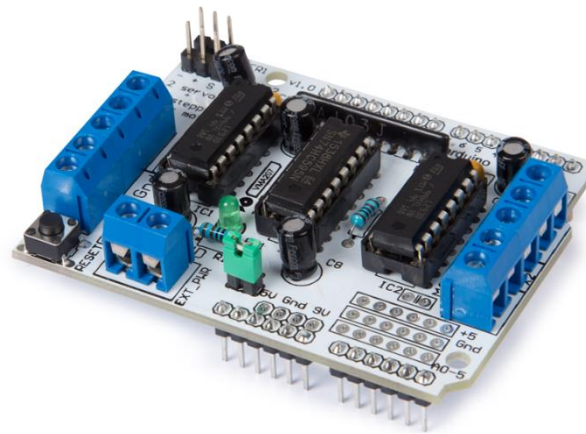


EN L293D motor drive expansion shield for Arduino®

WPSH207



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.

Product Overview

This motor shield contains two motor drivers and a 74HC595 shift register and extends the pins on the Arduino® from 3 to 8, which allows controlling the direction for the motor drivers.

Specifications

- two L293D motor driver chips
- four H-Bridges
- 0.6 A per bridge (1.2 A peak)
- thermal shutdown protection
- internal fly kickback protection diodes
- up to 4 bi-directional DC motors
- up to 2 stepper motors
- pull-down resistors to keep motors disabled during power-up
- separate logic and motor power connections
- terminal block connectors for motors and power
- motor voltages from 4.5 VDC to 16 VDC
- 2 connections for 5 V 'hobby' servos
- dimensions: 68 x 55 x 20 mm

Pin Layout

All 6 analogue input pins are available. They can also be used as digital pins (pins #14 through 19)

digital pin	function
#2, #13	not used

Following pins are only used if the DC/stepper is in use:

digital pin	function
#11	DC motor #1/stepper #1 (activation/speed control)
#3	DC motor #2/stepper #1 (activation/speed control)
#5	DC motor #3/stepper #2 (activation/speed control)
#6	DC motor #4/stepper #2 (activation/speed control)

Following pins are only used if any DC/steppers are in use:

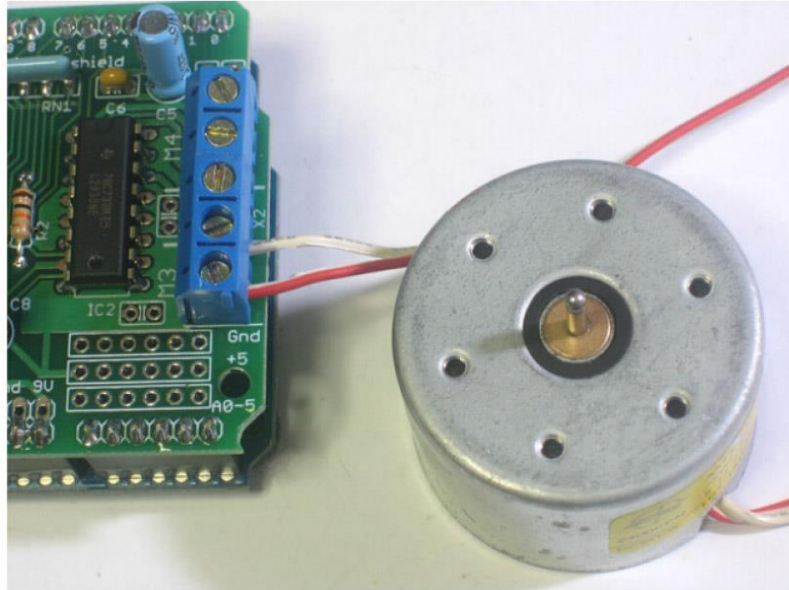
digital pin	function
#4, #7, #8, #12	driving the DC/stepper motors via the 74HC595 serial-to-parallel latch

Following pins are only used if that particular servo is in use:

digital pin	function
#9	servo #1 control
#10	servo #2 control

Example

In this example, we will control a DC motor through port M3.



*****Code begin*****

```
// Adafruit Motor shield library
// copyright Adafruit Industries LLC, 2009
// this code is public domain, enjoy!

#include <AFMotor.h> //DO NOT forget to include this library by "Sketch->Include Library->Add ZIP library" This library can be downloaded from the Velleman website.

AF_DCMotor motor(3);

void setup(){
  Serial.begin(9600);    // set up Serial library at 9600 bps
  Serial.println("Motor test!");

  // turn on motor
  motor.setSpeed(200);

  motor.run(RELEASE);
}

void loop(){
  uint8_t i;

  Serial.print("tick");
```



```
motor.run(FORWARD);
for (i=0; i<255; i++){
  motor.setSpeed(i);
  delay(10);
}

for (i=255; i!=0; i--){
  motor.setSpeed(i);
  delay(10);
}

Serial.print("tock");

motor.run(BACKWARD);
for (i=0; i<255; i++){
  motor.setSpeed(i);
  delay(10);
}

for (i=255; i!=0; i--){
  motor.setSpeed(i);
  delay(10);
}

Serial.print("tech");
motor.run(RELEASE);
delay(1000);
}
```

*****Code end*****



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