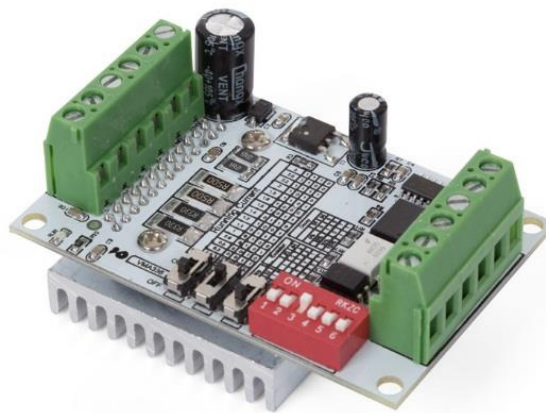


EN TB6500 3 A stepper motor driver board

WPM333



Introduction



To all residents of the European Union

Important environmental information about this product

This symbol on the device or the package indicates that disposal of the device after its lifecycle could harm the environment. Do not dispose of the unit (or batteries) as unsorted municipal waste; it should be taken to a specialized company for recycling. This device should be returned to your distributor or to a local recycling service. Respect the local environmental rules.

If in doubt, contact your local waste disposal authorities.

Thank you for choosing Whadda! Please read the manual thoroughly before bringing this device into service. If the device was damaged in transit, do not install or use it and contact your dealer.

Safety Instructions



Read and understand this manual and all safety signs before using this appliance.



For indoor use only.

- This device can be used by children aged from 8 years and above, and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the device in a safe way and understand the hazards involved. Children shall not play with the device. Cleaning and user maintenance shall not be made by children without supervision.

General Guidelines

- Refer to the Velleman® Service and Quality Warranty on the last pages of this manual.
- All modifications of the device are forbidden for safety reasons. Damage caused by user modifications to the device is not covered by the warranty.
- Only use the device for its intended purpose. Using the device in an unauthorized way will void the warranty.
- Damage caused by disregard of certain guidelines in this manual is not covered by the warranty and the dealer will not accept responsibility for any ensuing defects or problems.
- Nor Velleman Group nv nor its dealers can be held responsible for any damage (extraordinary, incidental or indirect) – of any nature (financial, physical...) arising from the possession, use or failure of this product.
- Keep this manual for future reference.

What is Arduino®

Arduino® is an open-source prototyping platform based on easy-to-use hardware and software. Arduino® boards are able to read inputs – light-on sensor, a finger on a button or a Twitter message – and turn it into an output – activating of a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board. To do so, you use the Arduino programming language (based on Wiring) and the Arduino® software IDE (based on Processing). Additional shields/modules/components are required for reading a twitter message or publishing online. Surf to www.arduino.cc for more information.

Specifications

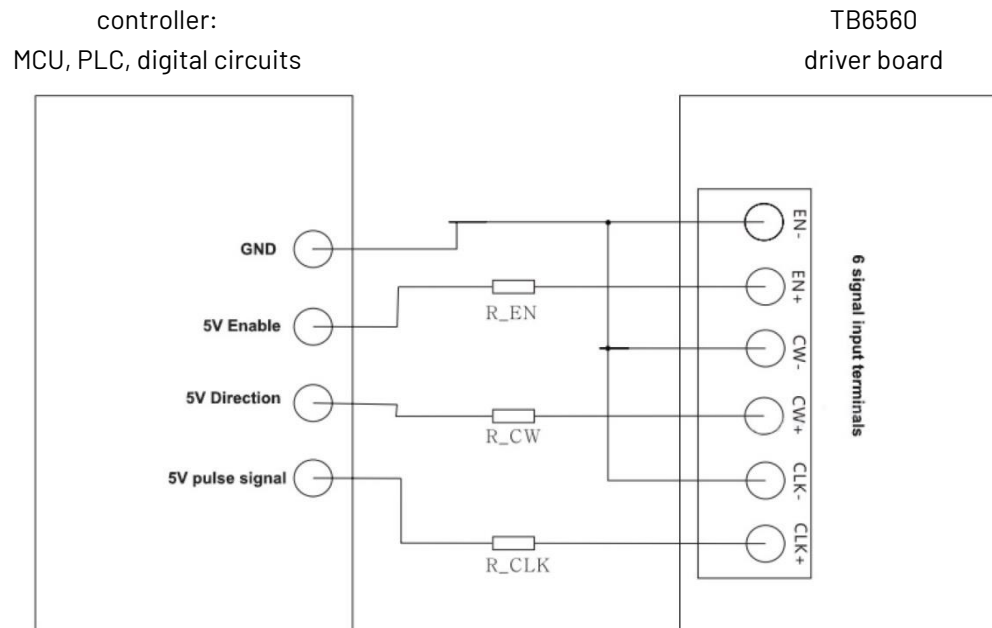
- operating voltage: 10-35 VDC
- rated output current: ± 3 A - peak 3.5 A
- dimensions: 50 x 75 x 35 mm
- weight: 80 g

Features

- 6N137 high-speed OptoCouple to ensure high-speed without losing steps
- for 42,57,86 stepper within 3 A 2/4-phase/4-wire /6-wire stepper motor
- automatic half-decay
- excitation mode: synchronizing, half step, 1/8 step, 1/16 step
- current level is adjustable to meet your application needs
- large heat sink for good heat dissipation
- overheating and over-current protection circuit to ensure optimal performance

Pin Layout

terminal	description
EN+ EN-	enable positive/negative
CW+ CW-	direction control
CLK+ CLK-	pulse signal control
24+ GND	power supply
A+ A-	motor A (red/blue wire)
B+ B-	motor B (green/black wire)



Note: Resistors on data lines are optional.

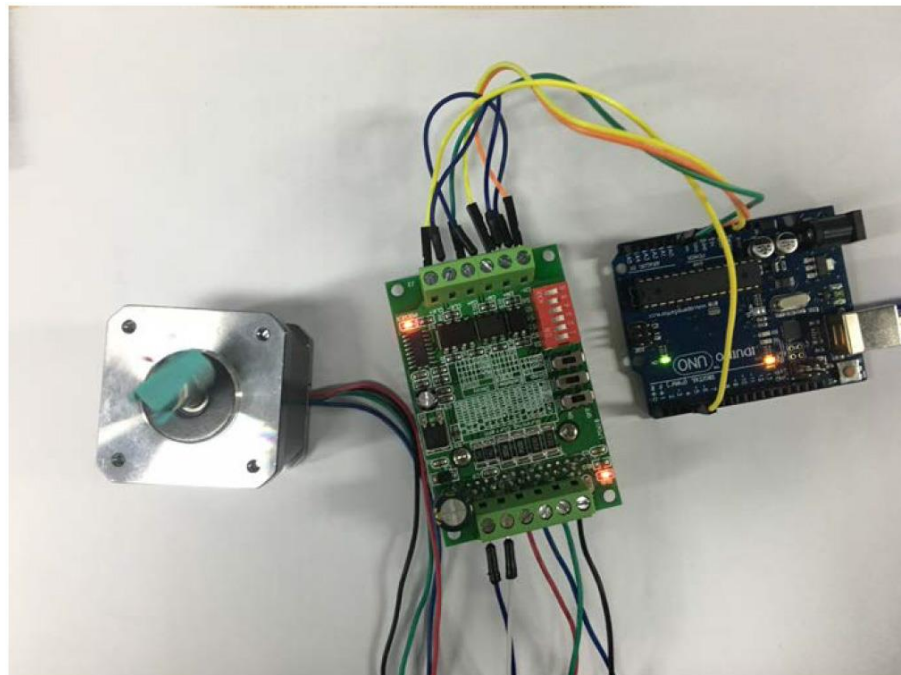
Example

Connection to Arduino® UNO

Arduino®		WPM333
GND	▶	EN+
GND	▶	EN-
D2	▶	CW+
GND	▶	CW-
D3	▶	CLK+
GND	▶	CLK-

Connection to 4-Wire Stepper Motor

Stepper Motor		WPM333
red wire	▶	A+
blue wire	▶	A-
green wire	▶	B+
black wire	▶	B-



Whadda WPM333 Stepper Motor Driver Arduino example

This example shows how the Whadda WPM333 Stepper Motor Driver board can be used with Arduino.

The following connections are required:

```
2 <==> CW+
GND <==> CW-
3 <==> CLK+
GND <==> CLK-
```

For more information about the Whadda WPM333 Stepper Motor Driver, consult the manual, available online at whadda.com

Example program based on TB6560 Arduino example code from makerguides.com (<https://www.makerguides.com/tb6560-stepper-motor-driver-arduino-tutorial/>)

```
*/
#define CW_Pin 2
```

```
#define CLK_Pin 3
#define stepsPerRevolution 200

void setup(){
  // Declare pins as output:
  pinMode(CW_Pin, OUTPUT);
  pinMode(CLK_Pin, OUTPUT);
}

void loop(){
  // Set the spinning direction clockwise:
  digitalWrite(CW_Pin, HIGH);

  // Spin the stepper motor 1 revolution slowly:
  for(int i = 0; i < stepsPerRevolution; i++){
    // These four lines result in 1 step:
    digitalWrite(CLK_Pin, HIGH);
    delayMicroseconds(8000);
    digitalWrite(CLK_Pin, LOW);
    delayMicroseconds(8000);
  }

  delay(1000);

  // Set the spinning direction counterclockwise:
  digitalWrite(CW_Pin, LOW);

  // Spin the stepper motor 1 revolution quickly:
  for(int i = 0; i < stepsPerRevolution; i++){
    // These four lines result in 1 step:
    digitalWrite(CLK_Pin, HIGH);
    delayMicroseconds(4000);
    digitalWrite(CLK_Pin, LOW);
    delayMicroseconds(4000);
  }

  delay(1000);

  // Set the spinning direction clockwise:
  digitalWrite(CW_Pin, HIGH);

  // Spin the stepper motor 5 revolutions fast:
  for(int i = 0; i < 5 * stepsPerRevolution; i++){
    // These four lines result in 1 step:
    digitalWrite(CLK_Pin, HIGH);
    delayMicroseconds(2000);
    digitalWrite(CLK_Pin, LOW);
    delayMicroseconds(2000);
  }

  delay(1000);
```

```
// Set the spinning direction counterclockwise:
digitalWrite(CW_Pin, LOW);

// Spin the stepper motor 5 revolutions fast:
for(int i = 0; i < 5 * stepsPerRevolution; i++){
  // These four lines result in 1 step:
  digitalWrite(CLK_Pin, HIGH);
  delayMicroseconds(2000);
  digitalWrite(CLK_Pin, LOW);
  delayMicroseconds(2000);
}

delay(1000);
}
```

The running current limit can be set by using the DIP-switches located on the module. The following table gives an overview of the possible settings.

Running Current														
(A)	0.3	0.5	0.8	1	1.1	1.2	1.4	1.5	1.6	1.9	2	2.2	2.6	3
SW1	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	ON	ON	ON	ON	ON	ON
SW2	OFF	OFF	ON	ON	ON	OFF	ON	OFF	OFF	ON	OFF	ON	ON	ON
SW3	ON	ON	OFF	OFF	ON	OFF	ON	ON	OFF	OFF	ON	ON	OFF	ON
S1	ON	OFF	ON	OFF	ON	ON	OFF	ON	OFF	ON	OFF	ON	OFF	OFF



whadda.com



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