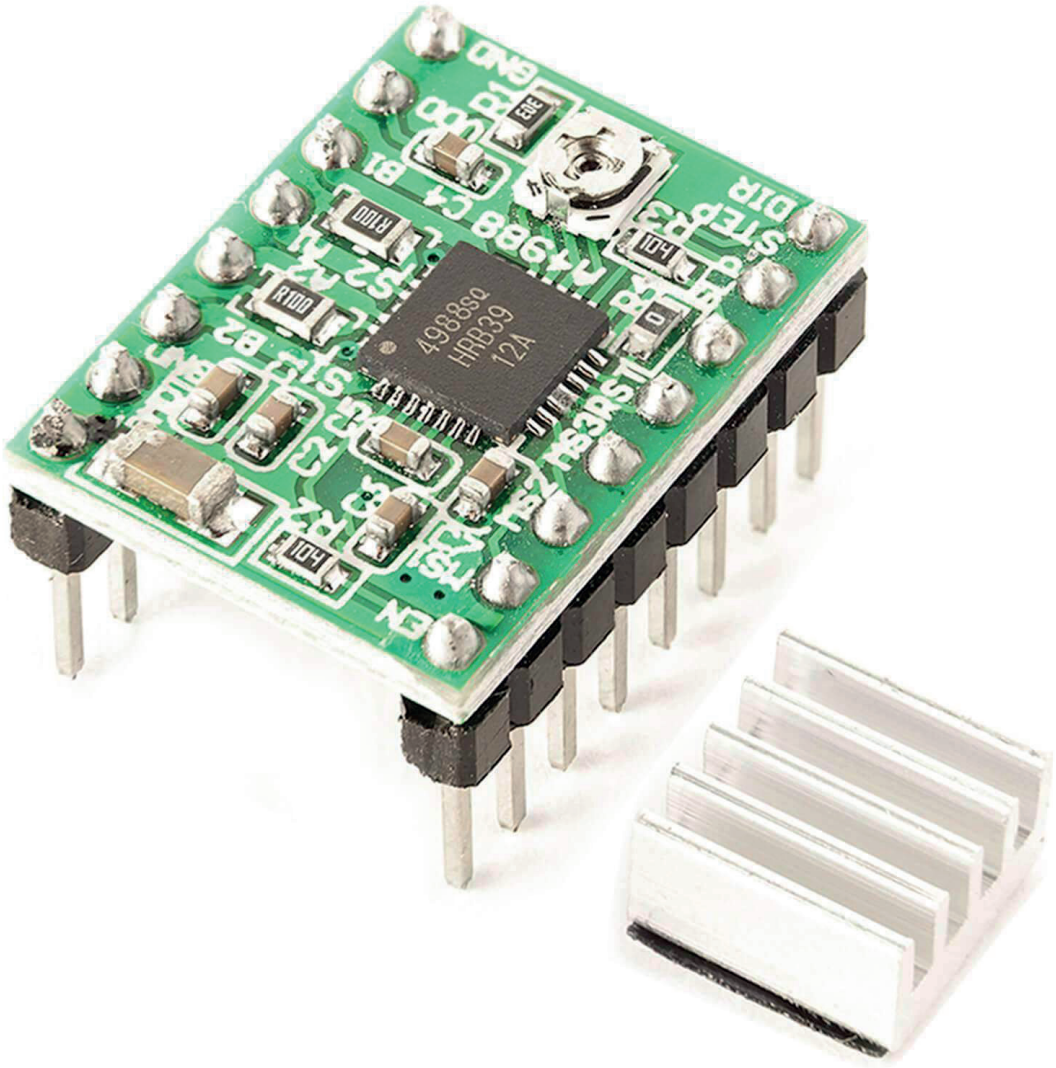
AZ-Delivery

Ihr Experte für Mikroelektronik!

A4988
Schrittmotor-Treiber-Modul
Datenblatt



Content:

1. Specifications

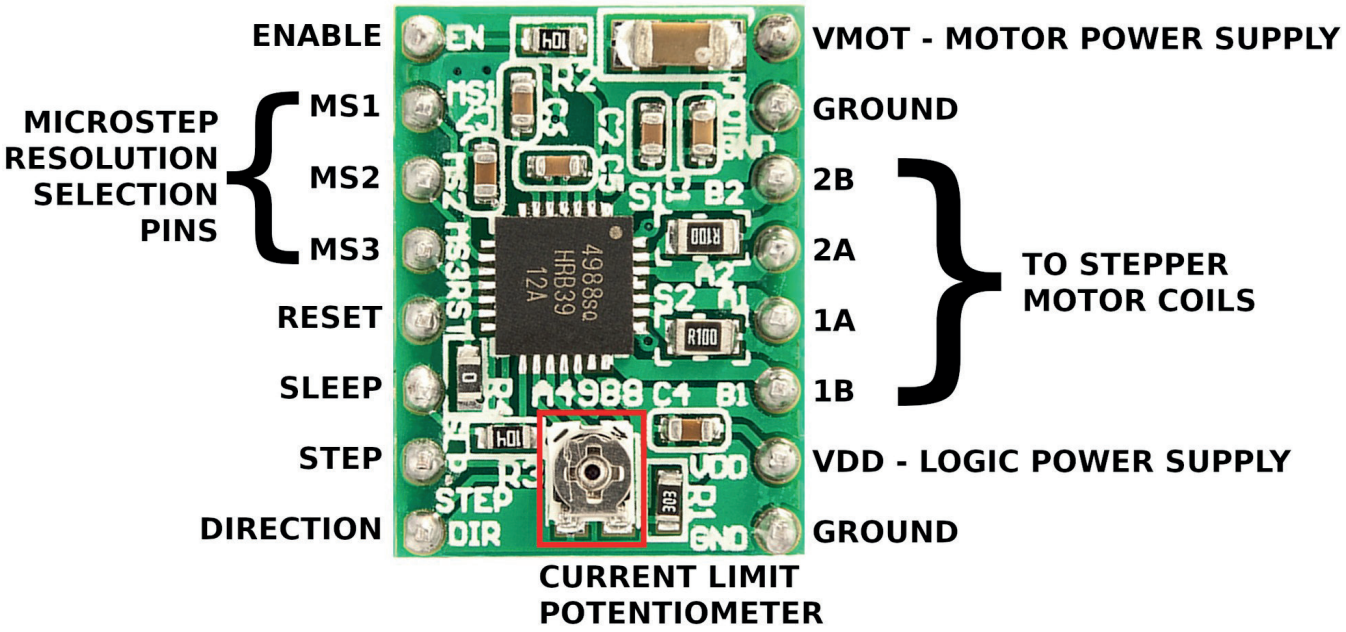
Min - Max. Logic Voltage	3V - 5.5V
Nominal Current per Phase	1A
Maximal Current per Phase	2A with passive cooling, alu Heatsink
Min - Max. Motor output Voltage	8V - 35V

The A4988 actually requires two power supply connections. One for logic pins, and one for motor power supply: VDD and GND is used for driving the internal logic of the driver, (from 3V to 5.5V). VMOT and GND are used for powering the motor, from 8V to 35V.
The motor supply requires an appropriate decoupling capacitor close to the board, capable of sustaining 4A current.

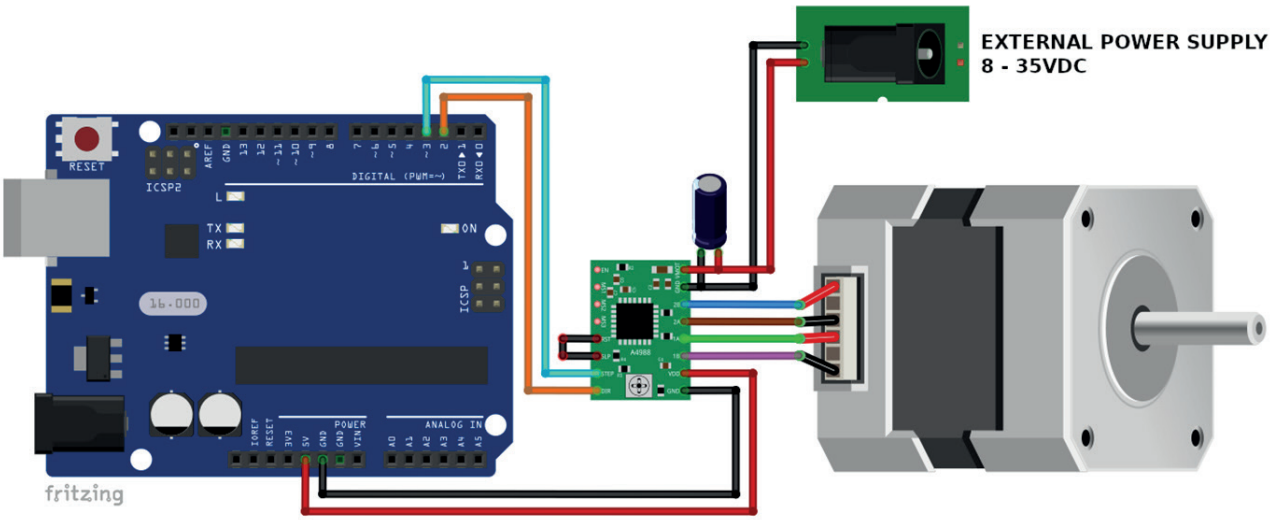
WARNING: This driver has low ESR ceramic capacitors on board, which makes it vulnerable to voltage spikes. In some cases, these spikes can exceed the 35V (maximum voltage rating of A4988), which can potentially permanently damage the board and/or the stepper motor!!!

One way to protect the driver from such spikes is to put a large 100µF electrolytic capacitor (or at least 47µF) across the power supply pins of the motor.

2. Pinout


ENABLE
MICROSTEP RESOLUTION SELECTION PINS
MS1
MS2
MS3
RESET
SLEEP
STEP
DIRECTION
VMOT - MOTOR POWER SUPPLY
GROUND
2B
2A
1A
1B
TO STEPPER MOTOR COILS
VDD - LOGIC POWER SUPPLY
GROUND
CURRENT LIMIT POTENTIOMETER
EN
MS1
MS2
MS3
RST
SLP
STEP
DIR
A4988
VDD
GND
B2
A2
A1
B1
C4
S1
S2
R100
4988a
HRB39
12A

3. Connection Diagram



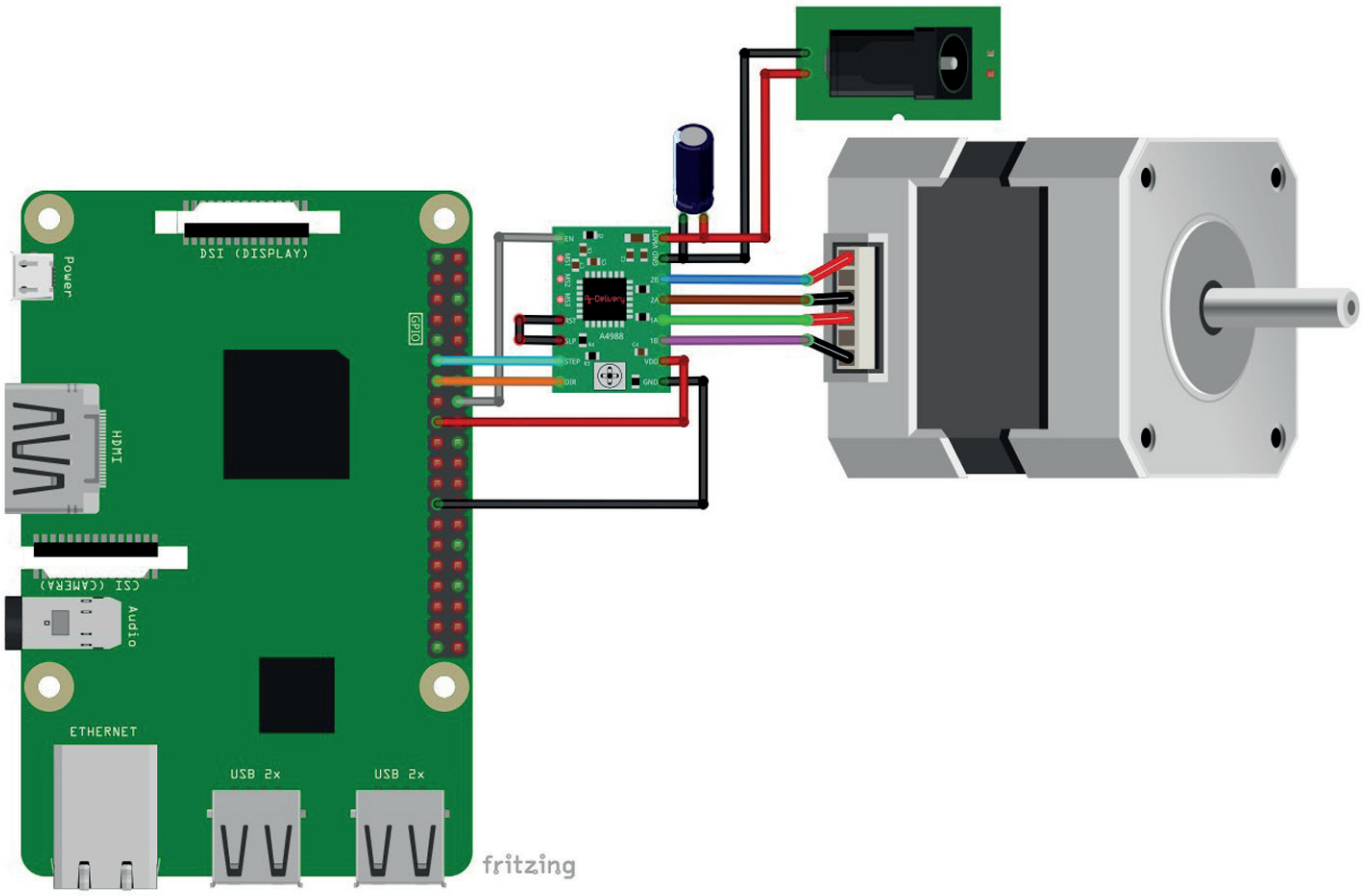
Driver Pin	Microcontroller Pin	Wire Color
VDD	5V	Red Wire
GND	GND	Black Wire
STEP	D3	Cyan Wire
DIR	D2	Orange Wire

Driver Pin	External Power Supply	Wire Color
VMOT	+ of external power supply	Red Wire
GND	GND of external power supply	Black Wire

Connect RST pin to the SLEEP pin to keep the driver enabled (Black wire).

REMEMBER to put a large 100µF decoupling electrolytic capacitor across motor power supply pins, as close to the board as possible, like on connection diagram on page 5.

WARNING: Connecting or disconnecting a stepper motor while the driver is powered may damage the driver!!!



Driver Pin	Microcontroller Pin	Physical Pin	Wire Color
VDD	3V3	17	Red Wire
GND	GND	30	Black Wire
STEP	GPIO17	11	Cyan Wire
DIR	GPIO27	15	Orange Wire
EN	GPIO23	16	Gray Wire

Driver Pin	External Power Supply	Wire Color
VMOT	+ of external power supply	Red Wire
GND	GND of external power supply	Black Wire

Connect RST pin to the SLEEP pin to keep the driver enabled (Black wire).

REMEMBER to put a large 100µF decoupling electrolytic capacitor across as close to the board as possible, like on connection diagram on page 7.

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