GS602-A Robot Arm Manual

GS Automatic Co., Ltd

2022.01

This manual is the operating instructions for users of GS602-A manipulator. Revision date: 2022

For sales and technical support, please contact GS Automatic Co., Ltd.

E-mail : sales@gsautomatic.com

Statement

Respected users:

Thank you for purchasing and using GS Automatic products. For your safety and benefit, please read the user manual and all the random information before using the product. If you do not operate and use the product in accordance with the user's use manual, resulting in any personal injury, property or other loss, GS Automatic Co., Ltd. will not be liable.

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- The contents of the manual are inconsistent with the actual product, and the actual product shall prevail.

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If you have any problems, please call +86 13602561056.

GS Automatic (co., ltd reserves the right to explain and modify the user's manual. the revision, update and explanation of the manual will be published on the GS Automatic website (http://www.gsautomatic.com/), please note.

Thank you!

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强制

A comprehensive description of the use of GS Automatic 602 arm is given in this specification. Be sure to operate the arm on the basis of careful reading and full understanding.

注意

The drawings and photos in the instructions are representative examples and may differ from the products purchased.

• Specifications are sometimes modified appropriately for reasons such as product improvements, specification changes and easier use of the specifications themselves. the revised instruction manual will update the version number below the cover and issue in a revised version.

Please contact our sales department to order the instructions for breakage and loss.

Customer unauthorized product transformation, not within the scope

of our warranty, the company is not responsible.

Directory

I. Safety precautions

thank you for purchasing our GS Automatic robot manipulator. For your safety and prevent damage to the manipulator, please read and master this manual and other ancillary materials before using the GS Automatic manipulator, and start using it after you are familiar with all equipment knowledge, safety knowledge and precautions, and pay special attention to the following safety signs.

1. symbols and their meanings

Misoperation is dangerous and may result in

Misoperation is dangerous and may result in moderate injury, minor injury or damage to objects.

Compliance in manuals and documents

Matters expressly prohibited in manuals

Even matters belonging to the category of "attention" will have serious consequences because of different circumstances, so any "attention" matters are extremely important, please strictly abide by.

2. hazardous matters

危险

(1) In case of emergency, press the emergency stop button immediately, if the brake arm can not be timely, it may cause personal injury or equipment damage accident.

Stop button

(2) When the servo power supply is switched on after the emergency stop is lifted, the emergency stop key should be started after the accident causing the emergency stop.

Release from emergency

(3) When moving within the range of the manipulator, observe the following:

1) consider the strain scheme when the manipulator suddenly moves to its position.

2) make sure to set up a shelter, just in case.

注意 The mechanical arm action caused by misoperation may cause personal injury accident.

(4) Make sure that no one is within the range of the action of the manipulator and that the operator is operating in a safe position when:

1)GS Automatic the arm is connected to the power supply.

2) use G code to operate the manipulator.

3) trial run time.

4) show again.

(5) Please do not move and maintain the arm while the arm is in operation. If you want to move and maintain, please turn off the power of the arm before doing this operation.

Accidental entry into the manipulator action range or contact with the manipulator may cause personal injury. If you find an exception, press the stop button immediately. Emergency stop key is located on the right side of the front of the GS 602-A manipulator electrical control box.

3. Notes

(1) The following shall be checked in front of the GS Automatic arm and, if any, repaired or other necessary measures shall be taken in a timely manner.

1) electrical cables are properly connected;

2) electrical cable skin damage;

3) the emergency stop switch is in the state of release;

4) arm movement is abnormal, abnormal noise.

(2) The owner and operator of the GS Automatic arm must be responsible for their own safety. Ano robot reminds users to wear safety protection equipment and comply with safety regulations when using manipulator products.

(3) Do not modify the mechanical arm

Do not rebuild the mechanical arm, due to unauthorized product transformation caused by accidents or failures, not within the scope of our warranty, the company is not responsible.

(4) Do not approach the running arm

Do not approach the running arm to prevent accidental injury or damage to the arm.

(5) Please specify those responsible for oversight

In order to prevent manual adjustment errors or accidents caused by inadequate safety confirmation, when more than two people operate, please specify the supervisor.

(6) Use the GS Automatic arm on the basis of an understanding of the "warning sign" of the instruction manual for the use of the arm.

4. use of the environment

(1) Do not place the mechanical arms in harsh conditions. Soil, scrap, high temperature will damage internal devices.

(2) After using the mechanical arm, the power cord plug shall be unplugged and the mechanical arm shall be placed at a dry and normal temperature. High temperature and harsh environment damage the internal devices of the manipulator.

(3) GS Automatic arm may not be used in:

1) close to flammable substances

2) an explosion

4) water or other liquid

5) the presence of corrosive, flammable gases

Environment 6) temperatures above 40 degrees Celsius

7) other harsh environment

5. safety operating procedures

(1) Control the movement of the manipulator

1) the movement of the manipulator should be adjusted at a lower rate in front of the operating manipulator to increase the effective control of the manipulator.

2) consider the movement trend of the manipulator before pressing the power key.

3) should consider the trajectory of the manipulator in advance and confirm that the line is not interfered.

4) the area around the arm must be clean, free of oil, water and impurities.

(2) Production and operation

Before 1) boot, you must know all the tasks the manipulator will perform according to the program.

2) shall know the position and status of all switches, sensors and control signals that will affect the movement of the manipulator.

3) must know the position of the emergency stop buttons on the manipulator control device, ready to press these buttons in case of emergency.

4) never think that the robot arm has been completed without moving its program. Because the arm is probably waiting for the input signal to move on.

6. routine maintenance and storage

GS Automatic the arm is safe to use and can adapt to the environment to the maximum extent. Please follow the instructions. Please be sure to follow the precautions in this manual.

(1) Never force the shaft of the mechanical arm, or it may cause personal injury and equipment damage.

(2) Avoid temperatures below or above 20 degrees Celsius;

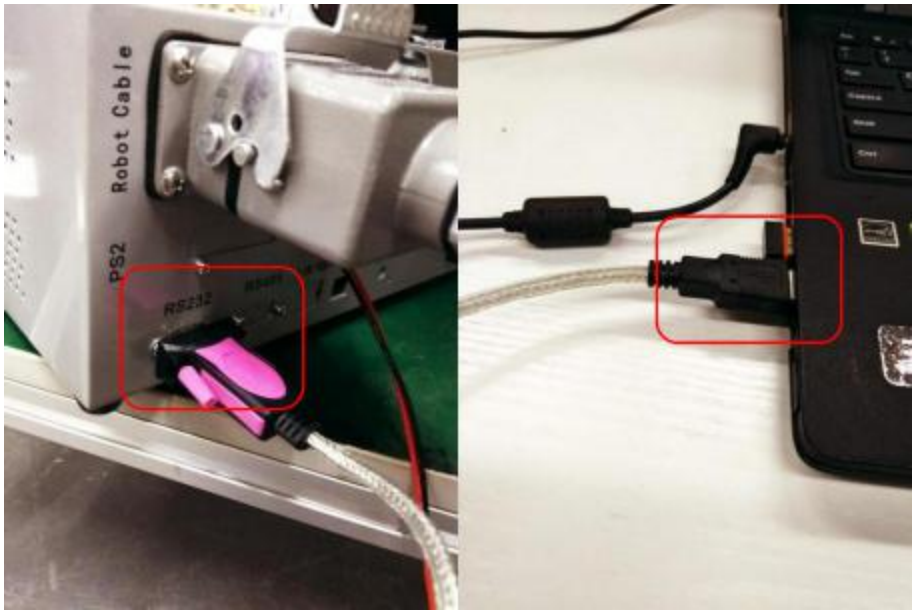
(3) Avoid long-term placement in direct sunlight;

(4) Avoid dirt and dusty environments;

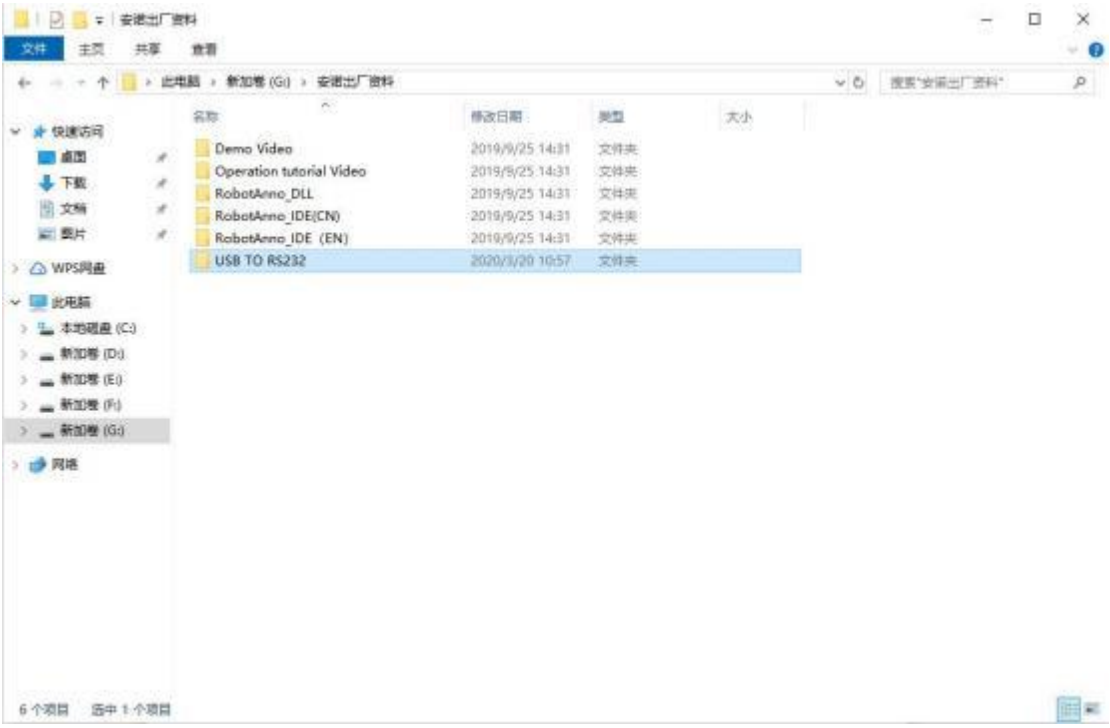
(5) Stay away from strong vibration environments;

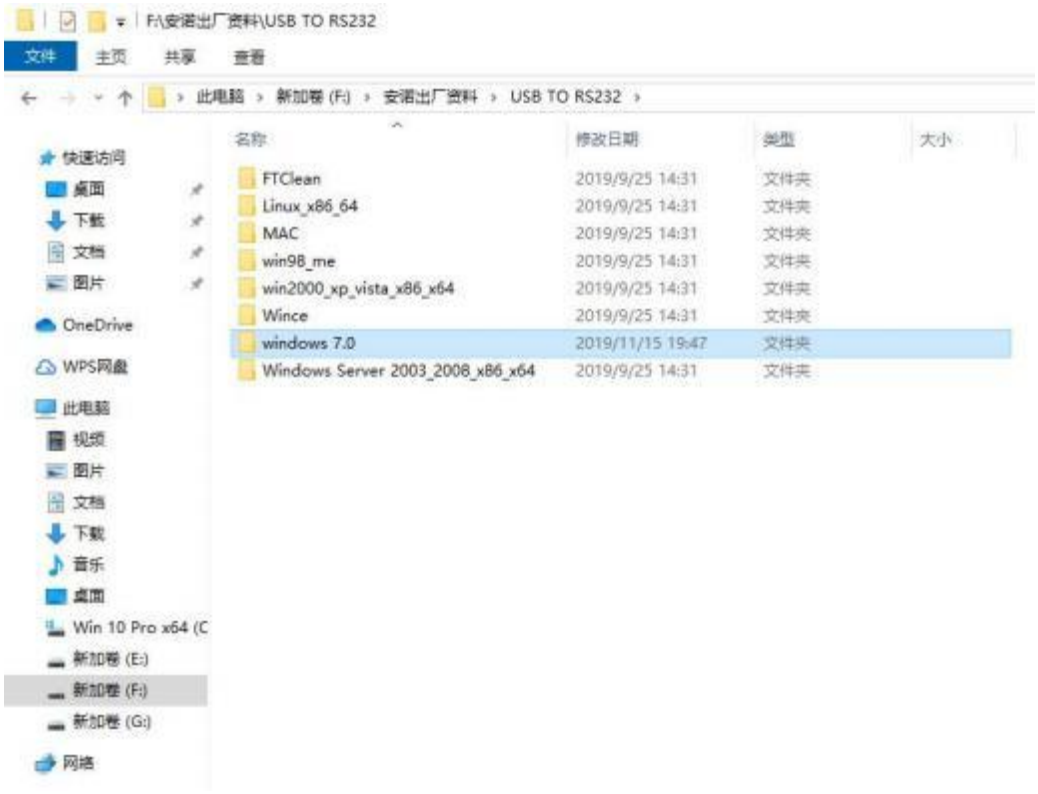
II. Install USB TO RS232 driver

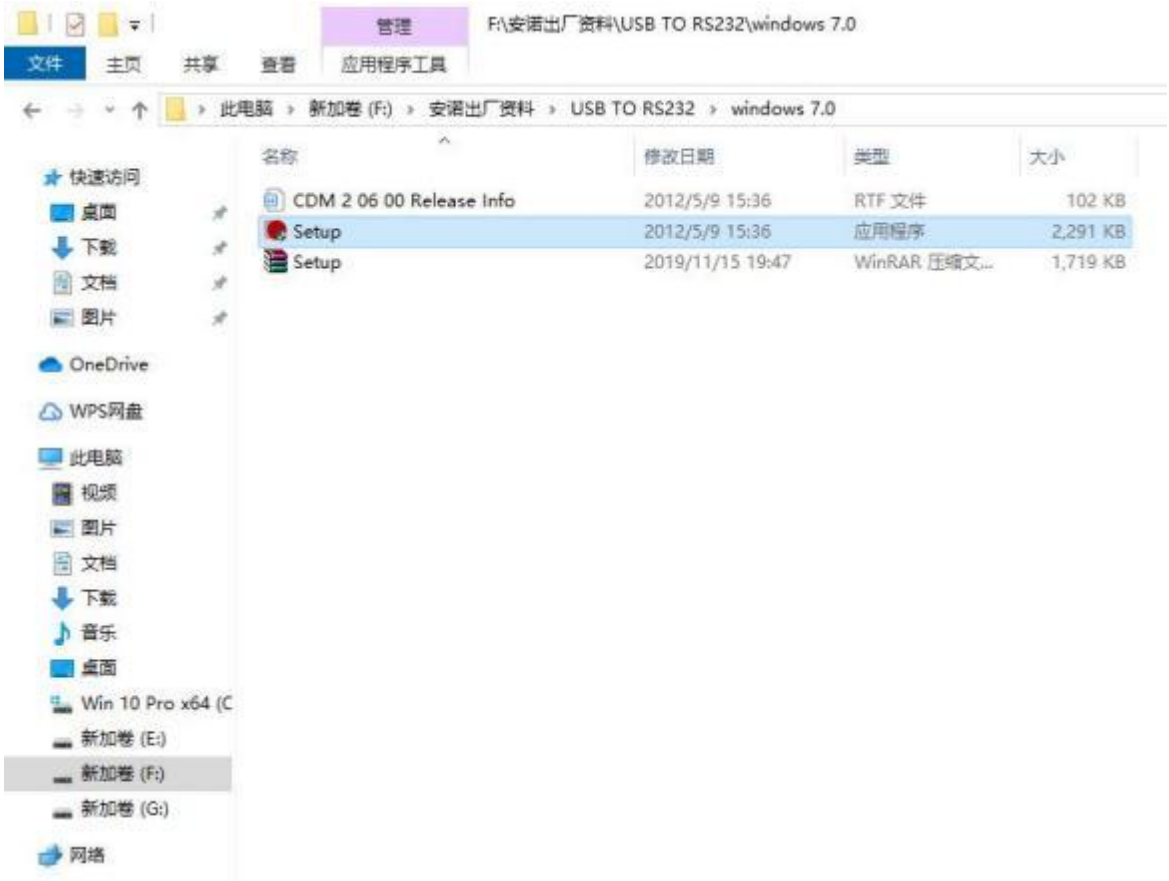
First, connect the computer to the controller through the data line, as shown in the figure:

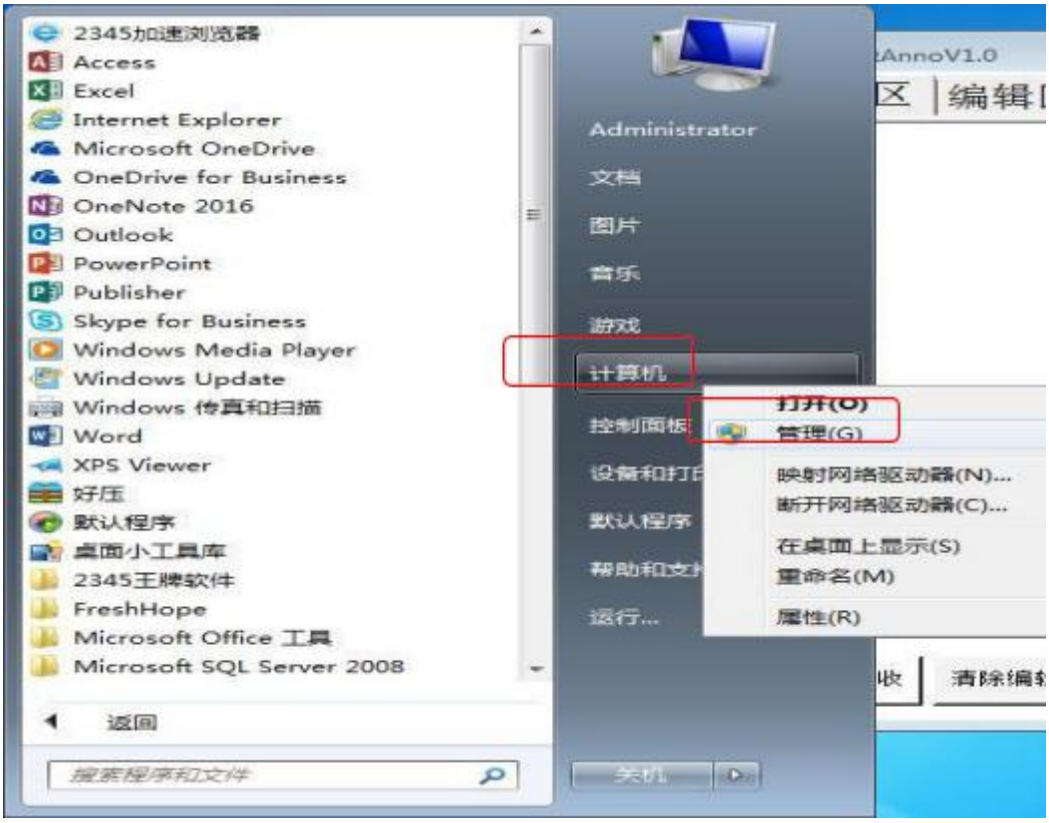


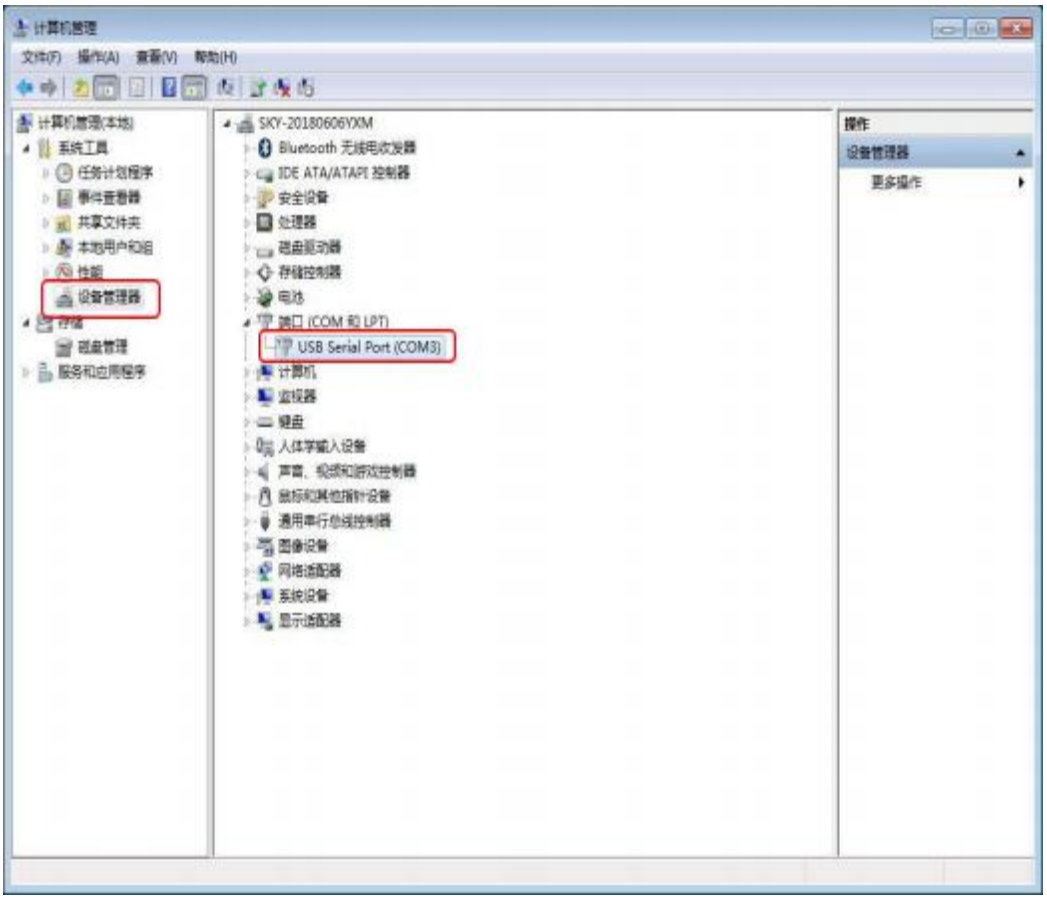
Open Ano factory data package, open USB TO RS232 folder, according to the use of computer systems to selectively install, here take the Win7/Win7 system as an example, as shown in the figure:

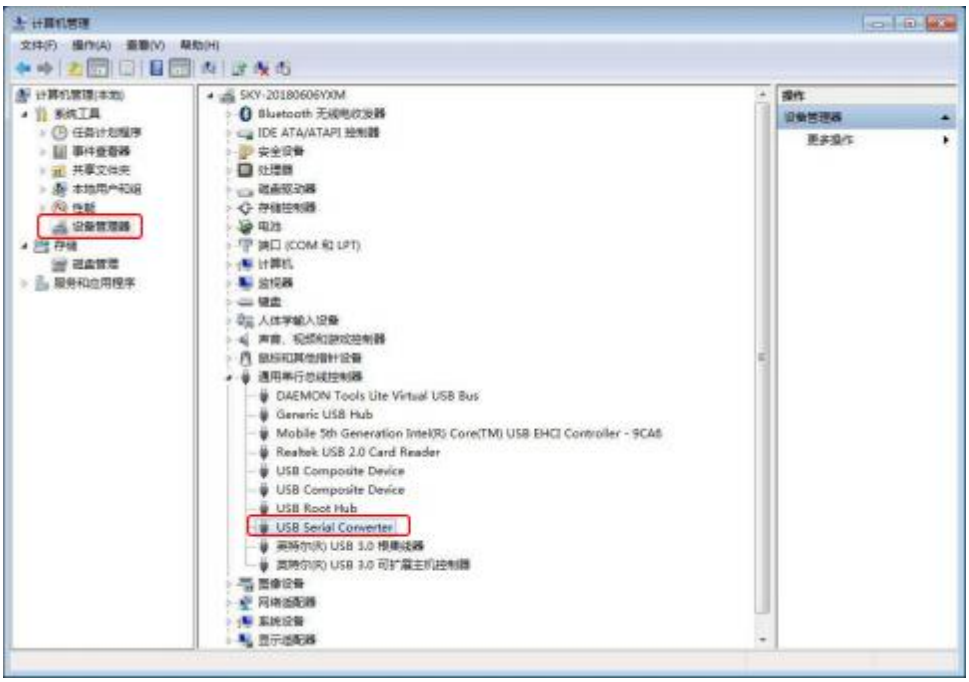



F:\安诺出厂资料\USB TO RS232
文件 主页 共享 查看
此电脑 › 新加卷 (F:) › 安诺出厂资料 › USB TO RS232 ›
名称 修改日期 类型 大小
FTClean 2019/9/25 14:31 文件夹
Linux_x86_64 2019/9/25 14:31 文件夹
MAC 2019/9/25 14:31 文件夹
win98_me 2019/9/25 14:31 文件夹
win2000_xp_vista_x86_x64 2019/9/25 14:31 文件夹
Wince 2019/9/25 14:31 文件夹
windows 7.0 2019/11/15 19:47 文件夹
Windows Server 2003_2008_x86_x64 2019/9/25 14:31 文件夹
快速访问
桌面
下载
文档
图片
OneDrive
WPS网盘
此电脑
视频
图片
文档
下载
音乐
桌面
Win 10 Pro x64 (C
新加卷 (E:)
新加卷 (F:)
新加卷 (G:)
网络


管理
F:\安诺出厂资料\USB TO RS232\windows 7.0
文件 主页 共享 查看 应用程序工具
此电脑 › 新加卷 (F:) › 安诺出厂资料 › USB TO RS232 › windows 7.0
名称 修改日期 类型 大小
CDM 2 06 00 Release Info 2012/5/9 15:36 RTF 文件 102 KB
Setup 2012/5/9 15:36 应用程序 2,291 KB
Setup 2019/11/15 19:47 WinRAR 压缩文... 1,719 KB
快速访问
桌面
下载
文档
图片
OneDrive
WPS网盘
此电脑
视频
图片
文档
下载
音乐
桌面
Win 10 Pro x64 (C
新加卷 (E:)
新加卷 (F:)
新加卷 (G:)
网络

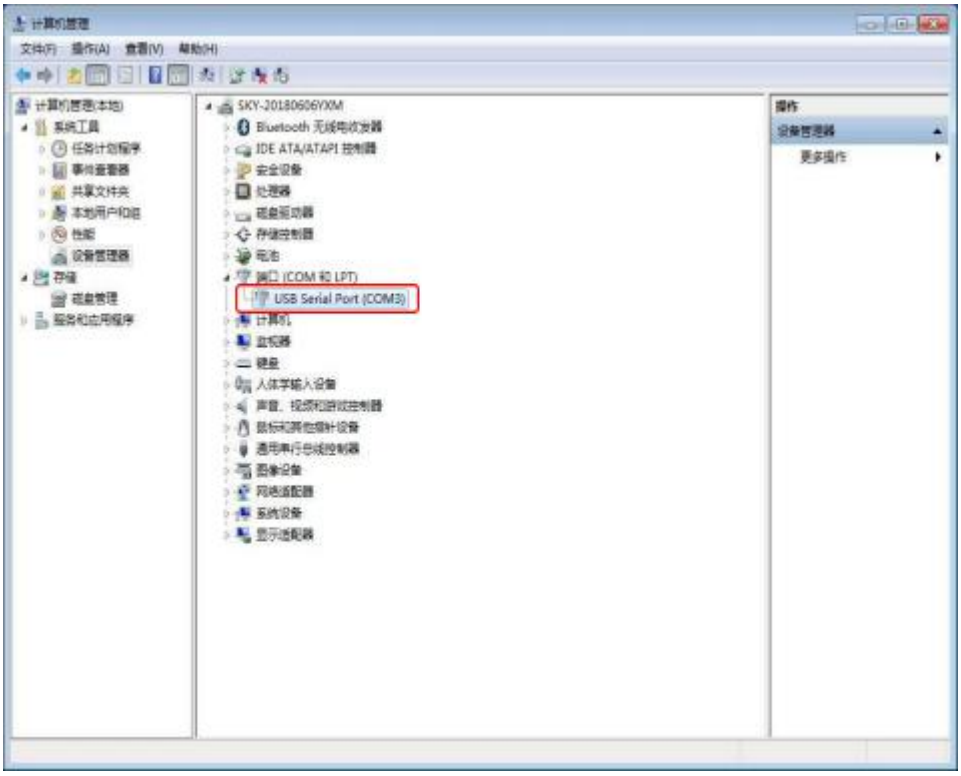

2345加速浏览器
Access
Excel
Internet Explorer
Microsoft OneDrive
OneDrive for Business
OneNote 2016
Outlook
PowerPoint
Publisher
Skype for Business
Windows Media Player
Windows Update
Windows 传真和扫描
Word
XPS Viewer
好压
默认程序
桌面小工具库
2345王牌软件
FreshHope
Microsoft Office 工具
Microsoft SQL Server 2008
返回
搜索程序和文件
Administrator
文档
图片
音乐
游戏
计算机
控制面板
设备和打印机
默认程序
帮助和支持
运行...
关机
打开(O)
管理(G)
映射网络驱动器(N)...
断开网络驱动器(C)...
在桌面上显示(S)
重命名(M)
属性(R)


计算机管理
文件(F) 操作(A) 查看(V) 帮助(H)
计算机管理(本地)
系统工具
任务计划程序
事件查看器
共享文件夹
本地用户和组
性能
设备管理器
存储
磁盘管理
服务和应用程序
SKY-20180606YXM
Bluetooth 无线电收发器
IDE ATA/ATAPI 控制器
安全设备
处理器
磁盘驱动器
存储控制器
电池
端口 (COM 和 LPT)
USB Serial Port (COM3)
计算机
监视器
键盘
人体学输入设备
声音、视频和游戏控制器
鼠标和其他指针设备
通用串行总线控制器
图像设备
网络适配器
系统设备
显示适配器
操作
设备管理器
更多操作



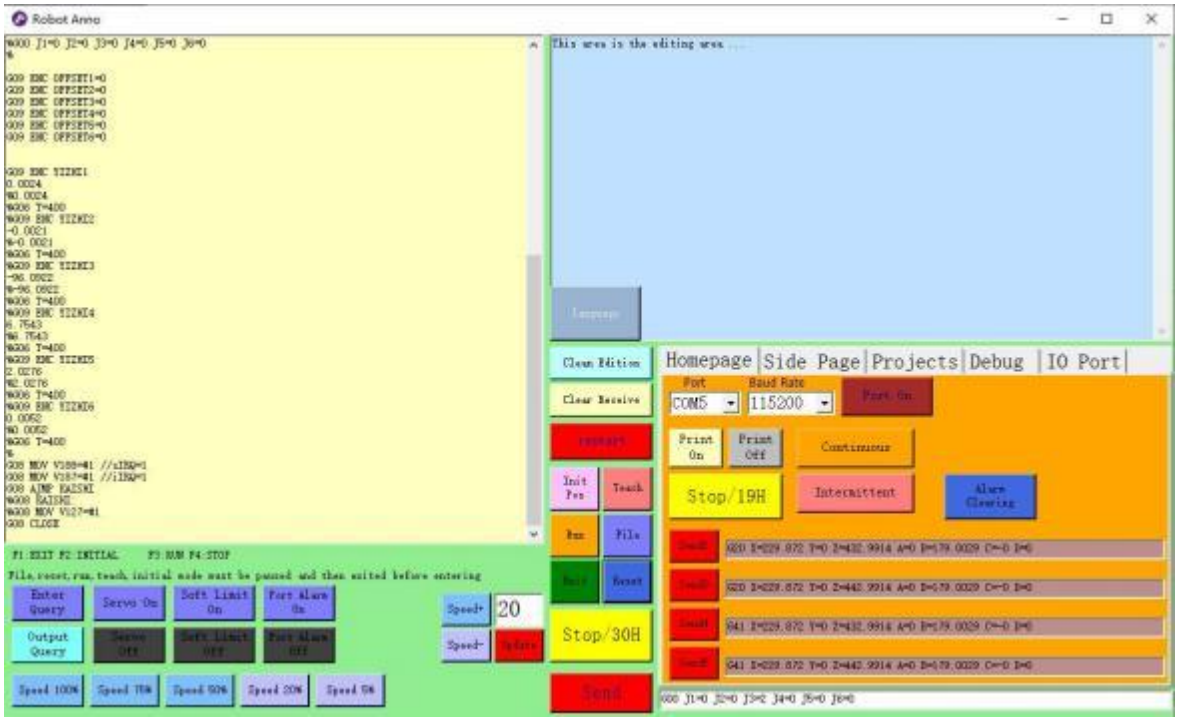
When the USB Serial Converter is seen in the universal serial bus controller, the USB TO RS232 driver installation is successful.

Select the port installed just now, the port number of each machine may be different, whichever is the actual port.

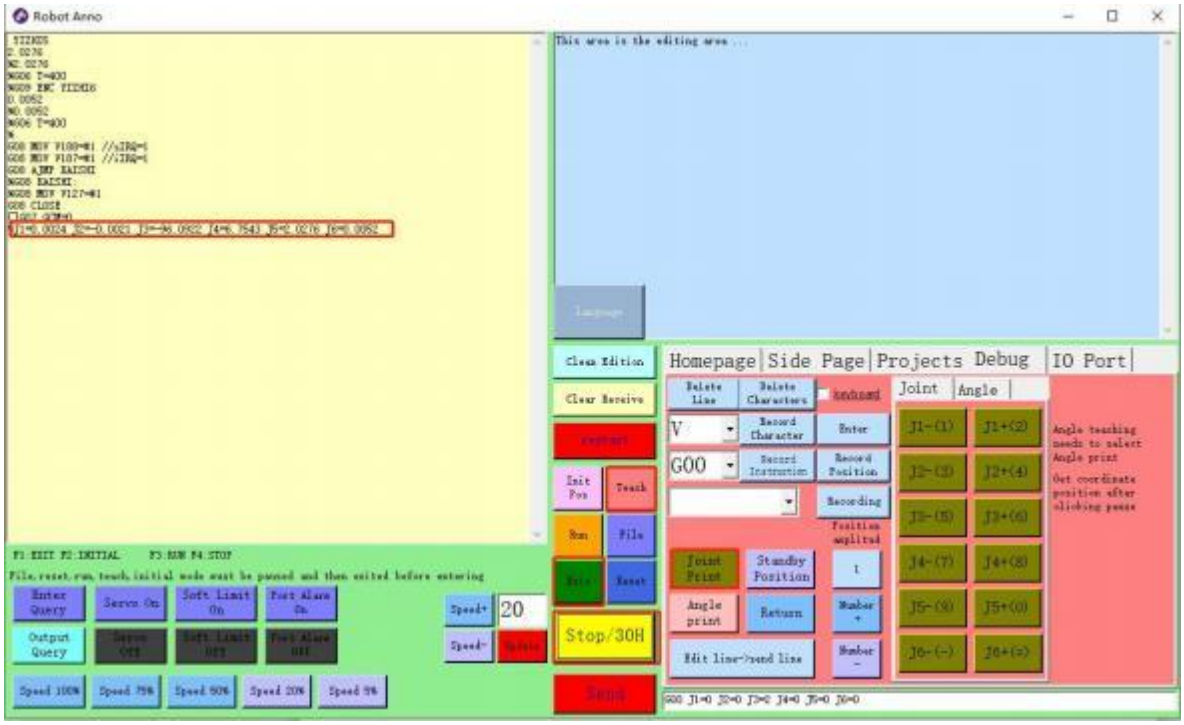


三. Zero calibration

2. power on reset (open host, connect serial port, then click pause, exit and reset)

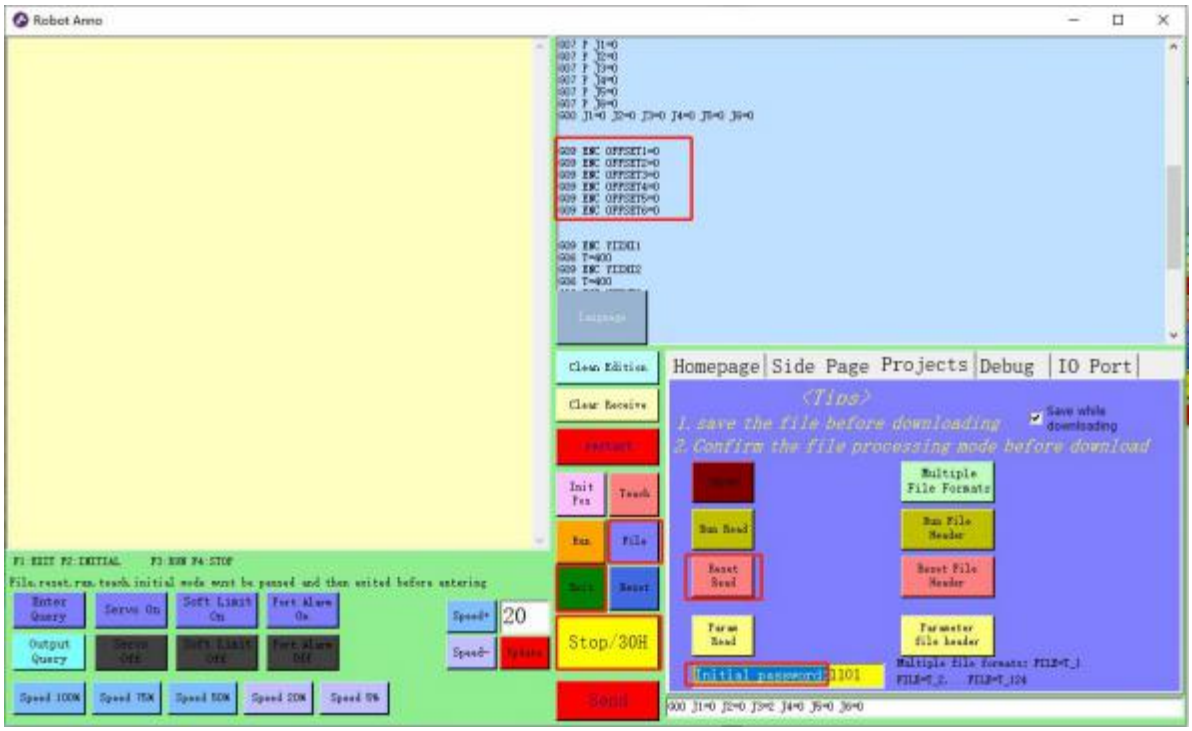


3. read joint position (click, pause, exit, teach, joint print, pause) in turn.



4. reset read (click pause, exit, file, reset read in turn)

5.



The value of joint printing J1=0.0024 J2J1=-0.0021 J3J1=-96.0922 J4J1=6.7543 J5J1=2.0276 0.0052 compensation reset file

G09ENC OFFSET1=-0.0024

G09ENC OFFSET2=0.0021

G09ENC OFFSET3=96.0922

G09ENC OFFSET4=-67543

G09ENC OFFSET5=-2.0276

G09ENC OFFSET6=-0.00525. Delete initial password : keep 1101 and download the reset file.

IV. GS AutomaticV2.0 instructions

When the computer opens the GS Automatic2.0 software for the first time and the serial port

is connected, a prompt window pops up to automatically create a folder in the root directory of the GS Automatic2.0's current software disk

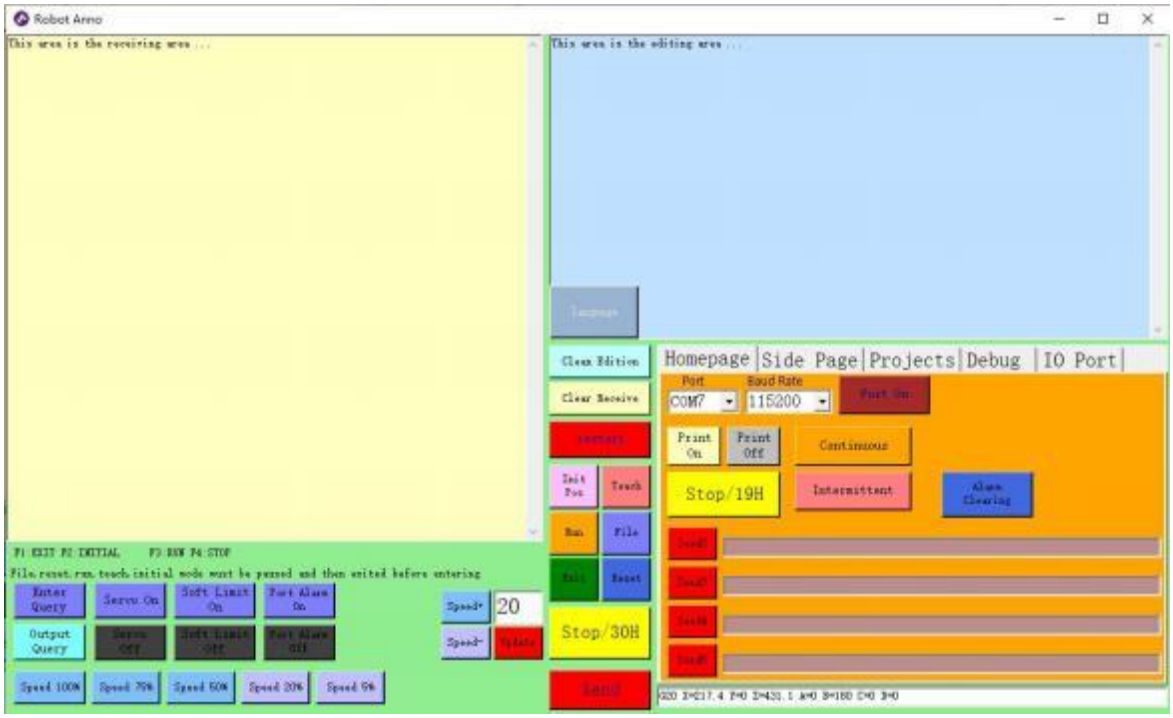
Selection determination

Then select OK, and then restart the software.

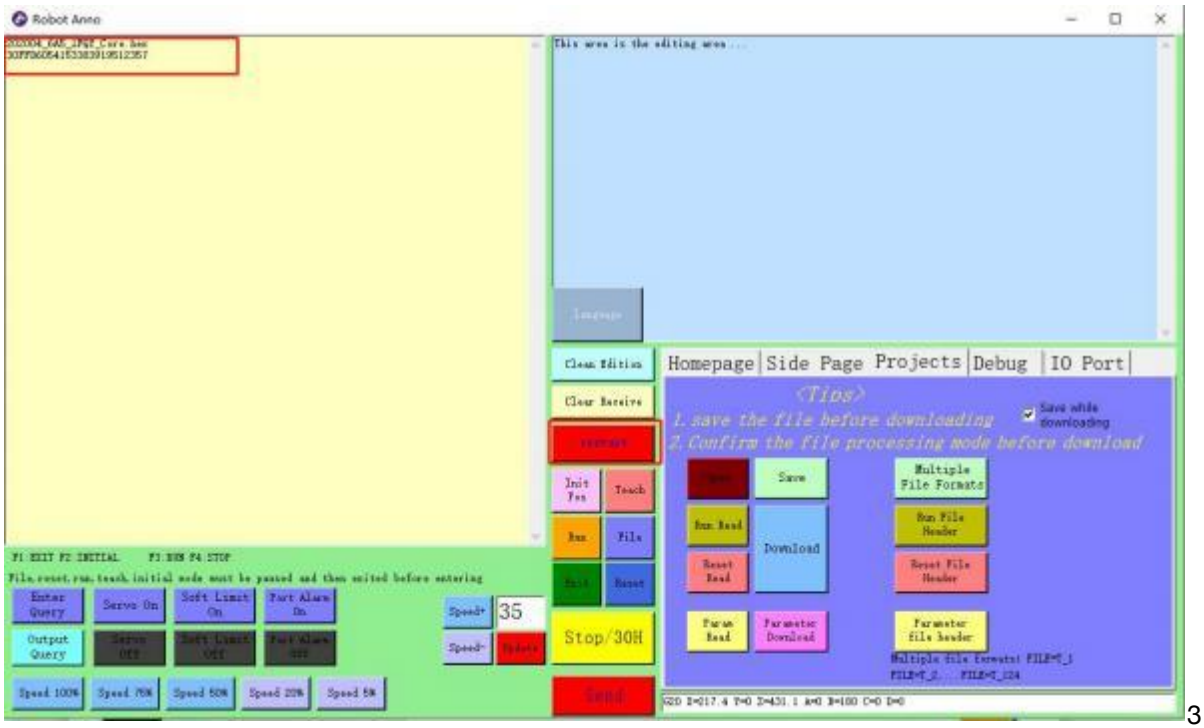
When the serial port is connected, the port number will be displayed automatically. If the serial port is not connected, the port number will appear blank

If the serial port is not connected, the serial port connection needs to be detected

2 Open the software interface

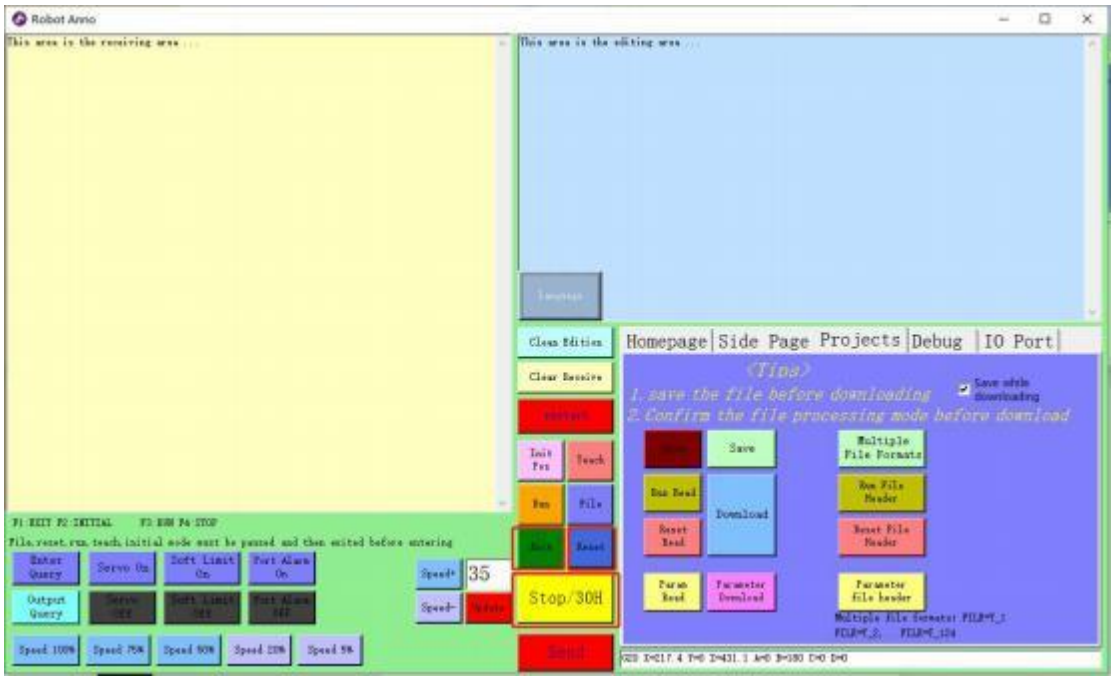


Click Restart, the beige receiving area will receive the system version information

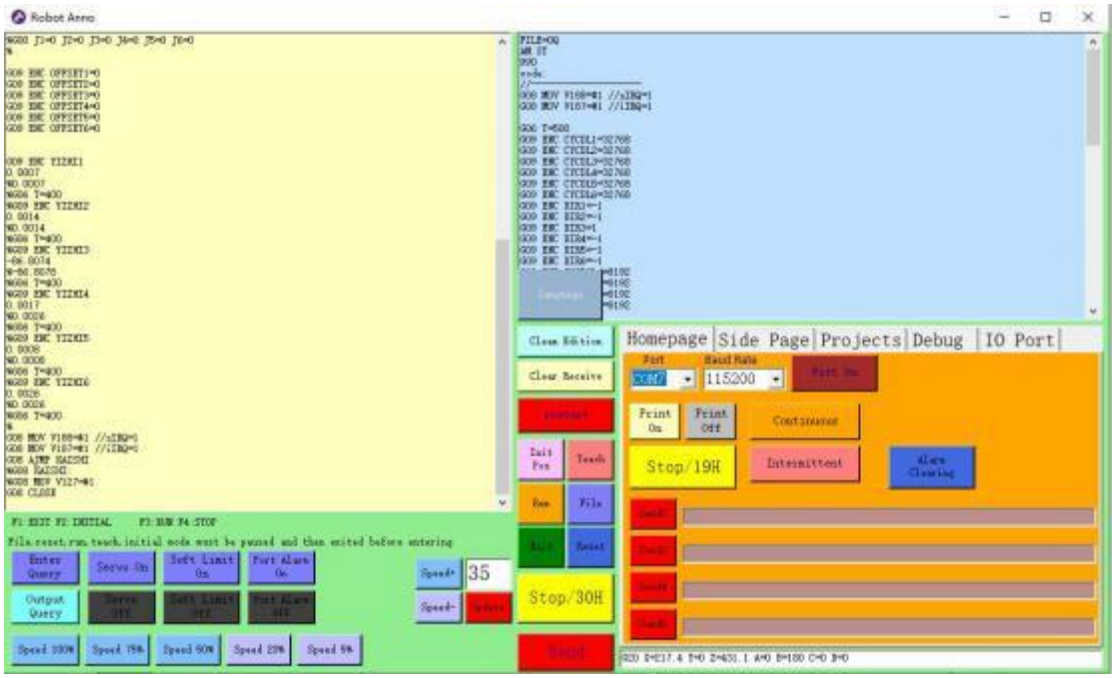


3

Enter reset mode, click pause, exit, reset



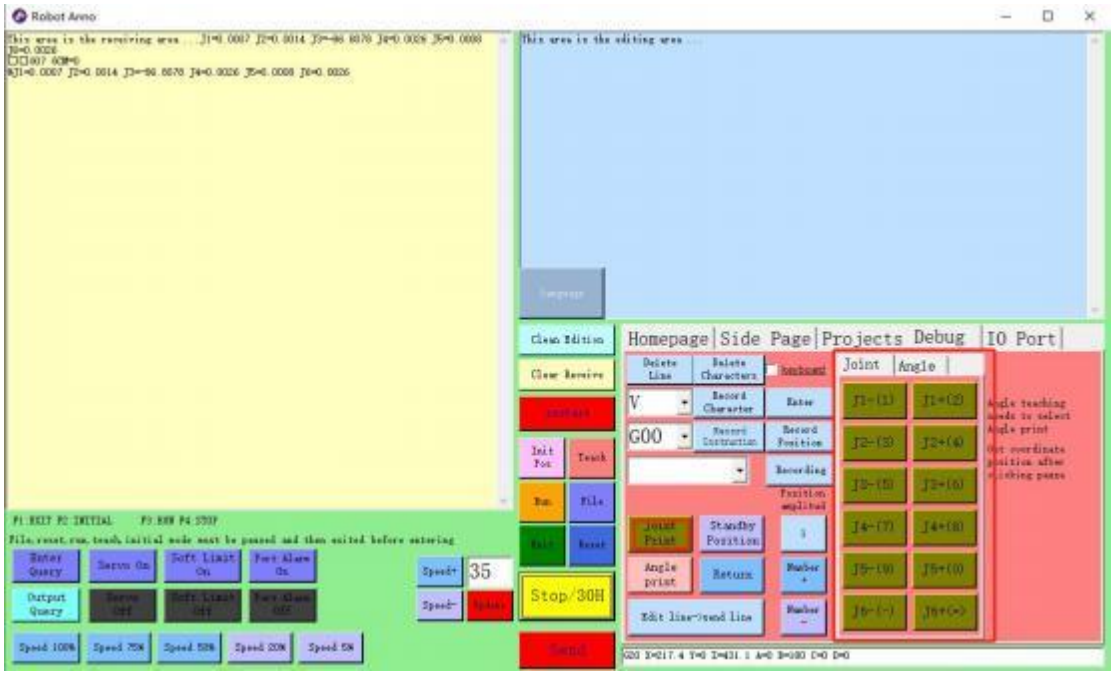
The stepper motor finds the origin sensor and resets it. Before operation, the parameter file of the controller is required.



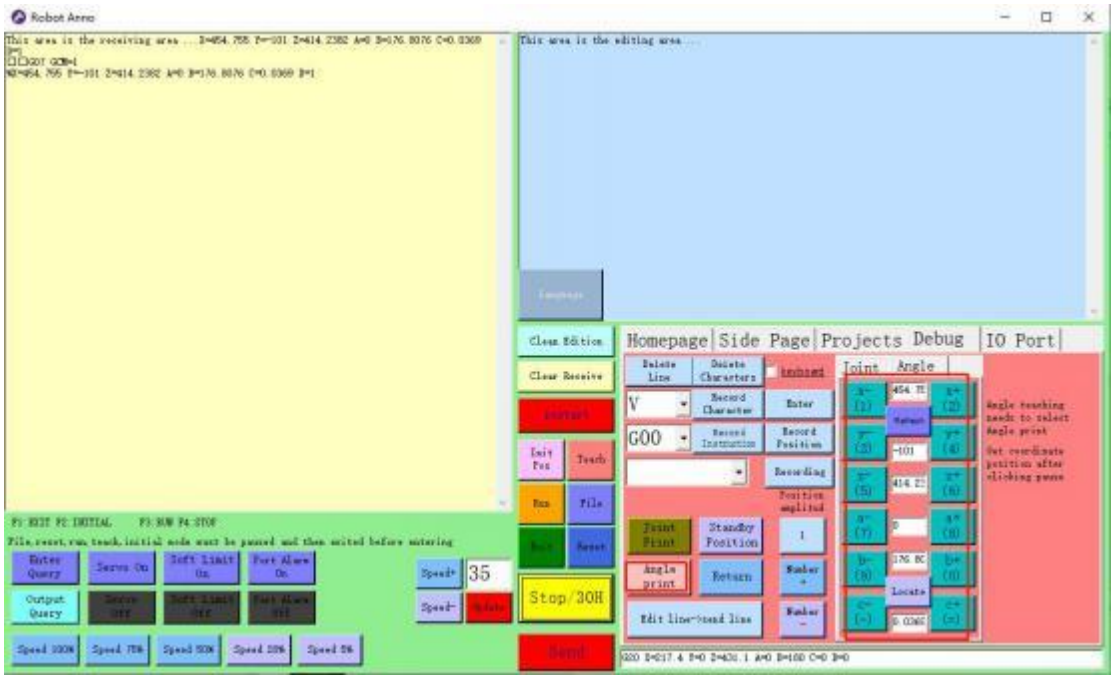
The servo motor reads the absolute encoder position. Before operation, the parameter file of the controller is required, and the zero return file is configured correctly。

4 Enter teaching mode, click pause (30H), exit (10H), teaching (14H)

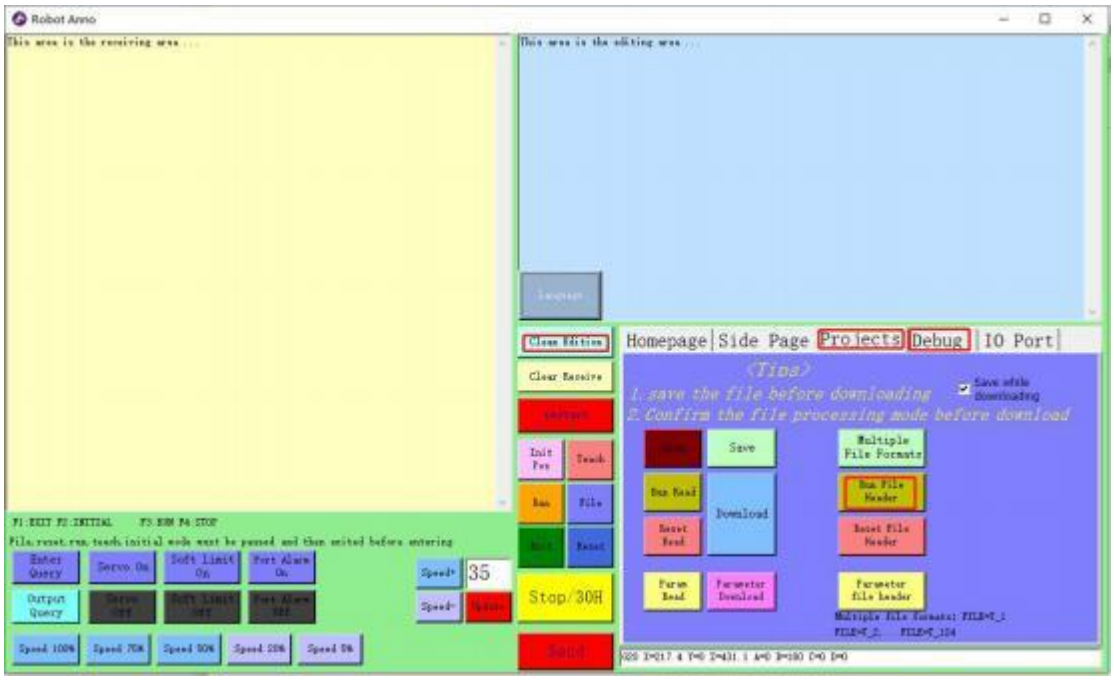
Click Pause, the receivi ng area receives the current position of the robot (joint position or rectangular coordinate position). When you click the joint to print, press Pause again, the joint angle is printed, and the joint debugging controls (J1 +, J1-, J2 +, J2-, J3 + , J3-, J4 +, J4-, J5 +, J5-, J6 +, J6-,) The brackets in the control are 1234567890- = on the keyboard after selecting the keyboard.



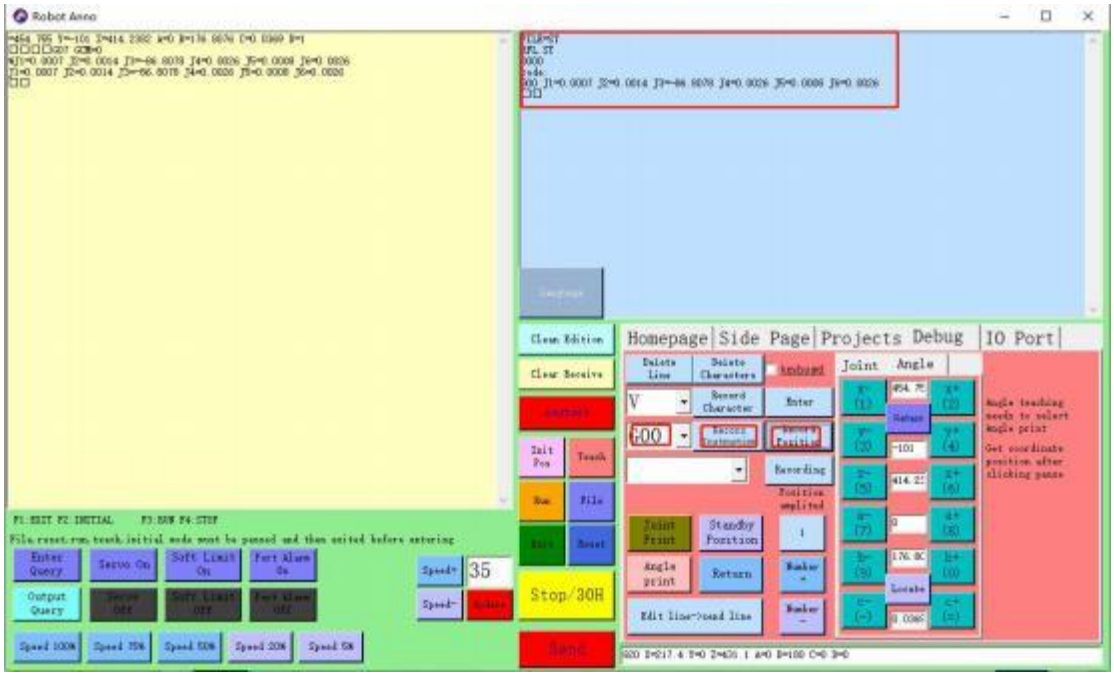
When you click rectangular printing, press Refresh to print the rectangular coordinate position and posture, you can operate the joint debugging controls (x +, x-, y +, y-, z +, z-, a +, a-, b +, b-, c +, c-,) Control brackets are corresponding to the selected keyboard after ticking



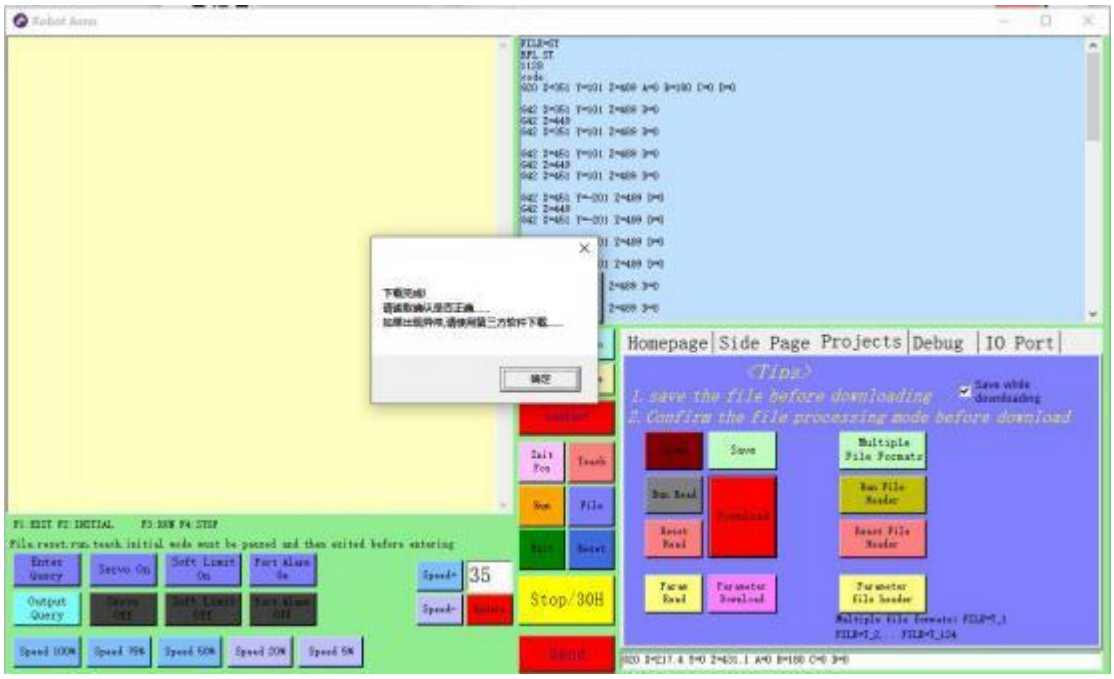
5 Programming, in the teaching mode, click on the project, click to clear edit, click to run the file header, then click debug to return to the debug interface



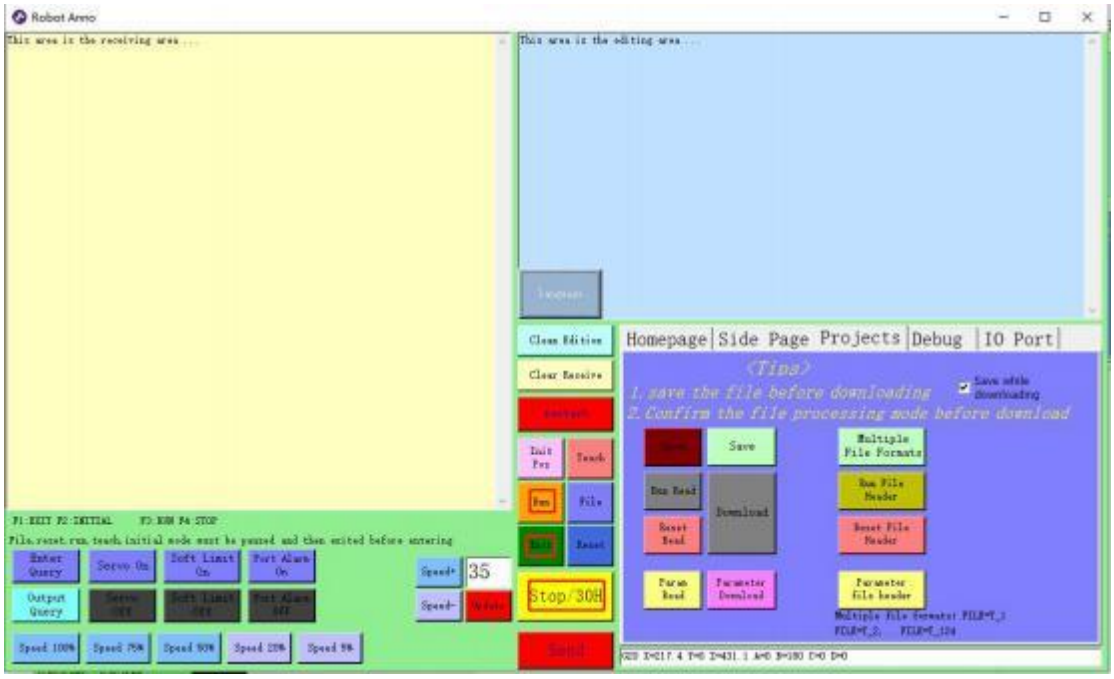
Click the cursor line in the editing area, select the instruction head, click record instruction, record position



6 File download, click pause, exit, file, download; (the download control needs to enter the correct password, the initial password is 1101)



7 Run, click pause, exit, run



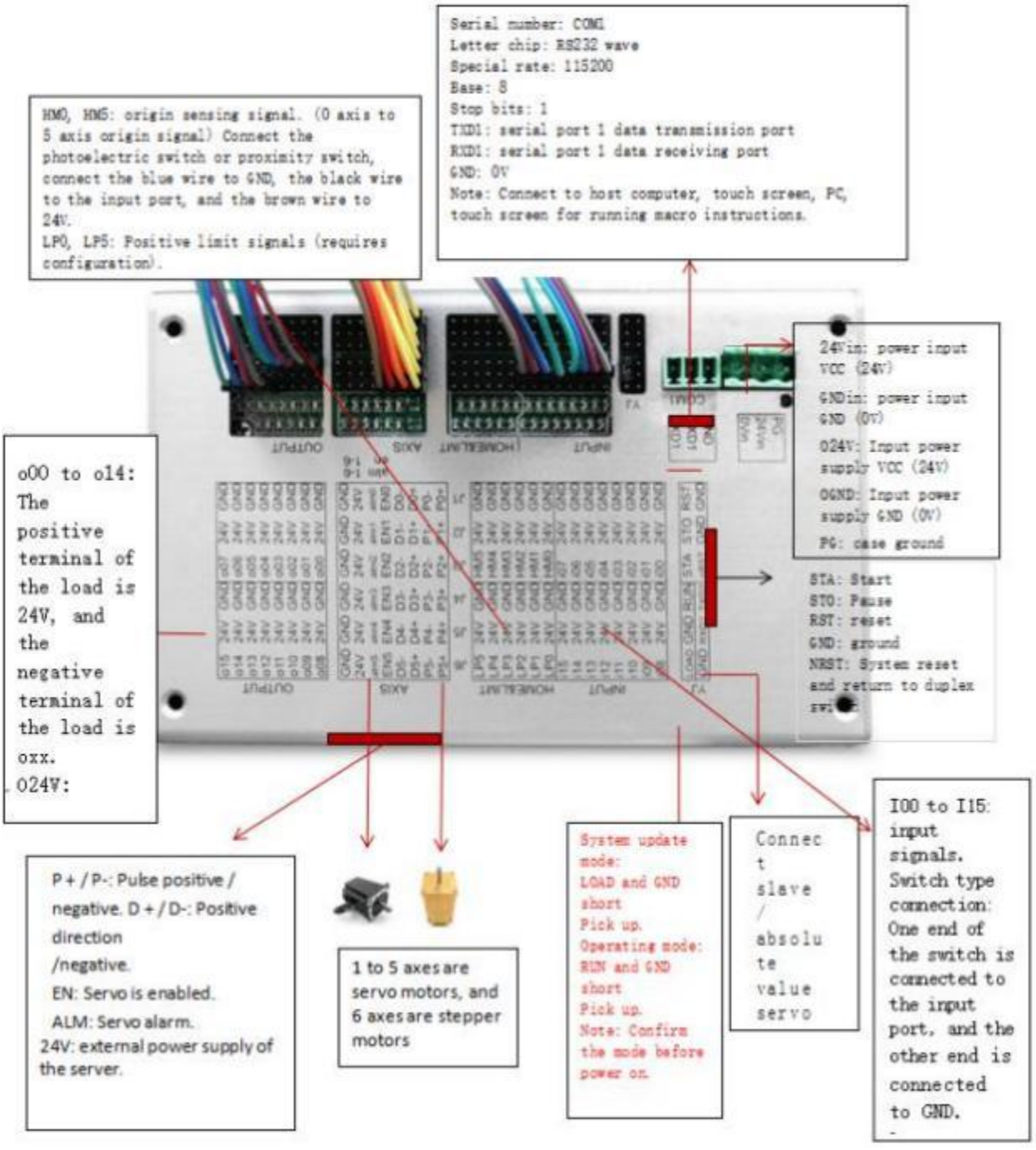
V. Aviation plug interface definition

interface definition		
Pin number	definition	Note
Y1	24V	
Y2	0V	
Y3	5V	
Y4	COM	
Y5	BAT+	
Y6	485B	
Y7	485A	
Y8	GND	
Y9		

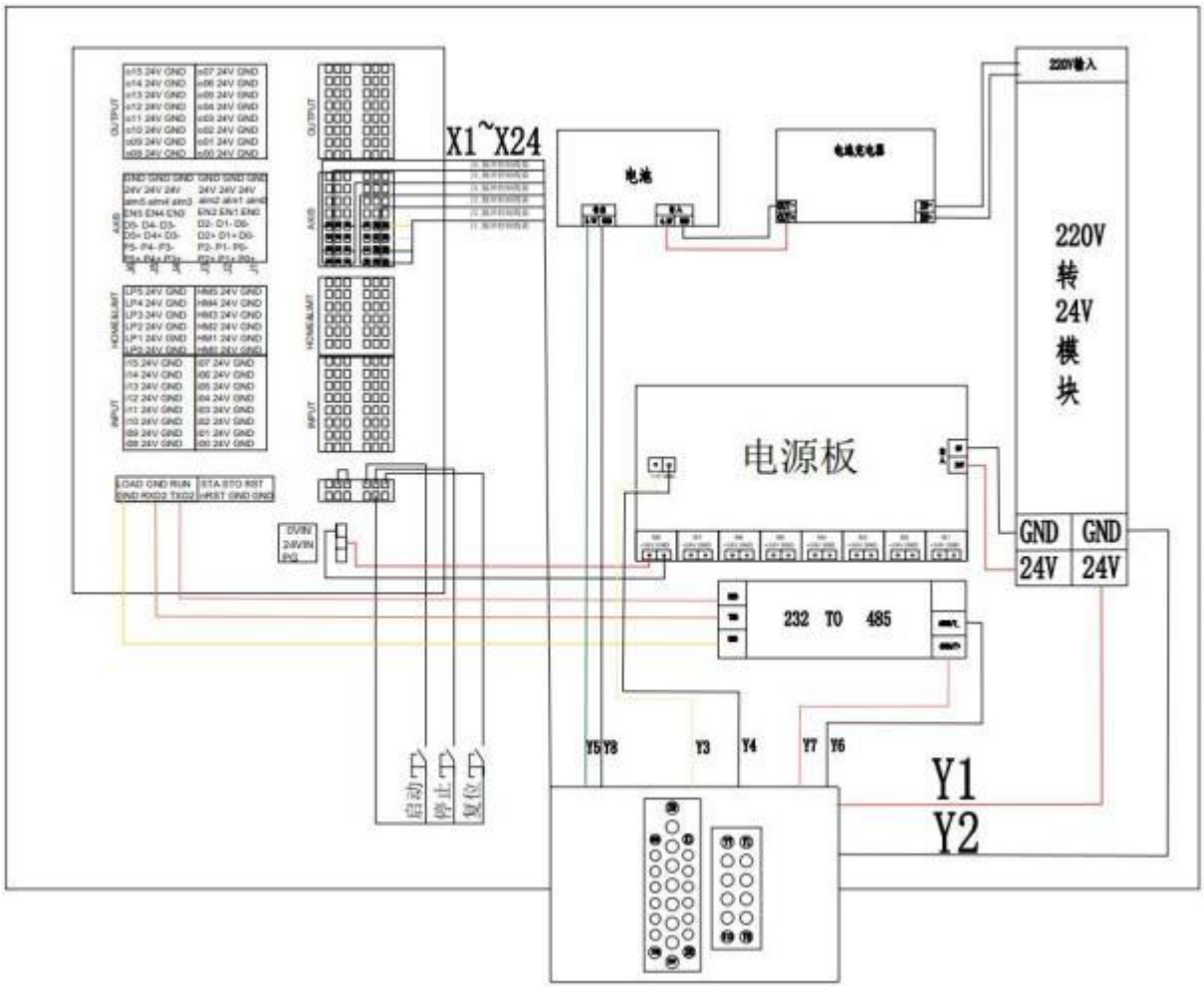
interface definition		
Pin number	definition	Note
X1	J1_P+	
X2	J1_P-	
X3	J1_D+	
X4	J1_D-	
X5	J2_P+	
X6	J2_P-	
X7	J2_D+	
X8	J2_D-	
X9	J3_P+	
X10	J3_P-	
X11	J3_D+	
X12	J3_D-	
X13	J4_P+	
X14	J4_P-	
X15	J4_D+	
X16	J4_D-	
X17	J5_P+	
X18	J5_P-	
X19	J5_D+	
X20	J5_D-	
X21	J6_P+	
X22	J6_P-	
X23	J6_D+	

X24	J6_D-	

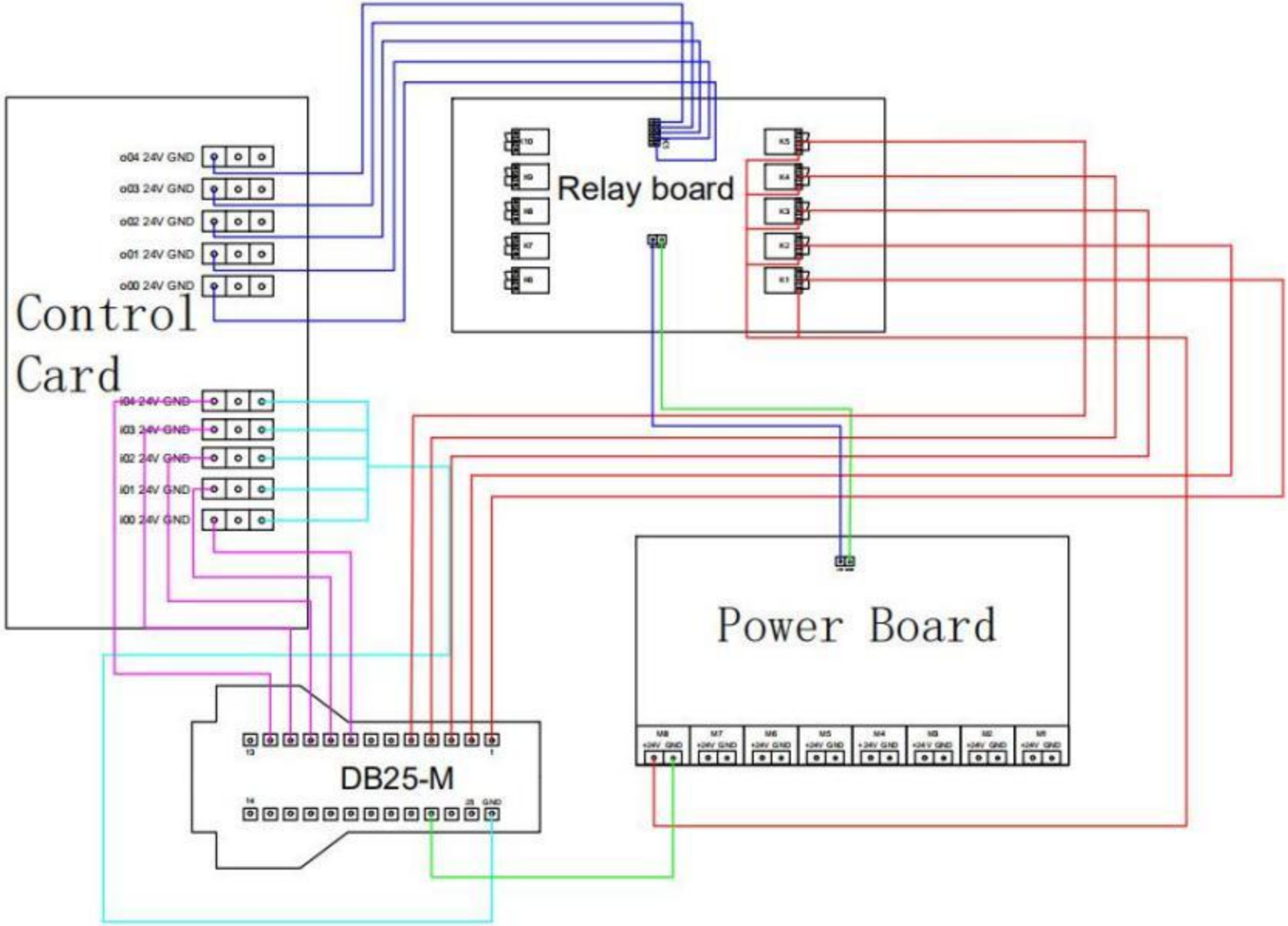
1. master port definition



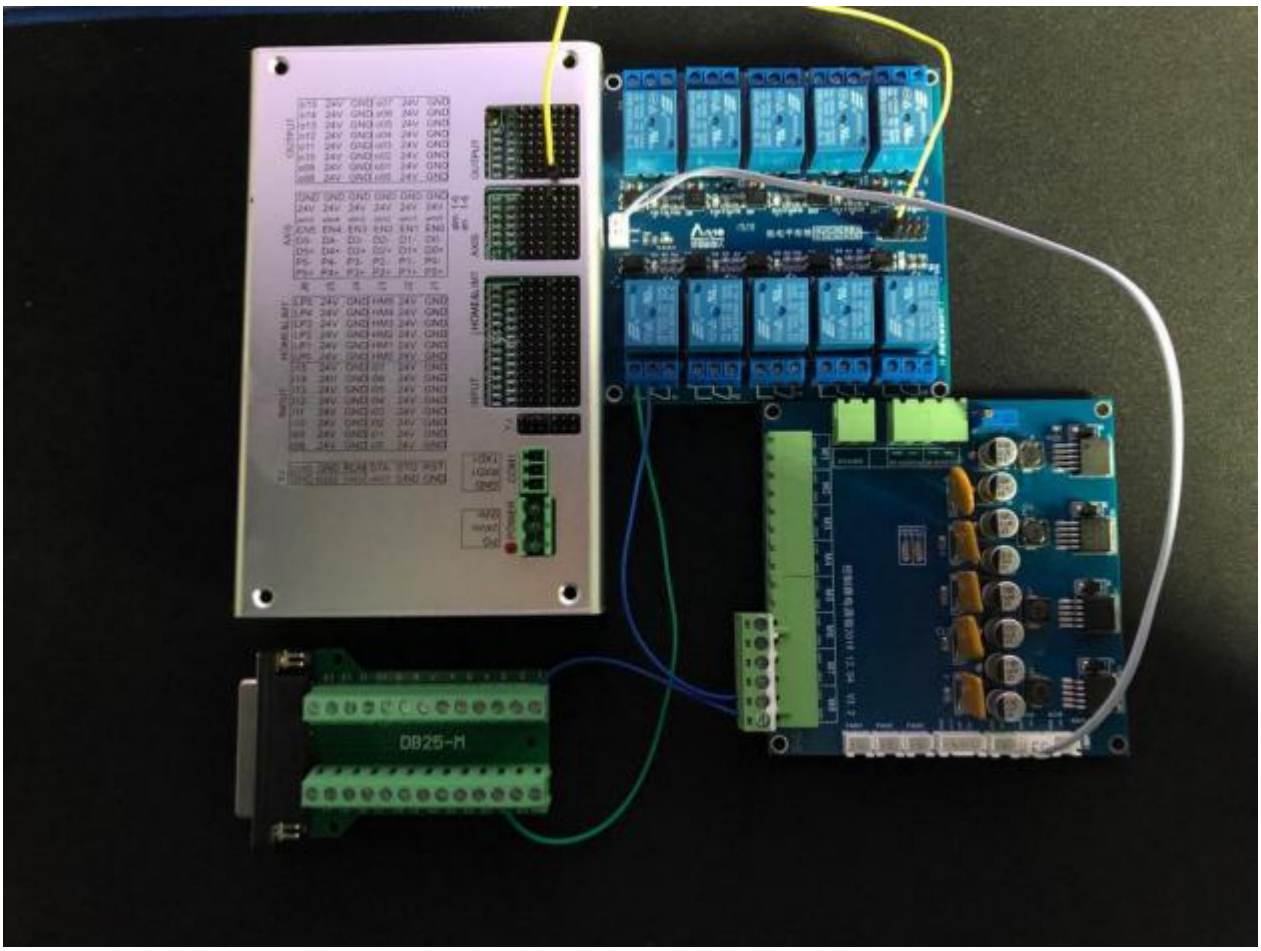
2. master wiring diagram:



Circuit diagram of relay wiring in 3. control box:


Control Card
o04 24V GND
o03 24V GND
o02 24V GND
o01 24V GND
o00 24V GND
i04 24V GND
i03 24V GND
i02 24V GND
i01 24V GND
i00 24V GND
Relay board
Power Board
DB25-M

4. control box internal relay wiring physical diagram (only one set of output in the diagram):

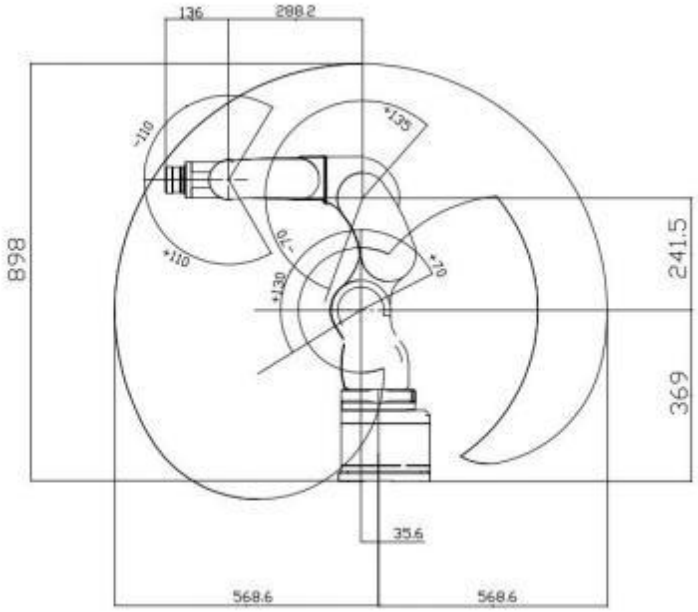


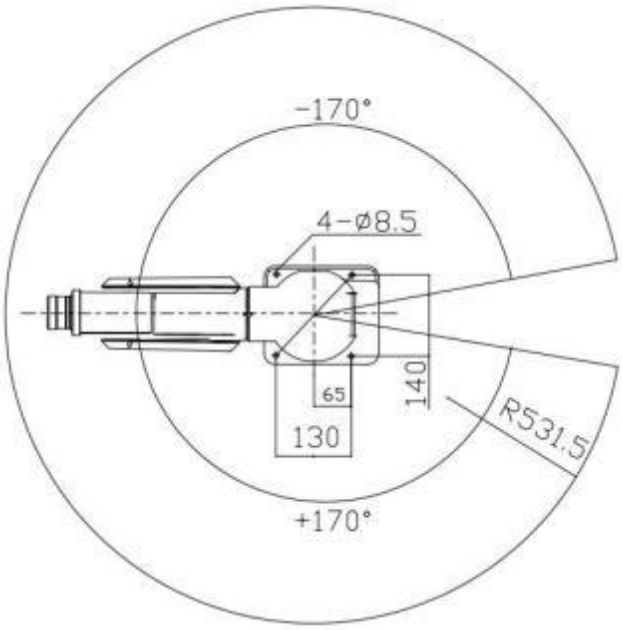
When multiple outputs are needed, the positive pole is connected to pin 1~5(controlled by O00~O04 respectively) and the

negative pole to pin 23(shared).

VI. 602 parameters

1. Dimensional parameters





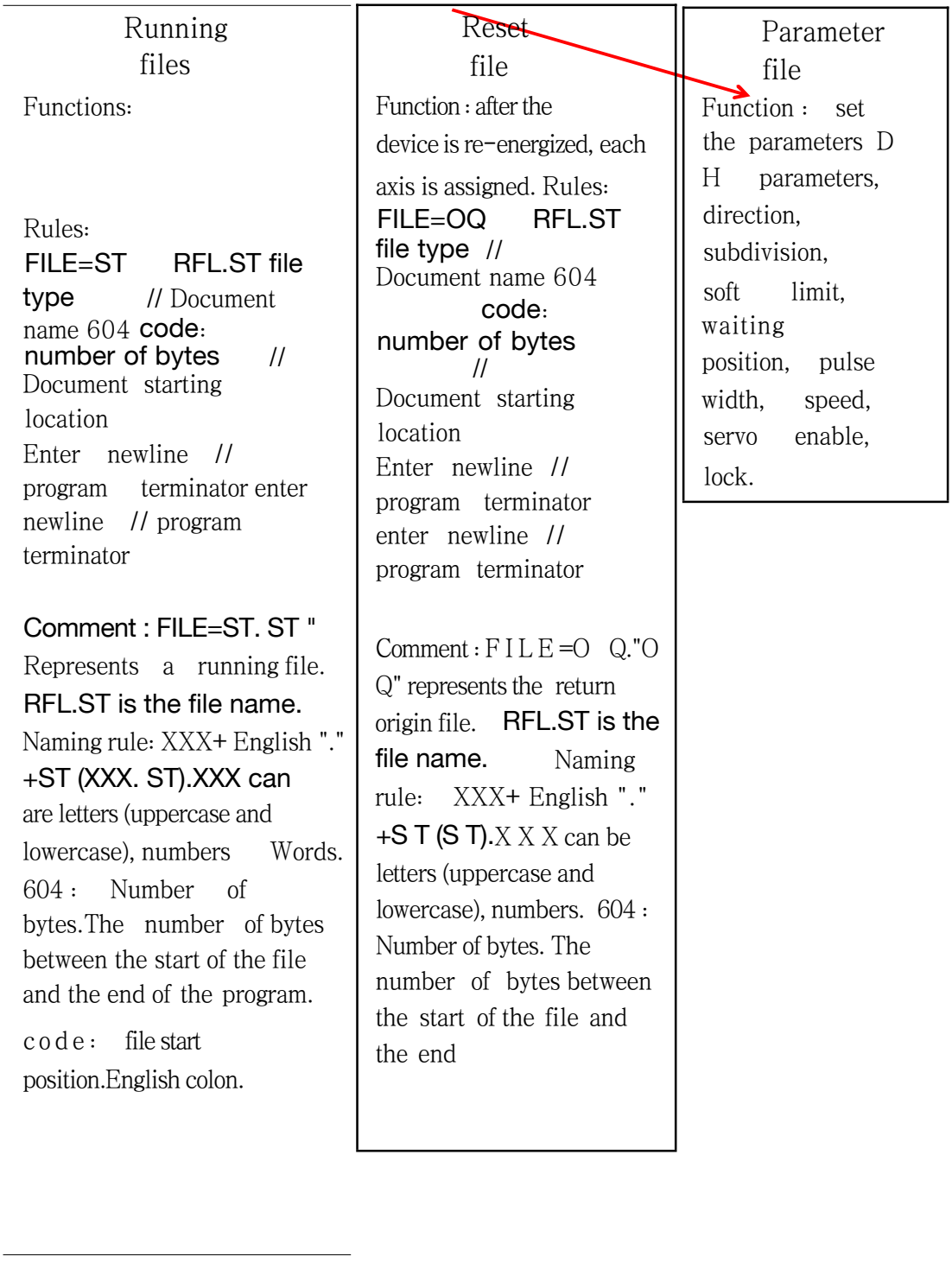
VII. Case cases

Suction cup handling cases:

FILE=ST // file type
AM.ST // file name
771/byte
code： // Operational instructions
G07VP=50/speed
G20X=300 YG20X=131 ZG20X=55 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G06O=P0.1// open the suction
G20X=300 YG20X=131 ZG20X=47.5 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G20X=300 YG20X=131 ZG20X=60 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G20X=300 YG20X=42.5 ZG20X=60 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G20X=300 YG20X=42.5 ZG20X=20 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G06O=P0.0// shut off suction
G06T=1000/ wait a second
G20X=300 YG20X=42.5 ZG20X=47 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G20X=300 YG20X=131 ZG20X=47 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G06O=P0.1
G20X=300 YG20X=131 ZG20X=38 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G20X=300 YG20X=131 ZG20X=51 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G20X=300 YG20X=-46 ZG20X=51 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G20X=300 YG20X=-46 ZG20X=20 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G06O=P0.0
G06T=1000
G20X=300 YG20X=-46 ZG20X=38 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G20X=300 YG20X=131 ZG20X=38 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G20X=300 YG20X=131 ZG20X=29 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G06O=P0.1
G20X=300 YG20X=131 ZG20X=42 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G20X=300 YG20X=134 ZG20X=42 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G20X=298 YG20X=134 ZG20X=22 AG20X=0 BG20X=180 CG20X=0 DG20X=0
G06O=P0.0
G06T=1000
G20X=300 YG20X=134 ZG20X=42 AG20X=0 BG20X=180 CG20X=0 DG20X=0

VIII. Functional mode and programming

1. Documents Classification



2. programming rules

Instruction writing:

Name of 1. constant :# XX. // XX specific values. Example :#2,#1000,#5

Name of 2. variable: VXX. // XX controller's universal storage unit. Example: V150 V150. of variables

3. instruction rules: function instruction + space + operation instruction . Example:

G06T=200 // Delay 200 milliseconds.
G07VE=2000/ set speed to 2000 pulses per second . G08STO // program automatically suspended

4.位置指令：功能指令(G 代码)+空格+位置信息例：

G20X=270Y=0Z=300A=0B=180C=0D=0// Fixed points

G21X=270 YG21X=0 ZG21X=300 AG21X=0 BG21X=180 CG21X=0 DG21X=0 // Straight

line G00J1=20 J2G00J1=70 J3G00J1=2 J4G00J1=0,7 J6G00J1=0 // Joint

coordinates

5. call instruction: G08+ space G08+ACALL G08+ subroutine name Example: G08ACALL ZAINA

6. jump instruction: G08+ space G08+AJMPG08+ subroutine name

Example: G08AJMP XXX // Jump to program XXX execution.

7. judgment instruction: G08+ space +IF+ judgment condition + statement true: execute statement A false: skip statement A, execute down.

judgment character (<,>,==, ! = 、<= 、>=. less than, greater than, equal to, not equal to, less than equal to, greater than equal to).

ACALL XXX G08IF #2<#0

G08IF #2>#0 ACALL XXX G08IF #2==#0 ACALL XXX G08IF #2ACALL XXX G08IF #2===#0 ACALL XXX #0

8. loop instruction: for (assignment statement, judgment statement, statement B) {segment}

for (V0=2, V0V0=V1,V0=V0+3){ program segment

9. subroutine programming:
G08+ space + subroutine name + English colon / subroutine start (no comment statement)

---- process content

G08+ END G08+ space // subroutine end sign.
Subprogram naming rules: case letters, numbers.

note :"/,*,+,-,%,//(divide, multiply, add, subtract, seek, annotate)" monocular operation has no priority.

3. instruction list:

Position Instruct	
Fixed point	G00J1=0 J2G00J1=0 J4G00J1=0 0 0/0/ J6G00J1= joint coordinates.
	G20X=270 YG20X=0 ZG20X=300 0 BG20X=180 0/0/0/ rectangular coordinates
Straight line	G01J1=10 J2G01J1=20 J3G01J1=40,10 J5G01J1=2/20/ joint coordinates.
	G21X=300 YG21X=100 ZG21X=500 AG21X=0 BG21X=180 0/0/ without acceleration or deceleration
	G41X=300 YG41X=100 ZG41X=500 AG41X=0 BG41X=180 0 DG41X=0/
Arc	current point: G21X=200 YG21X=0 ZG21X=200 AG21X=-180 BG21X=150,0 DG21X=0 Second: G22X=300 YG22X=100 ZG22X=200 AG22X=-180,150 CG22X=90 and 0 third: G23X=400Y=0Z=200A=-180B=150C=300D=0 圆弧 运行: G06DEGREE=300 或者G06DEGREE=ARC Comment: G06DEGREE= radians.

	G06DEGREE=ARC three - point arc.

G06		G07		G08	
Instruction	Function	Instruction	Function	Instruction	Function
T=XX	Delay XX milliseconds.	VE=XX	Velocity XX pulse per second	XXXX:	Subprogram Name (English description)
I=PA.1	waiting A port is high level. 1 is high and 0 is low.	AC=XX	Acceleration is XX pulse squared per second	ACALL XXXX	Call XXXX tag to
O=PA.0	A port output high level. 1 is high and 0 is low.	DE=XX	Deprivation speed XX pulse squared per second	END	Call End
I=STAO	Hold STA button low	VPP=XX	Maximum speed XX pulse per second	AJMP XXXX	Jump to XXXX run
SCAN=I	Read the input port value. Return string “1111 1111 1111 1111 ”	VP=XX	VE speed is the highest speed XX%,VE=VPP*VP*0	FLTAB=#	File jump to file T_# Operation ;
SCAN=O	Read the output port value. Return string “0000 0000 0000 0000 ”	h0=xx _	Height change	IFF	Floating point comparison
SCAN=RTC	Read the system clock value.	RCM=1	1 Print run instruction ,0 do not type	IF_ELSEF	Floating point comparison
DEGREE=ARC	The robot walks a three-point arc.	GCM=1	Output in Cartesian coordinates, 0 output of joint coordinates	XX MOV VXX=#	Integer assignment.
DEGREE=35	The robot walks 35.2 degrees.	Z-ADJ=xx	Z shaft height adjustment	XX MOVF VXX=#	Integer assignment.
REPOS=J#	The J# axis HOME# in the direction of increasing angle Sensor (back to low level)	UCS=FCS	Restoration of original coordinates *	PRINT VXX	Print VXX value, integer Type.
REPOS=-J#	The J# axis HOME# in the direction of angle reduction inductor (back to low level).	UCS=NOW	Sixth shaft end flange center For XOY* purposes	PRINTF VXX	Print VXX value, floating point Formula
				ADD	integer addition
REPOS=JH#	The J# axis HOME# in the direction of increasing angle Sensor (back to high	ABSPOS	Update Cartesian coordinates data (XYZ add Quantity (s)	INT VXX	Converts floating
				SUBB	integer subtraction
REPOS=-JH	The J# axis HOME# in the direction of angle reduction Sensor (back to high level)	P J#=XXXX	Calibration of J# axis angle	FLOAT VXX	Converts an integer
				STO	Automatic pause
REPOS=Z#	The J# axis increases Z#+ sense Receiver (back to low level)	G07MARKPOS_HERE X1=0 Y1G07MARKPOS_HERE X1=0 X2G07MARKPOS_HERE X1=100 Y2=100 template MARK poi		NRST	Restart
				EXIT	Exit run into idle mode

		nts G07 MARKPOS X1=10		

Note:

G09 instruction function: lower computer communication.

YN of G09COPYRIGHT inquiry system

Send XXXX characters G09COM2=XXXX COM2 port

G09COM2=G00J1=10 J2G09COM2=G00J1=10 J3G09COM2=G00J1=-90,0

J5G09COM2=G00J1=0

An instruction is issued by this controller COM1,G09COM2 another controller 10H serial port 2 X10H 0

G09COM2 12H serial port 2 X12H 0

G09COM2 13H serial port 2 X13H G09COM2 0

14H serial port 2 X14H G09COM2 0 15H serial port 2 X15H G09COM2 0 18H serial port 2 X18H 0

G09ENC.... connection with absolute servo motor is a special instruction, refer to zero file example;

4. Memory Use

Naming rules: VXX //xx unit.

XX // Constant.

V0-V127,V400-V511 of user computing units

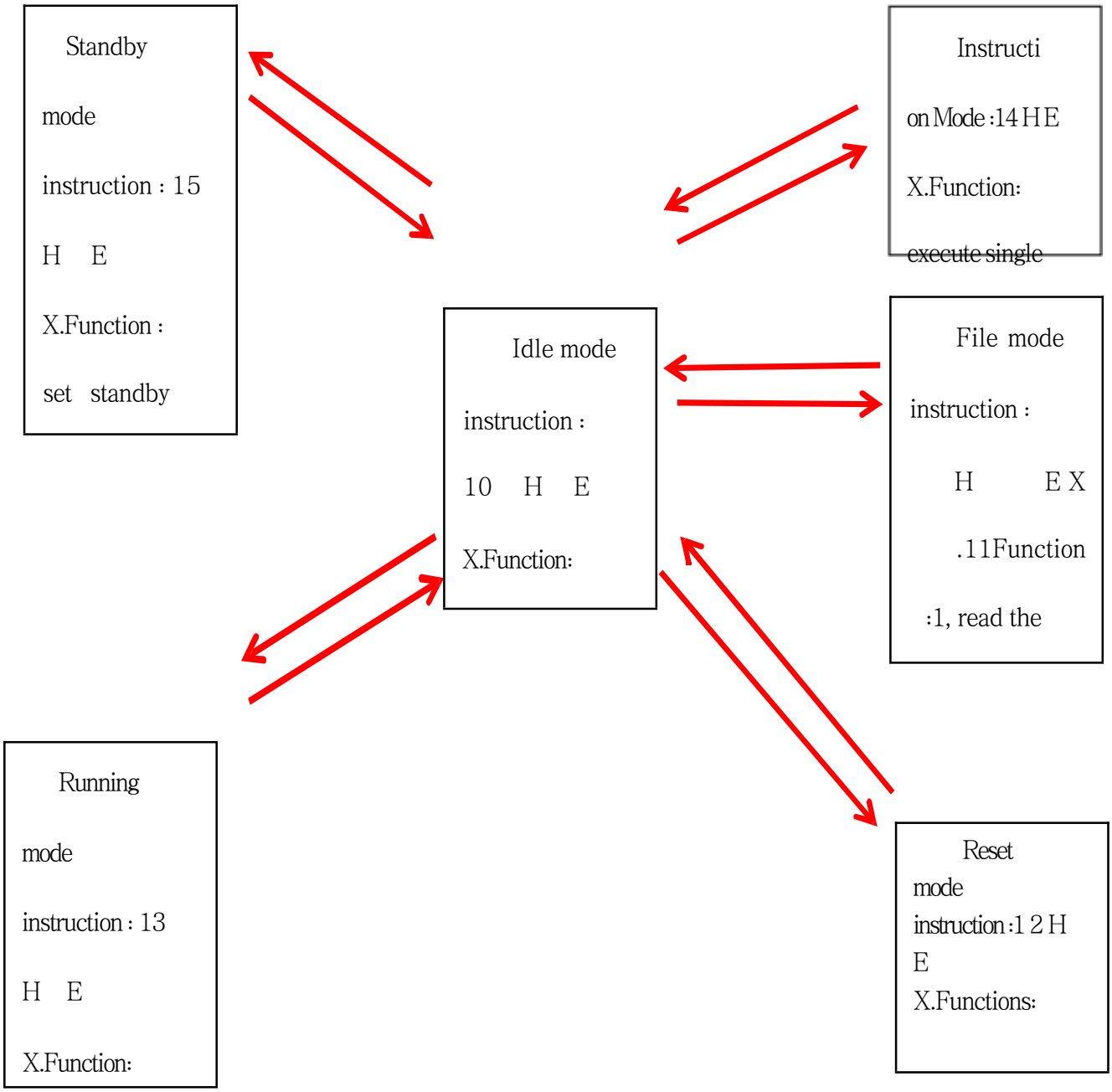
Port number type	Porto	Software port number	Register		Port number type	Porto	Software port number	Register
Input signal	i00	P0	v144		Output signal	O00	P0	V160
	i01	P1	v145			O01	P1	v161
	i02	P2	v146			O02	P2	v162
	i03	P3	v147			O03	P3	v163
	i04	P4	v148			O04	P4	v164
	i05	P5	v149			O05	P5	v165
	i06	P6	v150			O06	P6	v166
	i07	P7	v151			O07	P7	v167
	i08	P8	v152			O08	P8	v168
	I09	P9	v153			O09	P9	v169
	i10	P10	v154			O10	P10	v170
	i11	P11	v155			O11	P11	v171
	i12	P12	v156			O12	P12	v172
	i13	P13	v157			O13	P13	v173
	i14	P14	v158			O14	P14	v174
	i15	P15	v159			O15	P15	v175
Note: light value is 0, light out value is 1					Note: the light value is 1, the light out value is 0			

Port number type	Porto	Software port number	Register		Port number type	Porto	Software port number	Register
Origin signal	HM0	P16	V192		Limit position signal	LP0	P22	V198
	HM1	P17	V193			LP1	P23	V199
	HM2	P18	V194			LP2	P24	V200
	HM3	P19	V195			LP3	P25	V201
	HM4	P20	V196			LP4	P26	V202
	HM5	P21	V197			LP5	P27	V203
Servo alarm	ALM0	P28	V204					
	ALM1	P29	V205					
	ALM2	P30	V206					
	ALM3	P31	V207					
V256~V271 : Value 1 capture enable open, V189=0 Effect	ENi00	p0	V256		V288~V303 : Capture time- length value, in milliseconds, required software zero	FLAGi00	p0	V288
	ENi01	P1	V257			FLAGi01	P1	V289
	ENi02	P2	V258			FLAGi02	P2	V290
	ENi03	P3	V259			FLAGi03	P3	V291
	ENi04	P4	V260			FLAGi04	P4	V292
	ENi05	P5	V261			FLAGi05	P5	V293
	ENi06	P6	V262			FLAGi06	P6	V294
	ENi07	P7	V263			FLAGi07	P7	V295
	ENi08	P8	V264			FLAGi08	P8	V296
	ENi09	P9	V265			FLAGi09	P9	V297
	ENi10	P10	V266			FLAGi 10	P10	V298
	ENi11	P11	V267			FLAGi 11	P11	V299
	ENi12	P12	V268			FLAGi 12	P12	V300
	ENi13	P13	V269			FLAGi 13	P13	V301
	ENi14	P14	V270			FLAGi 14	P14	V302
	ENi15	P15	V271			FLAGi 15	P15	V303
Note : light value is 0, light out value is 1								

Query input signal :

```
G06SCAN=I                    // Scan ports.

G08IF v144== ACALL XXX #0    // If the I00 port signal is 0, call the program

                             // Waiting for I00 input.

XXX. G06I=P0.0 or            // Enable O00 output.

G06      O=P0.1
```

5. modules


Standby
mode
instruction：15
H E
X.Function：
set standby
Instructi
on Mode :14 H E
X.Function:
execute single
Idle mode
instruction：
10 H E
X.Function:
File mode
instruction：
H E X
.11Function
:1, read the
Running
mode
instruction：13
H E
X.Function:
Reset
mode
instruction :1 2 H
E
X.Functions: