WiXHC®

MACH3控制卡

MKX(标准版) -5代说明书

USB 4-axis Card
System:MACH3
model:MK4-V
QC:01   2016-9-13

WiXHC
USB MOTION CARD

标准卡：184x127x30mm

型号

MK3-V：带USB接口的，3轴运动控制卡

MK4-V：带USB接口的，4轴运动控制卡

MK6-V：带USB接口的，6轴运动控制卡

第2部份：英文介绍/ English Introduction
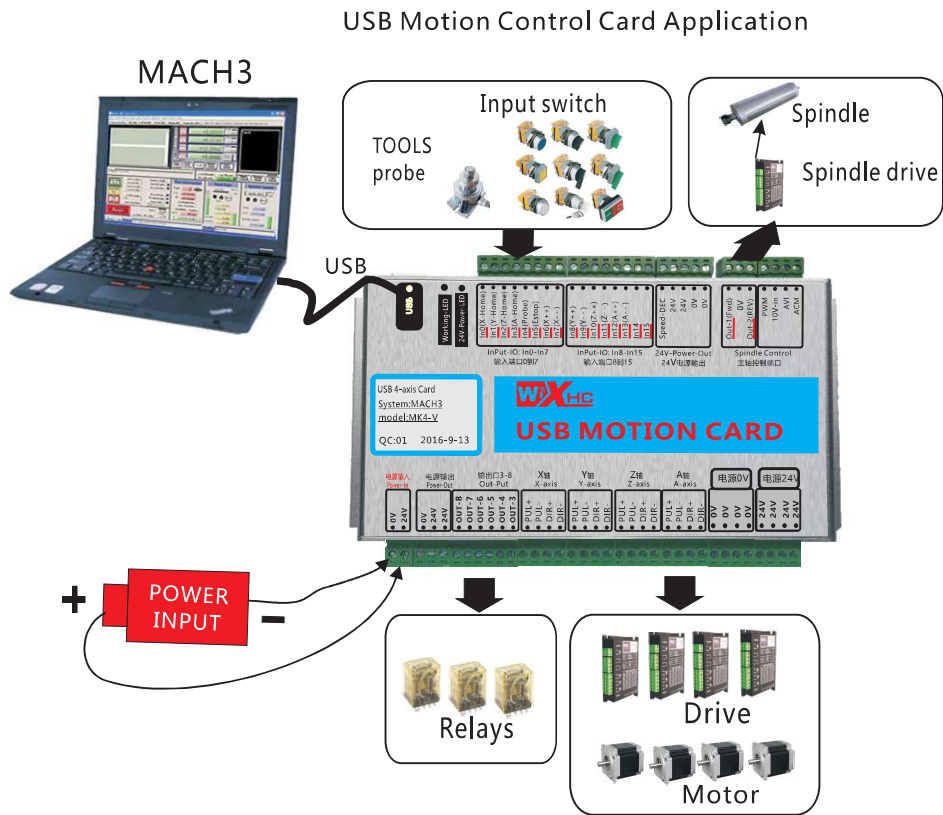**The following information describes the English**

Features:

★ Fully supporting all Mach3 versions

★ Support save data when power off

★ Support spindle speed feedback

★ Support 3 meters USB cable

★ Supports Up 6-axis

★ Maximum step-pulse frequency is 2000KHz

Status indicator LED can be useful to show the USB

★ connection, and working status by flashing.

★ 16 general-purpose input,8 output

has speed function, the spindle actual speed Mach3

★ interface in real-time display

★ all IO-port isolation, interference, stable performance

★ Full support for USB hot-swappable, the card is Monitoring

USB connection status at any time.

第2部份：英文介绍/ English Introduction

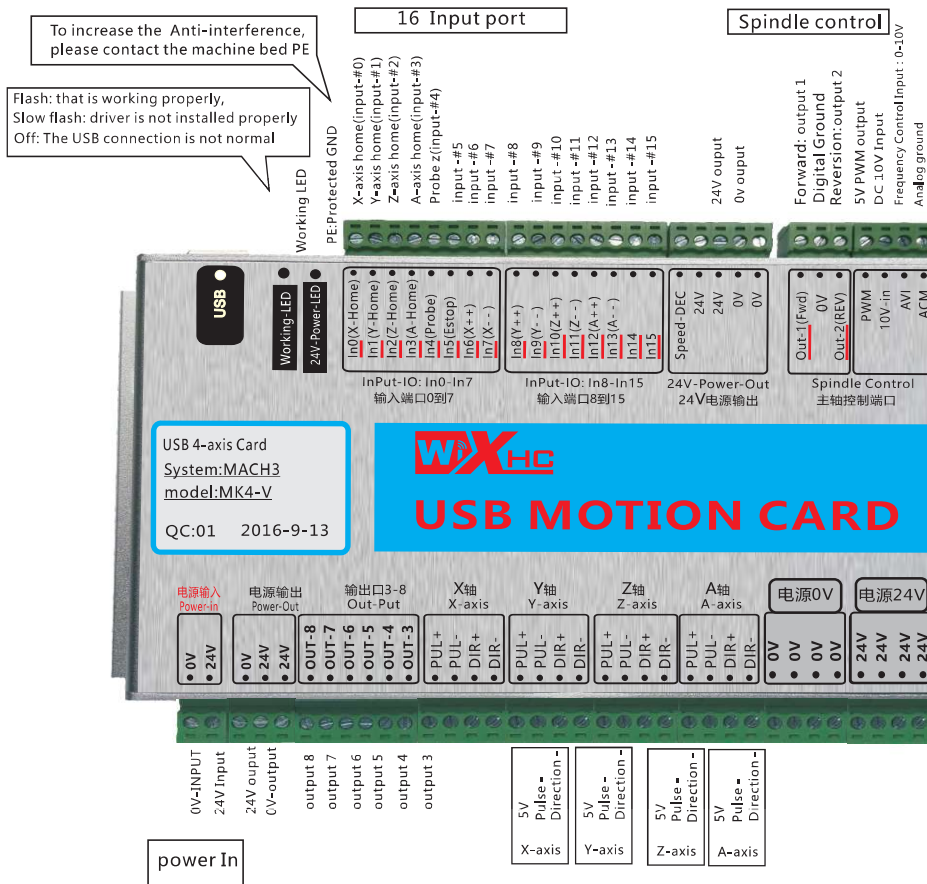## Simple connection description

Application Connection Diagram

USB Motion Control Card Application

MACH3

Input switch

TOOLS probe

Spindle

Spindle drive

USB

USB 4-axis Card
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WXHC
USB MOTION CARD

InPut-IO: In0-In7
输入端口0到7

InPut-IO: In8-In15
输入端口8到15

24V-Power-Out
24V电源输出

Spindle Control
主轴控制端口

电源输入
Power-In

电源输出
Power-Out

输出口3-8
Out-Put

X轴
X-axis

Y轴
Y-axis

Z轴
Z-axis

A轴
A-axis

电源0V

电源24V

POWER INPUT

+   −

Relays

Drive

Motor

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

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

Signal Description

To increase the Anti-interference,
please contact the machine bed PE

Flash: that is working properly,
Slow flash: driver is not installed properly
Off: The USB connection is not normal

16 Input port

Spindle control

Working LED
PE:Protected GND
X-axis home(input-#0)
Y-axis home(input-#1)
Z-axis home(input-#2)
A-axis home(input-#3)
Probe z(input-#4)
input-#5
input-#6
input-#7
input-#8
input-#9
input-#10
input-#11
input-#12
input-#13
input-#14
input-#15
24V ouput
0v ouput
Forward: output 1
Digital Ground
Reversion:output 2
5V PWM output
DC 10V Input
Frequency Control Input : 0-10V
Analog ground

USB
Working-LED
24V-Power-LED

In0(X-Home)
In1 (Y-Home)
In2(Z-Home)
In3(A-Home)
In4(Probe)
In5(Estop)
In6(X++)
In7(X -)
In8(Y++)
In9(Y-)
In10(Z++)
In11(Z-)
In12(A++)
In13(A-)
In14
In15
Speed-DEC
24V
0V
Out-1(Fwd)
Out-2(REV)
PWM
10V-in
AVI
ACM

InPut-IO: In0-In7
输入端口0到7

InPut-IO: In8-In15
输入端口8到15

24V-Power-Out
24V电源输出

Spindle Control
主轴控制端口

USB 4-axis Card
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WXHC

USB MOTION CARD

电源输入
Power-in

电源输出
Power-Out

输出口3-8
Out-Put

X轴
X-axis

Y轴
Y-axis

Z轴
Z-axis

A轴
A-axis

电源0V

电源24V

0V
24V
0V
24V
24V
OUT-8
OUT-7
OUT-6
OUT-5
OUT-4
OUT-3
PUL+
PUL-
DIR+
DIR-
PUL+
PUL-
DIR+
DIR-
PUL+
PUL-
DIR+
DIR-
PUL+
PUL-
DIR+
DIR-
0V
0V
0V
0V
24V
24V
24V
24V

0V-INPUT
24V Input
24V ouput
0V-output
output 8
output 7
output 6
output 5
output 4
output 3

5V
Pulse -
Direction -
X-axis

5V
Pulse -
Direction -
Y-axis

5V
Pulse -
Direction -
Z-axis

5V
Pulse -
Direction -
A-axis

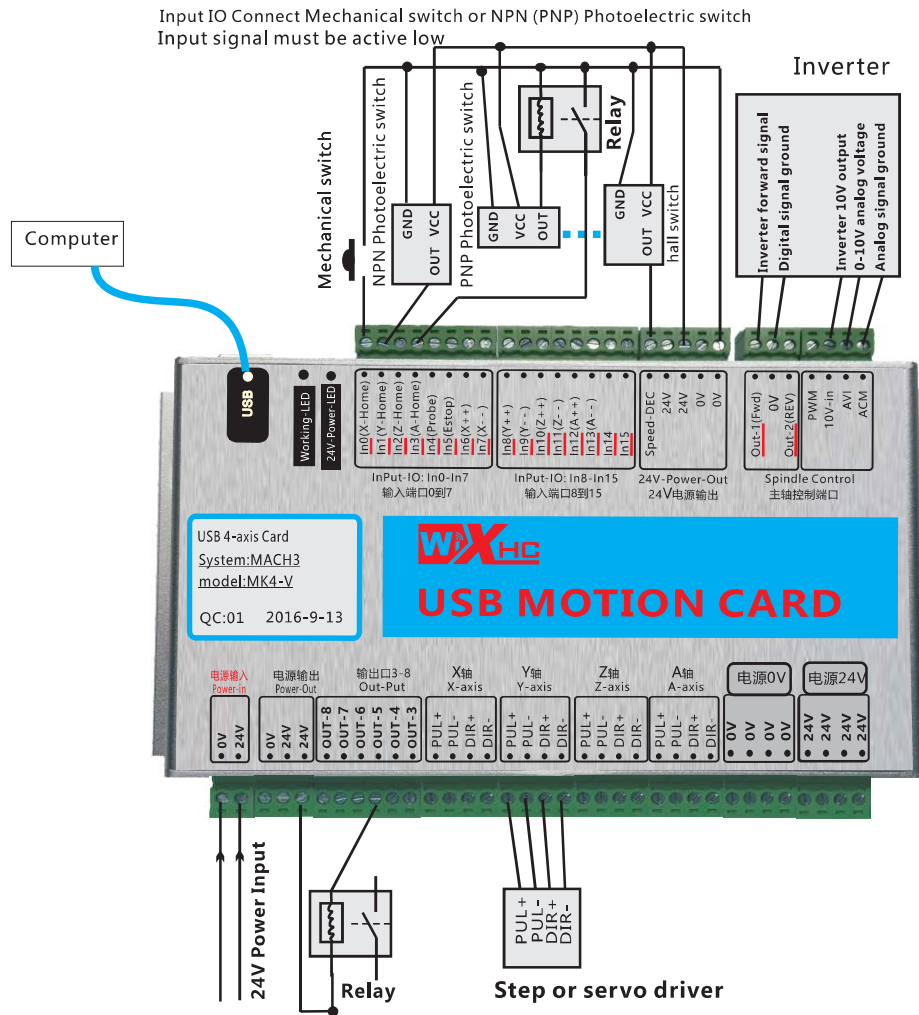power In

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-V:3-axis;MK4-V:4-axis;MK6-V: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 intput	Input Current	Isolated inputs, 5 mA, maximum voltage 25V
	Isolation Voltage	3.5KV
USB interface	Complies with USB2.0 standard	

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USB线将控制卡和电脑连接起来
No.4: Connect the control card and computer with the USB 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

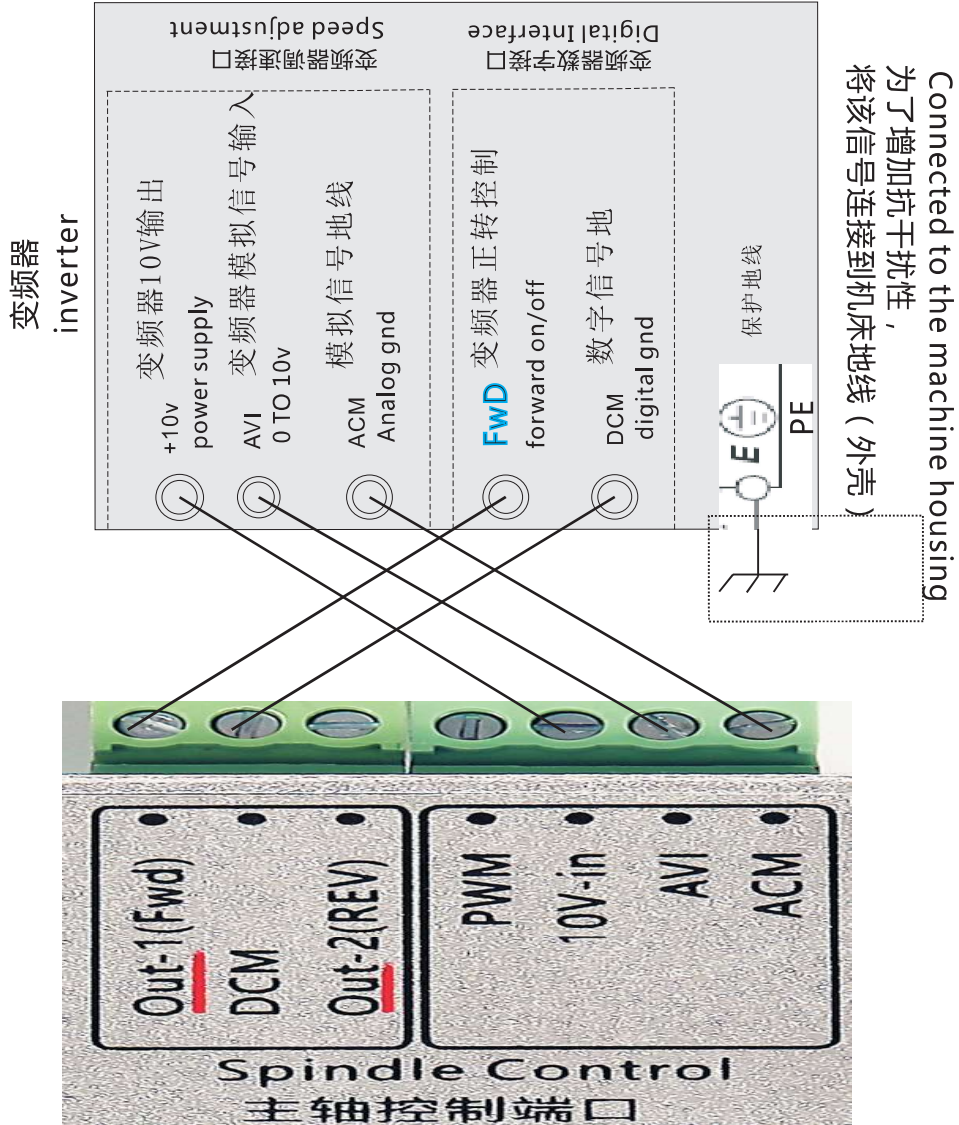power：24V,0.5A

DC 0V_GND

DC 24V-INPUT
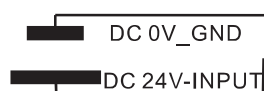
使用控制卡前，需要给控制卡提供电源
直流24V；工作电流0.5A
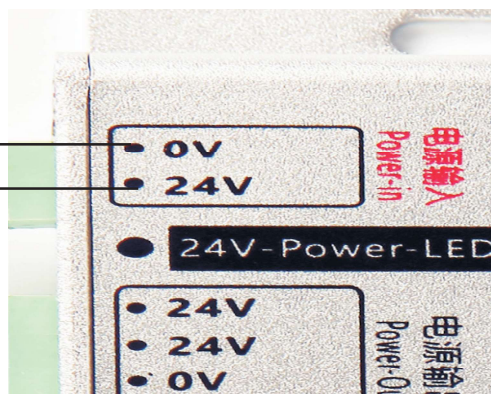
2.第2步：驱动器连接：支持伺服或步进驱动器，差分输出信号

NO.2：Drive Interface：Supporting servo or stepping drive

3.第3步：主轴控制-变频器连接

NO.3 : Inverter Interface

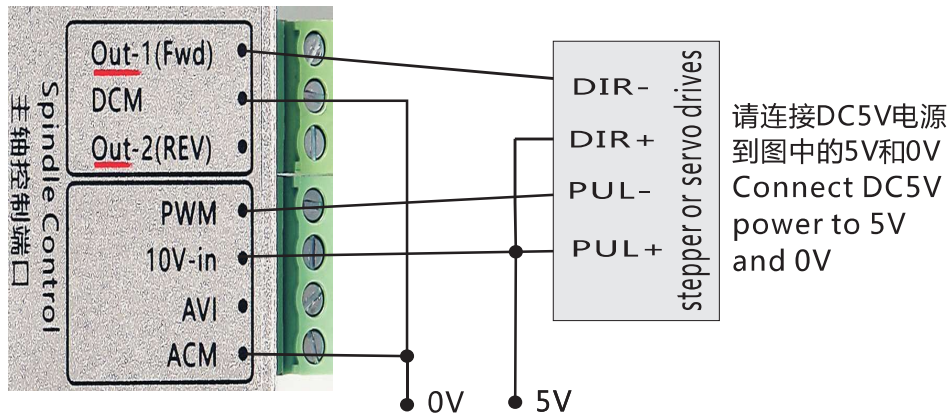Speed adjustment
变频器调速接口

Digital Interface
变频器数字接口

变频器
inverter

变频器10V输出
power supply
+10v

变频器模拟信号输入
0 TO 10v
AVI

模拟信号地线
Analog gnd
ACM

变频器正转控制
forward on/off
FwD

数字信号地
digital gnd
DCM

保护地线
PE

Connected to the machine housing
将该信号连接到机床地线（外壳）
为了增加抗干扰性，

Out-1(Fwd)
DCM
Out-2(REV)

PWM
10V-in
AVI
ACM

Spindle Control
主轴控制端口

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

请连接DC5V电源
到图中的5V和0V
Connect DC5V
power to 5V
and 0V

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

继电器
Relay

输出低电平有效
24V\50毫安
Output active low,24v\ 50 mA
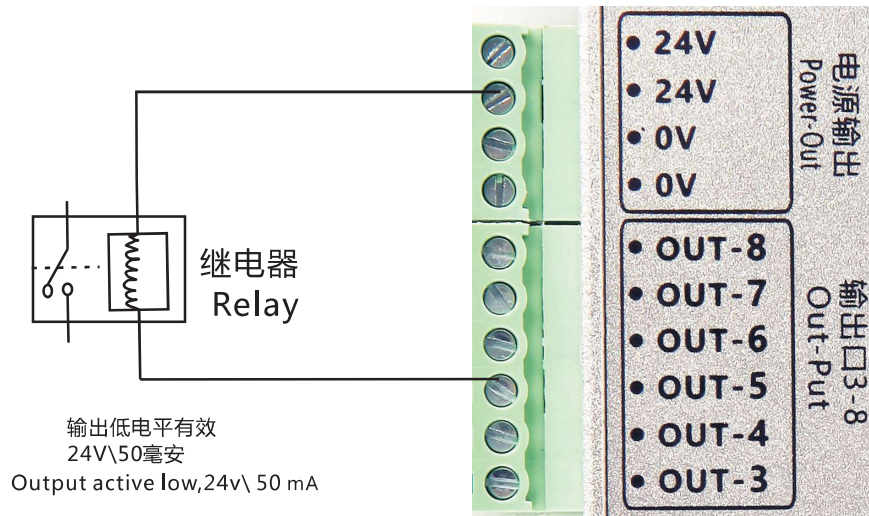
5.第5步：16个输入口IN0-IN15接法：限位开关等接口：输入低电平有效

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

继电器

GND OUT VCC
NPN型光电开关

GND VCC OUT
PNP型光电开关

机械开关

In0(X-Home)
In1(Y-Home)
In2(Z-Home)
In3(A-Home)
In4(Probe)
In5(Estop)
In6(X++)
In7(X--)

InPut-IO: In0-In7
输入端口0到7

In8(Y++)
In9(Y--)
In10(Z++)
In11(Z--)
In12(A++)
In13(A--)
In14
In15

InPut-IO: In8-In15
输入端口8到15

Speed-DEC
24V
24V
0V
0V

24V-Power-Out
24V电源输出
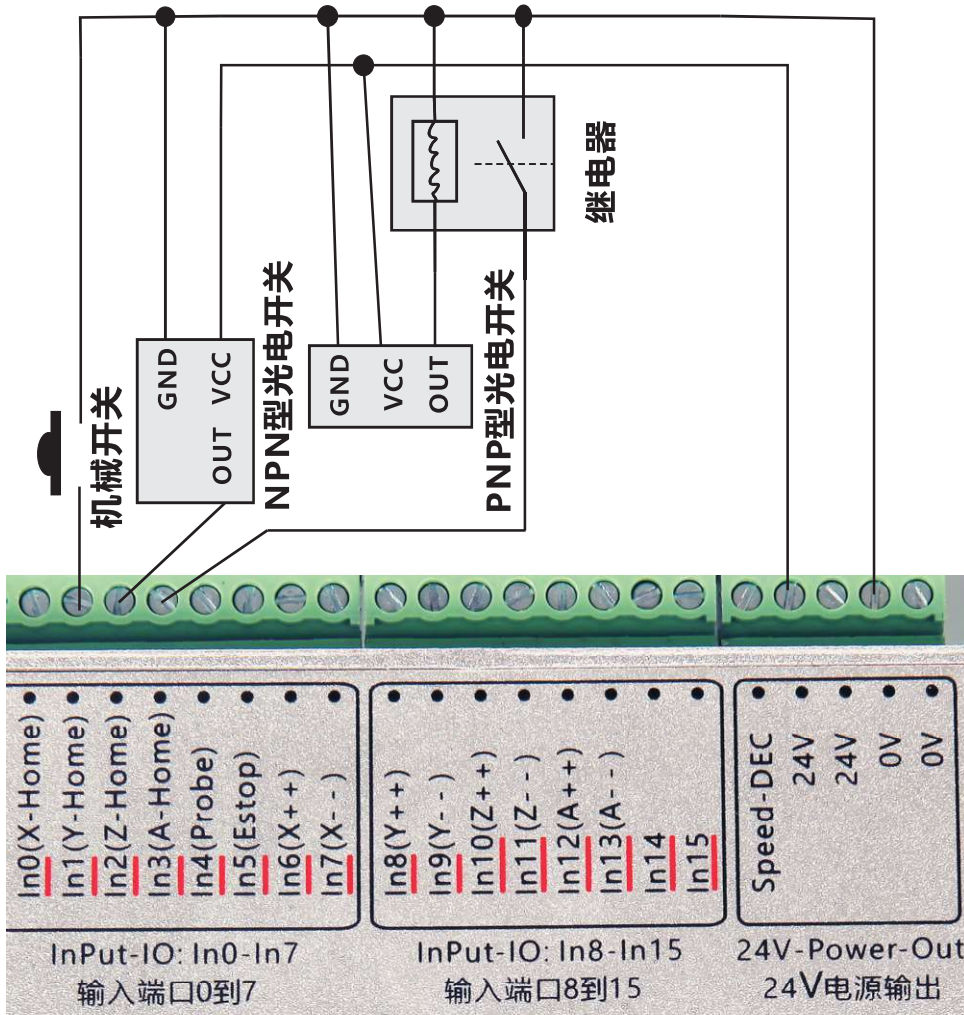
断电续传：当控制卡突然断电时，当前加工程序已经加工的行数自动
保存在控制卡的芯片中。(控制卡插件显示保存行数)
Break continue: when the control card suddenly power off, the
control card chip automatically save the current G code line
number.Control card plug-in display save the number of lines.
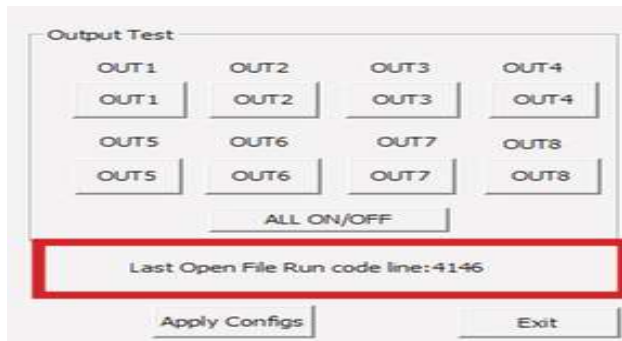
等到下一次控制卡通电以后,加载加工程序,点击断电
续存按钮,Mach3软件自动从上一次保存的行数处开始加工。
Wait until the control card is connected to the power supply next,
load the G code program, click the power to continue to the break
continue button, Mach3 software automatically from the last save
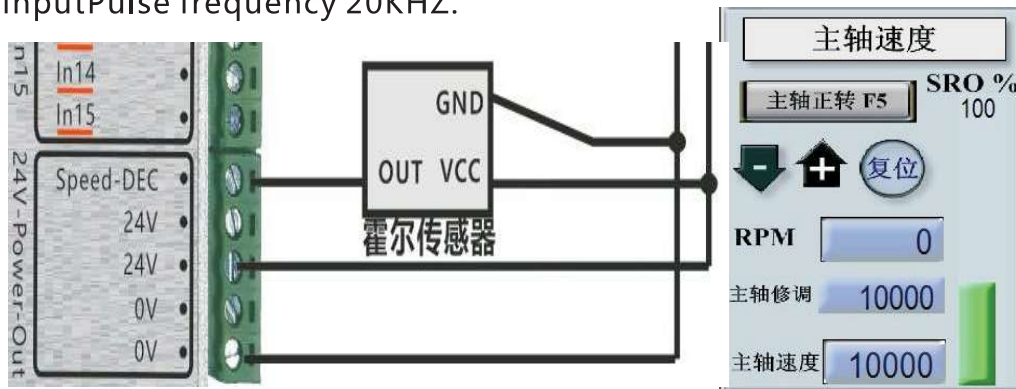the number of lines to start running.
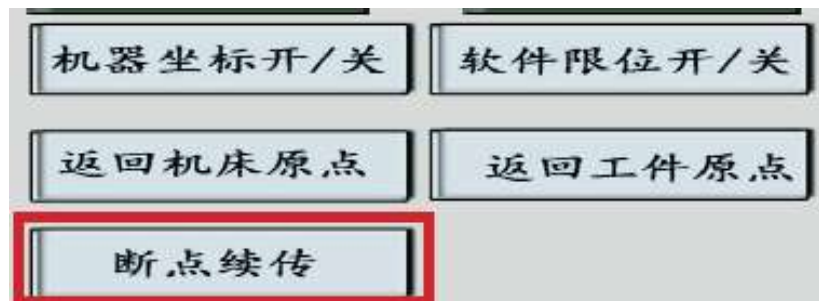
主轴速度反馈：主轴实时转速通过传感器反馈给控制卡的速度反馈接口"Speed-DEC"，然后在Mach3软件上显示RPM速度.支持反馈输入最大脉冲频率20KHZ.

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.

USB高抗干扰能力：全新设计独立的USB数据处理器，防止USB通讯被干扰，更加稳定可靠.适合等离子切割和自动化焊接等.

USB anti interference: the new design of the independent USB data processor, to prevent the interference of USB communication, more stable and reliable.Suitable for plasma cutting and automatic welding and so on.

USB

Independent data processor. Prevent interference
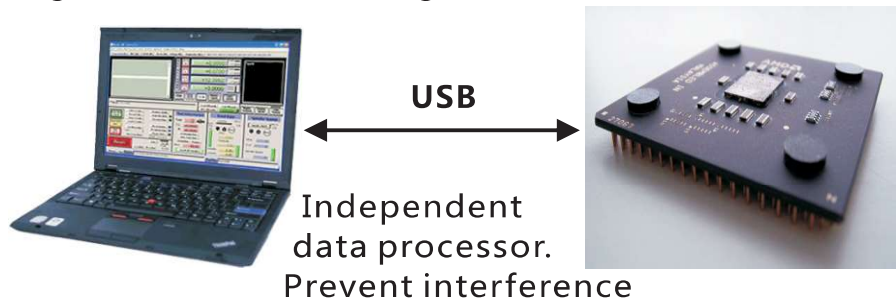
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Chengdu XinHeCheng Technology Co.,Ltd

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