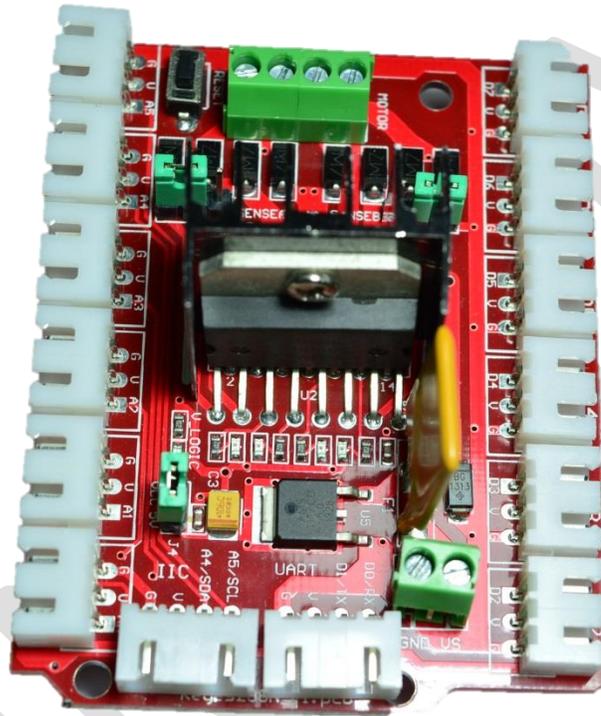


KEYES L298N Motor Shield

Dual High Current DC Motor Driver

v. 1.0



Description

A High Current DC Motor Driver Shield that is made for Arduino to make the interfacing easier. It uses the L298HN IC that is known as an outstanding high-power motor driver chip. The shield is compatible any Arduino boards such as the Arduino UNO, MEGA, LEONARDO and many more. It can also be used

with non-official Arduino boards by connecting the essential pins of the motor driver shield to the Arduino Board perfectly. It can drive two motors simultaneously with different speed and direction. The shield has an extra terminal block that can be used if the DC motor needs an external supply.

Specifications

- Input voltage : +5V DC
- VS (External Supply for the DC motor) : + 6.5V to +12V DC
- Maximum output current : 2A in each motor (total of 4A)
- Signal maximum current : 36mA
- Control signal input level : high - 2.3V to 5V,
low - 0.3V to 1.5V
- Maximum dissipation power : 25W (T = 75 °C)
- Working temperature : -25 to 130 °C

Pin Configuration (Arduino Pins)

- Pin13 : INPUT_M2+
- Pin12 : INPUT_M2-
- Pin11 : INPUT_M1+
- Pin8 : INPUT_M1-

- Pin10 : ENABLE_M2
- Pin9 : ENABLE_M1

Sample Program

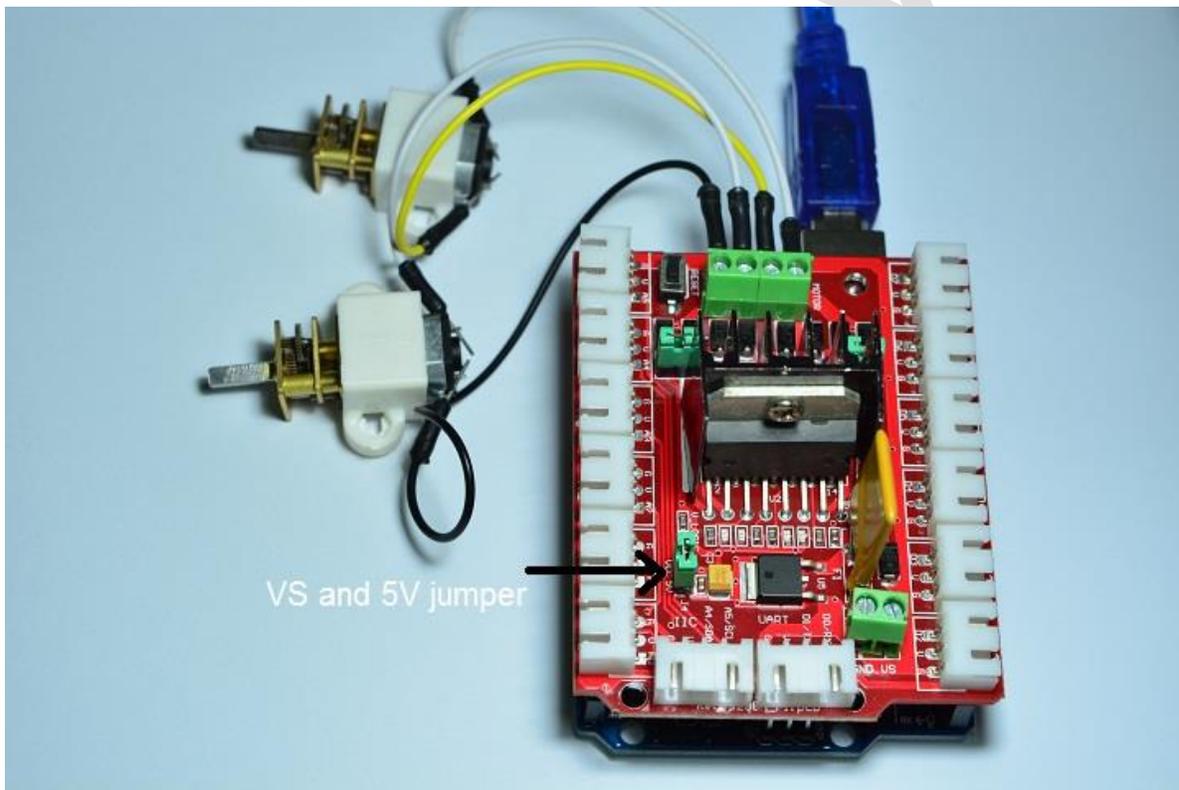
```
// Keyes HBridge Sample Program

void setup ()
{
  pinMode (13,1); //pin13 set as output(INPUT_M2+)
  pinMode (12,1); //pin12 set as output(INPUT_M2-)
  pinMode (11,1); //pin11 set as output(INPUT_M1+)
  pinMode (8,1) ; //pin8 set as output(INPUT_M1-)
  pinMode (10,1); //pin10 set as output(ENABLE_M2)
  pinMode (9,1) ; //pin9 set as output(ENABLE_M1)
}

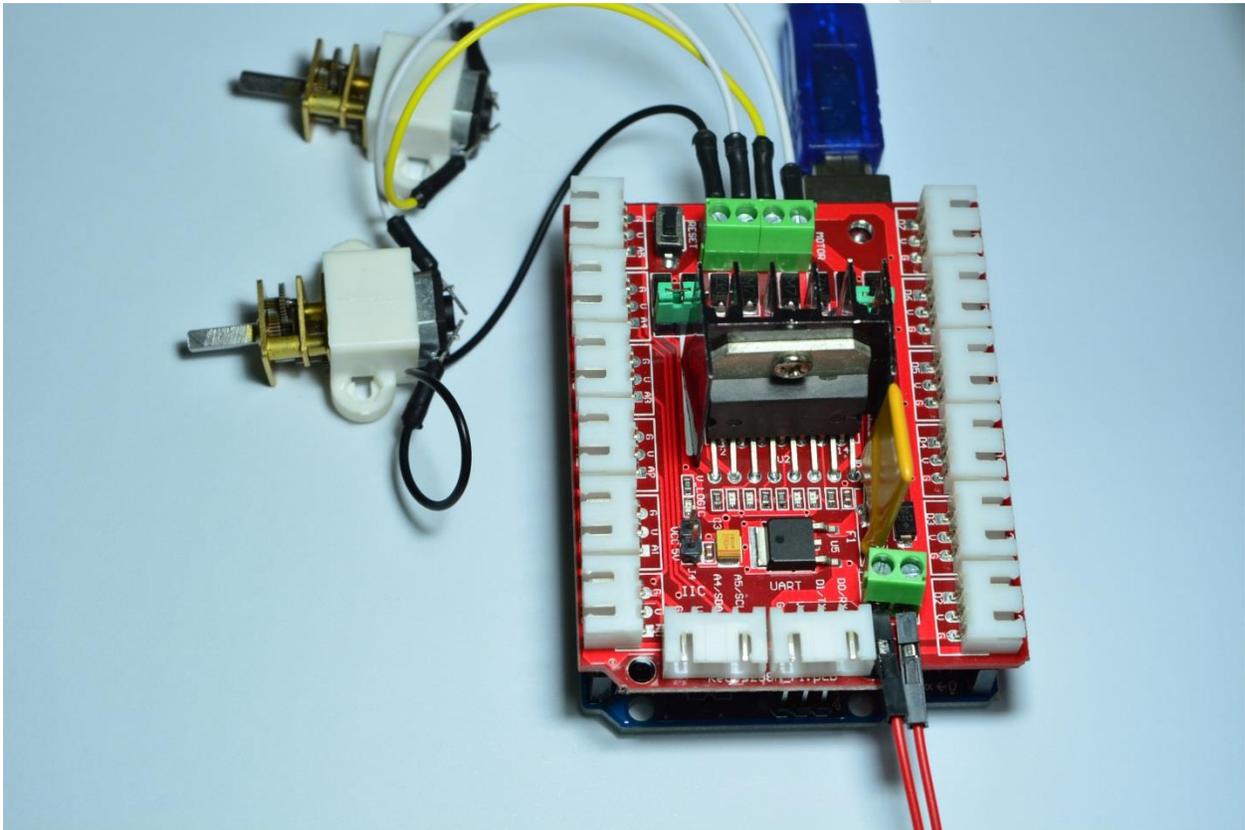
void loop ()
{
  digitalWrite (13,1) ; //OUTPUT_M2+ set as HIGH
  digitalWrite (12,0) ; //OUTPUT_M2- set as LOW
  digitalWrite (11,1) ; //OUTPUT_M1+ set as HIGH
  digitalWrite (8,0) ; //OUTPUT_M1- set as LOW
  analogWrite (10,255); //ENABLE_M2 set PWM to 255
  analogWrite (9,100) ; //ENABLE_M1 set PWM to 100
}
```

Wiring Diagram

There are two ways on how the motor driver shield works, first if the DC motor has the same voltage input (5V). Don't remove the jumper.



Second, if the DC motor has an external supply, the jumper must be removed, and find the terminal blocks with the label VS and ground.



Testing

1. Put the shield in the Arduino UNO, MEGA, or LEONARDO.
2. Type the sample program in your Arduino sketch then upload.
3. The pin13 and pin12 are control pin for Motor2(M2+ and M2-).
4. The pin11 and pin8 are control pin for Motor1(M1+ and M1-).
5. If the pin13 is high and pin12 is low, the direction of the motor must be forward.
6. If the pin13 is low and pin12 is high, the direction must be in opposite direction.
7. If the pin13 and pin12 are both high, the motor is in break condition or electronic stop.
8. If the pin13 and pin12 are both low, the motor stops like removing the supply.
9. The pin10 is the ENABLE pin of Motor2. It controls the speed of the motor, the range is about 0-255 PWM. The higher the value of PWM, the motor rotates faster. The lower the value of PWM, the motor rotation is slow.
10. The pin11 and pin8 have the same concept with pin13 and pin12. The pin10 has the same concept with pin9.