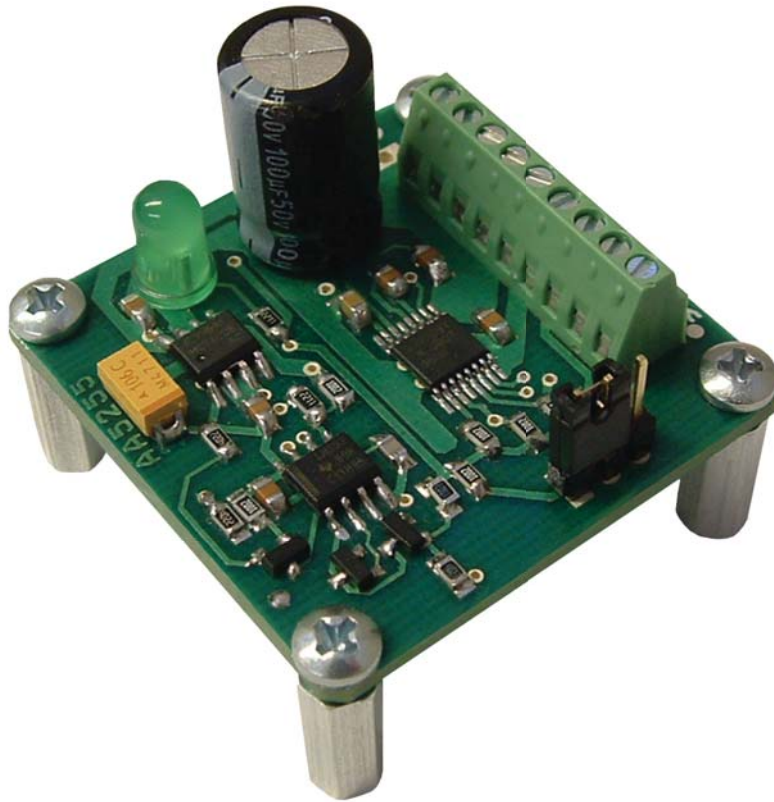


MBDC050-024031 24V, 3A Brush Controller

User's Guide



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MBDC050-024031 Driver Features

- Current Limit set at 3.0 Amps
- External Potentiometer Speed Control
- 0.5V to 5V External Voltage Speed Control
- 2-Quadrant Operation
- Open-Loop Velocity Mode
- Cycle by Cycle Short Circuit Protection
- Requires 8 - 35VDC
- Freewheel and Direction Inputs
- TTL-CMOS Compatible Inputs
- Compact Size (1.50"x1.50"x0.712")
- Screw type Terminal Block

General Description

The MBDC050-024031 driver is designed to drive DC brush motors at peak currents of up to 3.0A and 35V. An optional external potentiometer (10K) or external voltage (0.5-5VDC) can be used to control the speed as well. The direction of the motor can be preset by the direction control input. To disable energy from the motor, there is a Freewheel input that can be grounded.

Fault Protection

The fault protection is set for a cycle by cycle motor turn-off. Cycle by cycle over current limiting is done by monitoring the peak motor current and upon an over current of 3A, the motor phases are immediately turned off and held off for the remainder of the internal PWM oscillation.

Ordering Information

PART#	DESCRIPTION
MBDC050-024031	BDC DRIVER, 3A, 8 - 36V
PSA24V2.7A	DC POWER SUPPLY 24VDC AT 2.7 AMPS

Specifications

Vspeed Control: (TB1, Pin 1)

0VDC - Motor Stopped

5VDC - Max Speed (6VDCmax)

Control Inputs: (TB1, Pins 2-3)

TTL-CMOS Compatible

Logic "0" = 0-0.8VDC

Logic "1" = OPEN

All inputs (enable and direction) are pulled up through 10k ohm resistors.

Direction Control: (TB1, Pin 2)

Logic "1" (open) - Clockwise

Logic "0" - Counterclockwise

Specifications (cont.)

Freewheel: (TB1, Pin 3)

Logic "1" (open) - Motor is Enabled

Logic "0" - Motor is de-energized and will coast

+5VDC Output: (TB1, Pin 4)

10mA maximum

Power Requirements: (TB1, Pins 8 and 9)

8VDC (min) - 35VDC (max)

Output Current Rating: (TB1)

3.0 amperes peak maximum operating current.

Operating Temperature:

Board: 0°-70° C

Terminal Descriptions

Pin #	Description
1	Vspeed
2	Direction
3	Freewheel/Reset
4	5Vout
5	AGND
6	MOTOR PHASE A
7	MOTOR PHASE A/
8	VIN
9	PGND

TB1: Input and Motor
Terminals

Jumper Functions

Function	JP1
Voltage Speed Control (0.5 - 5V)	1-2
PWM Speed Control	2-3
Standard Product (Ready to Ship)	1-2

Heating Considerations

The temperature of the board should never be allowed to rise above 70 degrees Celsius. If necessary, air should be blown across the heatsink to maintain suitable temperatures.

Speed Adjust Setting

There are two ways to set the speed on this drive. One is to use an external voltage from 0.5 - 5V. The other is to use an external 5V PWM signal from 7KHz to 10KHz. . To use the external voltage control function, set jumper JP1 to position 1-2 (default). To use the iexternal 5V PWM, set jumper JP1 to position 2-3.

Motor Direction

The motor direction feature allows the changing of the rotation of the motor. This input should not be changed while motion is in progress. An open input causes the motor to turn in the CW direction, while a low at this input causes the motor to turn in the CCW direction.

Motor Freewheel

The motor freewheel feature allows the de-energizing of the motor phases. An open input at this input causes the motor to run at the given speed, while a low at this input causes the motor to coast to a stop.

Typical Hookup Drawing

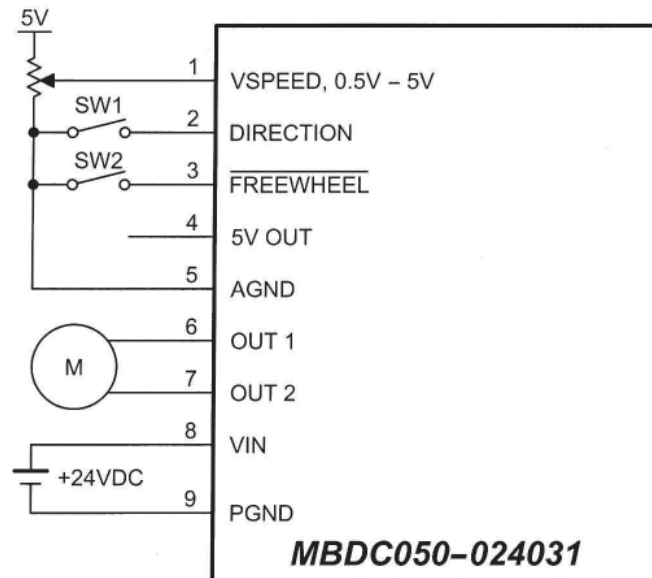


Figure 1: Hook Up for External Voltage Speed Control

Dimensions

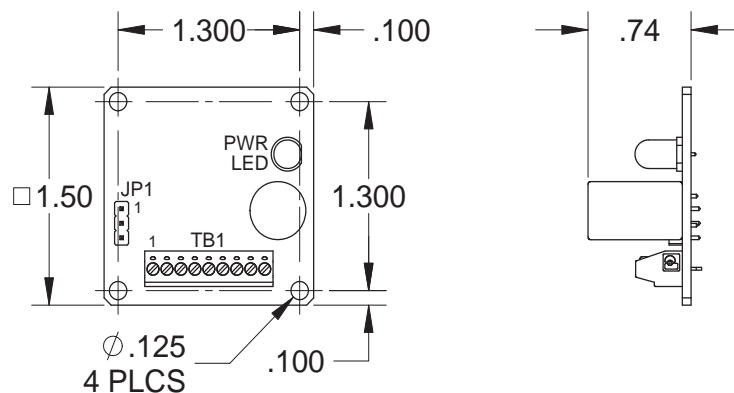


Figure 3: MBDC050-024031 Dimensions

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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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