



# 05 Series Connect Board

## Schematic

**Fax: +86-10-60553532**

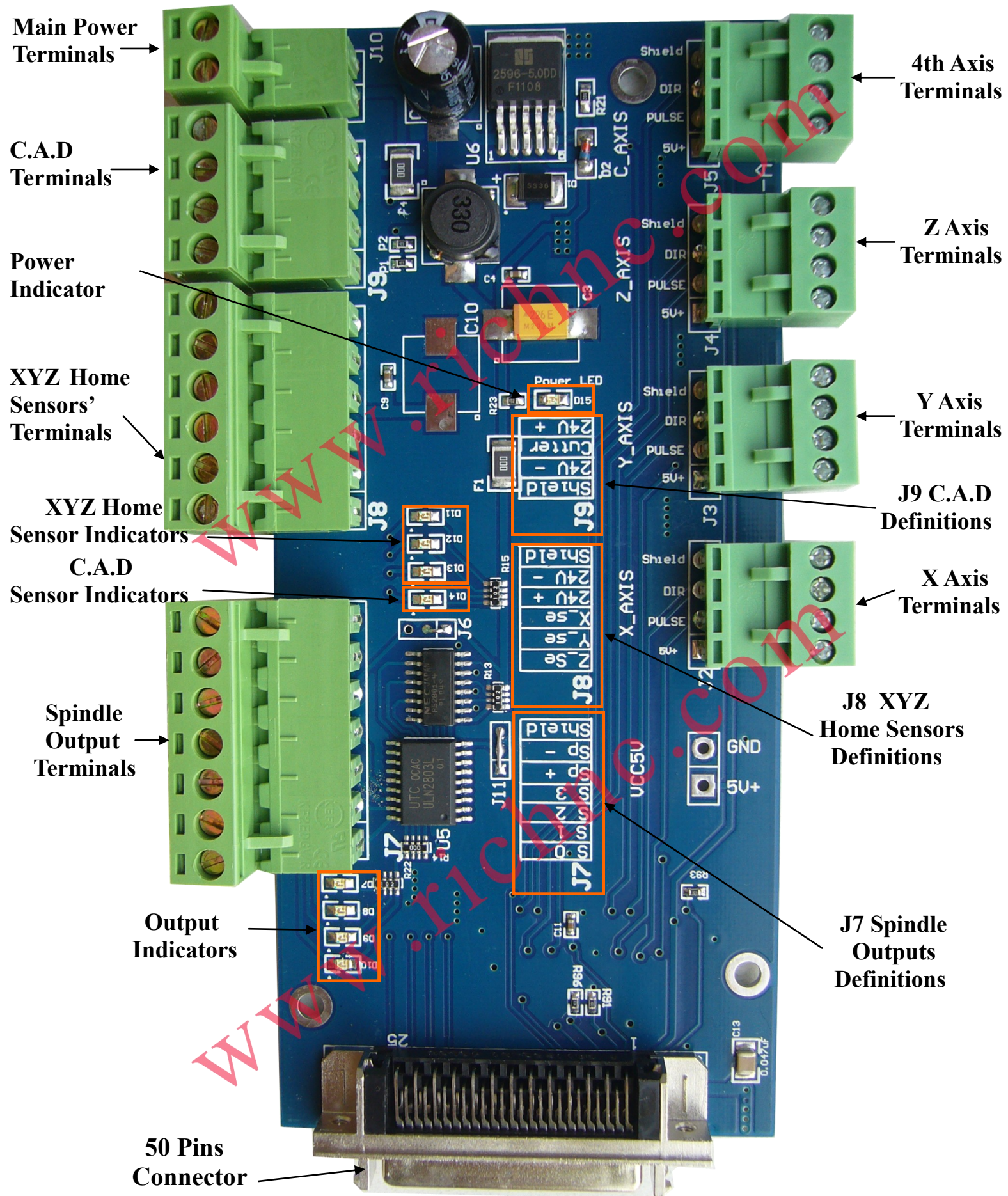
**Cell: +86-13581806922**

**24Hours:+86-18911613859**

**Http://www.richnc.com**

**Skype:wwwrchnccom**

**E-mail: richnc@hotmail.com**



**Main  
Power ter-  
minals**

**C.A.D ter-  
minals**

**System in-  
dicator**

**XYZ Home  
sensors'  
terminals**

**XYZ Home Sensor  
Indicators**

**C.A.D Sensor  
Indicators**

**Spindle  
Output  
Terminals**

**Output  
Indicators**

**50 Pins  
Connector**

**4th Axis  
Terminals**

**Z Axis  
Terminals**

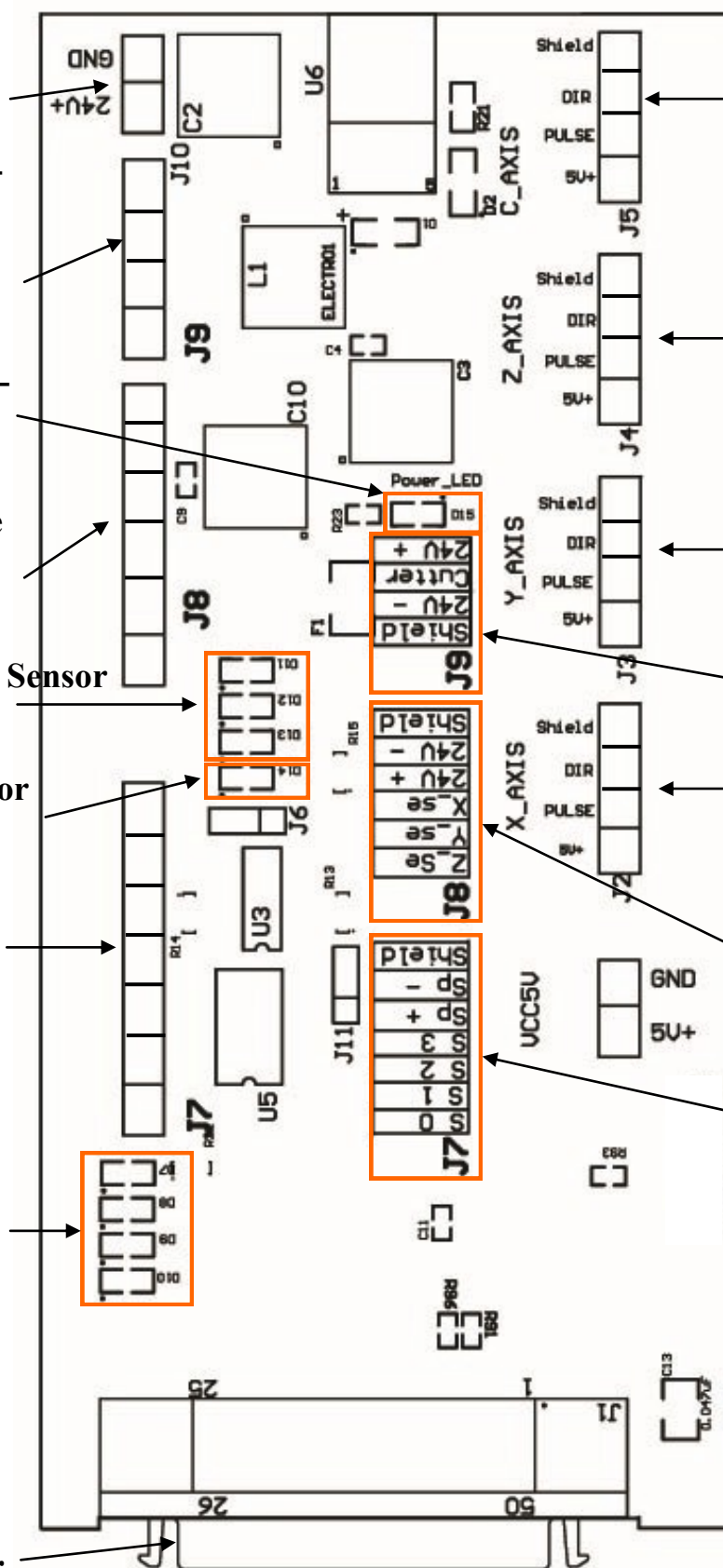
**Y Axis  
Terminals**

**J9 C.A.D  
Definition**

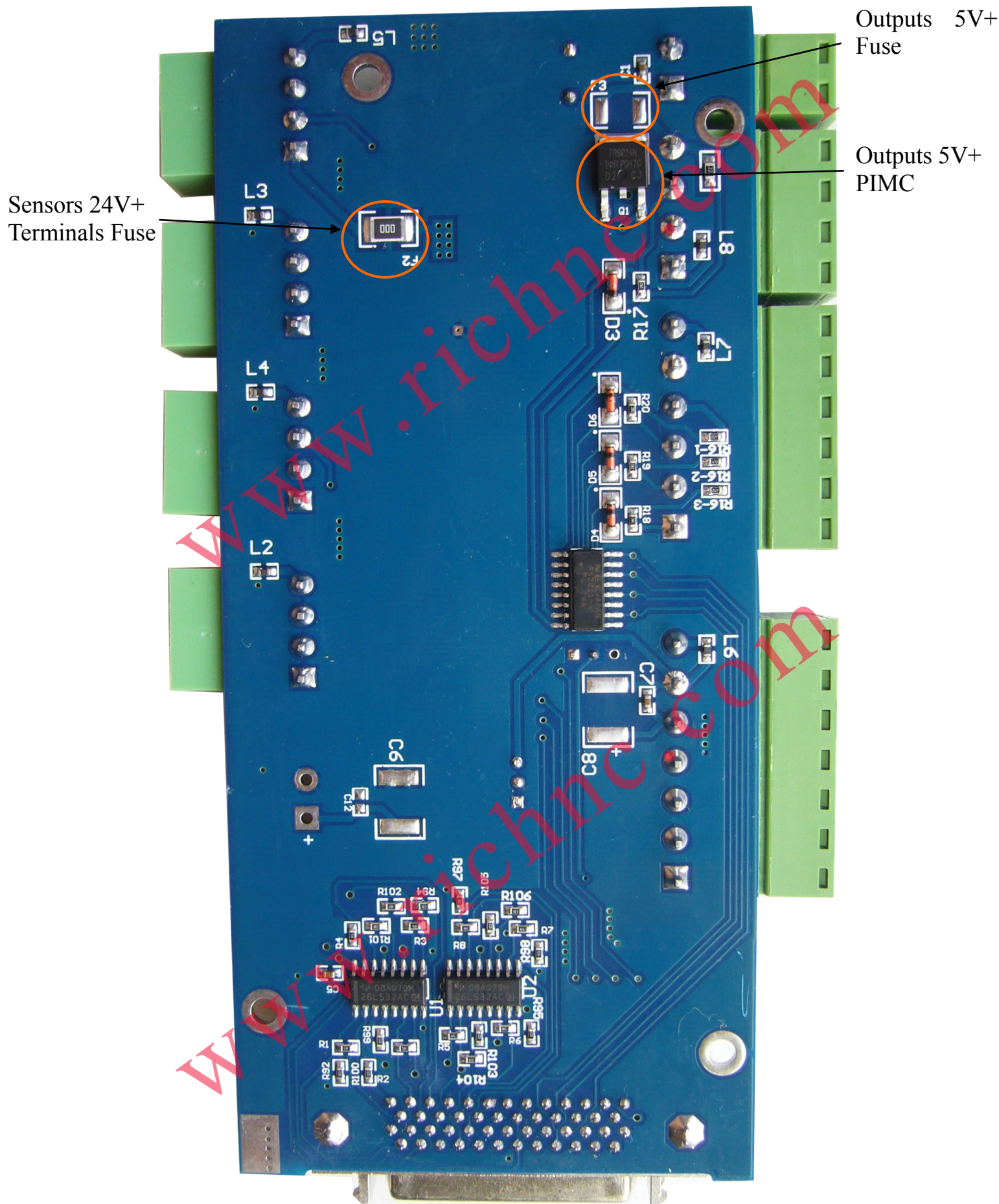
**X Axis  
Terminals**

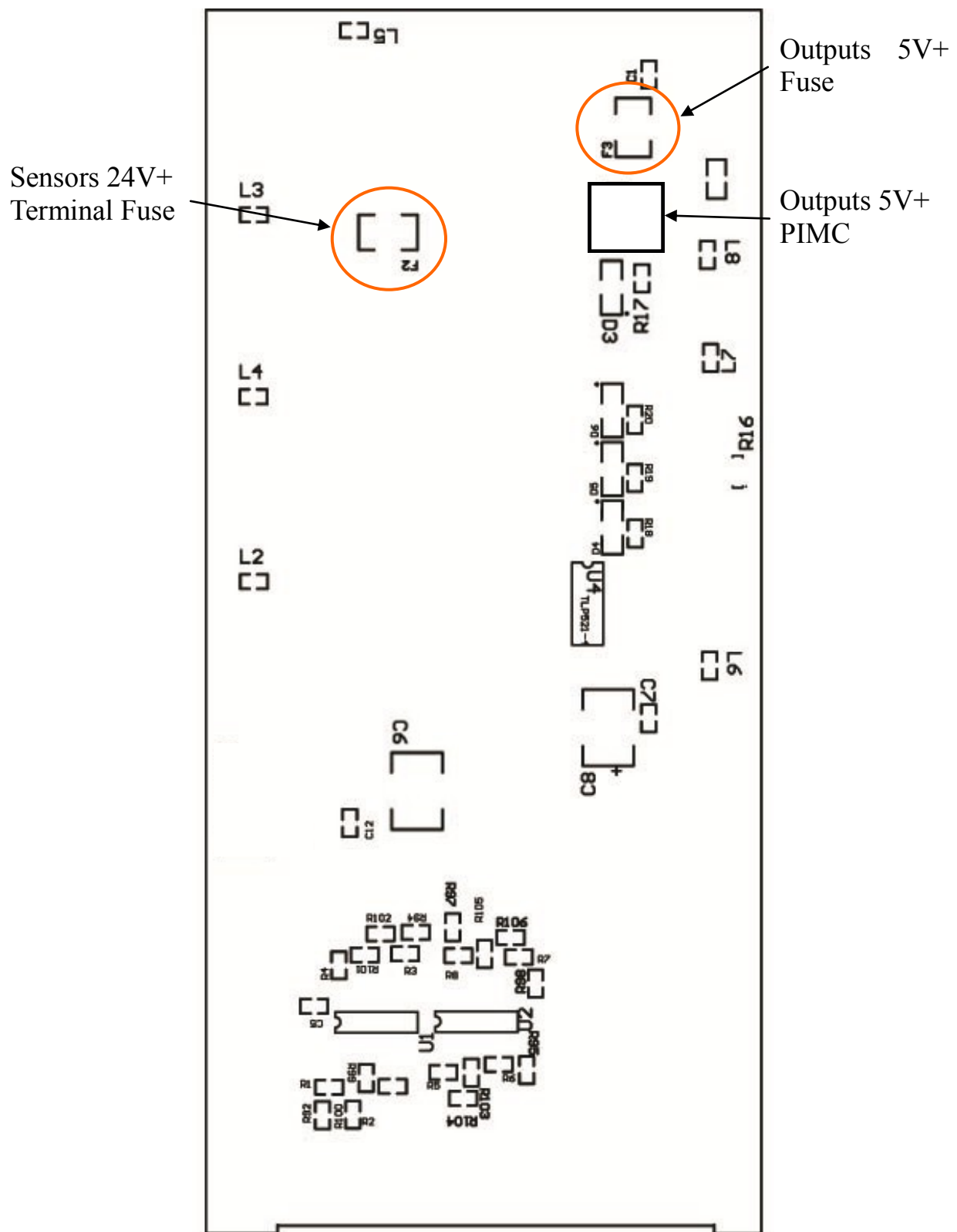
**J8 XYZ Home  
Sensors Definition**

**J7 Spindle  
Outputs Definition**









## The output(J2,J3,J4,J5) definitions for step drive

No	Terminal	Pin	Pin function	Note
J2	X Axis Output Terminals	5V+	Positive power terminal of X axis drive DC5V output	Mustn't supply any other voltage to this pin
		Pulse	X axis pulse signal output terminal Output Voltage $\geq 3V$ Current $\leq 8mA$	
		DIR	X axis direction signal output terminal Voltage $\geq 3V$ Current $\leq 8mA$	
		Shield	X axis drive output shielding line ter- minal	Mustn't use this pin as GND
J3	Y Axis Output Terminals	5V+	Positive power terminal of Y axis drive DC5V output	Mustn't supply any other voltage to this pin
		Pulse	Y axis pulse signal output terminal Output Voltage $\geq 3V$ Current $\leq 8mA$	
		DIR	Y axis direction signal output terminal Voltage $\geq 3V$ Current $\leq 8mA$	
		Shield	Y axis drive output shielding line ter- minal	Mustn't use this pin as GND
J4	Z Axis Output Terminals	5V+	Positive power terminal of X axis drive DC5V output	Mustn't supply any other voltage to this pin
		Pulse	Z axis pulse signal output terminal Output Voltage $\geq 3V$ Current $\leq 8mA$	
		DIR	Z axis direction signal output terminal Voltage $\geq 3V$ Current $\leq 8mA$	
		Shield	Z axis driver output shielding line ter- minal	Mustn't use this pin as GND
J5	4th Axis Output Terminals	5V+	Positive power terminal of X axis drive DC5V output	Mustn't supply any other voltage to this pin
		Pulse	4th axis pulse signal output terminal Output Voltage $\geq 3V$ Current $\leq 8mA$	
		DIR	4th axis direction signal output termi- nal Voltage $\geq 3V$ Current $\leq 8mA$	
		Shield	4th axis drive output shielding line terminal	Mustn't use this pin as GND

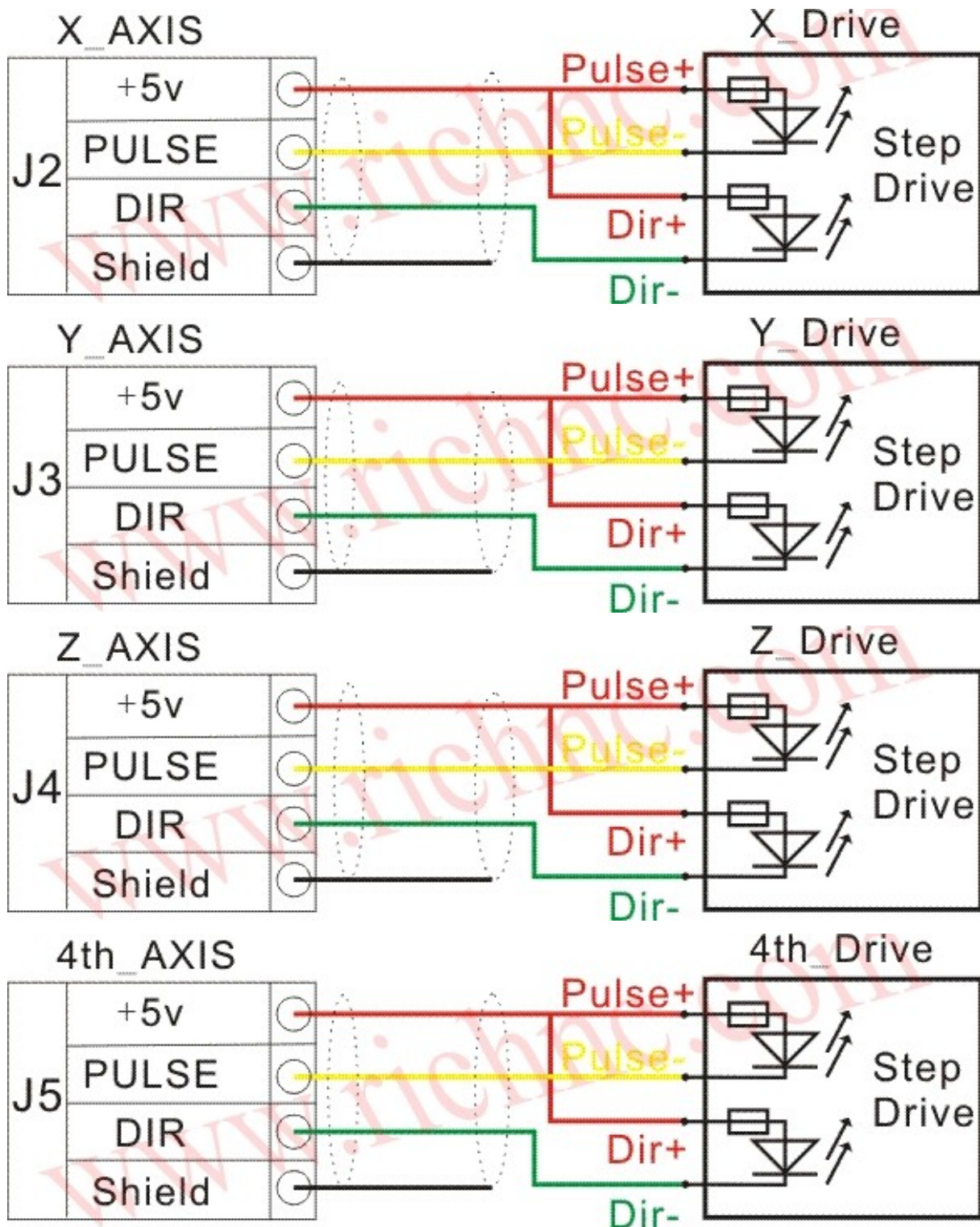
Note: the 4th Axis Output maybe is A Axis ,C Axis,Y2 Axis,Z2 Axis or others axis, difference 4th axis will choose the type to match your machine.

For example:[RZNC-1003](#) is A Axis .[RZNC-ATC\(D\)](#) is Z2 Axis and so on

More models of choice please [click here](#)



## The output(J2,J3,J4,J5) Diagram for Stepper drive



### Note:

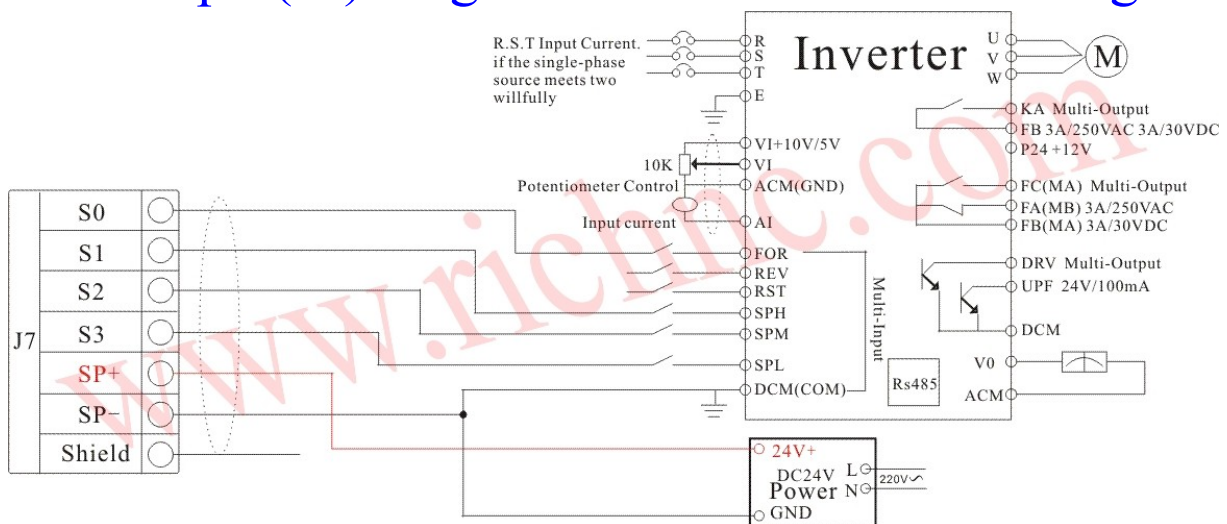
The connection line's diameter should be above 0.3 square mm. The shielding line should be connect one end and cut down the other end.(Normal please must not Connection the shielding).

[Click here got more clearly and complete diagram](#) .

## The output(J7) definitions for Inverter Controlling

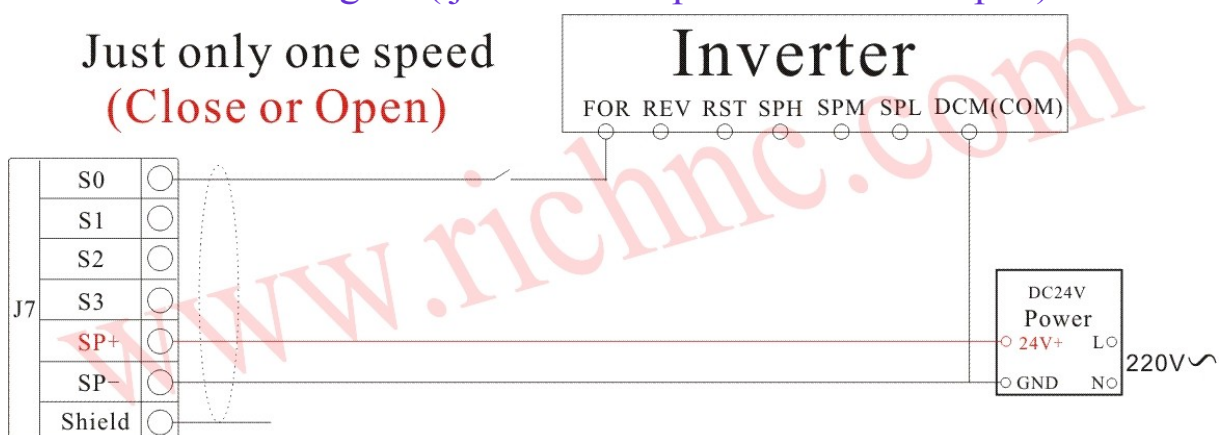
No	Terminal	Pin	Pin Function	Note
J7	Spindle Control Terminals	Output S0	Control spindle speed when it is connected to the inventor	Built-in circuit is OC gate. Max Voltage: $\leq$ DC25V Max Current: $\leq$ 400mA
		Output S1	Control spindle speed when it is connected to the inverter	
		Output S2	Control spindle speed when it is connected to the inverter	
		Output S3	Control spindle speed when it is connected to the inverter	
		SP+	Outputs power+	It is not necessary to supply voltage when it controls spindle speed
		SP-	Output power-	It should be connected to the inverter's COM port when it control spindle speed
		Shield	Shielding line	Mustn't use it as GND

## The output(J7) diagram for Inverter Controlling



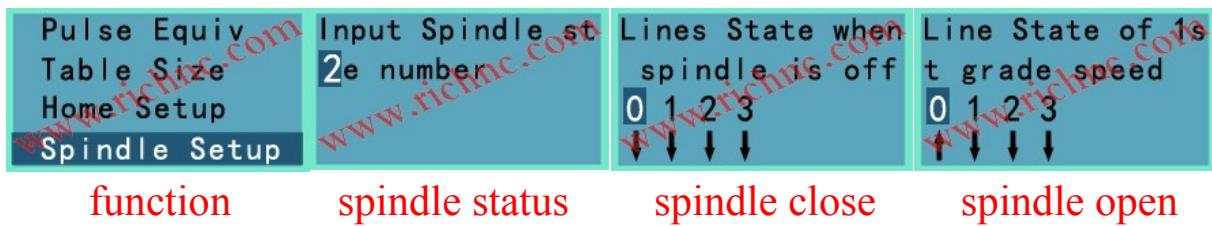
Note :the different “spindle setup” with “inverter setup” will got different spindle controlling mode. The RZNC Controller can be used control 2-8 different spindle speed. “inverter setup” checking his manual.

### The first mode Diagram( just control spindle Close or Open)



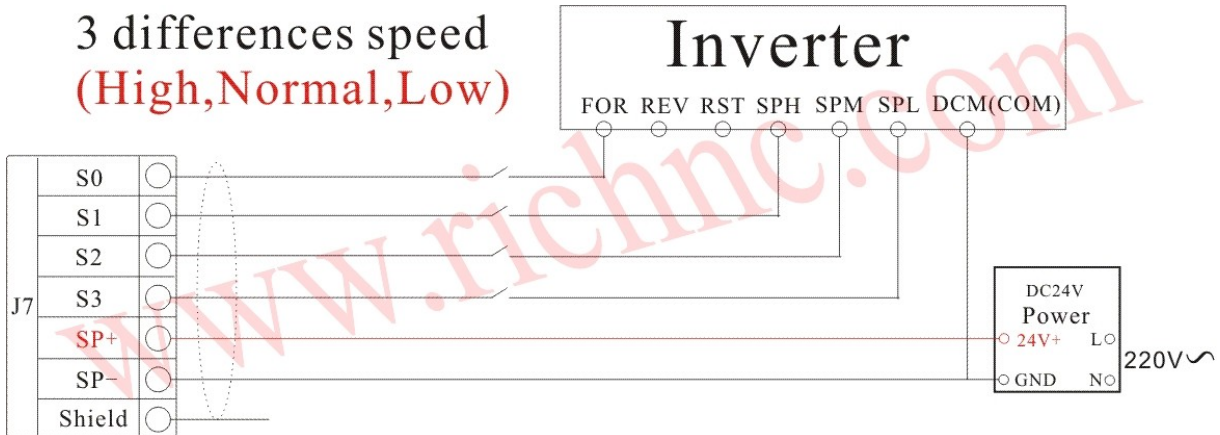


## The first mode “Spindle setup”( just control spindle Close or Open)

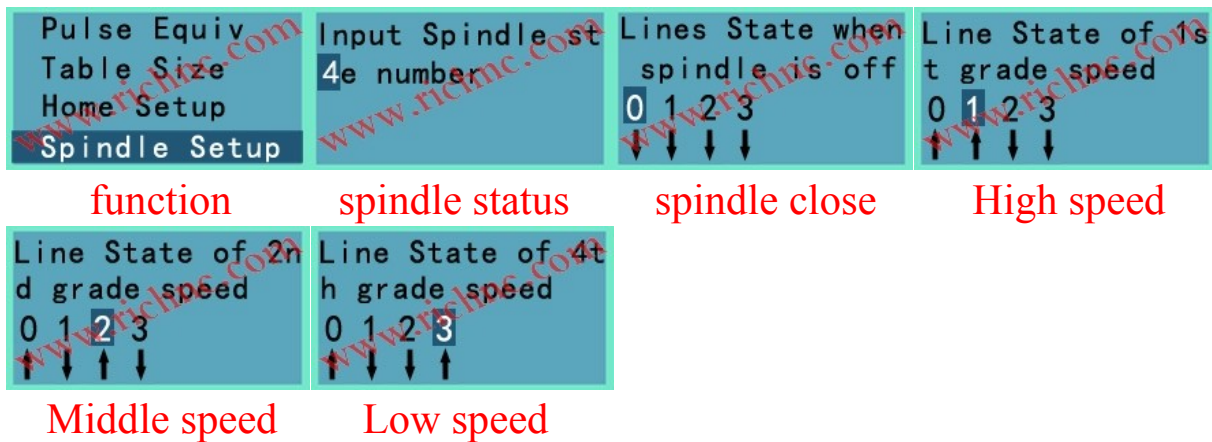


Note: Please Must make sure the inverter Multi-input is disable

## The 2nd mode Diagram( control spindle speed High Middle Low )

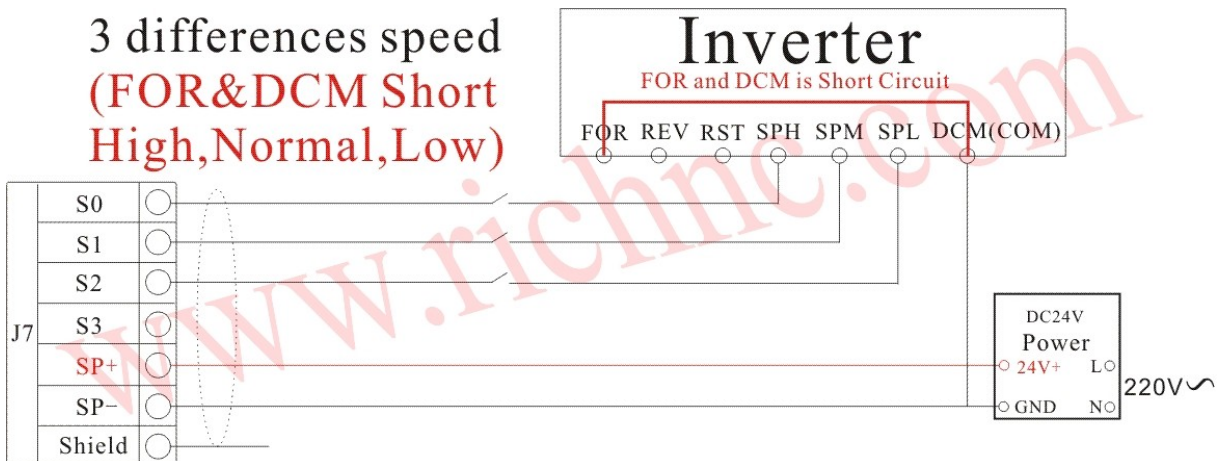


## The 2nd mode “Spindle setup”( High Middle Low)

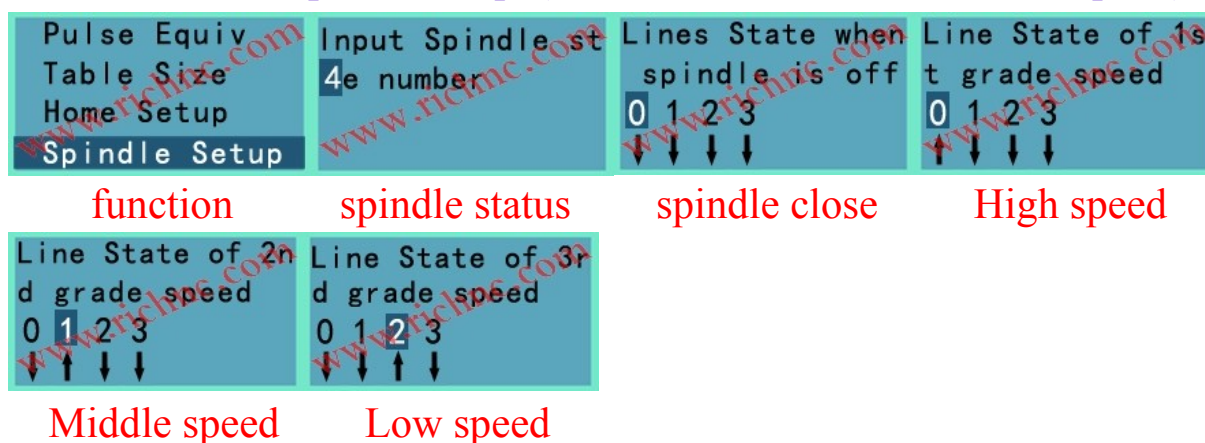


Note: Please Must make sure the inverter Multi-input had opened and “SPH SPM SPL” setup is correct.

## The 3rd mode Diagram( FOR and DCM short , High Middle Low )



## The 3rd mode “Spindle setup”( FOR and DCM short H M L speed)

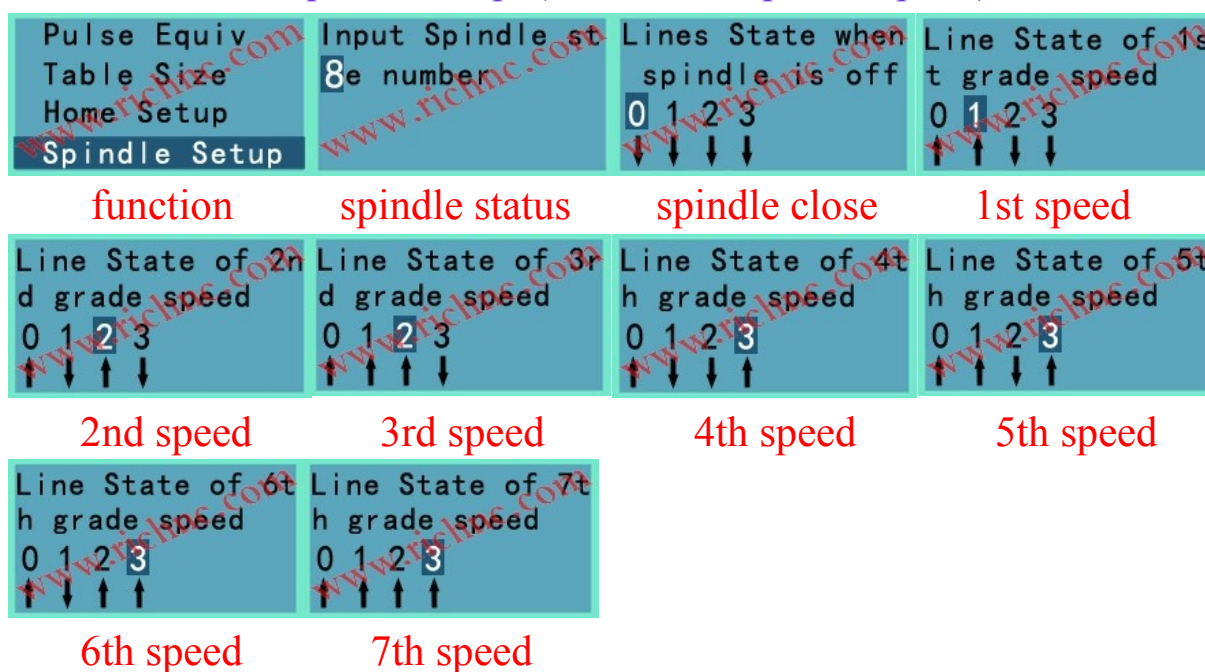


Note: Please Must make sure the inverter Multi-input had opened and “SPH SPM SPL” setup is correct.

## The 4th mode Diagram( 7 different spindle speed )



## The 5th mode “Spindle setup”( 7 different spindle speed)



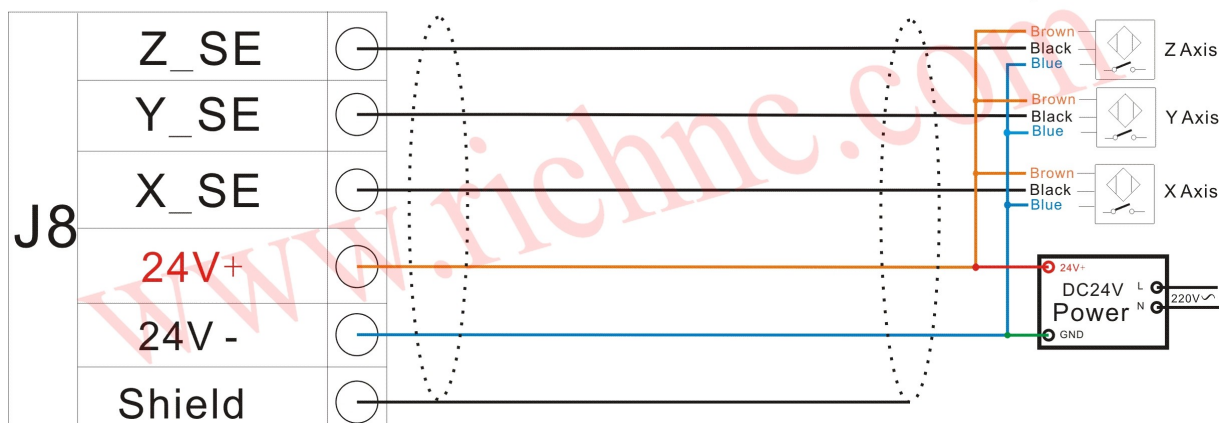
Note: Please Must make sure the inverter Multi-input had opened and “Multi-speed” setup is correct.

## The input(J8) definitions for Sensor

No	Terminal	Pin	Pin Function	Note
J8	X、Y、Z home sensor Terminals	X Axis Sensor	Home sensor signal terminal of X axis	It works when this terminal get short circuit with Sensor-
		Y Axis Sensor	Home sensor signal terminal of Y axis	It works when this terminal get short circuit with Sensor-
		Z Axis Sensor	Home sensor signal terminal of Z axis	It works when this terminal get short circuit with Sensor-
		24V+	Home sensors power+ terminal	Voltage match sensor working voltage It can get power from the main power supply when F3 is connected. If F3 is not connected, you must supply power to sensors separately ( <b>Default</b> ).
		24V-	Home sensors power- terminal	
		Shield	Shielding line of home sensors ( if there are)	Mustn't use it as GND.

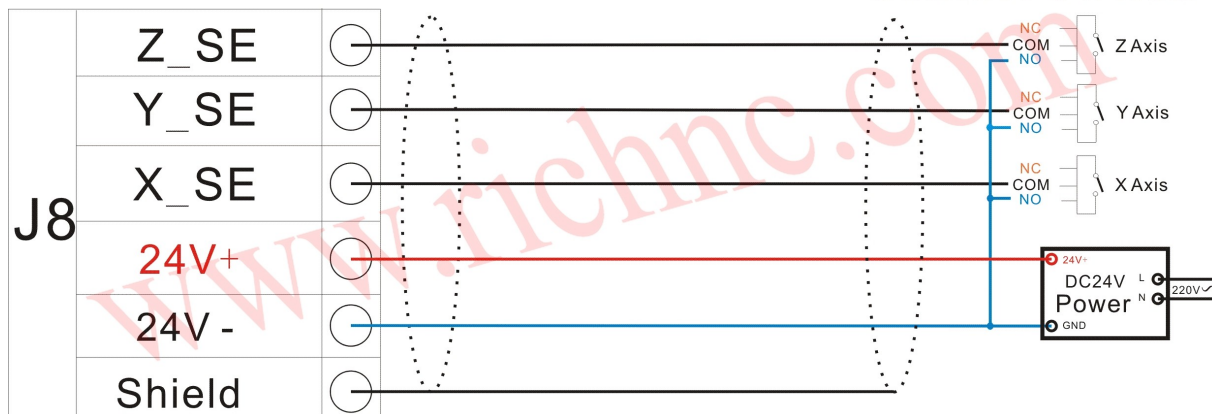
### The 1st mode Diagram( Proximity Switch, NO model )

#### NPN Proximity Switch



### The 2nd mode Diagram( Contact Switch, NO model )

#### Contact Switch



Note: The connection line's diameter should be above 0.3 square mm. The shielding line should be connect one end and cut down the other end. [Click here got more clearly and complete diagram](http://www.richnc.com) .

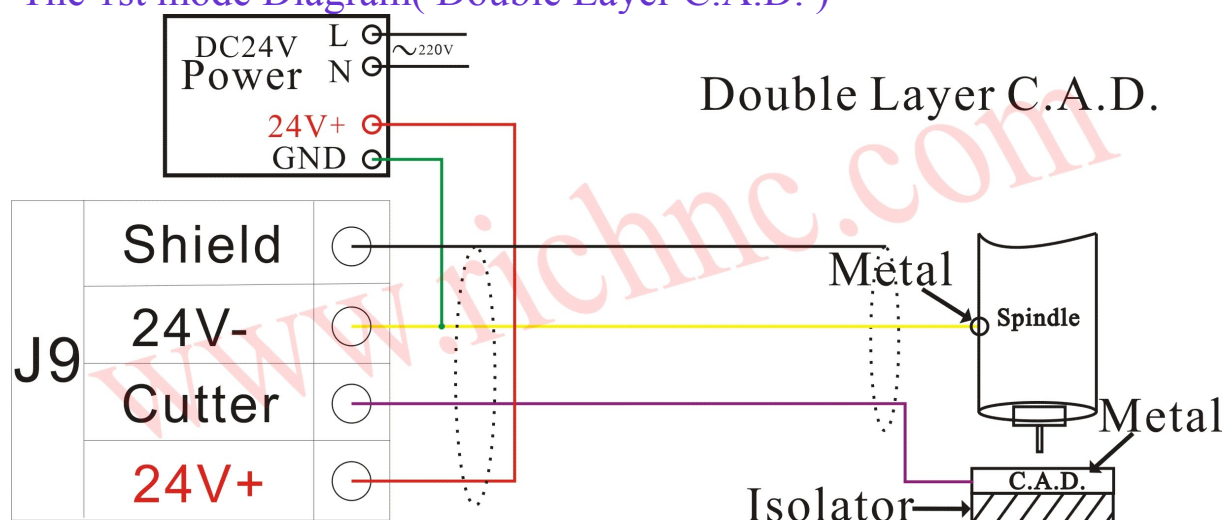


## The input(J9) definitions for Sensor

No	Terminal	Pin	Pin Function	Note
J9	Cutter Adjust Device (C.A.D.) Terminals	Shield	C.A.D. Shielding line terminal	Mustn't use it as GND
		24V-	C.A.D. power-	J9(C.A.D.) Built-in power circuit is connected with J8(X Y Z home Sensor). So if the J8 had offered voltage need not offered voltage for J9
		C.A.D. signal	C.A.D. signal	
		24V+	C.A.D. power+	

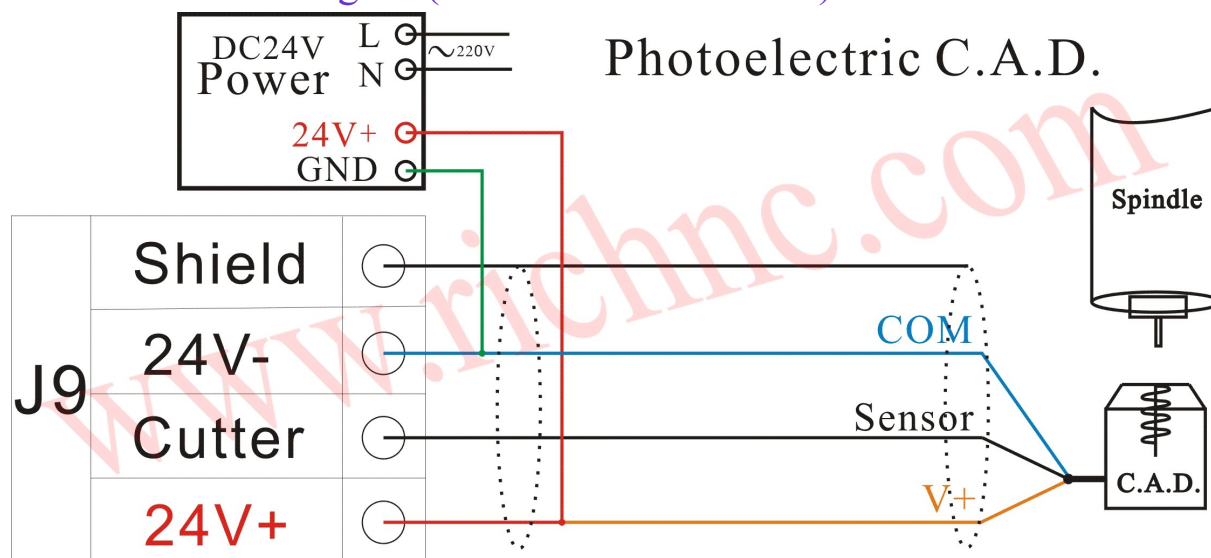
Note :C.A.D. means "Cutter Adjust Device" abbreviations. Used to check new tools distance for last job

### The 1st mode Diagram( Double Layer C.A.D. )



Note :the 24V- must be well connect to spindle metal cover ,must not connect it with machine fracture

### The 2nd mode Diagram( Photoelectric C.A.D. )



Note :The connection line's diameter should be above 0.3 square mm. The shielding line should be connect one end and cut down the other end.(Normal please must not Connection the shielding).

If you adopt Photoelectric C.A.D. please adopt the same working voltage with Home switch and C.A.D.

[Click here got more clearly and complete diagram](#) .

## The input(J10) definitions for main power

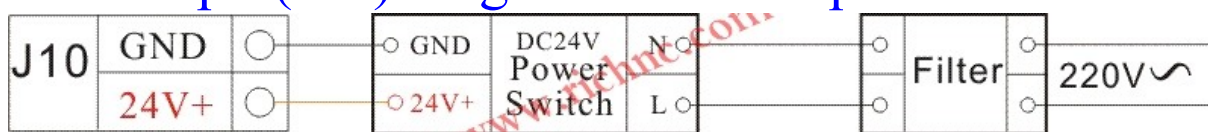
No	Terminal	Pin	Pin Function	Note
J10	System main power supply	GND	Power-	Supply power to the controller with DC 5V. When F3 is connected, it also offers voltage to XYZ home sensor terminal (Default F3 is cut for preventing electronic interference)
		24V+	Power+	

Note :

The input voltage should be  $6V \leq J10 \leq 40V$  (better it is  $24V \pm 5\%$ ). Current should be 2A. The connecting line diameter from the switch to the connection board should be above 0.8 square mm.

Mustn't connect GND in connect board to any GND ports.

## The output(J10) diagram for main power



## The other definitions for connect board

No	Terminal	Pin	Function	Note
	F2	Fuse	Pulse signal 5V output overload protection	
	F3	Fuse	Sensor overload protection (Current=1A)	If connected sensor 24V and main power 24V connects (Default: off)
	D15	Power Indicator	It shows the main power supply and inner power state	It lights when system gets power
	D14	Indicator	C.A.D. state indicator	They light when signals are short circuit with the 24V-.
	D13	Indicator	Z axis home sensor state indicator	
	D12	Indicator	Y axis home sensor state indicator	
	D11	Indicator	X axis home sensor state indicator	
	D10	Indicator	Output port S3 state indicator	They light when OC gate is closed( means the controller controlling signals is successful).
	D9	Indicator	Output port S2 state indicator	
	D8	Indicator	Output port S1 state indicator	
	D7	Indicator	Output port S0 state indicator	

Note: All of the indicators can be self checked by controller

D11-D14, input signals indicator .they will light when signal are short circuit with 24V-(J8 or J9).

Self check way: the controller got the input signals (short circuit with 24V-) the “[input self check](#)” function arrow will changed (up to down, or down to up)

D10-D7,output signals indicator. They will light when the controller controlling signals is successful.

Self check way: “[output self check](#)” the controller will auto send test signals,they will light one by one

[Click here will got more and more](#)



[illegible]

## The 50 pins definitions (SICI Cable)

