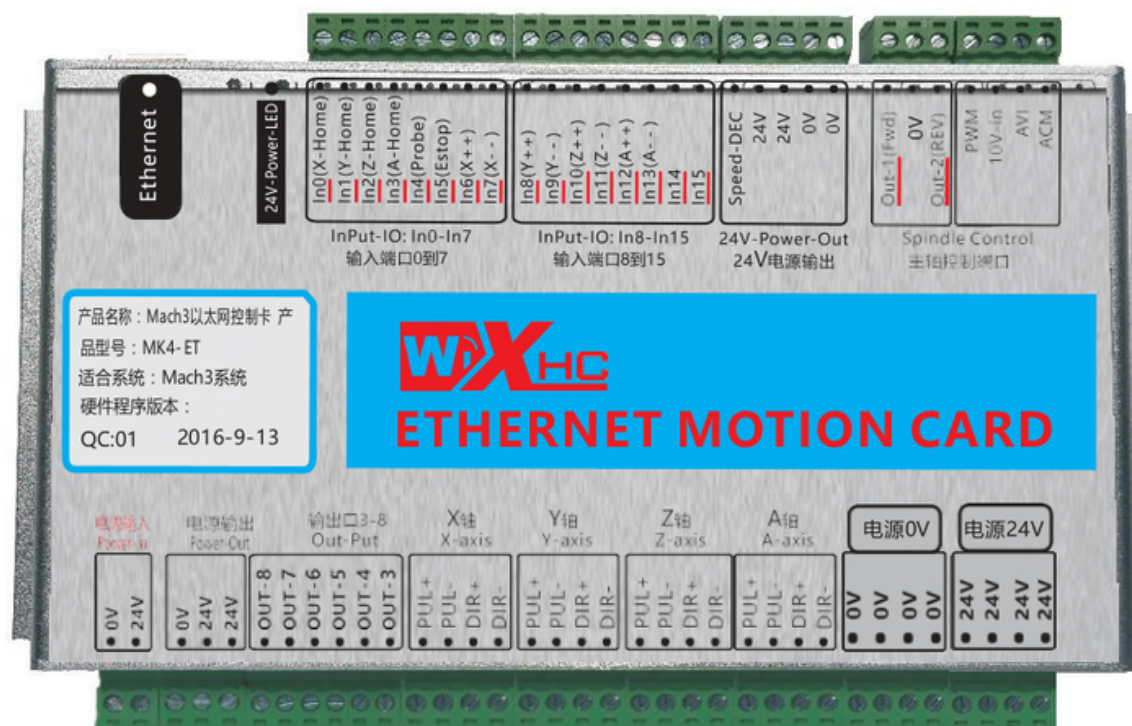




MACH3 (MKX-ET)



PRADO

AUTOMAÇÃO INDUSTRIAL

第2部份：英文介绍/ English Introduction

The following information describes the English

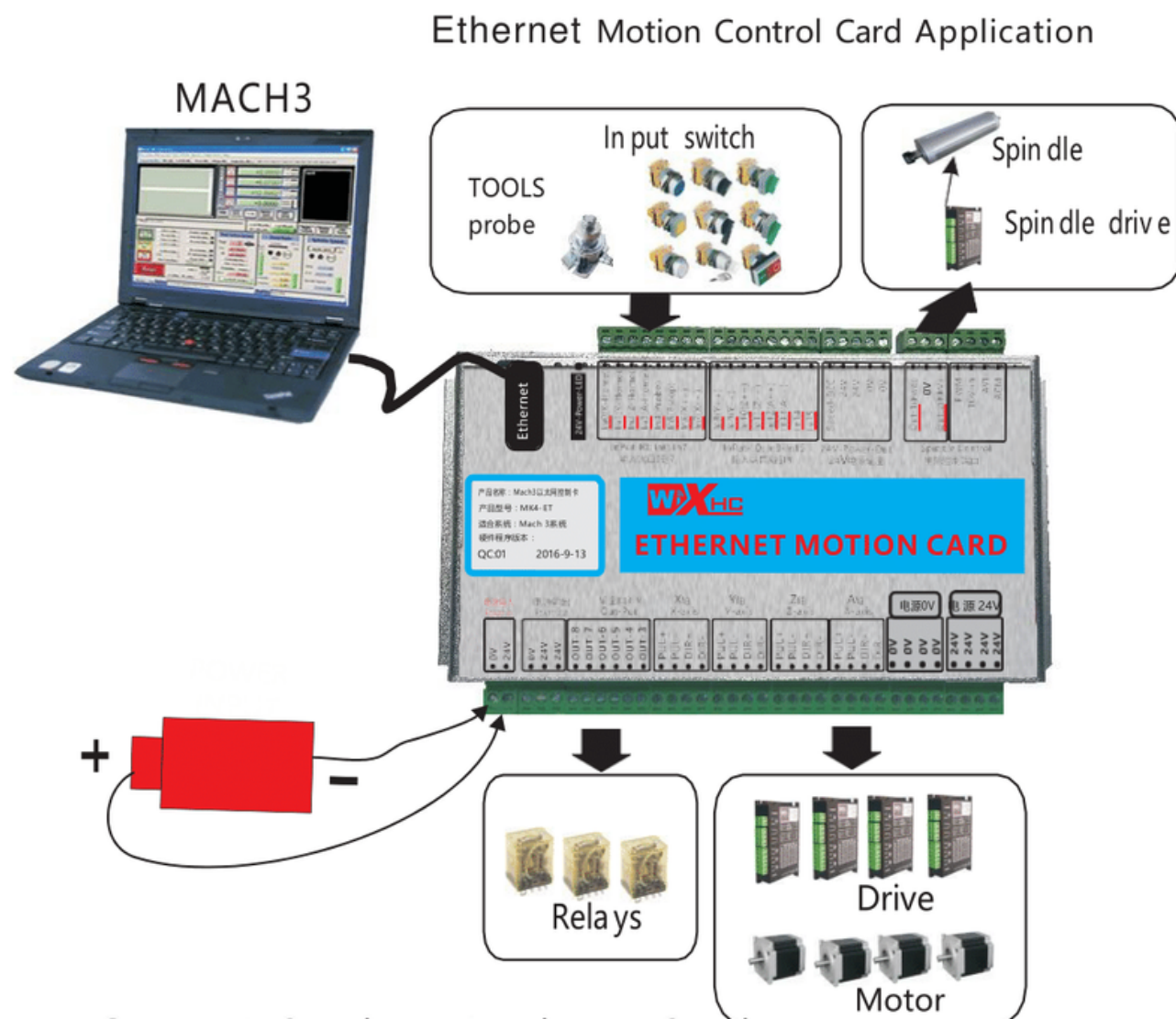
Features:

- ★ Fully supporting all Mach3 versions,support Windows PC,
- ★ Only support Ethernet interface,Need to set IP address
(Please read page 20)
- ★ Support save data when power off
- ★ Support spindle speed feedback
- ★ Support 10 meters Ethernet interface cable
- ★ Supports Up 6-axis
- ★ Maximum step-pulse frequency is 2000KHz
16 general-purpose input,8 output
- ★ Velocity feedback function, Spindle speed display in real time
- ★ all IO-port isolation, interference, stable performance
- ★ Support servo motor and step motor

第2部份：英文介绍/ English Introduction

Simple connection description

Application Connection Diagram

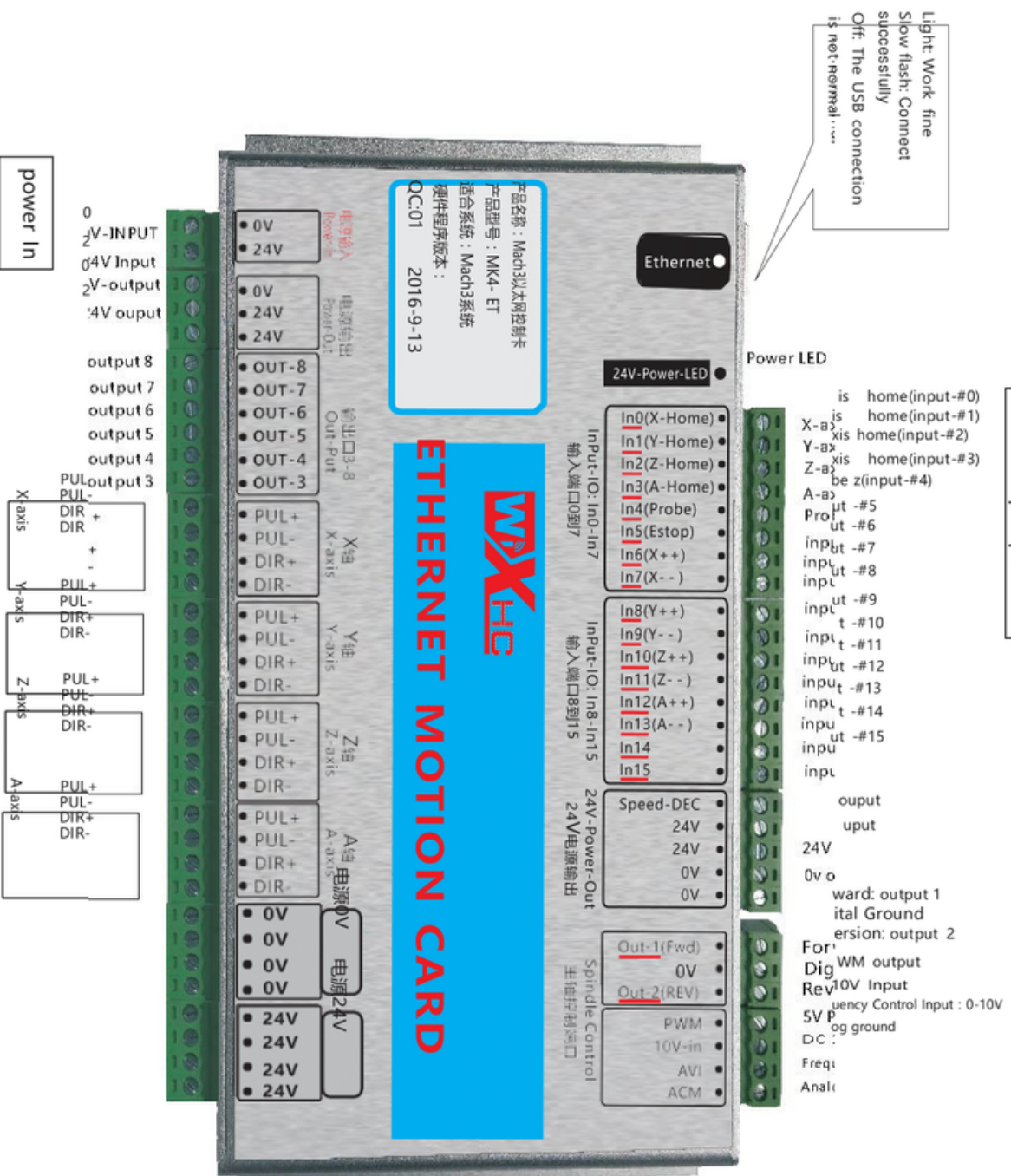


Support: 3-axis or 4-axis, or 6-axis

Mk3-ET: 3-axis; Mk4-ET: 4-axis; Mk6-ET: 6-axis

第2部份：英文介绍/ English Introduction

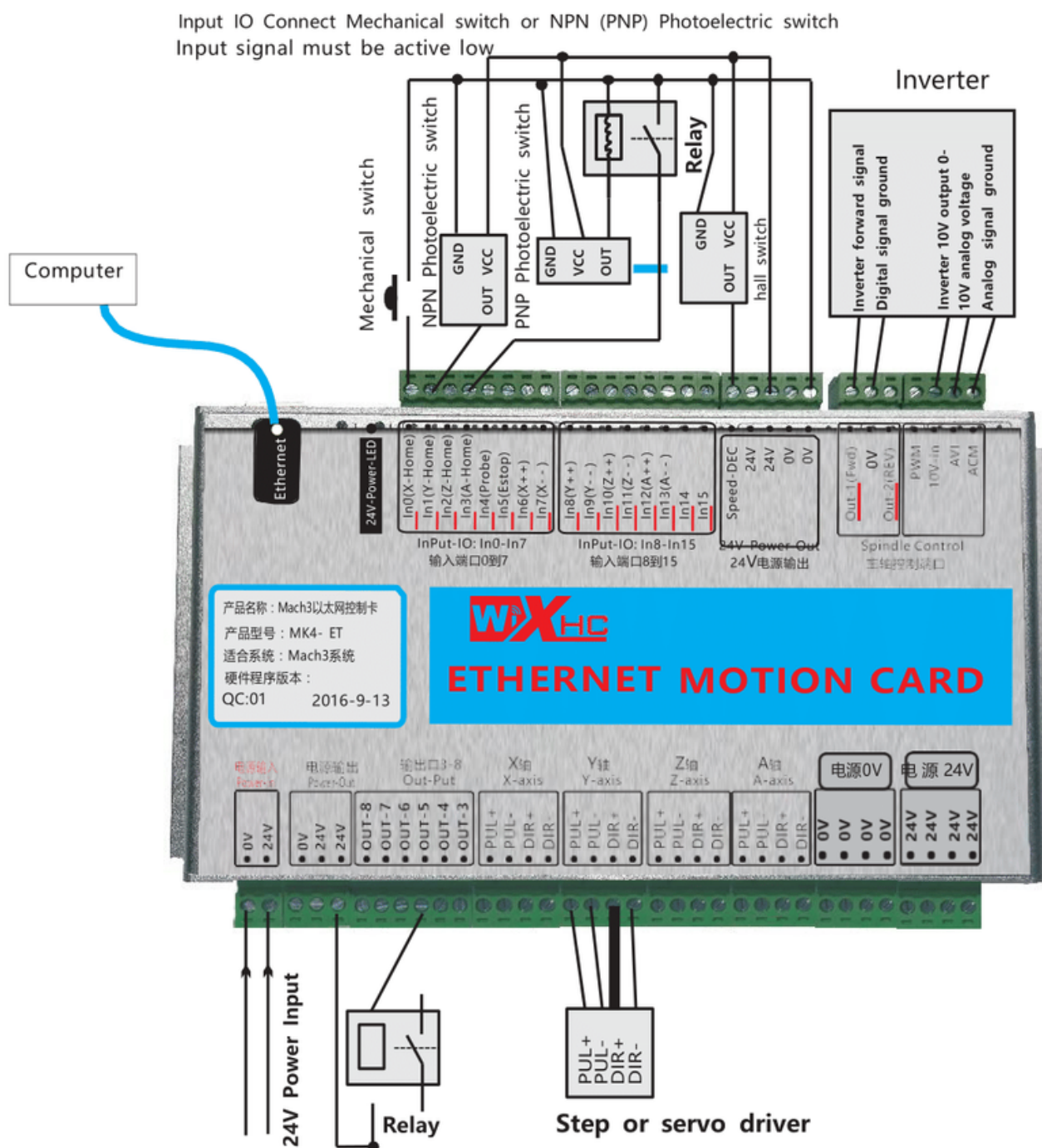
Signal Description



第2部份：英文介绍/ English Introduction

Wiring diagram shows

NOTE: If the inverter is turned on, the control card is not working properly because of interference caused by the inverter; Replace inverter.



第2部份：英文介绍/ English Introduction

Electrical Characteristics

	Parameter Description	
axis output control:	Drive Current	Isolated open collector output; 5V, 20mA
	Drive	Pulse + direction output
	Output frequency	2000KHZ
	axes	MK3-ET:3-axis;MK4-ET:4-axis;MK6-ET:6-axis
	Isolation Voltage	3.5KV
Spindle inverter output: 3 types of output modes	Analog voltage output	0—10V
	PWM output	5V,1KHZ, Duty;0-100%
	Pulse+direction output	5V,15HZ to 4KHZ
8 IO output	Drive Current	Isolation:50mA, 25V
	Isolation Voltage	3.5KV
16 IO input	Input Current	Isolated inputs, 5 mA, maximum voltage 25V
	Isolation Voltage	3.5KV
Communication mode	Ethernet interface	

附件：接线图(Software installation)

软件安装 (Software installation)

- 第1步：安装MACH3软件

No.1:Install MACH3 software

- 第2步：拷贝驱动到指定的MACH3目录

No.2: copy drive to the specified MACH3 directory

具体操作：参见光盘资料..\中文资料\MACH3卡驱动x\《驱动安装说明.txt》
see the disc information:..\English Manual\usb card driver\readme.txt

- 第3步：参见接线图，将控制卡连线正确

No.3: See wiring diagram, which will control the card connection correctly

- 第4步：用ETHERNET线将控制卡和电脑连接起来

No.4: Connect the control card and computer with the Ethernet line.

完成以上步骤，你就可以打开MACH3软件，进行操作，使用了。
To complete the above steps, you can open the MACH3 software, and use.



参见印刷说明书：《MACH3软件参数设置》，调整脉冲当量等参数设置

See print Manual: "MACH3 parameter setting", adjust the parameters such as pulse equivalent set

附件：接线图(Annex 2:Wiring schematics)

应用接线图

MKX Wiring schematics

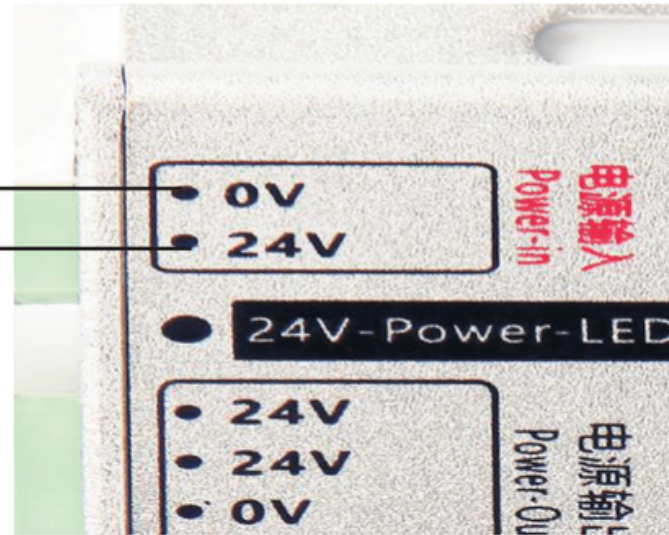
1.第1步，给控制卡接上电源线

NO.1 : power input

power : 24V,0.5A

DC 0V_GND
DC 24V-INPUT

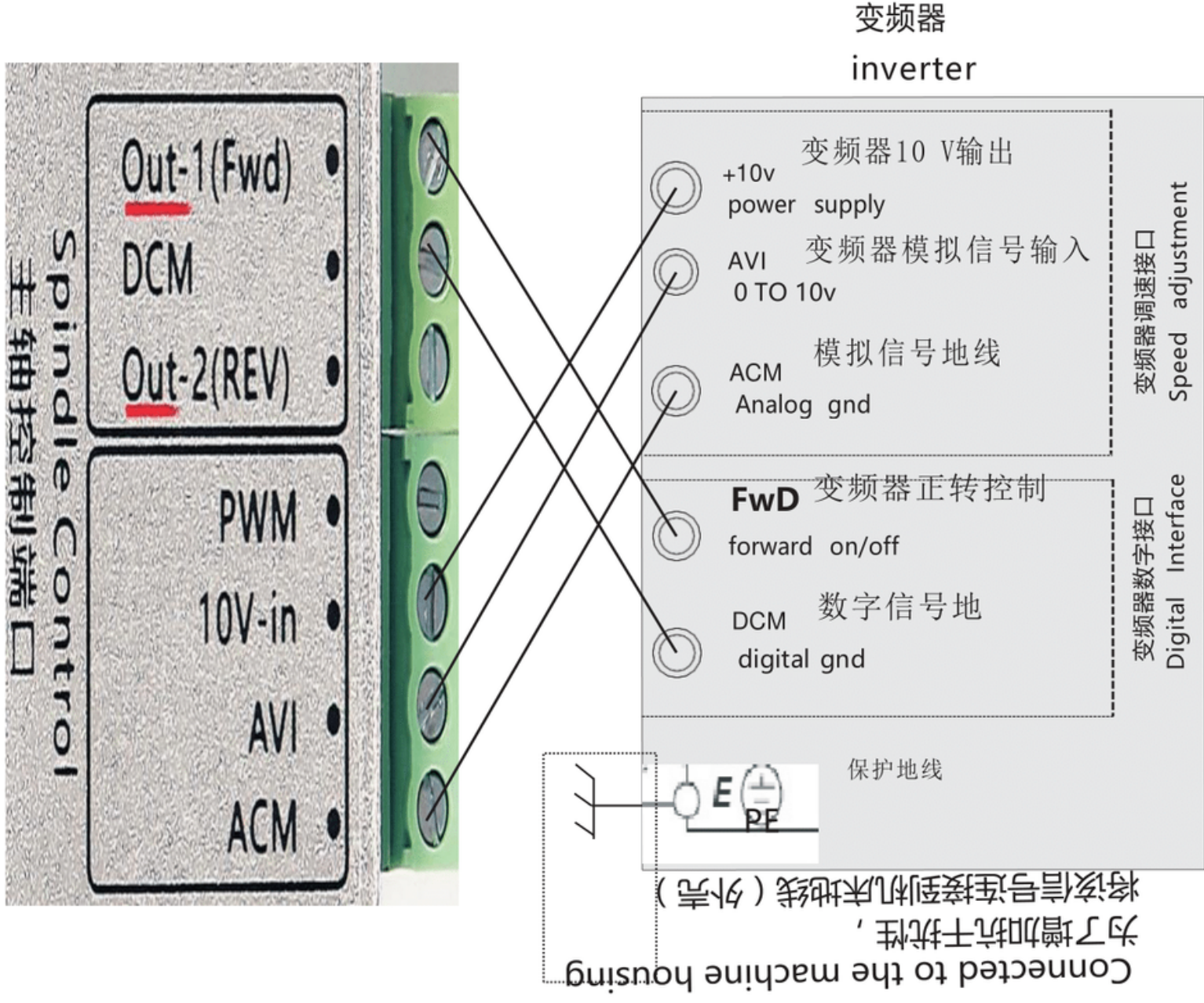
使用控制卡前，需要给控制卡提供电源
直流24V；工作电流0.5A



2.第2步：驱动器连接：支持伺服或步进驱动器，差分输出信号NO.2：

Drive Interface : Supporting servo or stepping drive,
Differential signal output

3.第3步：主轴控制-变频器连接 NO.3 : Inverter Interface

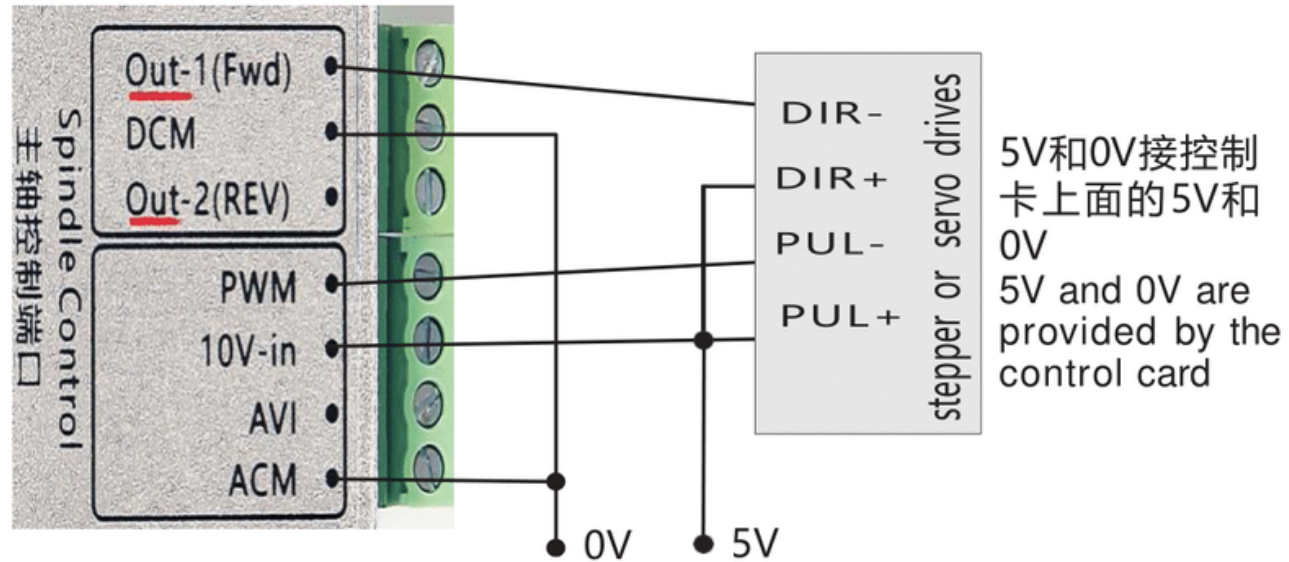


应用接线图

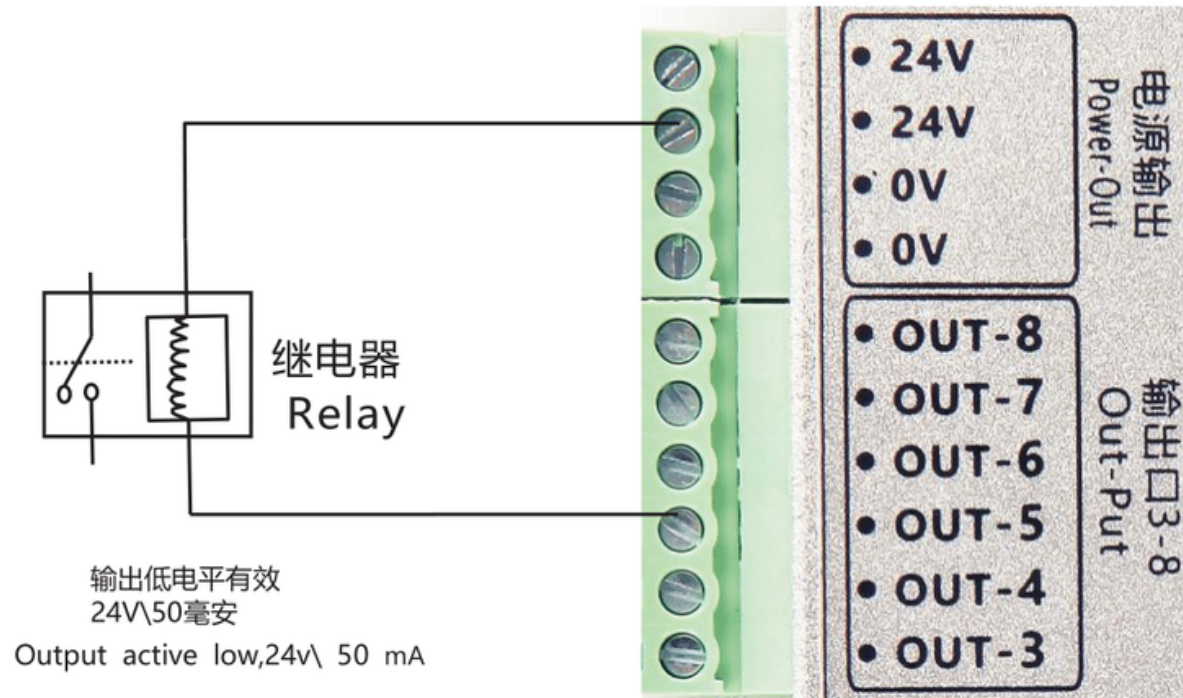
MKX Wiring schematics

主轴控制：步进或伺服驱动器

Spindle connected stepper or servo drives

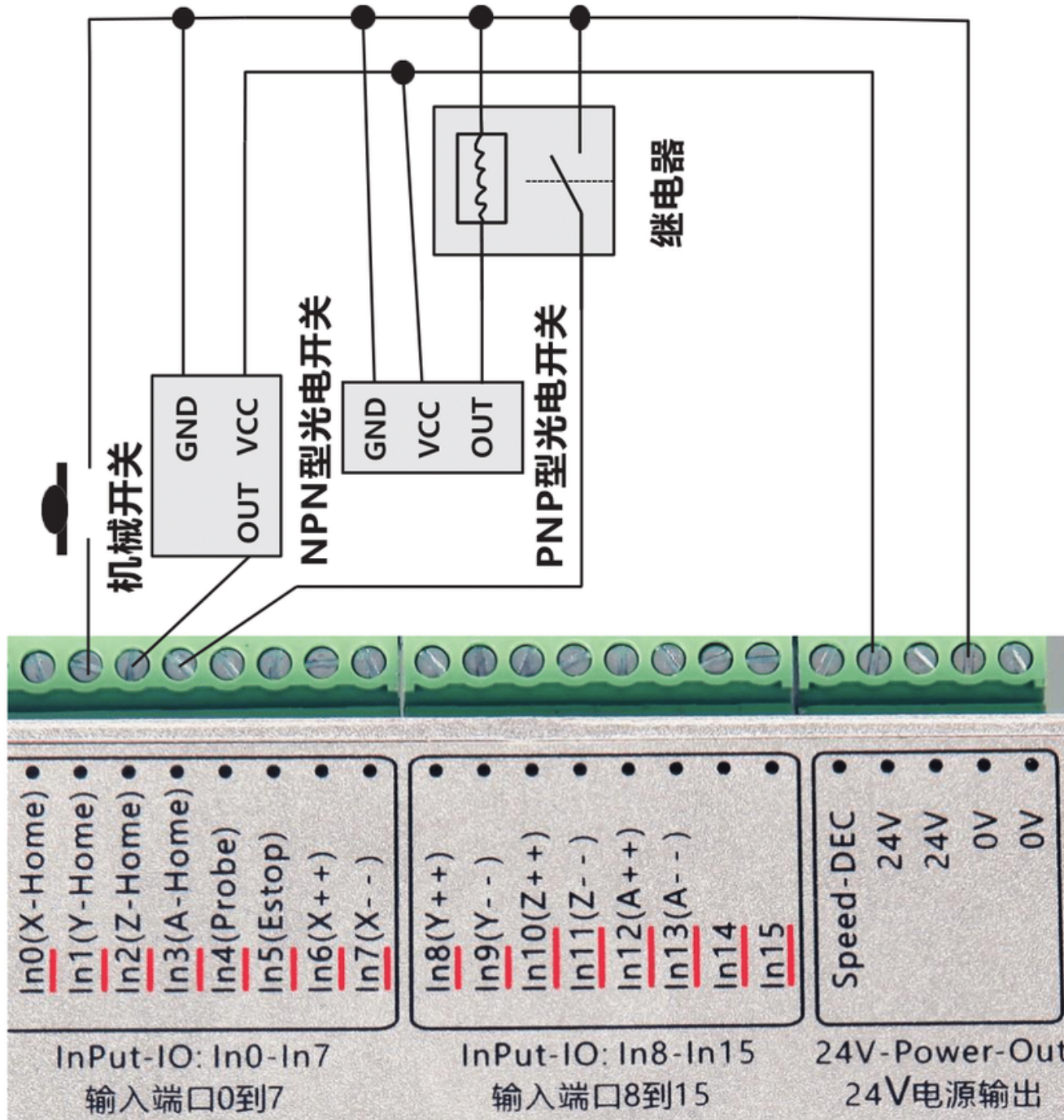


4. 第4步：输出口 继电器连接：OUT3到OUT8连接继电器方式
NO.4：Relay Interface：OUT3 to OUT8 Relay Interface



5.第5步：16个输入口IN0-IN15接法：限位开关等接口：输入低电平有效

NO.5：input Interface：16 input port;In0 to In15.Active Low

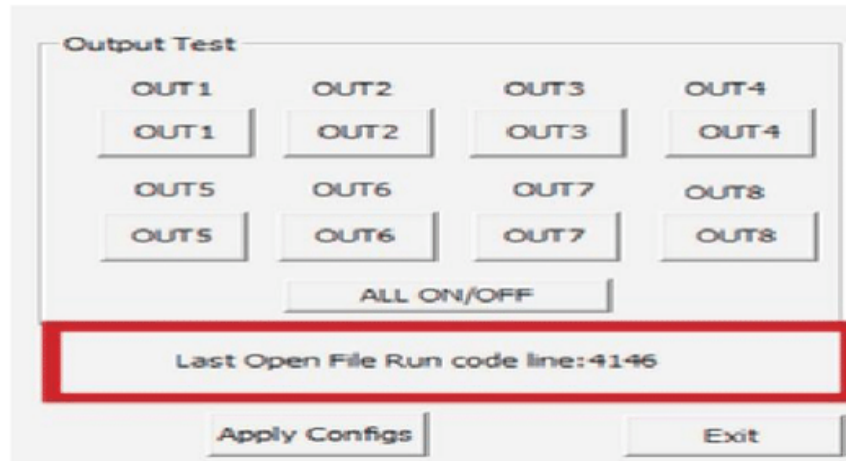


新增功能

New features

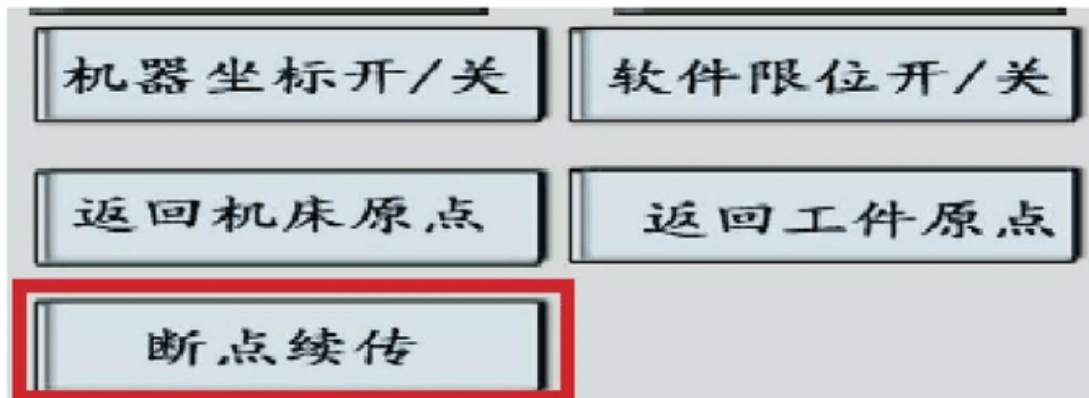
断电续传：当控制卡突然断电时，当前加工程序已经加工的行数自动保存在控制卡的芯片中。(控制卡插件显示保存行数)

Break continue: when the control card suddenly power off, the control card chip automatically save the current G code line number. Control card plug-in display save the number of lines.



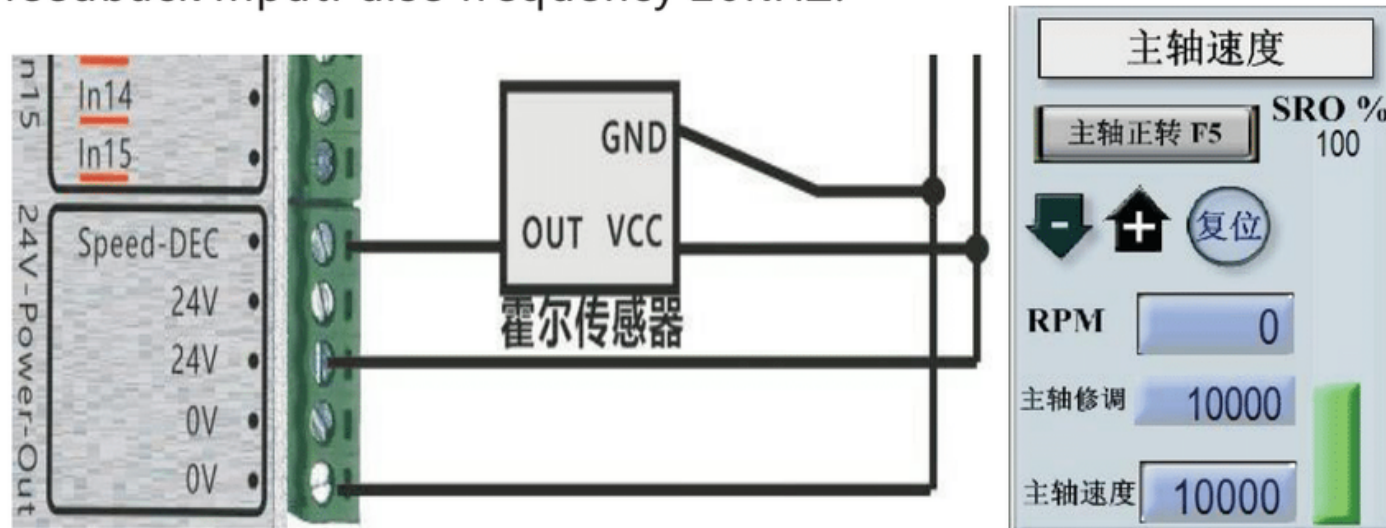
等到下一次控制卡通电以后,加载加工程序,点击断电续存按钮,Mach3软件自动从上一次保存的行数处开始加工。

Wait until the control card is connected to the power supply next, load the G code program, click the power to continue to the break continue button, Mach3 software automatically from the last save the number of lines to start running.



主轴速度反馈：主轴实时转速通过传感器反馈给控制卡的速度反馈接口"Speed-DEC"，然后在Mach3软件上显示RPM速度.支持反馈输入最大脉冲频率20KHZ.

Spindle speed feedback: spindle speed feedback through the sensor feedback to Input port "Speed-DEC"，and then display the RPM speed on the Mach3 software. Maximum support feedback inputPulse frequency 20KHZ.



以太网卡IP地址设置:

第一步:电脑IP地址设置:

<以太网卡直接连接电脑>如果你的以太网卡是用网线直接连接电脑,打开"网络共享中心",选择"本地连接-属性",打开 "Internet 协议版本 4 (TCP /IPV4)",手动输入设置IP地址192.168.1.xx(xx从0-179,不能重复).

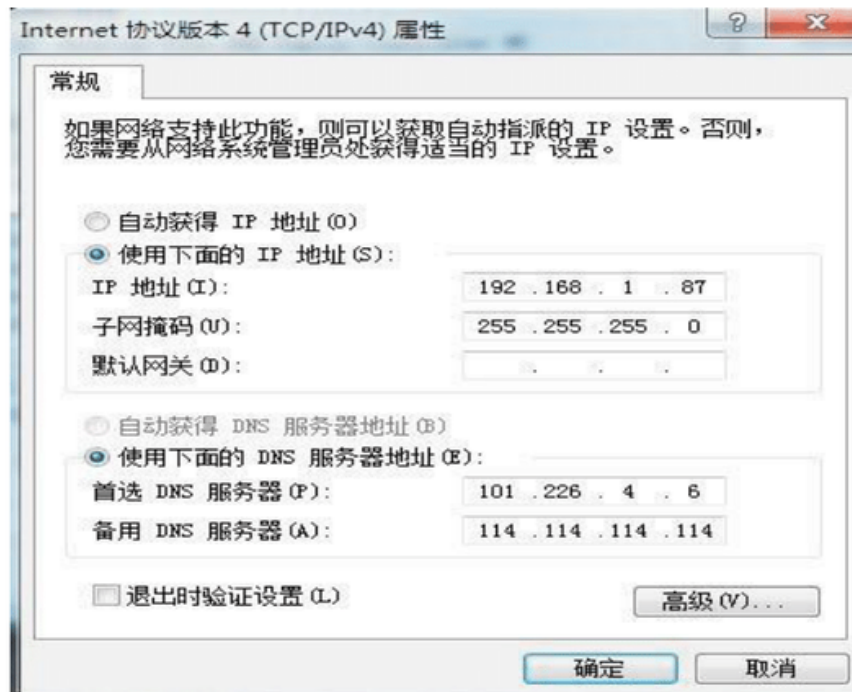
<以太网卡连接路由器>如果你的以太网卡不是直接连接电脑,而是通过路由器与电脑连接。请注意一定要确认你的路由器IP地址是192.168.1.xx格式。如果不是,请修改你的路由器IP地址为192.168.1.xx格式。否则无法通讯。修改路由器IP地址后,再按照上面的方法手动设置电脑的IP地址.

The first step: the computer IP address settings:

<Ethernet card directly connected to the computer> open the "network sharing center", select the "local connection - property", open "Internet protocol version 4 (TCP/IPV4)", the manual input IP address 192.168.1.xx (XX from 0-179, can not be repeated)

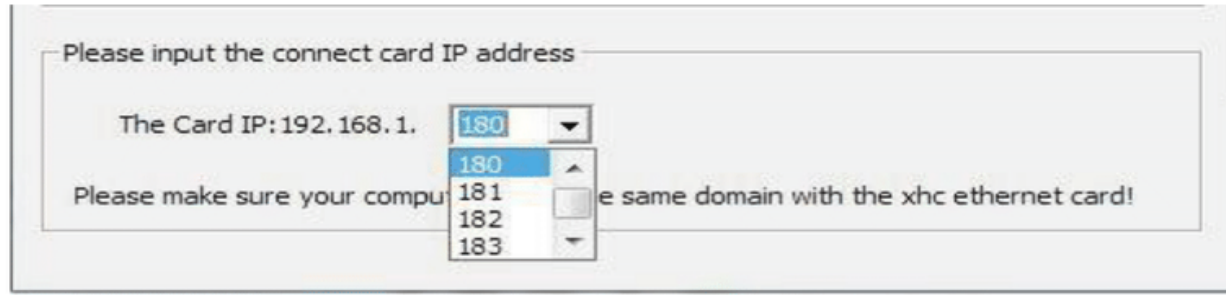
<Ethernet card connected to the router>

If your Ethernet card is connected to your computer via a router, Please make sure your router IP address format is 192.168.1.xx , If not, modify your router IP address in 192.168.1.xx format. Otherwise unable to communicate. Modify the IP address of the router, and then manually set the IP address of the computer in accordance with the above method.



第二步:以太网卡Mach3软件IP地址设置 : 电脑的IP地址设置好以后,打开Mach3软件的"插件控制",在下图的位置中选择一个IP地址,范围:180-195.(如果你仅连接一套控制卡,跳过此项设置,出厂默认为IP:180)

The second step: Ethernet card Mach3 software IP address setting: After the computer's IP address is set up, open the Mach3 software "plug-in control" in the figure below the location of the choice of a IP address, range: 180-195.(If you have only one set of control card, skip this setting.factory defaults IP:180)



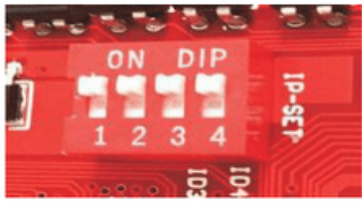
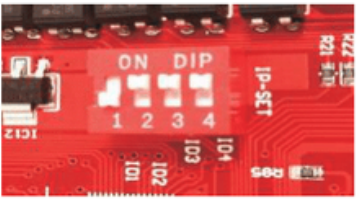
第三步:以太网卡内部IP拨码开关设置:如果你只连接一套我公司的以太网控制卡,则跳过此项设置.IP出厂默认为180.

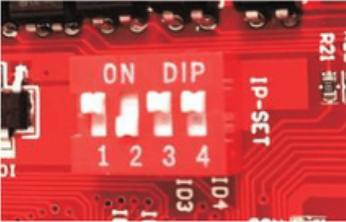
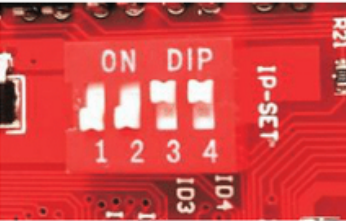


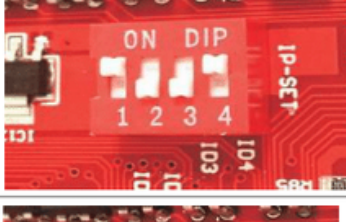

拆开以太网控制卡的外壳,在控制卡内部的电路板上有一组红色的拨码开关,一共4个.可以设置IP,范围:0-15,对应的是Mach3软件插件控制里的IP地址:180-195.出厂默认所有拨码开关都拨到ON位置,IP地址为0,对应Mach3软件IP为180.

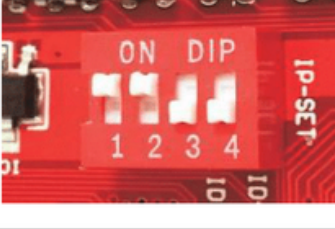
具体拨码开关IP地址设置与对应的Mach3软件IP地址参考下表:

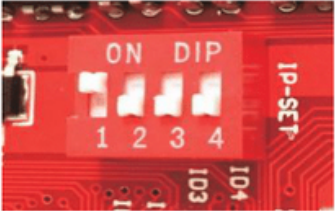
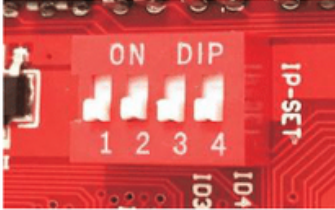
The third step: IP internal Ethernet switch setting: if you only connected with a set of our Ethernet control card, skip the step. IP factory default is 180 open Ethernet control card control card circuit board in the shell, the upper inner has a red dial switch, a total of 4 of them. You can set the IP, range: 0-15, corresponding to the IP address of the Mach3 software plug-in control: 180-195. default all dial switch goes to the ON position, IP address is 0, corresponding to Ethernet IP of Mach3 software: 180

Refer to the following table settings:

拨码开关设置 Dial switch setting	对应Mach3软件IP地址 Mach3 software IP
	IP:180
	IP:181

拨码开关设置 Dial switch setting	对应Mach3软件IP地址 Mach3 software IP
	<p style="text-align: center;">IP:182</p>
	<p style="text-align: center;">IP:183</p>
	<p style="text-align: center;">IP:184</p>
	<p style="text-align: center;">IP:185</p>
	<p style="text-align: center;">IP:186</p>
	<p style="text-align: center;">IP:187</p>

拨码开关设置 Dial switch setting	对应Mach3软件IP地址 Mach3 software IP
	<p style="text-align: center;">IP:188</p>
	<p style="text-align: center;">IP:189</p>
	<p style="text-align: center;">IP:190</p>
	<p style="text-align: center;">IP:191</p>
	<p style="text-align: center;">IP:192</p>
	<p style="text-align: center;">IP:193</p>

拨码开关设置 Dial switch setting	对应Mach3软件IP地址 Mach3 software IP
	IP:194
	IP:195



PRADO

AUTOMAÇÃO INDUSTRIAL