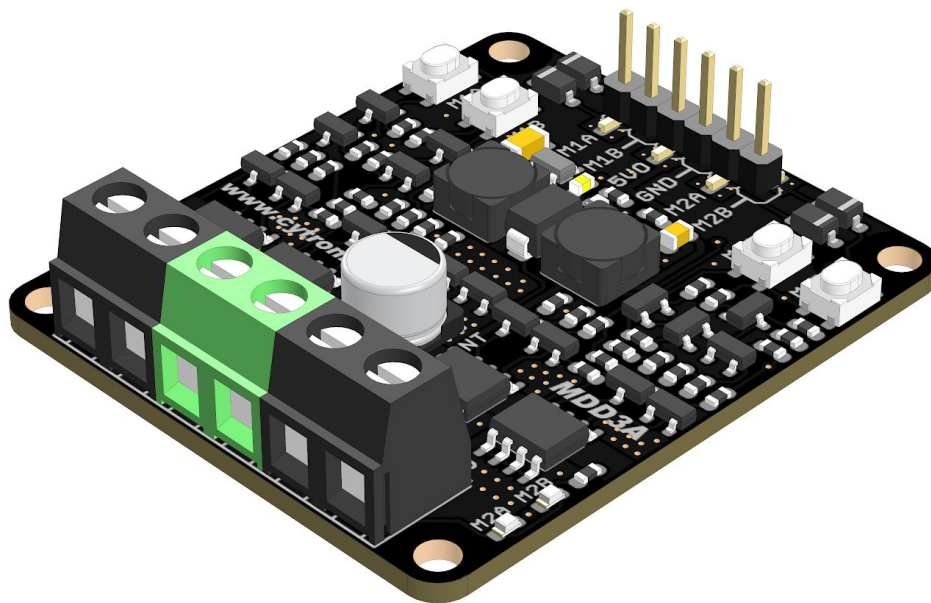




# **MDD3A**

## **3Amp 4V-16V DC Motor Driver (2 Channels)**



## **Datasheet**

Rev 1.0  
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## 1. BOARD LAYOUT & FUNCTION

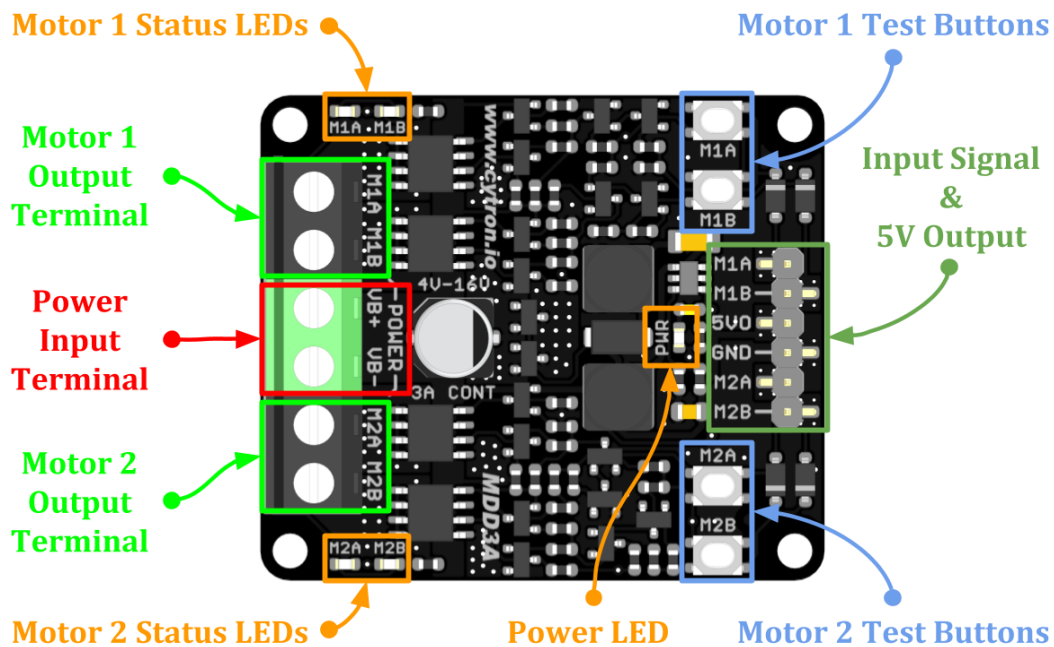


Figure 1: MDD3A Board Functions

| Function                            | Description   |
|-------------------------------------|---|
| <b>Power Input Terminal</b>         | Connect to battery. <ul style="list-style-type: none"> <li>• VB+ : Positive</li> <li>• VB- : Negative</li> </ul>  |
| <b>Motor Output Terminal</b>        | Connect to motor terminal.<br>Motor direction depends on the polarity.  |
| <b>Power LED</b>                    | Turn on when power up.  |
| <b>Motor Status LEDs</b>            | Turn on when the motor is running. <ul style="list-style-type: none"> <li>• M1A / M2A : Forward*</li> <li>• M1B / M2B : Backward*</li> </ul>  |
| <b>Test Buttons</b>                 | Press to test the functionality of the motor driver.<br>Motor will run at full speed. <ul style="list-style-type: none"> <li>• M1A / M2A : Forward*</li> <li>• M1B / M2B : Backward*</li> </ul>   |
| <b>Input Signal &amp; 5V Output</b> | Input signal from microcontroller to control the motor.<br>+5V output can be used to power the microcontroller. <ul style="list-style-type: none"> <li>• M1A : PWM Input A for motor 1.</li> <li>• M1B : PWM Input B for motor 1.</li> <li>• 5V0 : DC +5V Output (Maximum 200mA)</li> <li>• GND : Ground</li> <li>• M2A : PWM Input A for motor 2.</li> <li>• M2B : PWM Input B for motor 2.</li> </ul> |

Table 1: MDD3A Board Functions

\* Actual motor direction is depending on the motor connection.  
 Swapping the connection (MA & MB) will reverse the direction.

## 2. SPECIFICATIONS

| No | Parameters   | Min                | Max | Unit |   |
|----|--|--------------------|-----|------|---|
| 1  | Power Input Voltage (Vin)                                      | 4                  | 16  | VDC  |   |
| 2  | Maximum Motor Current  | Continuous         | -   | 3    | A |
|    |  | Peak (< 5 seconds) | -   | 5    | A |
| 3  | Logic Input Voltage (M1A, M1B, M2A, M2B)                       | Low Level          | 0   | 0.5  | V |
|    |  | High Level         | 1.7 | 12   | V |
| 4  | PWM Frequency<br>(Output frequency is same as input frequency) | DC                 | 20  | KHz  |   |
| 5  | DC +5V Output Maximum Current                                  | -                  | 200 | mA   |   |

Table 2: MDD3A Absolute Maximum Ratings

## 3. DIMENSION

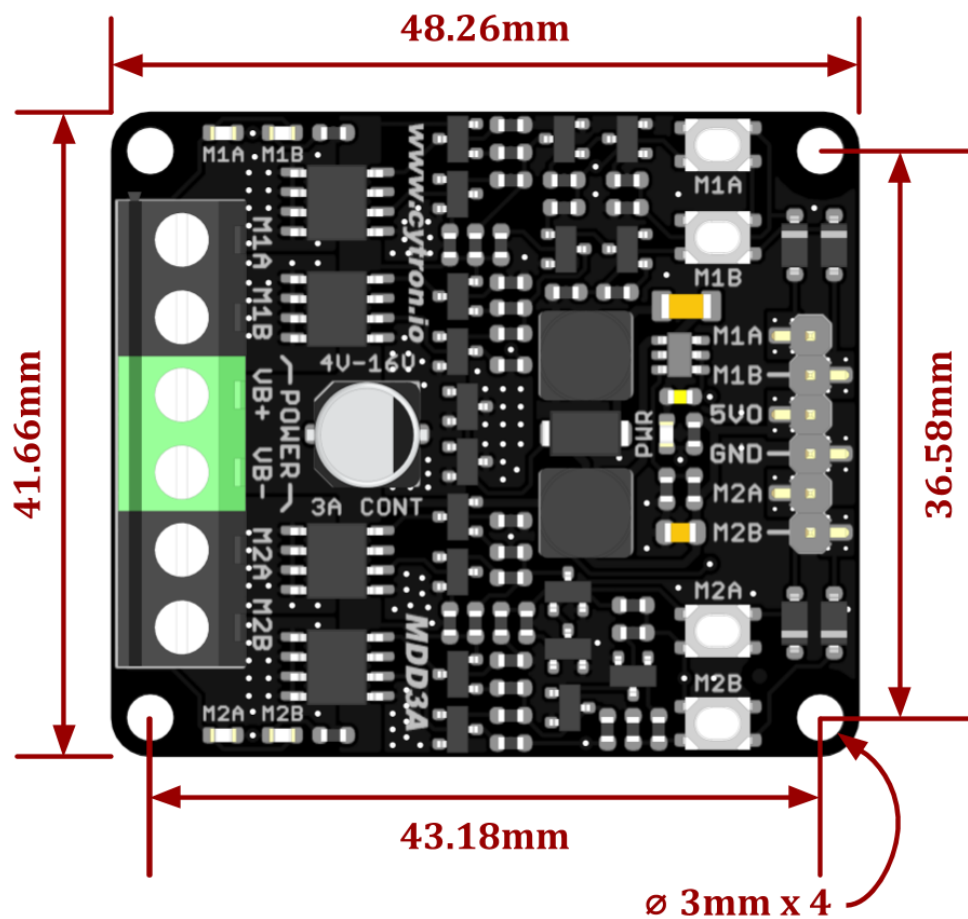


Figure 2: MDD3A Dimension

### 4. INTERFACE

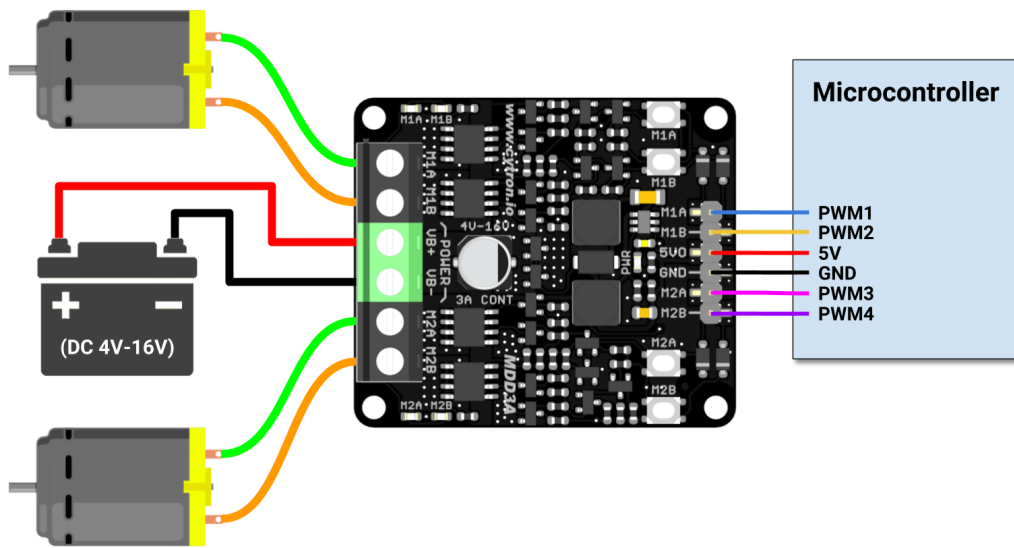


Figure 3: Connection Diagram for Brushed DC Motor

| Input A (M1A / M2A) | Input B (M1B / M2B) | Output A (M1A / M2A) | Output B (M1B / M2B) | Motor     |
|---------------------|---------------------|----------------------|----------------------|-----------|
| Low                 | Low                 | Low                  | Low                  | Brake     |
| High                | Low                 | High                 | Low                  | Forward*  |
| Low                 | High                | Low                  | High                 | Backward* |
| High                | High                | High                 | High                 | Brake     |

Table 3: Input Truth Table

\* Actual motor direction is depending on the motor connection. Swapping the connection (MA & MB) will reverse the direction.

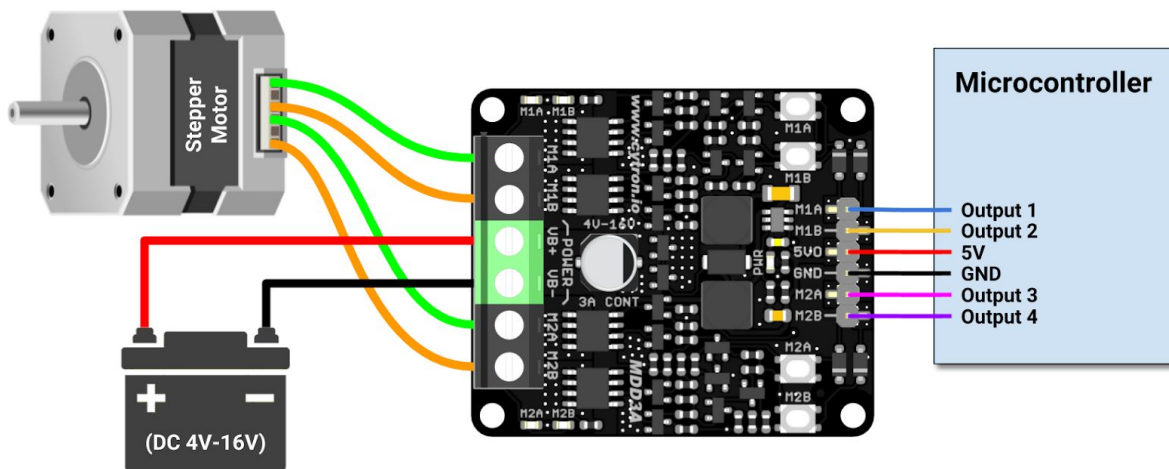


Figure 4: Connection Diagram for Stepper Motor

## 5. PROTECTION FEATURES

- **Power Input Reversed Polarity Protection**

Protect the motor driver from damage if the battery is connected in wrong polarity. This is a very common mistake done by a lot of makers even for the very experienced one.

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