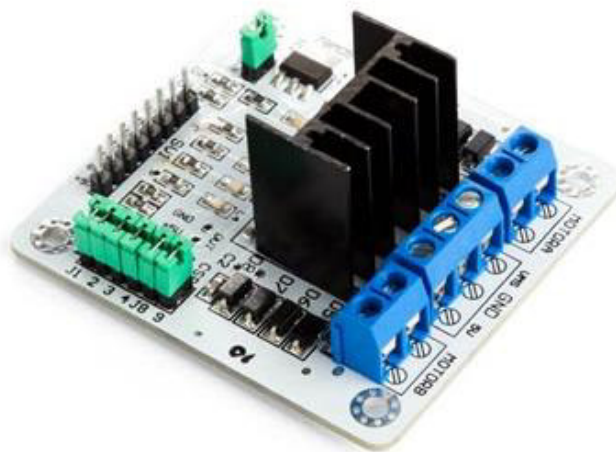


**EN** L298N dual bridge DC and stepper motor controller board

WPI409



## 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](http://www.arduino.cc) for more information.

## Product Overview

This module allows full control of two DC motors or one stepper motor.

## Specifications

- driver: L298N
- driver power supply: 5-35 V
- driver output current (max.): 2 A
- logic power output Vss: 5-7 V (internal supply +5 V)
- logic current: 0-36 mA
- controlling level: low -0.3 V to 1.5 V, high: 2.3 V-Vss
- enable signal level: low -0.3 V to 1.5 V, high: 2.3 V-Vss
- max. power: 25 W
- working temperature: -25 to +130 °C (-13 to 266 °F)
- dimensions: 69 x 56 x 36 mm (2.71 x 2.2 x 1.41")

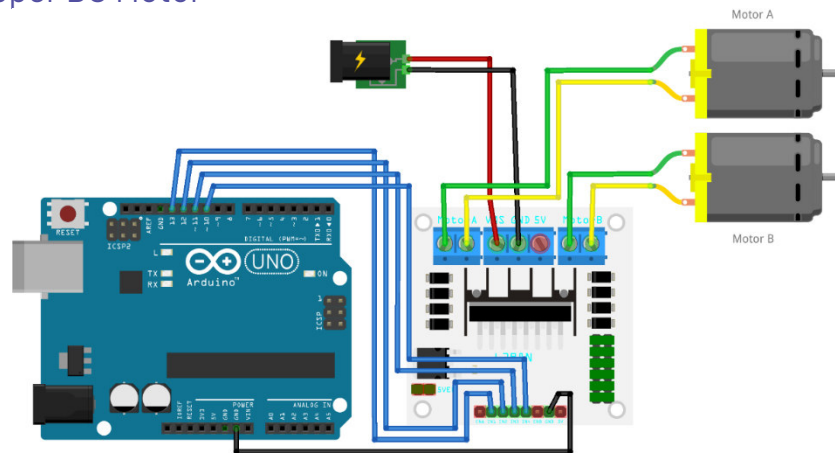
## Pin Layout

pin name	description
MOTORA	motor 1
MOTORB	motor 2
VMS	5 VDC to 35 VDC
GND	ground
5V	power input for the logic circuit on the board
ENA	enable pin for motor 1
IN1	control pin motor 1
IN2	control pin motor 1
IN3	control pin motor 1
IN4	control pin motor 1
ENB	enable pin for motor 2
5V	5 V output
GND	ground

CSB	current test pin for motor 1; can be wired to a resistor for current testing or tied to a jumper to disable it
CSA	current test pin for motor 2; can be wired to a resistor for current testing or tied to a jumper to disable it
UR1	pull-up resistor
UR2	pull-up resistor
UR3	pull-up resistor
UR4	pull-up resistor
5V_EN	5 V source jumper; supplies power from the VMS port when the jumper is enabled; the power is supplied by the 5 V port when the jumper is disabled

## Example

### 2-Stepper DC Motor



This demo will test the motor controller board by running two connected DC motors in each direction for 2 seconds

See [whadda.com](http://whadda.com) for the manual which includes a wiring diagram

\*/

```
int in1=13; // IN1 connected to digital pin 13
int in2=12; // IN2 connected to digital pin 12
int in3=11; // IN3 connected to digital pin 11
int in4=10; // IN4 connected to digital pin 10
```

```
void setup(){
  pinMode(in1, OUTPUT); // Set IN1 as OUPUT
  pinMode(in2, OUTPUT); // Set IN2 as OUPUT
  pinMode(in3, OUTPUT); // Set IN3 as OUPUT
  pinMode(in4, OUTPUT); // Set IN4 as OUPUT
```

```

// disable motor output by setting all INx pins high
digitalWrite(in1, HIGH);
digitalWrite(in2, HIGH);
digitalWrite(in3, HIGH);
digitalWrite(in4, HIGH);

}

void loop(){

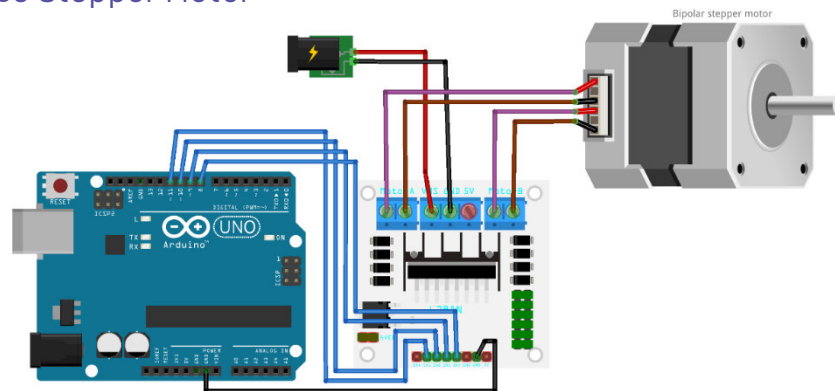
digitalWrite(in1, LOW); // Turn on motor A in direction 1
delay(2000);
digitalWrite(in1, HIGH); // Turn off motor A in direction 1
digitalWrite(in2, LOW); // Turn on motor A in direction 2
delay(2000);
digitalWrite(in2, HIGH); // Turn off motor A in direction 2

digitalWrite(in3, LOW); // Turn on motor B in direction 1
delay(2000);
digitalWrite(in3, HIGH); // Turn off motor B in direction 1
digitalWrite(in4, LOW); // Turn on motor B in direction 2
delay(2000);
digitalWrite(in4, HIGH); // Turn off motor B in direction 2

}

```

## 2-Phase Stepper Motor



This demo will test the motor controller board by running a connected stepper motor in each direction for a full revolution.

See [whadda.com](http://whadda.com) for the manual which includes a wiring diagram

\*/

```

// Include the Arduino Stepper Library
#include <Stepper.h>

```

```

// Number of steps per output rotation

```

```
const int stepsPerRevolution = 200;

// Create Instance of Stepper library
Stepper myStepper(stepsPerRevolution, 8, 9, 10, 11);

void setup()
{
  // set the speed at 60 rpm:
  myStepper.setSpeed(60);
  // initialize the serial port:
  Serial.begin(9600);
}

void loop()
{
  // step one revolution in one direction:
  Serial.println("clockwise");
  myStepper.step(stepsPerRevolution);
  delay(500);

  // step one revolution in the other direction:
  Serial.println("counterclockwise");
  myStepper.step(-stepsPerRevolution);
  delay(500);
}
```



[whadda.com](http://whadda.com)