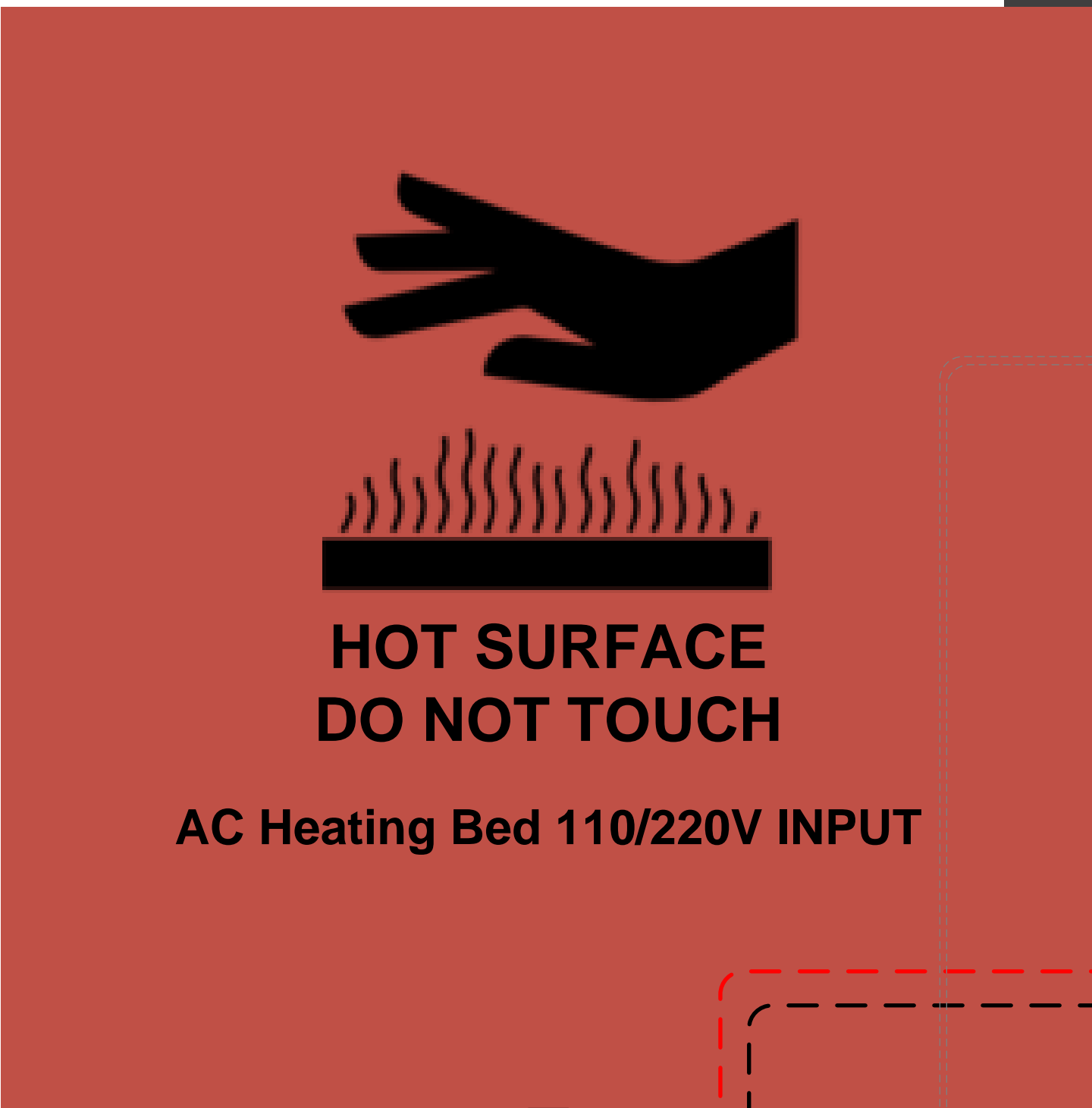
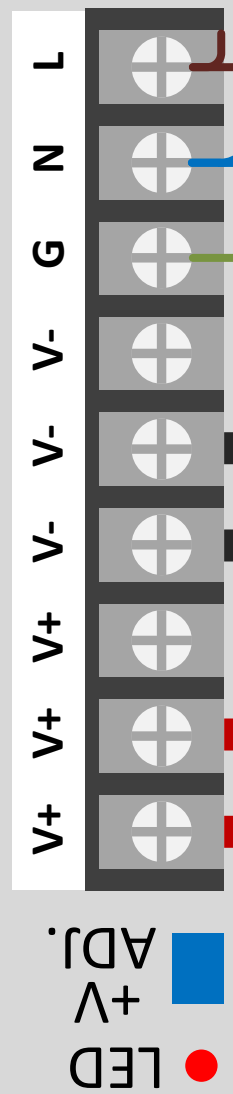
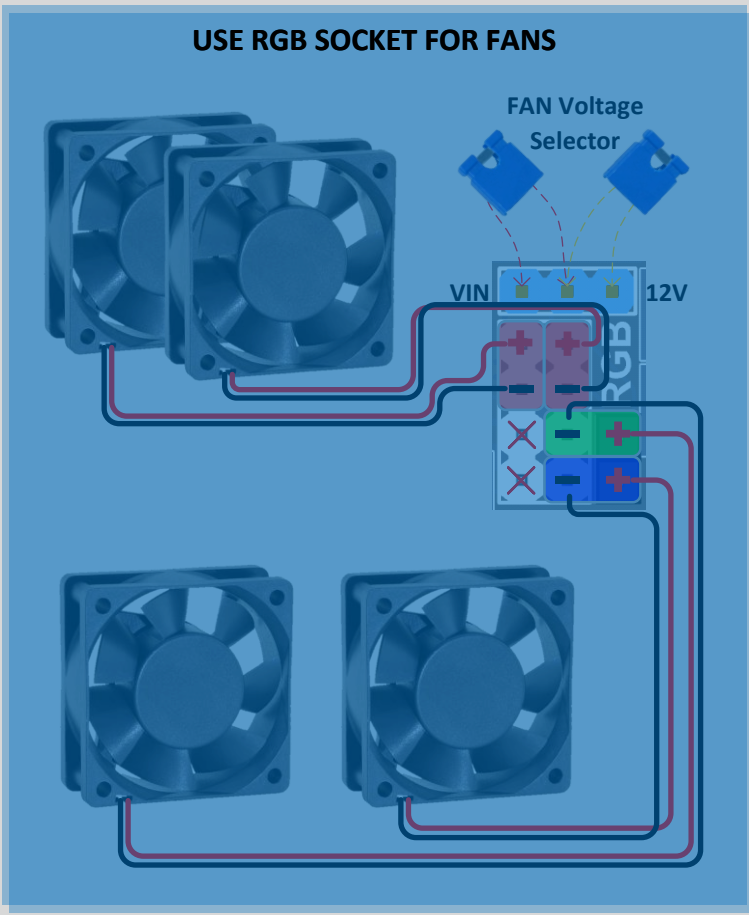
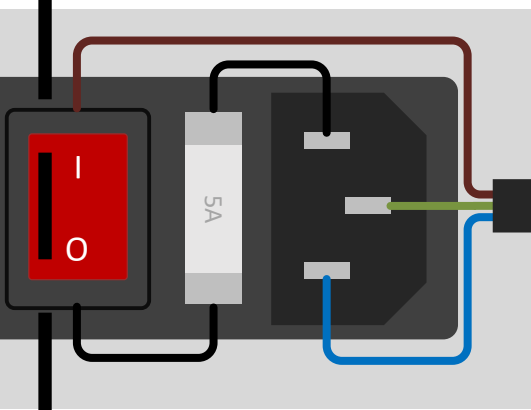


AC Heating Bed: If you use AC hot bed, you can get faster heating speed and lower PSU cost. But you need to add an SSR to control it, you can connect as shown in the dotted basket.



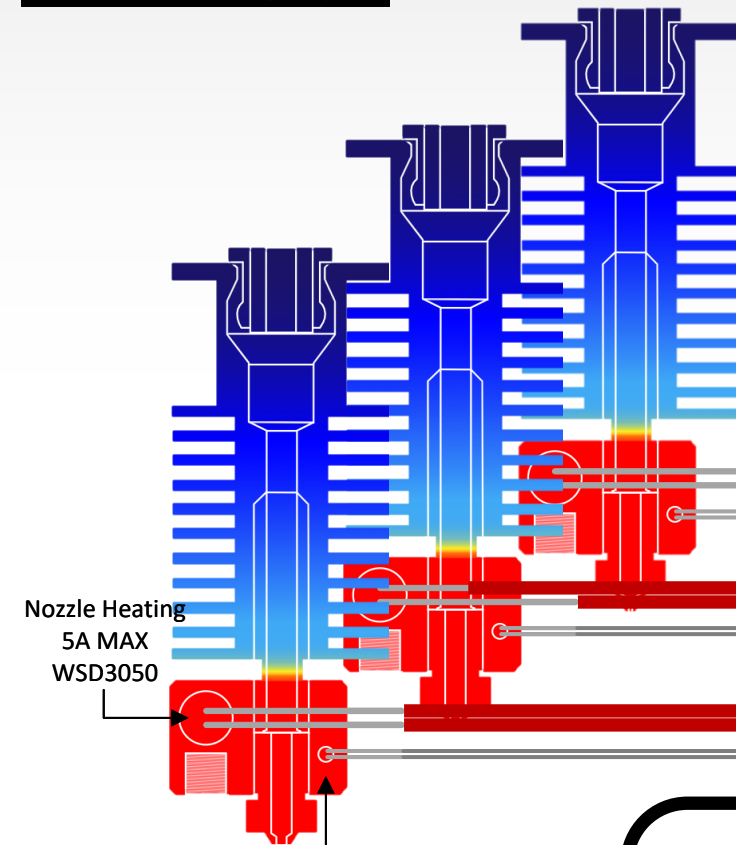
DC Heating Bed 24V INPUT 15A MAX



Spider V2.2 Wiring diagram

—By Eli Wong

More Information: wiki.fysetc.com/spider



Temperature Sensor
NTC/PT100/Thermocouple(Need AD597 add on)
3.3V 4.7K(0.1%) Pull Up

Install this jumper cap(pin1&pin2) to use internal DC5V, close the other two(pin2&pin3) to use USB5V(recommend only for debug).

If sensorless homing is required on an axis, install a jumper on the corresponding pins here

The markings of EXP1 and EXP2 may be different from those of some displays, if it cannot be displayed normally, please try to reverse EXP1 and EXP2 if the program is correct.

SD Pins Out: You can use the SD Card in a farther position by the SD module, but it is not recommended to exceed 30cm.

USB Pins Out: used to connect the Raspberry Pi inside the printer via USB.

CANBUS Pins Out: CANBUS shares pins with LCD-D6 (PDO/RX), LCD-D7 (PD1/TX) (in EXP2).

LCD SUPPORT:
• FYSETC mini12864 — ✓ TESTED
• FYSETC RRLCD2004 — ✓ TESTED
• FYSETC GLCD12864 — ✓ TESTED
• FYSETC Touch LCD — ✓ TESTED
• FYSETC TFT81050 — ✓ TESTED

With "PWM pin" (PA2 in the Y+ socket) the Bltouch is controlled to move up and down. With the "SIG pin" the Bltouch will tell the controller trigger or not, generally use the "Z-min" pin(PA0). The power supply of Bltouch is easily connected from the Z+ socket, and the jumper cap needs to be connected to the 5V side. You can also choose to supply power from X+ or Y+, but you need to change the SMD jumper at the bottom (cut off 3.3V, and solder the middle pad with 5V with a soldering iron).

"Z+" can only be used as an input, because there is a conversion circuit that converts a high voltage signal (24V /5V) into a low voltage signal (3.3V), so it is recommended to connect a proximity sensor here, such as PL-08N.

Connect to the NC(normally closed), the signal is **low** when it is not triggered.

Connect to the NC(normally closed), the signal is **high** when it is triggered.

Connect to the NC(normally closed), the signal is **high** when it is not triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

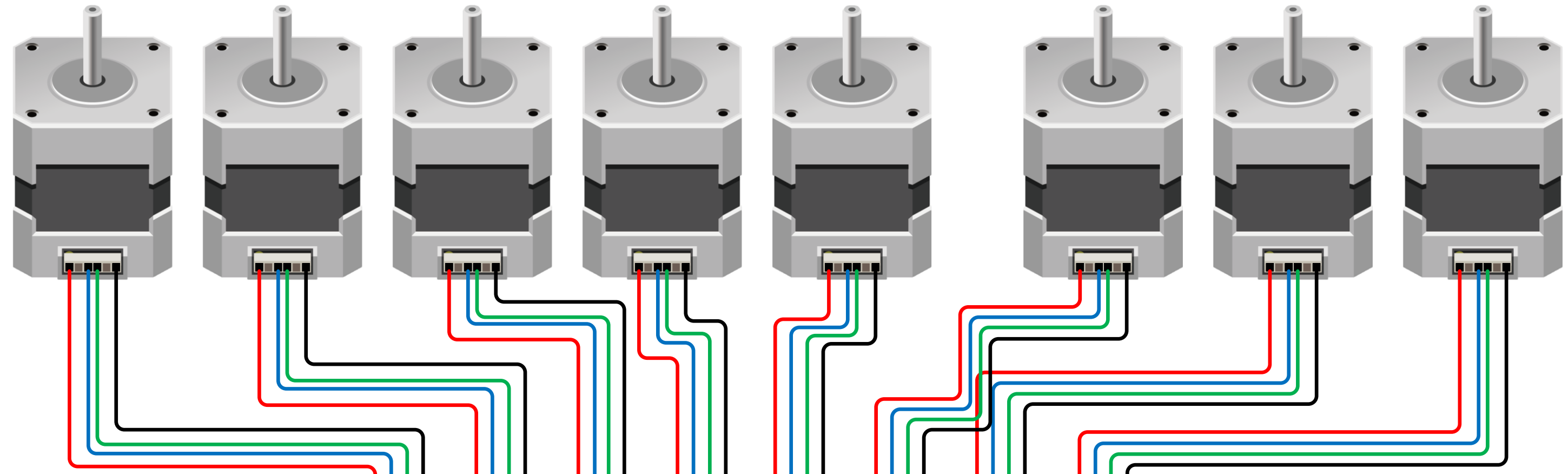
Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.



Temperature Sensor
NTC/PT100/Thermocouple(Need AD597 add on)
3.3V 4.7K(0.1%) Pull Up

Install this jumper cap(pin1&pin2) to use internal DC5V, close the other two(pin2&pin3) to use USB5V(recommend only for debug).

If sensorless homing is required on an axis, install a jumper on the corresponding pins here

SD Pins Out: You can use the SD Card in a farther position by the SD module, but it is not recommended to exceed 30cm.

USB Pins Out: used to connect the Raspberry Pi inside the printer via USB.

CANBUS Pins Out: CANBUS shares pins with LCD-D6 (PDO/RX), LCD-D7 (PD1/TX) (in EXP2).

LCD SUPPORT:
• FYSETC mini12864 — ✓ TESTED
• FYSETC RRLCD2004 — ✓ TESTED
• FYSETC GLCD12864 — ✓ TESTED
• FYSETC Touch LCD — ✓ TESTED
• FYSETC TFT81050 — ✓ TESTED

With "PWM pin" (PA2 in the Y+ socket) the Bltouch is controlled to move up and down. With the "SIG pin" the Bltouch will tell the controller trigger or not, generally use the "Z-min" pin(PA0). The power supply of Bltouch is easily connected from the Z+ socket, and the jumper cap needs to be connected to the 5V side. You can also choose to supply power from X+ or Y+, but you need to change the SMD jumper at the bottom (cut off 3.3V, and solder the middle pad with 5V with a soldering iron).

"Z+" can only be used as an input, because there is a conversion circuit that converts a high voltage signal (24V /5V) into a low voltage signal (3.3V), so it is recommended to connect a proximity sensor here, such as PL-08N.

Connect to the NC(normally closed), the signal is **low** when it is not triggered.

Connect to the NC(normally closed), the signal is **high** when it is triggered.

Connect to the NC(normally closed), the signal is **high** when it is not triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

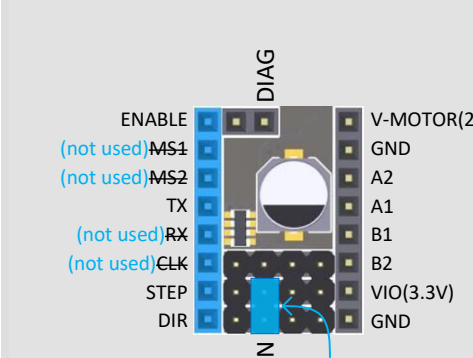
Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

Connect to the NC(normally closed), the signal is **low** when it is triggered.

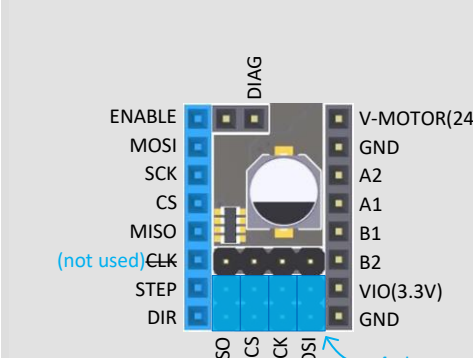
USE FYSETC TMC 2209 V3.1



PDN: It is connected to TX for communication between TMC and MCU, using single wire. The jumper cap shown in the figure must be setted before the drive module install.

DIAG: It is used to go home without sensing, while ensuring that the jumper corresponding to the limit is in the closed state.

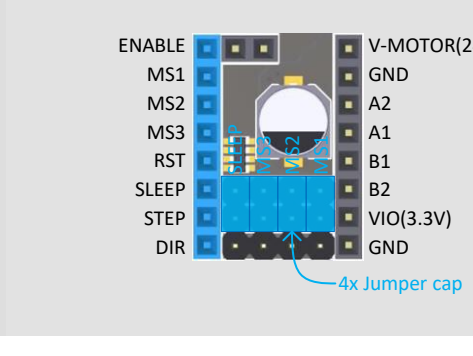
USE FYSETC 2130/5160/5161



(SPI4 used for TMC driver SPL/CS and PDN share pins)

DIAG: It is used to go home without sensing, while ensuring that the jumper corresponding to the limit is in the closed state.

USE 4988 or 4988like driver



Connect the Raspberry Pi to Spider

The spider provides a serial port for connecting to the Raspberry Pi or WiFi module, and this interface has a strong enough (8A MAX) 5V power supply. In order to use the only hardware serial port of the Raspberry Pi, you need to disable the console function and map the hardware serial port to GPIO14 and GPIO15.

You can refer here:

```
sudo raspi-config
=> Interfacing Option
=> Serial
=> NO
=> YES
sudo nano /boot/config.txt
=> add this line:
dtoverlay=pi3-disable-bt
=> then
sudo reboot
sudo nano /boot/cmdline.txt
=> remove the word phase
"console=serial0,115200" or
"console=ttyAMA0,115200"
sudo reboot
```

AWG Wire Gauges Current Ratings

AWG	Normal	MAX
26	0.506	0.577
25	0.641	0.731
24	0.808	0.921
23	1.022	1.165
22	1.28	1.460
21	1.6	1.9
20	2.0	2.3
19	2.6	2.9
18	3.2	3.7
17	4.1	4.7
16	5.2	5.9
15	6.5	7.4
14	8.2	9.4
13	10.4	11.8
12	13.1	14.9
11	16.5	18.8
10	20.8	23.7