a small range by varying the line voltage. This curve is not to be confused with a universal type motor curve, as a universal motor can be used with this driver as well. Otherwise, a different type of motor and control application needs to be visited.

## Input Pin Descriptions

The ACSD050-120051 is a simple AC motor speed control. The speed is adjusted by the onboard potentiometer. Pin I1 and I2 needs to be connected together via Switch or a simple jumper if the feature is not being used. Input Pin C1 and C2 is the connection for a running/start Capacitor. Pin MC is where the common point of the Main and Auxiliary winding of a AC Induction or AC Reversible motor. Pin M1 and M2 is where the Main and Auxiliary windings connect to respectively.

## Switching Directions

Switching Directions can be either be done by switches or by simply reversing the main and auxiliary windings from one pin to the other.

Input Pin Descriptions	
Pin #	Description
L	AC-HOT
N	PGND
MC	Motor Common
M1	Main Winding
M2	Auxiliary Winding
C1	Capacitor Con.
C2	Capacitor Con.
I1	RUN/STOP
I2	RUN/STOP

Table 1: ACSD050-120051 Input Connections

Power Pin Descriptions	
Pin #	Description
L	120 VAC
N	0 VAC

Table 2: ACSD050-120051 Power Connections

Item	Min	Typ	Max	Units
Input Voltage (Power)	40	120	140	VAC
Output Current	-		5	A(RMS)
Operation Temperature	0		80	C

Table 3: Electrical Specifications

## Absolute Maximum Ratings

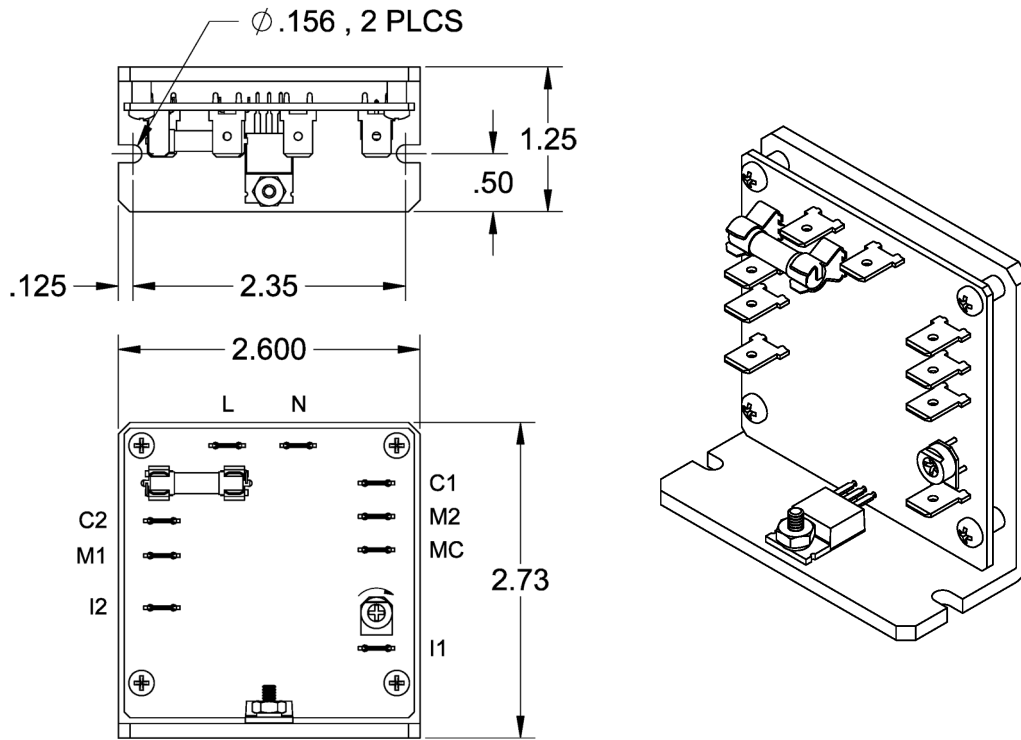
Input Voltage: 140 VAC

Output Current: 5A RMS

Max Plate Temperature: 80°C

Storage Temperature: 0° to +50°C

## Dimensions

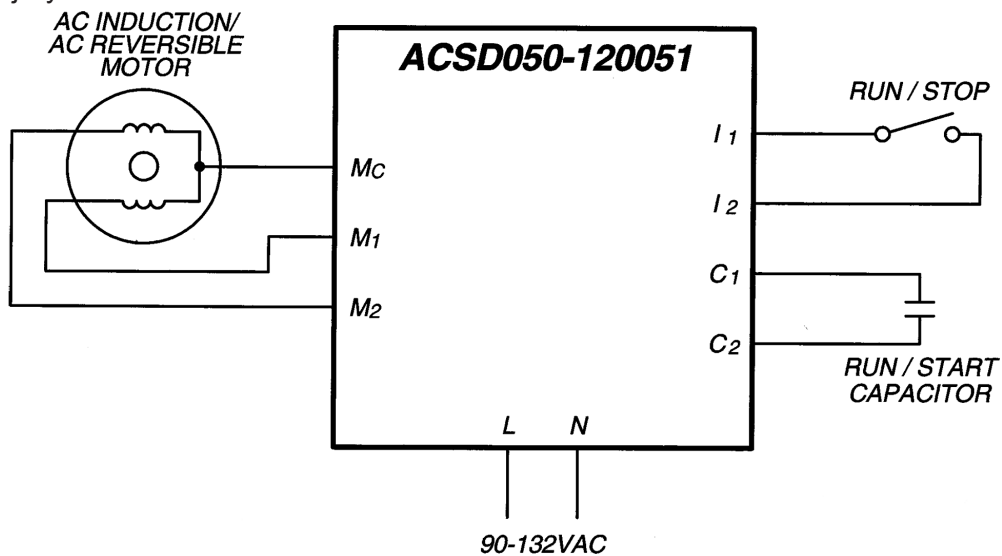


All units are in inches

Figure 2: Dimensions for ACSD050-120051

## Hook-Up Drawings

For other motor connections, such as a universal motor or other 2 wire connections, one can connect the leads to the MC and M1 quick disconnects. If doing so, please cover the M2, C1, C2, connections so shock or injury will not occur.



## Power Supply Recommendation

The ACSD050-120051 must be powered by 120 VAC 50/60Hz.

**Warning:** When using a higher current motor, the driver may overheat and burnup. Use additional airflow and heatsinking to keep motor and driver temperature under 80°C.

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## **TECHNICAL SUPPORT**

If you should require technical support or if you have problems using any of the equipment covered by this manual, please read the manual completely to see if it will answer the questions you have. If you need assistance beyond what this manual can provide, contact your Local Distributor where you purchased the unit, or contact the factory direct.

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