

BN 2268121

Motor Control Module L293D for Arduino™

GB Operating instructions

Latest operating instructions

Download the latest operating instructions at www.conrad.com/downloads or scan the QR code shown. Follow the instructions on the website.



Delivery contents

- Motor Control Module L293D for Arduino™

Description

The L293D motor control shield is compatible with the Arduino™ Board UNO R3 and MEGA and provides an easy way to control up to four DC motors or two stepper motors.

The shield is simply attached to the existing Arduino™ board, and the motors and the power supply are connected.

The example program in this manual shows how to control the motors via the software.

Product features

- Arduino™ compatible
- L293D motor driver (H-bridge)
- All pins on the board are labelled for easy installation.
- 2 servo outputs for model-building servos
- 4 H-bridges: 0.6 A (1.2 A peak current)
- Thermal protection
- For motors from 4.5 - 10 V/DC
- Separate power supply for the Arduino™ and the motors
- Reset button
- Status LED
- Screw terminals for power supply and for connecting the motors

Screw terminals:

- | | |
|------|---------|
| - M1 | Motor 1 |
| - M2 | Motor 2 |
| - M3 | Motor 3 |
| - M4 | Motor 4 |

EXT_PWR (motor power supply)

- | | |
|-------|-------------------------|
| - +M | Motor operation voltage |
| - GND | Ground |

RESET button

Resets the Arduino™

Jumper PWR

Disconnects the power supply to the motors

SER1

Servo connection 1 (digital pin 9)

SERVO_2

Servo connection 2 (digital pin 10)

LED

Indicates the motor power supply

The digital (14 to 19) and all analogue pins (A0 to A5) on the Arduino™ are guided onto solder pads and can be used freely.

In addition, some solder pads for tapping the Arduino™ power supply (5V, 9V, GND) are also available as solder pads.

The following pins are required to control the motor drivers and cannot be used for other tasks:

- | | |
|------------------|---|
| - Digital pin 11 | DC-Motor 1 / Stepper 1
(Control/speed control) |
| - Digital pin 3: | DC motor 2 / stepper 1
(Control/speed control) |
| - Digital pin 5: | DC motor 3 / stepper 2
(Control/speed control) |
| - Digital pin 6: | DC motor 4 / stepper 2
(Control/speed control) |

In addition, the following pins are occupied when a DC or stepper motor is in use:

- Digital pin 4, 7, 8, 12
Used to control the motors for the serial to parallel converter (74HC595).

The remaining pin assignments for the inputs/outputs correspond to the markings on the circuit board.

Operation

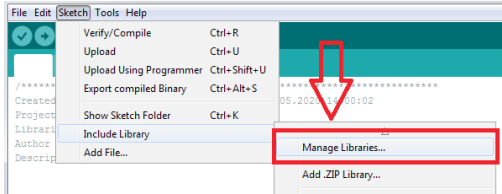
Carefully place the motor shield onto the Arduino™ to avoid bending the pin headers.

The Arduino™ can be supplied with power and programmed as usual via USB.

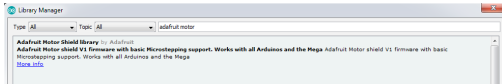
For this test, connect a DC motor to the M3 terminals, and connect the power supply for the motor to the EXT_PWR (+M and GND) terminals.

Download the Adafruit Library for the motor driver shield via the Arduino™ IDE.

To do this, open the "Manage Libraries..." menu, which you will find in the Arduino™ IDE under "Sketch" - "Include Library".



In the search box, type "Adafruit Motor" and install the "Adafruit Motor Shield library" (for Shield V1).



Test program

This small test program uses the Adafruit library and makes the connected DC motor turn in one direction and then in the other.

The motor accelerates slowly and brakes slowly again before changing direction. At the end of the loop, the motor is switched off and the program starts from the beginning.

The Adafruit library contains many examples that are suitable for the motor shield.

Reference:

» <https://learn.adafruit.com/adafruit-motor-shield/overview>

```
// Adafruit Motor shield library
// this code is public domain, enjoy!

#include <AFMotor.h>

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);
}
```

Disposal



Electronic devices are recyclable waste and must not be placed in household waste. At the end of its service life, dispose of the product in accordance with the applicable regulatory guidelines.

You thus fulfil your statutory obligations and contribute to protection of the environment.

Specifications

Operating voltage	5 V/DC (digital)
Motor operating voltage	4.5 - 10 V/DC (Terminal +M and GND)
Motor current (duration)	≤ 0.6 A
Motor current (max)	1.2 A
Number of motors	4 DC motors or 2 stepper motors
Motor driver	2 L293D
Compatibility	Arduino™ UNO R3 and MEGA
Dimensions (W x H x D)	55 x 20 x 68 mm
Weight	32 g

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