industrial grade

Ethernet interface Mach3 motion control card

BSMCI14E Instructions for use

BITSENSOR.COM

2016

directory index

Parameter Description

Order model:BSMCI14E

Pulse frequency: 200K (maximum) / axis

Pulse Width: Adaptive

Number of linkage axes: 4

Power supply: 5V DC 5W power

Input and output terminal power supply: 12V~36V DC

Output terminal drive capability: 100mA

Interface type: Ethernet interface

Limit switch: support

Reference point switch: support

Automatic reference point return: support

Tool setting: support

External control switch: support

Electronic handwheel: support

Software: Mach3 version 3.XXX

system power

The operation of the control board requires a 5V DC power supply. The power requirements are as follows:

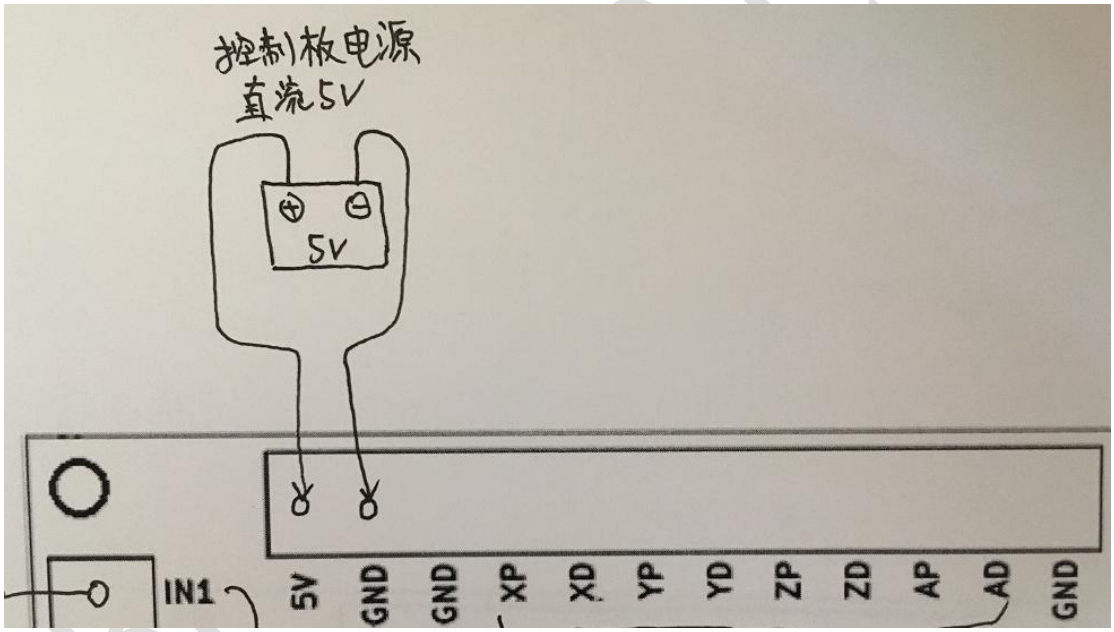
Voltage: DC 5V

Working current: 200mA

Peak current: 500mA

(You can use the USB port of the computer to lead out, or buy a 5V power supply with a power of 5W)

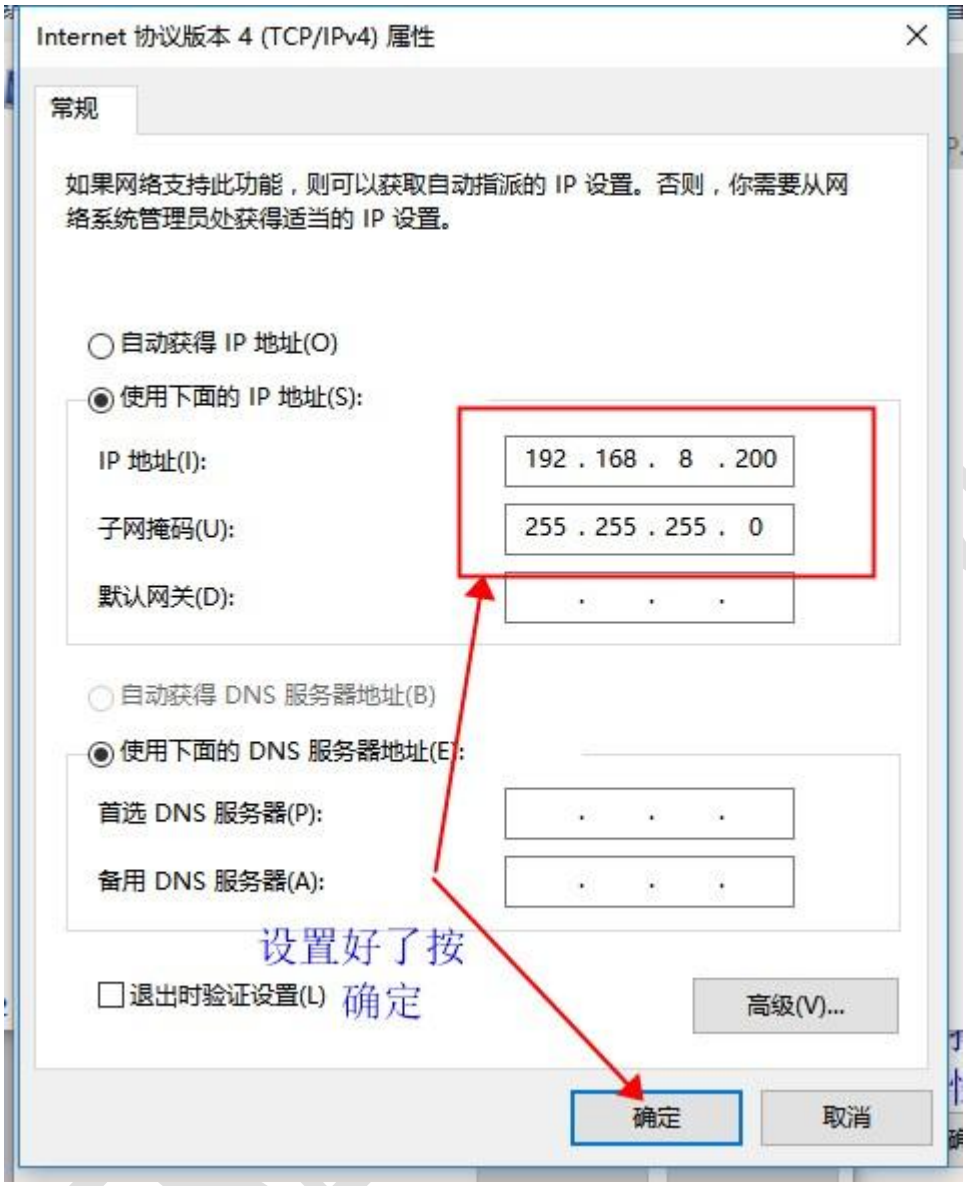
The wiring between the power supply and the control board is as follows:



Internet connection

Use the network cable that comes with the card, plug one end into the network port of the control card, and the other end into the computer network port.

The computer Ethernet adapter is configured as follows:

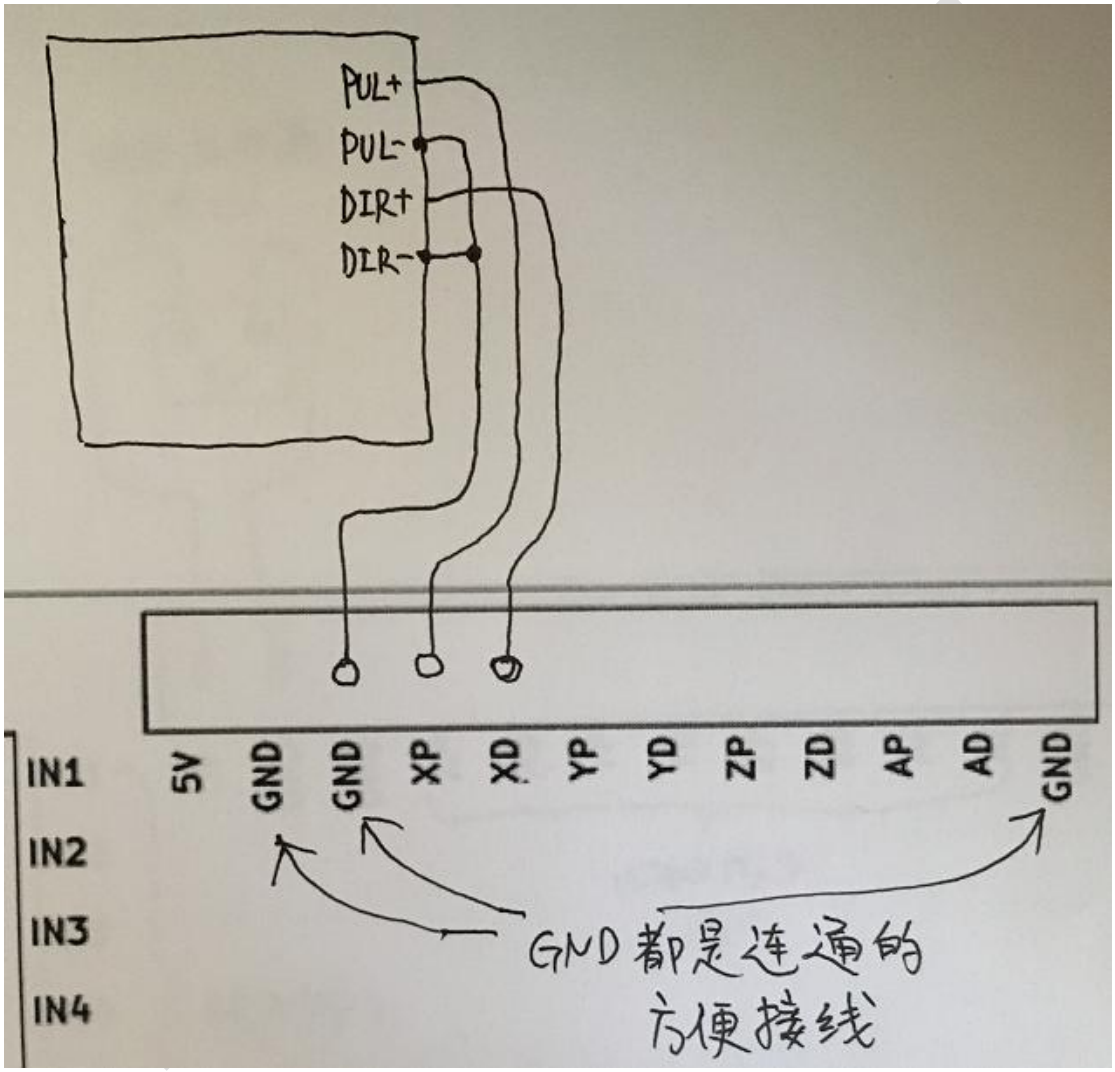

Internet 协议版本 4 (TCP/IPv4) 属性
常规
如果网络支持此功能，则可以获取自动指派的 IP 设置。否则，你需要从网络系统管理员处获得适当的 IP 设置。
自动获得 IP 地址(O)
使用下面的 IP 地址(S):
IP 地址(I): 192 . 168 . 8 . 200
子网掩码(U): 255 . 255 . 255 . 0
默认网关(D):
自动获得 DNS 服务器地址(B)
使用下面的 DNS 服务器地址(E):
首选 DNS 服务器(P):
备用 DNS 服务器(A):
设置好了按
确定
退出时验证设置(L)
高级(V)...
确定
取消

Motor drive module

The control board can be connected to various stepper motor drive modules and servo motors that support pulse/direction control mode

drive module.

Common cathode connection is usually used for wiring. Take the X-axis motor as an example, the wiring is as follows:



There are multiple GND terminals on the control card, and they are all connected. In this way, it is possible to facilitate the electrical

machine driver connection. Because of the common cathode connection method, many wires need to be connected to the GND terminal.

The control card also supports common anode connection. But not recommended. Because there is only one 5V terminal, it is not easy to wire.

The above is the part that must be connected. In addition, the control card can also choose to connect limit switches,

Control switches, inverters, relays and other external devices.

I/O terminal power supply

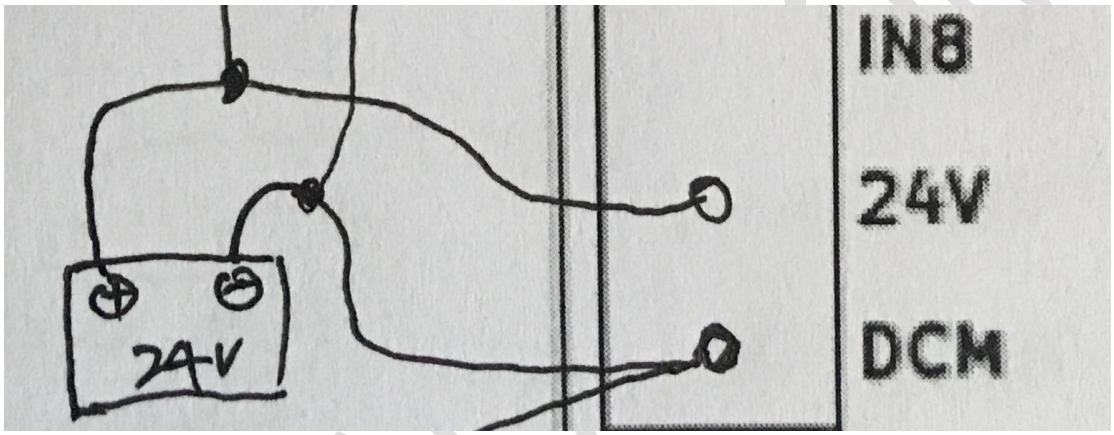
To connect limit switches, control switches, or drive relays, signal lights and other equipment, you need to prepare a

Input and output terminal power supply. The power requirements are as follows:

Voltage: DC 12V~36V (recommended 24V, the best versatility)

Power: usually within 10W, depending on the power consumption of external devices

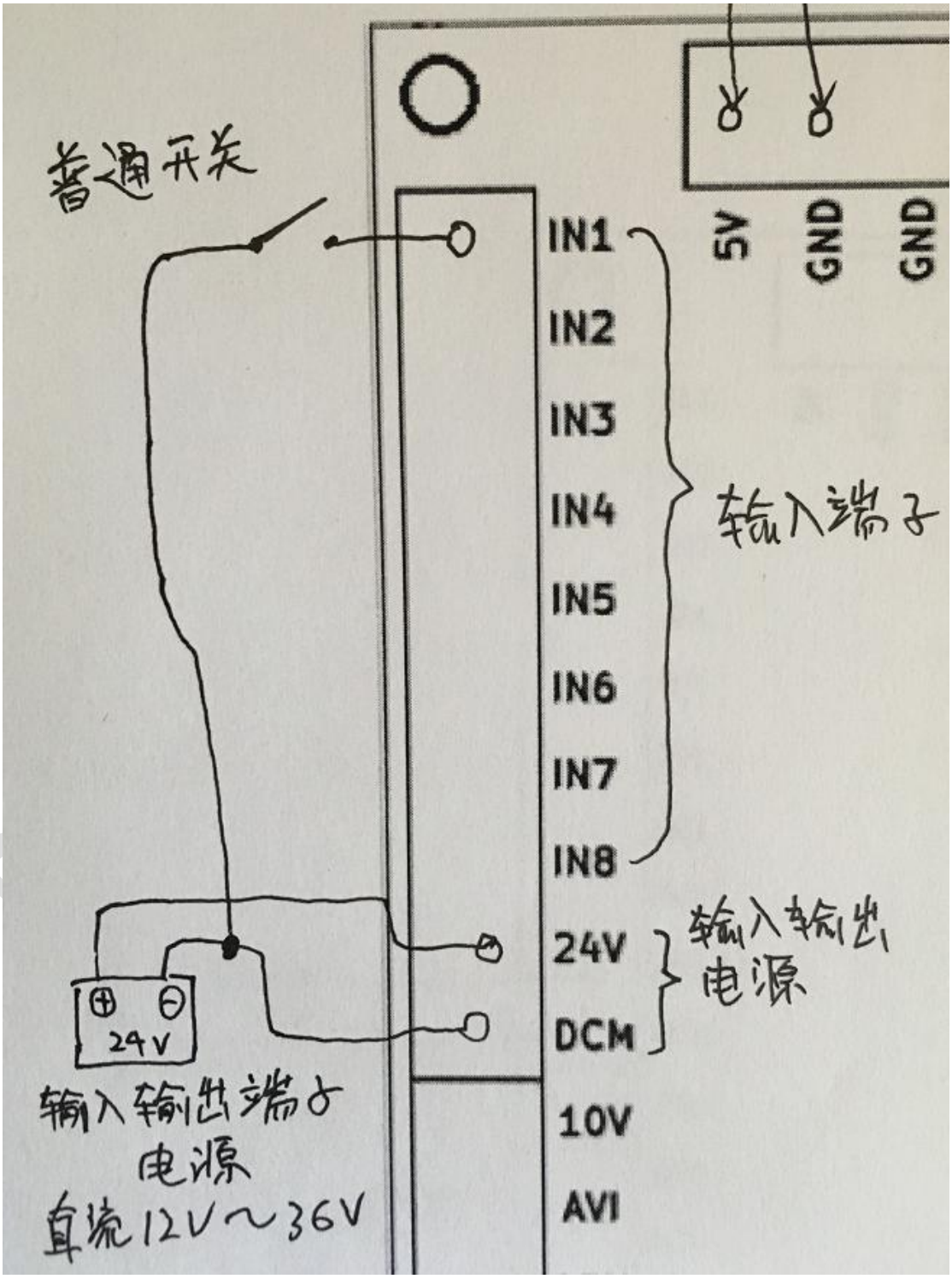
The power wiring of the input and output terminals is as shown in the figure below:



mechanical limit switch

Mechanical limit switches use normally open contacts. The connection method is as follows:

(In addition, the connection method of the control switch of other various machines is the same)

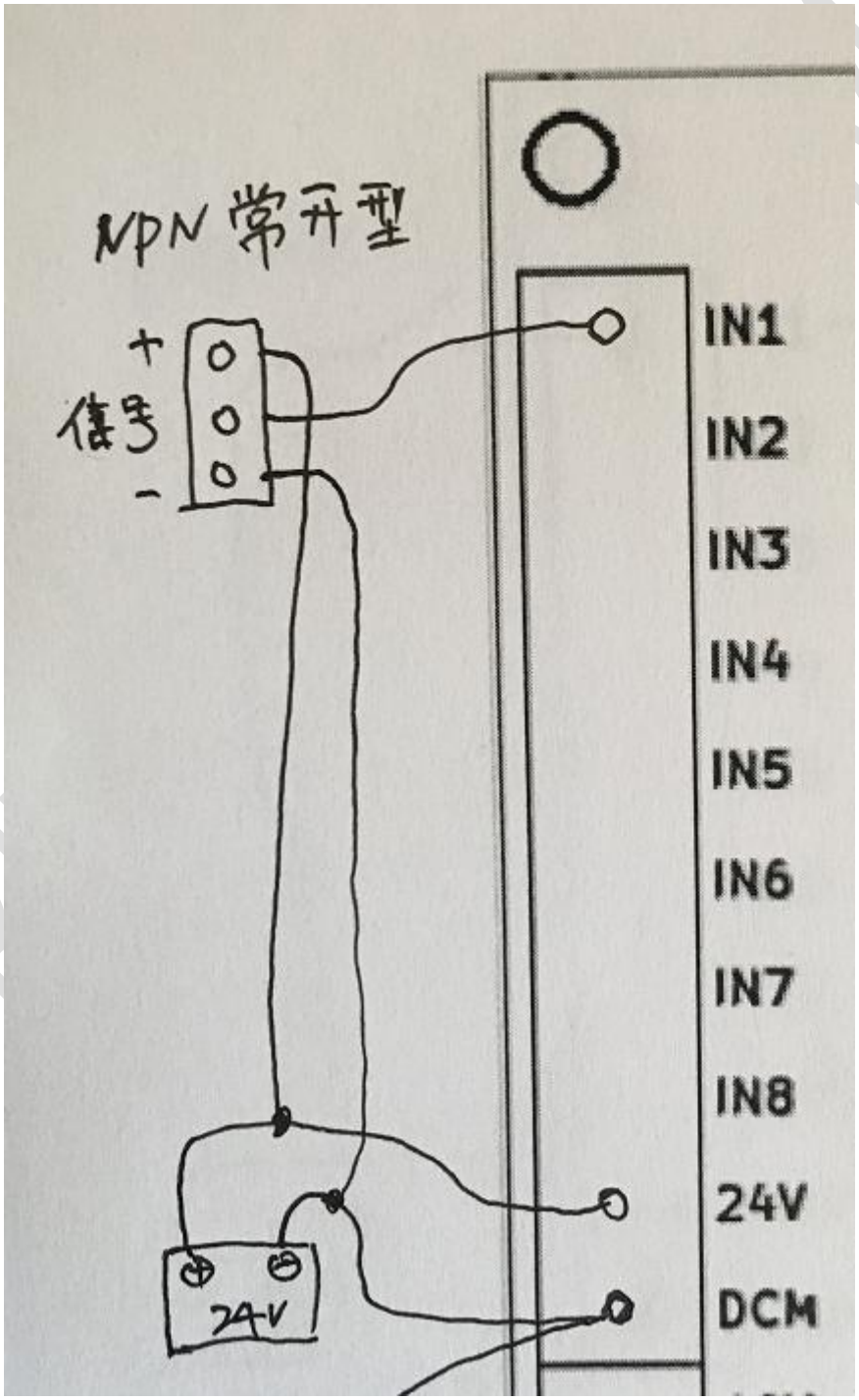


Electronic limit switch

The limit switch can adopt various electronic limit switches. Such as photoelectric switch, electromagnetic induction switch, etc. model

Please choose Choose 3-wire NPN normally open type. Because this switch can be connected in parallel, the wiring is convenient.

The wiring is as follows:



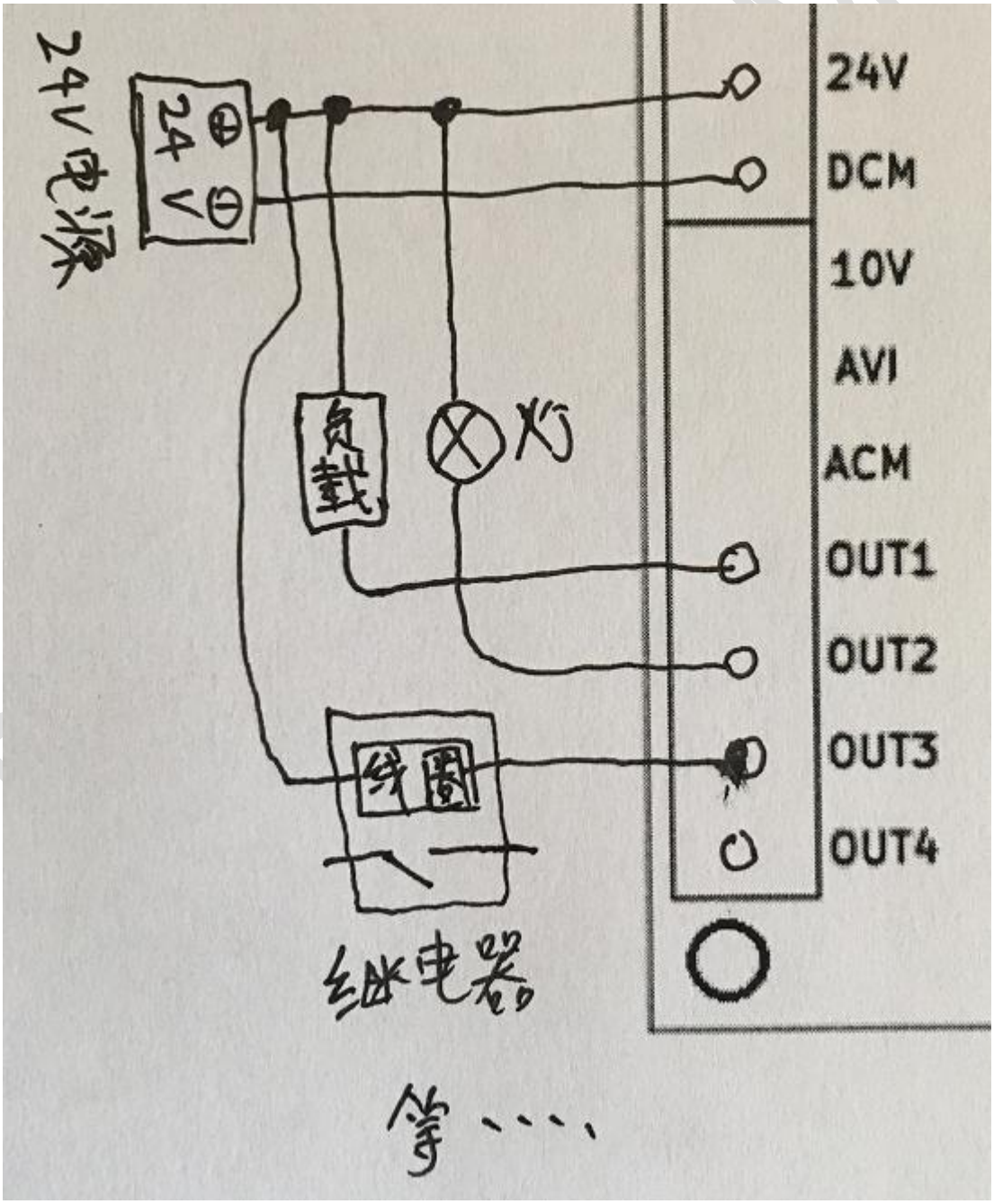
switch output

The control board has 4 switch output terminals. Can drive 100mA load equipment. Usually used to drive

External devices such as relays and signal lamps. Relays and signal lamps usually use 24V DC models (following input

Input and output terminal power keeps matching)

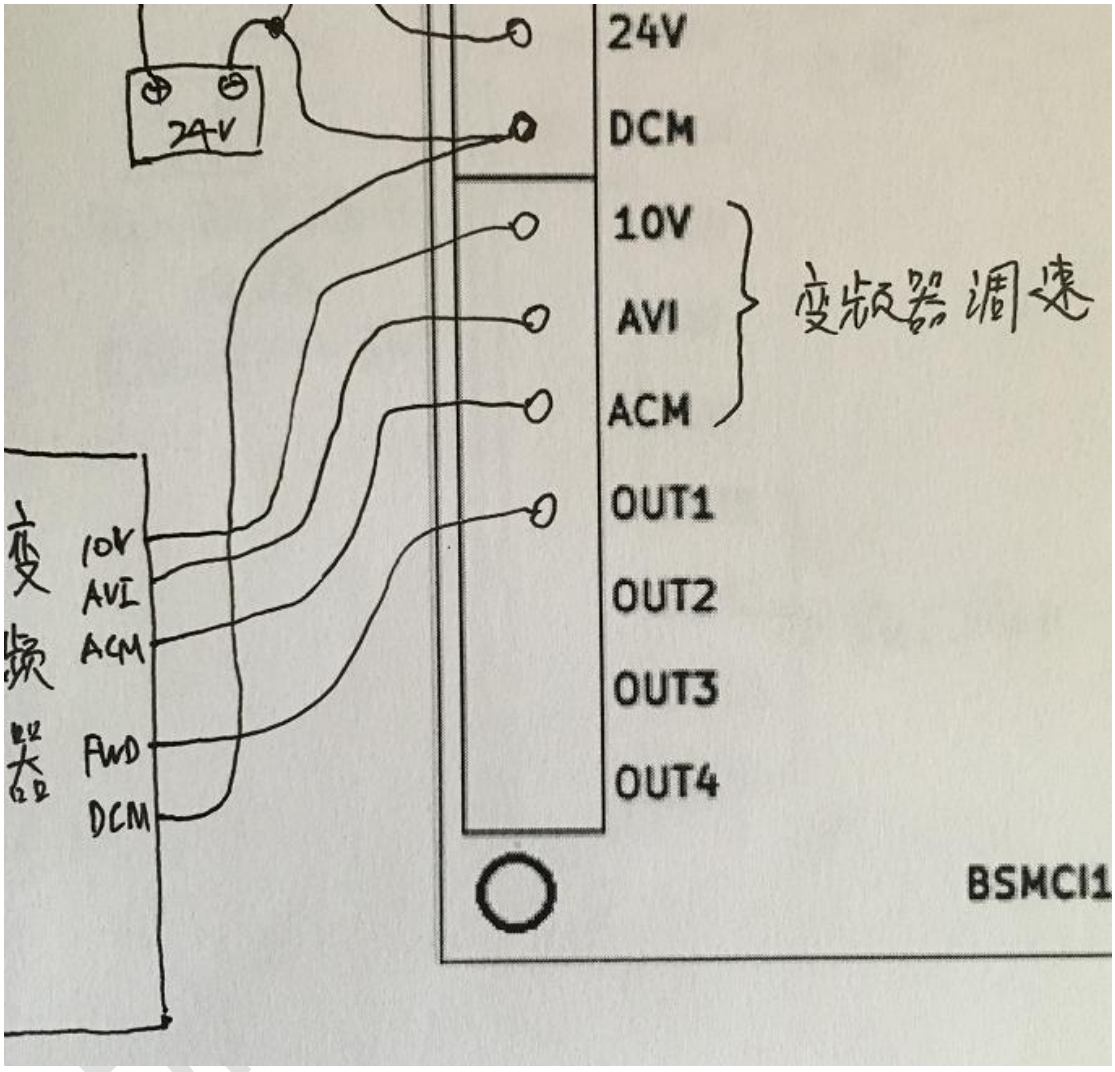
The wiring is shown in the figure:



Inverter

The control card has a frequency converter speed regulation interface to control the spindle speed.

The inverter wiring is as shown in the figure below:



There are slight differences in the wiring terminals of inverters of various brands and models. Here, the most common inverter terminals are added.

to illustrate.

10V, the 10V standard signal output terminal of the inverter

AVI, the input terminal of the frequency converter speed regulation analog signal

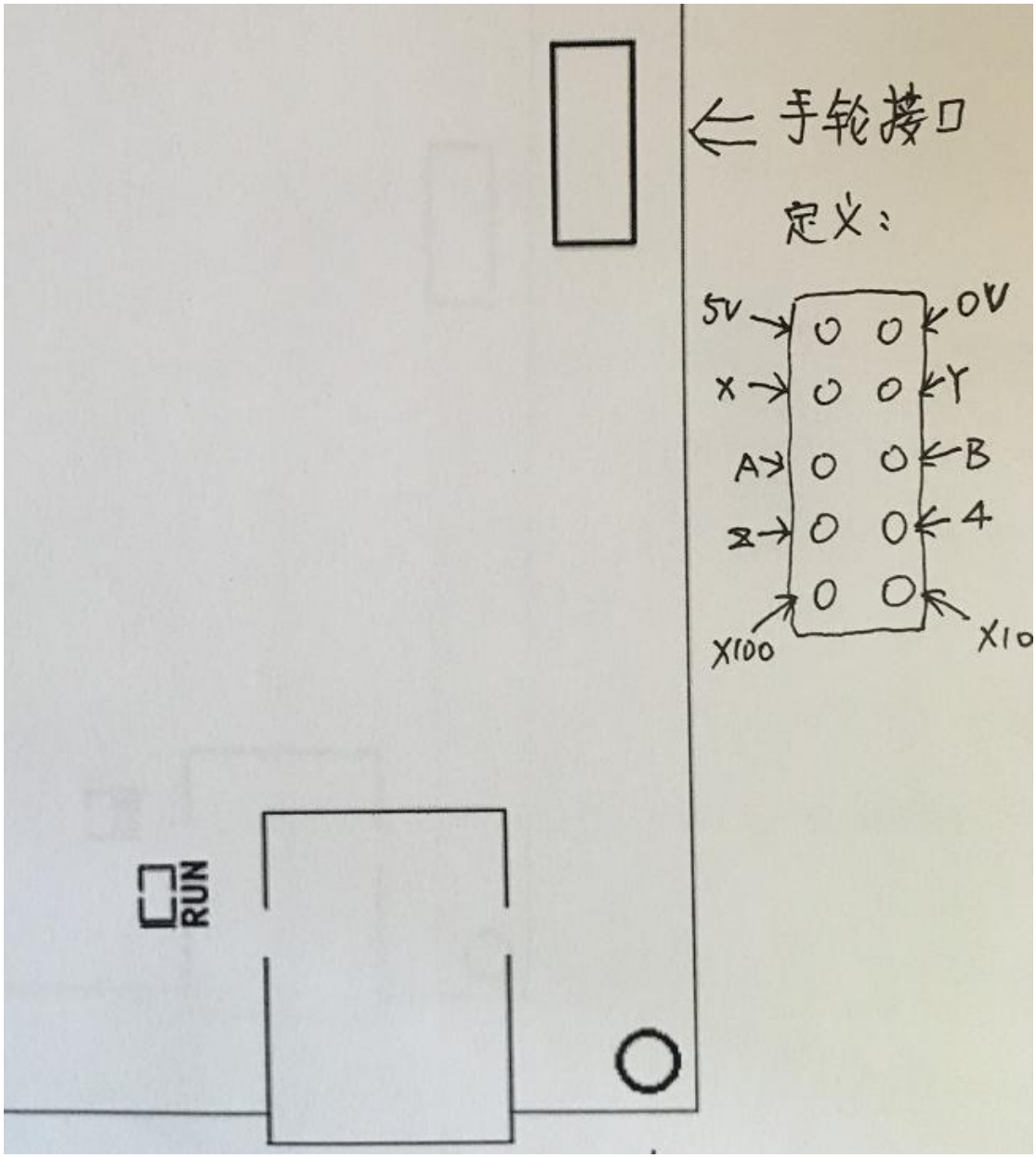
ACM, the ground of the frequency converter speed control analog signal (analog signal common terminal)

FWD, inverter forward/start signal input terminal

DCM, the ground of the inverter FWD signal (digital signal common terminal)

hand wheel

The control card supports handwheel control. Handwheel socket DC 2X5 male socket. Each pin is defined as follows:



5V: Provided to the handwheel as power supply

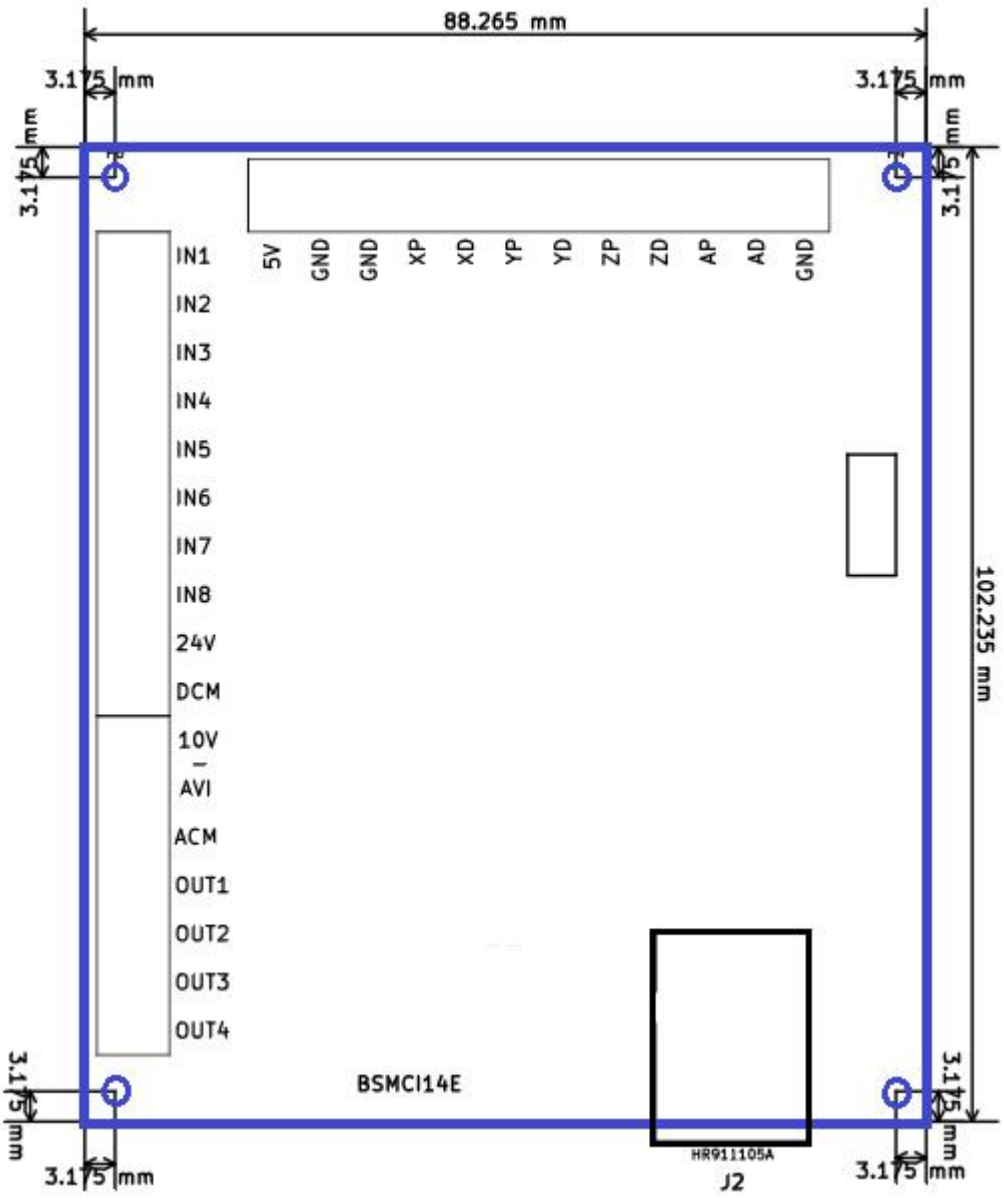
0V: Provided to the hand wheel as power supply ground and signal ground

X, Y, Z, 4: axis switching signal (the signal is valid when the signal ground is short-circuited)

X10, X100: the magnification is 10 times or 100 times (the signal is valid when it is short-circuited to the signal ground)

A, B: Handwheel encoder AB terminal (5V quadrature encoder level signal)

installation size



4 holes of 3.5mm

Software Installation

1 Install Mach3 software (English version)

2 Copy all the files in the Chinese package to the Mach3 installation folder (replace the original files)

3 Confirm that the control card is connected and the power is turned on

4 Start the Mach3Mill (milling machine control) software

ready to use