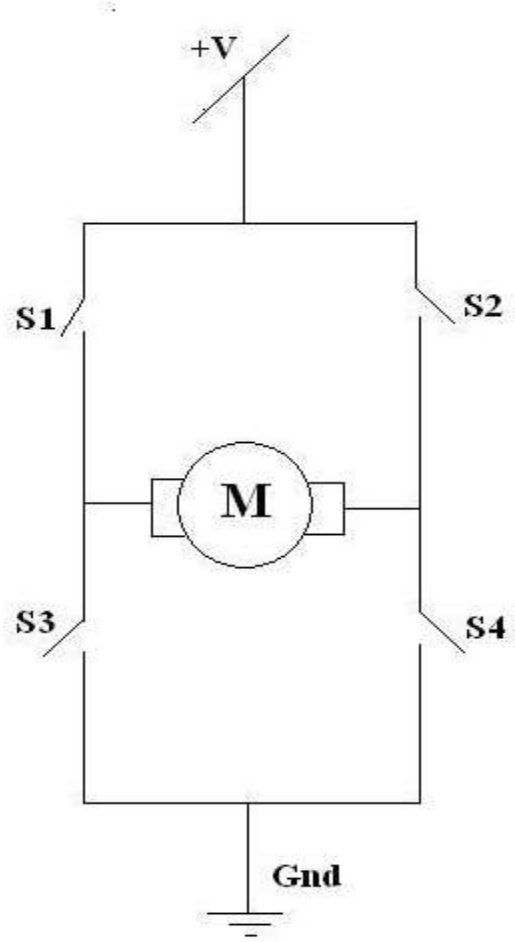
L293D MOTOR DRIVER IC

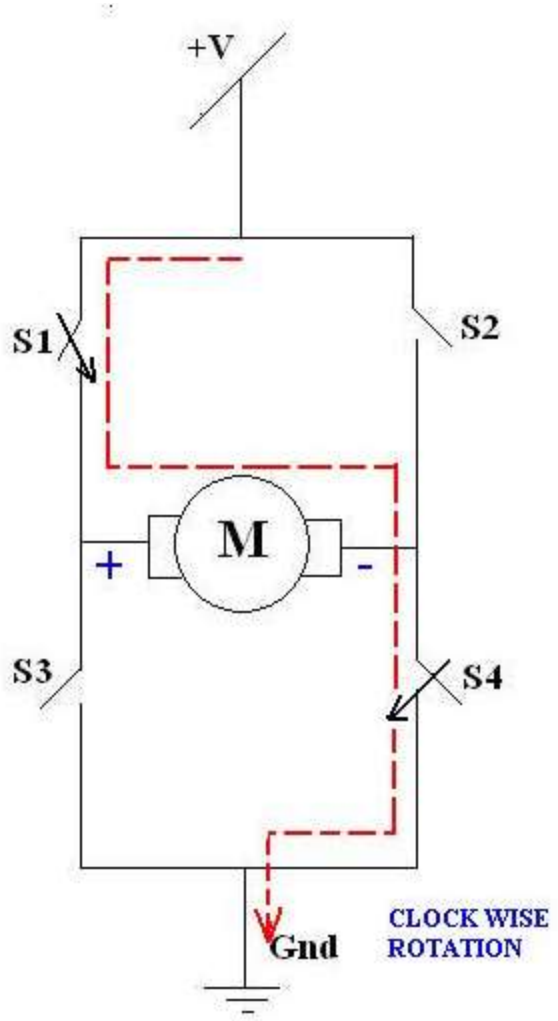
Motor Driver

- It is one of the most widely used dc motor driver IC and is available in 16 pin DIP package.
- Motor needs high current i/p signal which cannot be provided by microcontroller directly and so in between microcontroller and dc motor a motor driver IC is required for converting a low current control signal into a high current signal which can drive the dc motor.
- L293D is a dual H bridge IC and it performs the job of current amplification.
- Cheap and easy to use.
- Works well with the Microcontroller

H bridge using switches



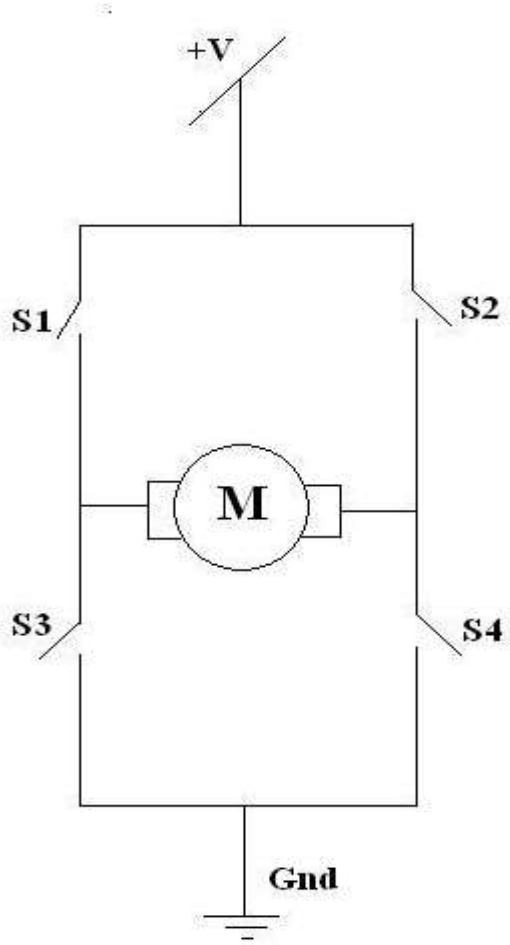
If switches S1, S4 are closed and S2, S3 are open then the motor will rotate in clockwise direction.



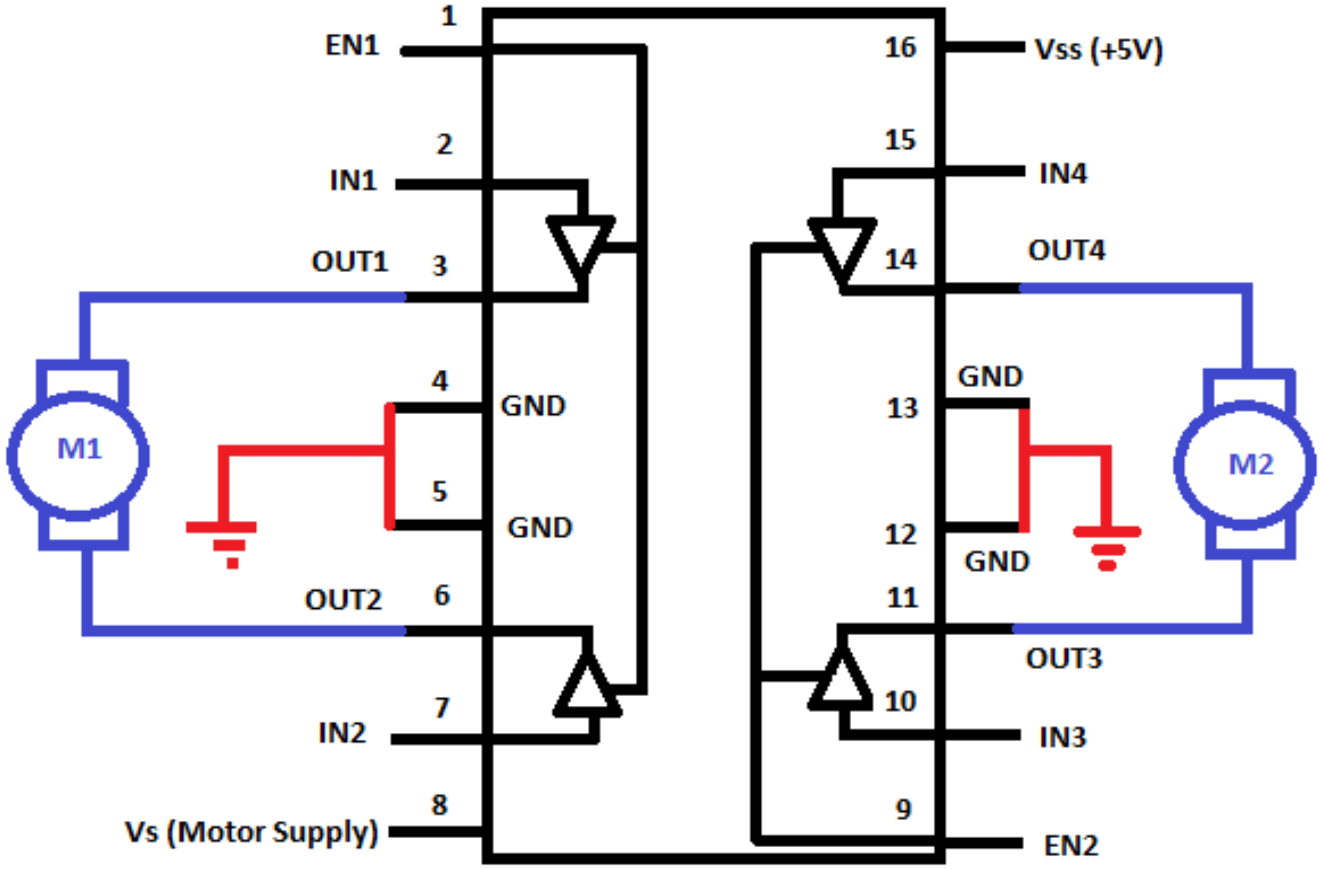
If S2, S3 are closed and S1, S4 are open then the motor will rotate in the anti clockwise direction.

If S2, S4 are closed and S1, S3 are open or vice versa the it will create a direct path b/w power supply and ground leading to short circuit condition and this must be avoided.

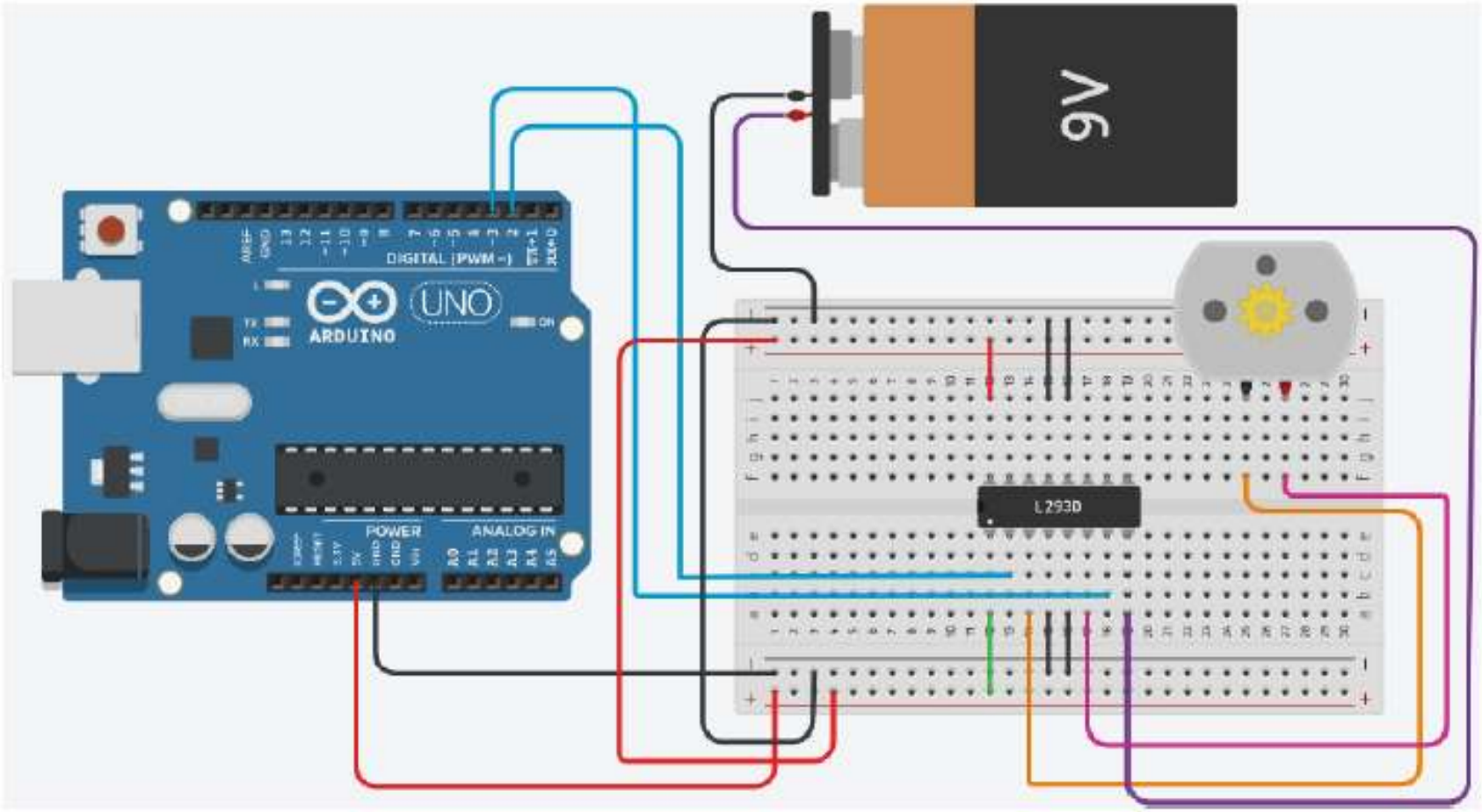
If S1, S2 are closed and S3, S4 are open or vice versa then there will be no difference in potential across the two ends of the motor and so it will not rotate.



Pin diagram of L293D motor driver IC



Programming Example



Code

Rotating Motor in One Direction Continuously

```
void setup() {
// put your setup code here, to run once:
pinMode(2,OUTPUT); // pin 2 configured as o/p
pinMode(3,OUTPUT); // pin 3 configured as o/p
}
void loop() {
// put your main code here, to run repeatedly:
// rotate the DC motor in one direction only
digitalWrite(3,HIGH);
digitalWrite(4,LOW);
}
```