

The RobotBits Robot Shield is an easy to use Arduino compatible shield optimised for small mobile robotics applications.

Features

- Dual bi-directional motor driver circuit (1.1 Amp continuous, 2 Amp Peak)
- Easy screw-terminal motor connection
- Thermal overload protection
- Dedicated Arduino Library for robot applications
- Separate headers for I2C, SPI and Serial ports
- Integrated I2C pull-up resistors
- Reset switch and power indicator
- Auxiliary power connector

Description

The design of the Robot Shield utilises the same dual, bi-directional motor driver circuit as the popular motor shield but replaces the original L293 with the improved SN754410.

Power for the motors can be drawn from the Arduino Vin supply or provided externally via the Auxiliary power connector.

In addition to the motor drive circuitry, the Robot Shield also includes individual headers for I2C, SPI and Serial communications. The I2C header also has the necessary 1k8 pull-up resistors fitted. If the I2C port is not required, the pull-up resistors can be disconnected by removing the fitted jumpers; allowing pins A4 and A5 to be used as Analogue inputs.

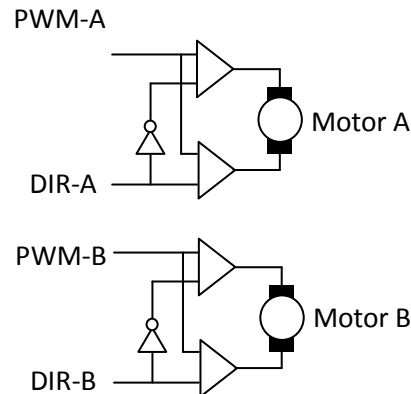
All of the other Arduino I/O ports are terminated with 3-pin headers allowing servos and sensors to be easily interfaced.

A dedicated Arduino Library makes programming easy by implementing standard commands such as forward, reverse, rotate clockwise, rotate counter-clockwise, turn right, turn left and stop. The Robot Shield library and example sketches illustrating the use of the Library are also available to download from the RobotBits website.

Electrical Characteristics

| | Min | Max | Units |
|-------------------------------|-----|-----|-------|
| Drive Current (continuous) | | 1.1 | A |
| Drive Current (peak, 5% duty) | | 2 | A |
| Auxiliary Power Input | 6 | 12 | V |
| Operating Temperature | -40 | +85 | °C |

Motor Driver Block Diagram



Motor Driver Pin-out

| Motor Driver | Arduino Pin |
|--------------|-------------|
| PWM – A | 6 |
| DIR – A | 8 |
| PWM – B | 9 |
| DIR – B | 7 |

I2C Port Pin-out

| I2C Header | Arduino Pin |
|------------|-------------|
| GND | GND |
| SCL | A5 |
| SDA | A4 |
| +5V | +5V |

SPI Port Pin-out

| I2C Header | Arduino Pin |
|------------|-------------|
| GND | GND |
| SCK | 13 |
| MISO | 12 |
| MOSI | 11 |
| SS | 10 |
| +5V | +5V |

Serial Port Pin-out

| I2C Header | Arduino Pin |
|------------|-------------|
| GND | GND |
| TX | 1 |
| RX | 0 |
| +5V | +5V |

Disclaimer

This product has not been designed for use in automotive, military, aerospace or safety-critical applications where a failure of the product might reasonably be expected to cause severe personal injury or death. By buying or using this product, the purchaser and/or representative acknowledges and agrees to fully indemnify RobotBits and its representatives against any damages arising out of the use of its products in such un-authorised applications.

Robot Shield v1.0

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