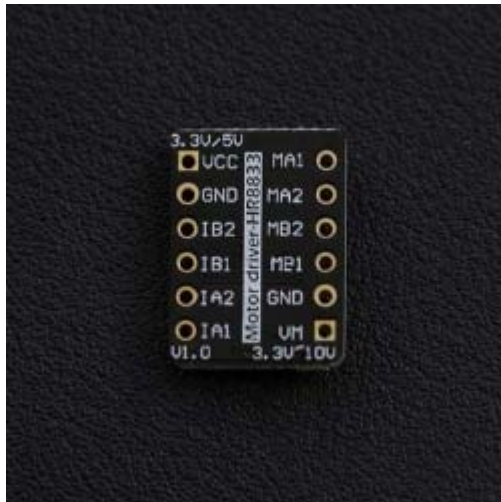




## Dual 1.5A Motor Driver - HR8833 SKU: DRI0040

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HR8833 Dual DC Motor Driver

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### Introduction

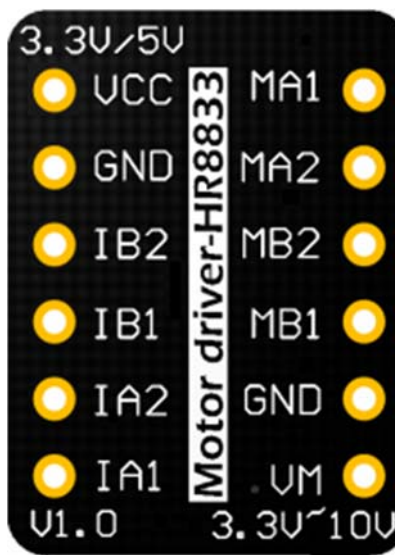
This is a ultra compact size Dual-H-Bridge dc motor driver (Based on HR8833), which could drive two way 1.5A DC brush motors up to 10V . It has the same footprint as your thumbnail suitable for projects with limited spaces.

Both sides of the module are desgined with standard XH2.54 pins, which allows you to plug it on a breadboard or prototype board.

## Specifications

- Logic Input Voltage (VCC): 3.3-5V
- Load Supply Voltage (VM): 3.3-10V
- Maximum Continuous Operating Current: 1500mA( Single)
- Support PWM speed control mode
- Maximum power dissipation: 25W (T = 75 degree Celsius)
- Working temperature:-20~85°C
- Module Size: 18\* 13mm/0.7\*0.5 inches

## Pin-out



### Pin mapping

Grade name	Functional	Description
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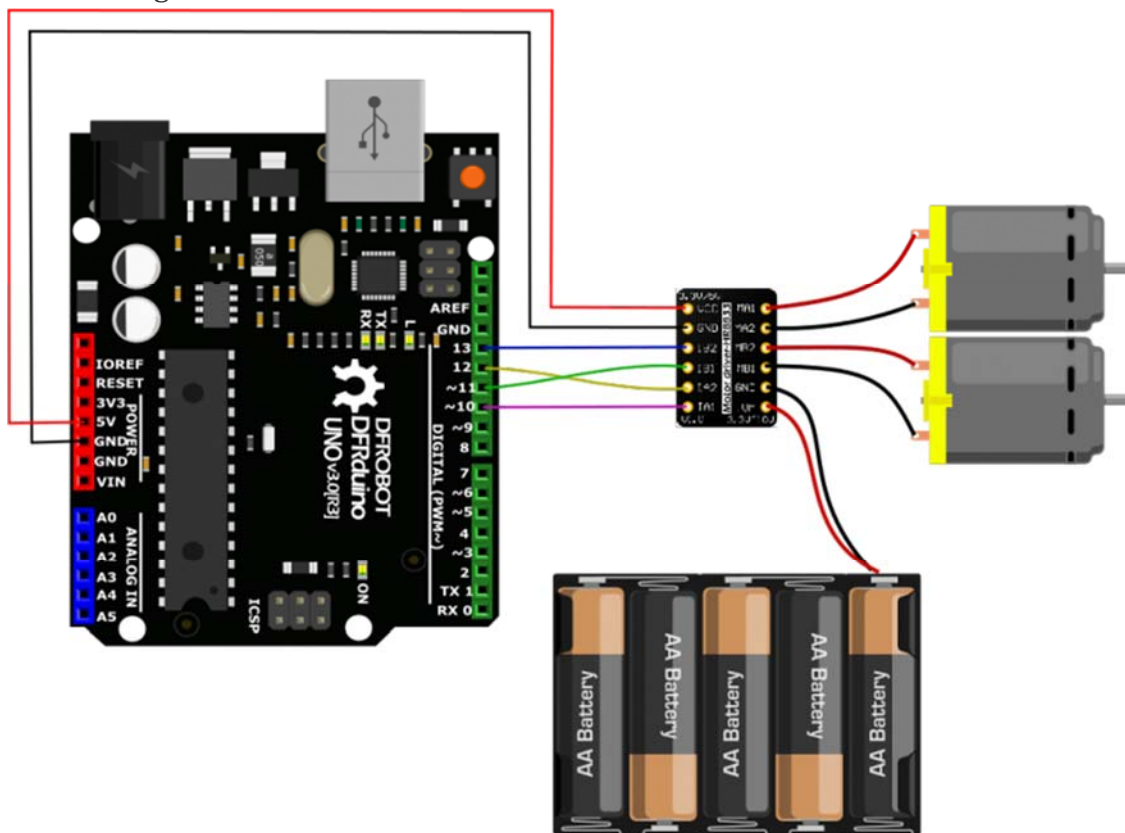
1	VCC	Power 3.3V-5V or IO port output high
2	GND	Negative power supply
3	IB2	B channel logic input 2
4	IB1	B channel logic input 1
5	IA2	A channel logic input 2
6	IA1	A channel logic input 1
7	VM	Motor drive power 3.3V-10V
8	GND	Negative power supply
9	MB1	B Output 1
10	MB2	B Output 2
11	MA2	A Output 2
12	MA1	A Output 1

# Tutorial

Ready

- **hardware**  
UNO x1  
Motor driver-HR8833 x1  
Several DuPont wire
- **software**  
Arduino IDE version 1.6.8 [click to download Arduino IDE](#)

## Connection Diagram



IA1<—>10  
IA2<—>12  
IB1<—>11  
IB2<—>13

## Control Method

The **IA1** and **IA2** input pins control the state of the **MA1** and **MA2** outputs; similarly, the **IB1** and **IB2** input pins control the state of the **MB1** and **MB2** outputs. Below table shows the logic.

ix1	ix2	Mx1	Mx2	Function
0	0	Z	Z	Coast/fast decay
0	1	L	H	Reverse
1	0	H	L	Forward
1	1	L	L	Brake/slow decay

The inputs can also be used for PWM control of the motor speed. When controlling a winding with PWM, when the drive current is interrupted, the inductive nature of the motor requires that the current must continue to flow. This is called recirculation current. To handle this recirculation current, the H-bridge can operate in two different states, fast decay or slow decay. In fast decay mode, the H-bridge is disabled and recirculation current flows through the body diodes; in slow decay, the motor winding is shorted.

To PWM using fast decay, the PWM signal is applied to one **Ix** pin while the other is held low; to use slow decay, one **Ix** pin is held high.

ix1	ix2	Function	Description
PWM	0	Forward PWM,fast decay	Speed = High duty-cycle
1	PWM	Forward PWM,slow decay	Speed = Low duty-cycle
0	PWM	Reverse PWM,fast decay	Speed = High duty-cycle
PWM	1	Reverse PWM,slow decay	Speed = Low duty-cycle

## Sample code

```
/*
 * @file Motor driver HR8833-Test.ino
 * @brief HR8833-Test.ino Motor control program
 *
 * control motor positive inversion
```

```
*
* @author lei.wu@dfrobot.com
* @version V1.0
* @date 2016-4-13
*/
const int IA1=10;
const int IA2=12;
const int IB1=11;
const int IB2=13;

void setup() {
    pinMode(IA1, OUTPUT);
    pinMode(IA2, OUTPUT);
    pinMode(IB1, OUTPUT);
    pinMode(IB2, OUTPUT);
}

void loop() {
    MA1_Forward(200); //Motor MA1 forward; PWM speed control
    delay(1000);
    MA2_Backward(200); //Motor MA1 backward; PWM speed control
    delay(1000);
}

void MA1_Forward(int Speed1) //fast decay; Speed = High duty-cycle
{
    analogWrite(IA1, Speed1);
    digitalWrite(IA2, LOW);
}

void MA2_Backward(int Speed1) //slow decay; Speed = Low duty-cycle
{
    int Speed2=255-Speed1;
    analogWrite(IA1, Speed2);
}
```

```
    digitalWrite(IA2,HIGH);  
}  
  
void MB1_Forward(int Speed1)  
{  
    analogWrite(IB1,Speed1);  
    digitalWrite(IB2,LOW);  
}  
  
void MB2_Backward(int Speed1)  
{  
    int Speed2=255-Speed1;  
    analogWrite(IB1,Speed2);  
    digitalWrite(IB2,HIGH);  
}
```

Result

Motor Reversing

Trouble shooting

More question and cool idea, visit [DFRobot Forum](#)