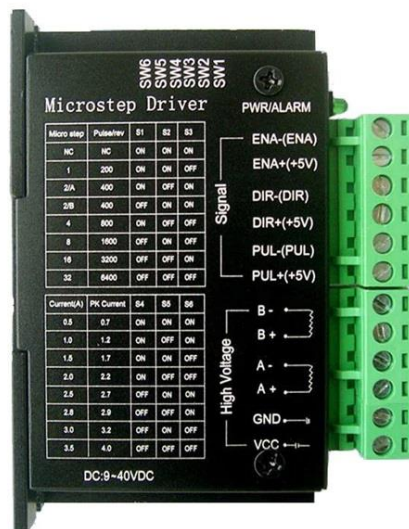


# TB67S109AFTG Stepper Motor Driver (4A ) with 32 Micro-stepping



TB67S109AFTG is 2nd generation micro-step stepping motor driver. This 4A drive have better performance than TB6600 5A stepper drive. It has micro-stepping capability up to 1/32 (compared to maximum of 1/16 for TB6600). It has low vibration and high efficiency and low heat generation. Suitable for drive stepping motor dynamic voltage 9V to 40V, the maximum drive current is less than 4A.

This drive uses the current loop subdivision control, the motor torque ripple is very small, low-speed running is very smooth. High-speed torque is much higher than other two-phase drives, high positioning accuracy. Widely used in the engraving machines, CNC machine tools, packaging machinery and other high resolution requirements on the device. NEMA17, NEMA23, NEMA24 and NEMA34 stepper motors work perfectly with this 4A Stepper Driver.

## Features

Rated voltage: DC 10V-40V

Rated output current:  $\pm 3A$  , peak 3.5A.

Selectable micro-stepping (1/1, 1/2, 1/4, 1/8, 1/16 and 1/32 step)

Optically isolated inputs

Over voltage, under-voltage, over-current, and short-circuit protection

High starting speed

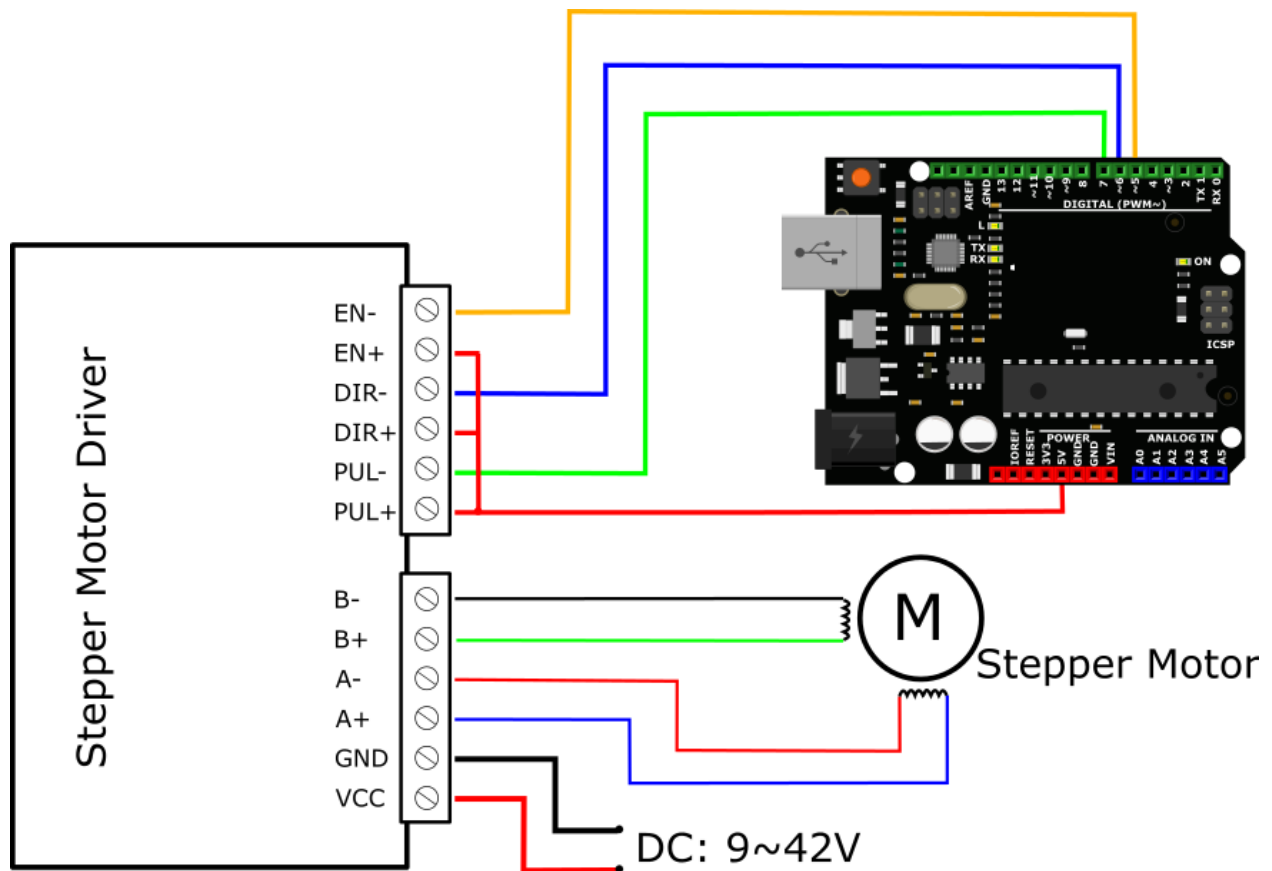
High-speed torque

Black Rugged All metallic Enclosure and Large Black Aluminum Heat Sink

Mounting Holes on Heat Sink for Mounting the Drive in Machine Panels

## Tutorial and connection diagram

### Connection Diagram



1. In this tutorial, we'll use a bipolar stepper motor, 1.8 step angle, 1.7A
2. Set current: 1.7A
3. Set Micro Step: 32
4. Connect a 9~42V DC power supply

**Up: OFF; Down: "ON"**

## Sample Code

```
int PUL=7; //define Pulse pin
int DIR=6; //define Direction pin
int ENA=5; //define Enable Pin
void setup() {
  pinMode (PUL, OUTPUT);
  pinMode (DIR, OUTPUT);
  pinMode (ENA, OUTPUT);
}

void loop() {
  for (int i=0; i<6400; i++) //Forward 5000 steps
  {
    digitalWrite(DIR,LOW);
    digitalWrite(ENA,HIGH);
    digitalWrite(PUL,HIGH);
    delayMicroseconds(50);
    digitalWrite(PUL,LOW);
    delayMicroseconds(50);
  }
  for (int i=0; i<6400; i++) //Backward 5000 steps
  {
    digitalWrite(DIR,HIGH);
    digitalWrite(ENA,HIGH);
    digitalWrite(PUL,HIGH);
    delayMicroseconds(50);
    digitalWrite(PUL,LOW);
    delayMicroseconds(50);
  }
}
```

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## Result

The stepper motor rotates 6400 steps (a cycle), and reverses 6400 steps (a cycle).

## Comments

- When "EN" is Low, the motor is in a free states (Off-line mode). In this mode, you can adjust the motor shaft position manually; when "EN" is High (Vacant), the motor will be in an automatic control mode.
- "Direction" is the motor direction signal pin,
- "PULSE" is the motor pulse signal pin. Once the driver get a pulse, the motor move a step.