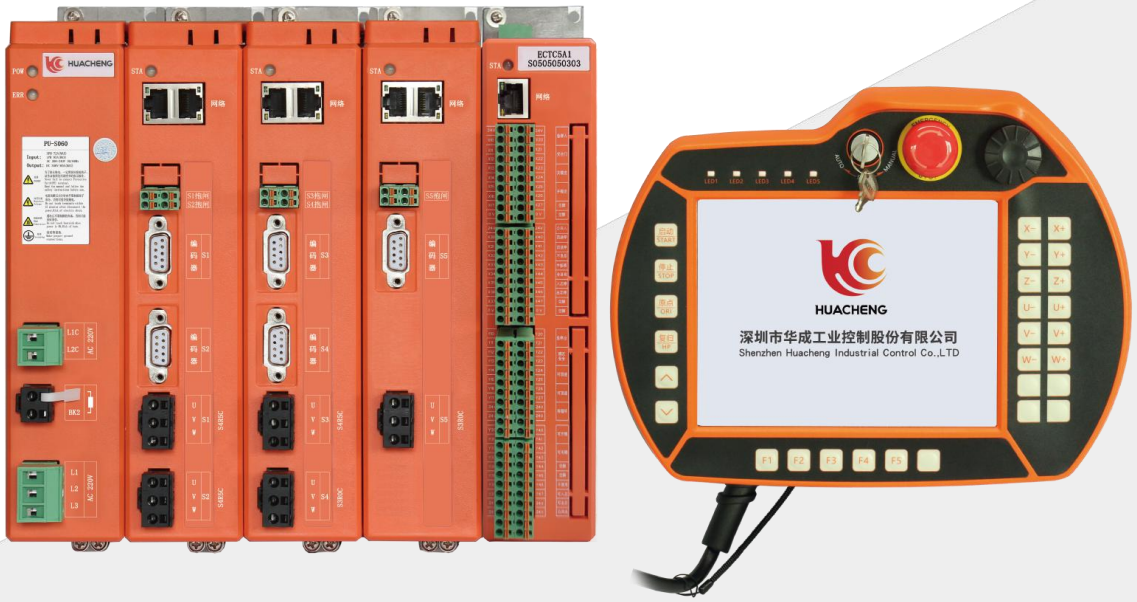
ECTC Series Product User Manual

Drive Control Multi Axis Standard Universal



深圳华成工业控制股份有限公司

Shenzhen Huacheng Industrial Control Co., Ltd.

Introduction

First of all, thank you very much for choosing the universal control system produced by Shenzhen Huacheng Industrial Control Co.,Ltd.

This manual is the manual of the universal control system, it will provide you with the installation, wiring, system operation, alarm and handling of the universal control system and other related details and precautions.

In order to use the system correctly, give full play to the excellent performance of the system and ensure the safety of the user and the equipment, please make sure you read this manual in detail before using the system. Incorrect operation and use may cause abnormal operation of the universal control system and even equipment damage, personal injury or death!

Since we are committed to the continuous improvement of our products, the information provided by us is subject to change without notice.

Contents

Chapter 1. System configuration and Installation Matters

1.1 System Basic Con Configuration

(1) 8-inch color display operation panel
(adapter length optional, standard configuration1m).

(2) Drive control integrated control box.

(3) Servo motor (conventional 100w-1800w).

(4) Brake resistance.

(5) Power supply (optional).

(6) UVW power cable, encoder cable (optional, length optional).

1.2 Security Alerts and System Installation

The following signs are used for the safety contents of this manual. The description of the safety signs of the operation is very important and must be observed.

Attention!

Danger caused by failure to operate as required, which may lead to moderate or minor injury and equipment damage.

1.2.1 Precautions for Storage and Handling

***Note:** Do not store or place in the following environment, otherwise it may cause fire, electric shock or machine damage.

(1) Places with direct sunlight, places where the ambient temperature exceeds the storage temperature, places where the relative humidity exceeds the storage humidity, places with large temperature difference and condensation.

(2) Places close to corrosive gas and combustible gas, places with more dust, dust, salt and metal dust, places with water, oil and medicine dripping, and places where vibration or impact can be transmitted to the main body.

(3) Do not handle the cable, otherwise it may cause damage or failure of the machine.

1.2.2 General Precautions

(1) Do not put too many overlaps of this product together, otherwise it will cause damage or failure during use.

(2) This product is a general industrial product and is not intended to harm any life and health.

(3) If it is applied to devices that may cause major accidents or damage due to the failure of this product, please provide safety devices.

(4) If it is used in the environment with high concentration of sulfur or sulfurized gas, please note that the chip resistance may be disconnected or have poor point contact due to sulfurization reaction.

(5) If the input voltage far exceeds the rated range of the power supply of this product, smoke and fire may occur due to the damage of internal components. Please pay full attention to the input voltage.

(6) Please note that this product cannot be used beyond the scope of product specifications.

(7) The company is committed to the continuous improvement of products, and some parts may be changed.

1.2.3 Prohibited Matters

Except for the staff of the company, do not carry out disassembly and repair.

1.2.4 Precautions for Disposal

Attention!

When the product needs to be treated as waste after normal use, please comply with the laws and regulations of relevant departments on the recycling and reuse of electronic information products.

1.2.5 System Installation Matters

(1) Wiring must be carried out by professional electricians.

(2) Confirm that the power supply is disconnected before starting the operation.

(3) Please install on metal and other flame retardants and keep away from combustibles.

(3) It must be safely grounded during use.

(4) If the external power supply is abnormal, the control system will fail. In order to make the whole system work safely, please be sure to set a safety circuit outside the control system.

(5) Be familiar with the contents of this manual before installation, wiring, operation and maintenance; When using, you must also be familiar with relevant mechanical and electronic knowledge and all relevant safety precautions.

(6) The electric box installed with the controller shall have the conditions of good ventilation, oil prevention and dust prevention. If the electric cabinet is closed, it is easy to make the temperature of the controller too high and affect the normal operation. An extraction fan must be installed. The appropriate temperature in the electric cabinet is below 50 ℃. It should not be used in places with condensation and freezing.

(7) The controller shall be installed as close as possible to the contactor, transformer and other accessories to avoid unnecessary surge interference.

1.2.6 Security Precautions

 ATTENTION	The encoder must use shielded wire, and the shielding layer must ensure reliable grounding at one end! Do not install transformers and other equipment that generate electromagnetic waves or interference around the servo driver, otherwise it will cause false operation of the servo driver. If such equipment needs to be installed, a shielding plate shall be set between it and the servo driver.
	When operating the servo driver, please follow the steps specified in electrostatic prevention measures (ESD), otherwise the internal circuit of the servo driver will be damaged by static electricity. Please protect the branch and short circuit circuit circuit in accordance with local standards. If the protection measures of branch and short circuit circuit circuit are improper, the servo driver may be damaged. Do not share the grounding wire with the welding machine or the power machine requiring high current, otherwise it will cause poor action of the servo driver or the machine. When using multiple servo drivers, please operate according to the contents of this manual. Be careful not to wind the grounding wire into a ring, otherwise it will cause poor action of the servo driver or the machine. Do not connect or operate the machine if there is obvious damage or missing parts. Wiring and inspection shall be carried out by professionals The operator carries out.
	The rotating motor will feed electric energy to the servo driver, which will cause the servo driver to be charged even when the motor stops and cuts off the power supply. Before carrying out maintenance work on the servo drive, make sure that the motor servo drive is safely disconnected.
 DANGER !	Do not conduct wiring operation when the power supply is powered on, otherwise there will be a risk of electric shock. Please cut off the power supply of all equipment before inspection. Even if the power supply is cut off, there is residual voltage in the internal capacitor. Please wait at least 10 minutes after cutting off the power supply.The contact current of the servo driver is greater than 3.5ma. Please ensure that the servo driver is well grounded, otherwise there will be electric shock DANGER.
	After power on
	Do not open the cover plate after power on, otherwise there is a risk of electric shock! Do not touch any input and output terminals of the servo driver, otherwise there is a risk of electric shock! Do not remove the cover plate of the servo driver or touch the printed circuit board when it is powered on, otherwise there will be a risk of electric shock. Do not change the parameters of the servo driver manufacturer at will, otherwise the equipment may be damaged!
	During operation
	Non professional technicians are not allowed to detect signals during operation, otherwise personal injury or equipment damage may be caused! Do not touch the cooling fan and discharge resistance to

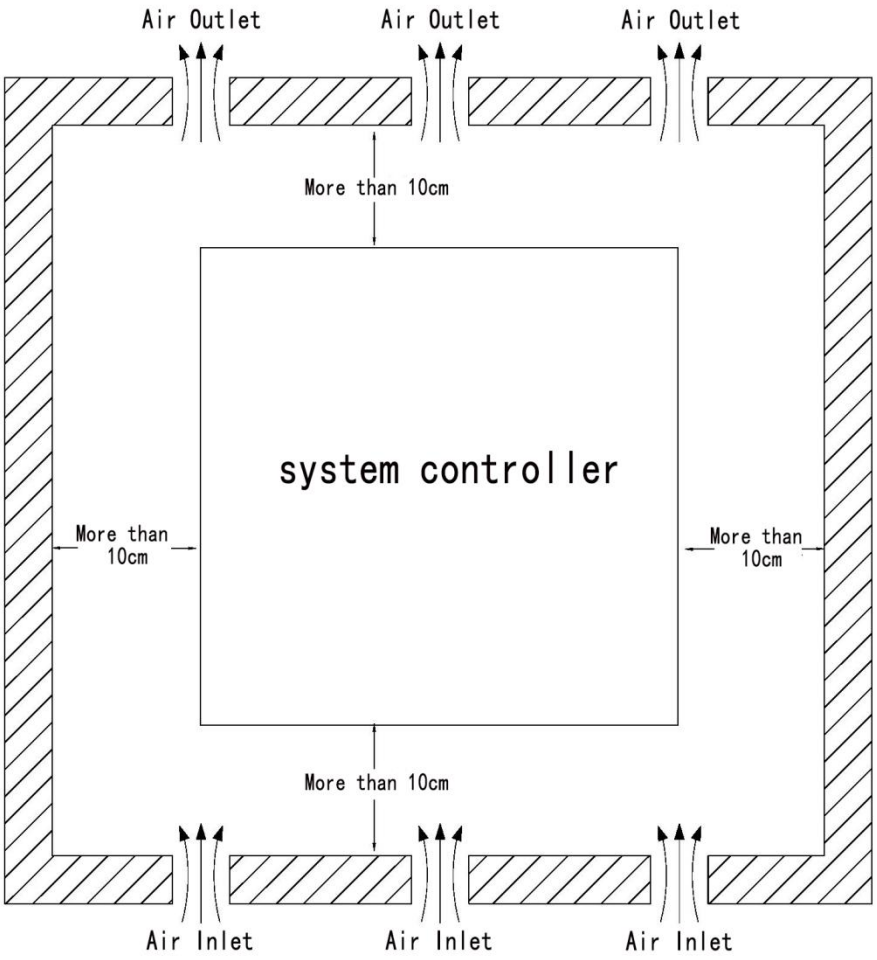
	test the temperature, otherwise it may cause burns!When the servo driver is running, something should be avoided falling into the equipment, otherwise the equipment will be damaged!
	During maintenance
	Do not repair and maintain the servo driver without professional training, otherwise personal injury or equipment damage will be caused! Do not repair and maintain the equipment with electricity, otherwise there is a risk of electric shock! Confirm that the servo driver can be maintained and repaired only after the input power of the servo driver is cut off for 10 minutes, otherwise the residual charge on the capacitor will cause harm to people!Before carrying out maintenance work on the servo drive, ensure that the servo drive is safely disconnected from all power supplies. All pluggable plug-ins must be pluggable in case of power failure! After replacing the servo driver, the parameters must be set and checked. Do not power on the damaged machine, otherwise it will expand the damage of the machine.
 **Warning !**	Ensure that the phase sequence of motor terminal and servo driver terminal is consistent. If the phase sequence is inconsistent, the motor will rotate in reverse. Do not connect the power supply to the output terminal of the servo driver, otherwise the servo driver will be damaged and even cause fire. When some systems are powered on, the machinery may act by itself. Please be careful, otherwise it may cause death or serious injury. Before turning on the servo driver, please make sure that the servo driver cover plate is firmly installed and the motor is allowed to restart. Before connecting the power supply of the servo driver, please confirm whether the rated voltage of the servo driver is consistent with the power supply voltage. If the power supply voltage of the main circuit is used incorrectly, there is a risk of fire. Do not connect the input power supply to the output terminals (U, V, W) of the servo driver, otherwise the servo driver will be damaged! Non electrical construction professionals are not allowed to install, maintain, inspect or replace components, otherwise there will be a risk of electric shock.

Note: Improper handling may cause hazards, including personal injury or equipment accident.

1.3 Installation and External Wiring Requirements

1.3.1 Installation Direction and Space Requirements

Installation direction: the normal installation direction of servo driver is vertical. The installation interval between the servo drive and the chassis space and other equipment must be ⩾ 10cm. Please refer to the following figure. Note that the minimum size is indicated on the figure. In order to ensure the service performance and service life of the drive, please reserve sufficient installation interval as far as possible.



Installation space requirements diagram

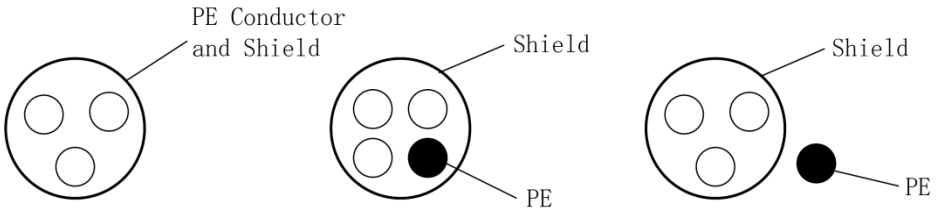
***Note:** The installation requirements of drive control three axis and drive control five axis are consistent.

Heat dissipation: The servo driver adopts its own fan heat dissipation and cooling mode. It is best to have a ventilation slot or install a heat dissipation fan in the electrical control cabinet to ensure that the drive control integrated machine has good natural convection ventilation and heat dissipation in the chassis.

1.3.2 Cable requirements and Wiring

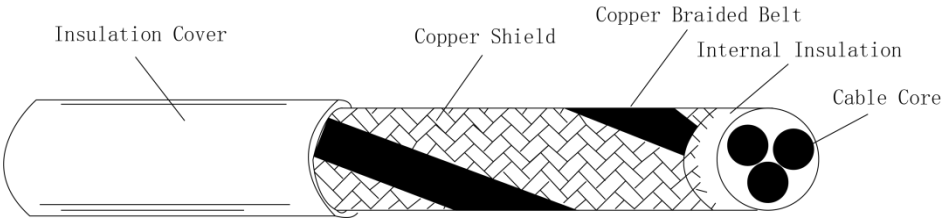
1.3.2.1 Shielded Cable

In order to meet the requirements of EMC, the encoder line must adopt the shielded cable with shielding layer, and the power line is also recommended to adopt the shielded cable with shielding layer. The shielded cable includes three phase conductor shielded cables and four phase conductor shielded cables, one of which is PE wire, as shownin the figure below



Shielded Cable Requirements

In order to effectively suppress RFI emission and conduction, the shielding layer of the shielding wire consists of a coaxial copper braid. In order to increase the shielding efficiency and conductivity, the braiding density of the shielding layer should be greater than 90%. As shown in the figure below:



Braid Density of Shielding Layer

Installation Precautions:

1. Shielded symmetrical cables are recommended for all shielded cables, and four core cables can also be used for input cables;
2. The motor cable and its PE shielded conductor (stranded shield) shall be as short as possible to reduce electromagnetic radiation and stray current and capacitive current outside the cable;
3. It is recommended that shielded cables be used for all control cables;
4. The output power line of the driver is recommended to use shielded cable or steel pipe to shield the power line, and the shielding layer shall be reliably grounded. For the lead of the disturbed equipment, it is recommended to use twisted pair shielded control wire, and the shielding layer shall be reliably grounded.

1.3.2.2 Cable Routing Requirements

(1) The routing of motor cables must be far away from the routing of other cables. The motor cables of several drives can be routed side by side.

(2) It is recommended to lay motor cables, input power cables and control cables in different trunking. In order to avoid the electromagnetic interference caused by the rapid change of driver output voltage, the long-distance side-by-side wiring of motor cables and other cables should be avoided.

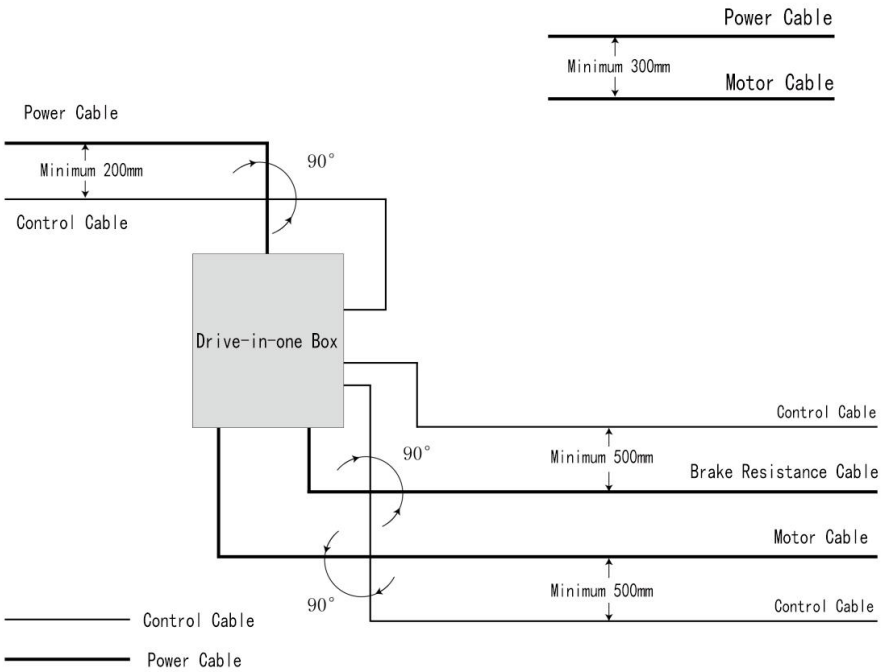
(3) When the control cable must pass through the power cable, ensure that the included angle between the two cables is maintained at 90 degrees as far as possible, and do not pass other cables through the driver.

(4) The power input and output lines and weak signal lines (such as control lines) of the driver shall not be arranged in parallel as far as possible, and shall be arranged vertically if possible.

(5) The cable trays must be well connected and grounded. Aluminum trunking can be used to improve equipotential.

(6) Ensure that the filter, driver and motor shall be well overlapped with the system (machinery or device), and the installed part shall be protected by spraying, and the conductive metal shall be in full contact.

(7) See the following figure for cable wiring diagram:



1.3.2.3 Common EMC Interference Problems and Solutions

The driver product belongs to strong interference equipment. When there are problems in wiring and grounding during use, interference may still occur. When there is interference with other equipment, the following methods can also be used for rectification.

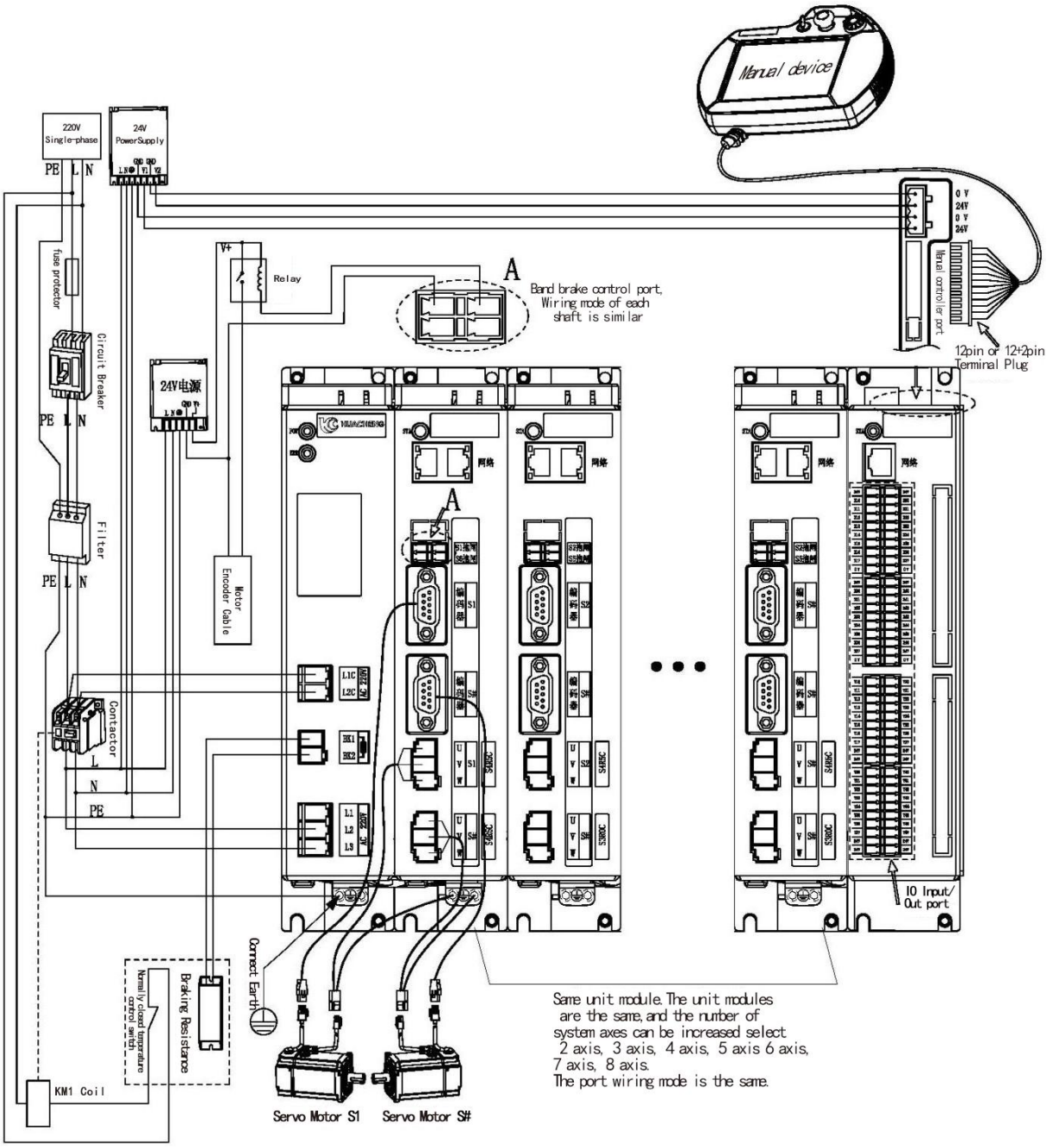
Common EMC Interference Problems and Solutions

Interference Type	Rectification Measures
Leakage protection circuit breaker switch trips	Reduce carrier frequency; Reduce the length of driving line; Magnetic ring is wound on the input drive line (PE line is not wound); In case of tripping at the moment of power on, it is necessary to disconnect the large ground capacitance at the input end; (disconnect the grounding terminal of external or built-in filter and the grounding terminal of input port to ground y capacitance) In case of operation or tripping, leakage current suppression measures (leakage current filter and safety regulation capacitor) shall be added at the input end+wound magnetic ring, wound magnetic ring)
Interference caused by drive operation	The motor housing is connected to the PE end of the driver; The PE end of the driver is connected to the power grid PE; The input power line is wound with a magnetic ring; Adding capacitance or winding magnetic ring to the disturbed signal port; Add additional common ground connection between equipment;
Communication interference	The motor housing is connected to the PE end of the driver; The PE end of the driver is connected to the power grid PE; Add a magnetic ring around the input power line; Matching resistance shall be added at the source of communication line and load end; Communication line differential line plus external communication public ground wire; Shielded wire is used for communication line, and the shielding layer is connected with communication public ground wire; Communication wiring shall be twisted pair;

Chapter 2 System Installation and Wiring Instructions

2.1 System Wiring Diagram

2.1.1 ECTC Whole Machine Wiring Diagram



*Note:

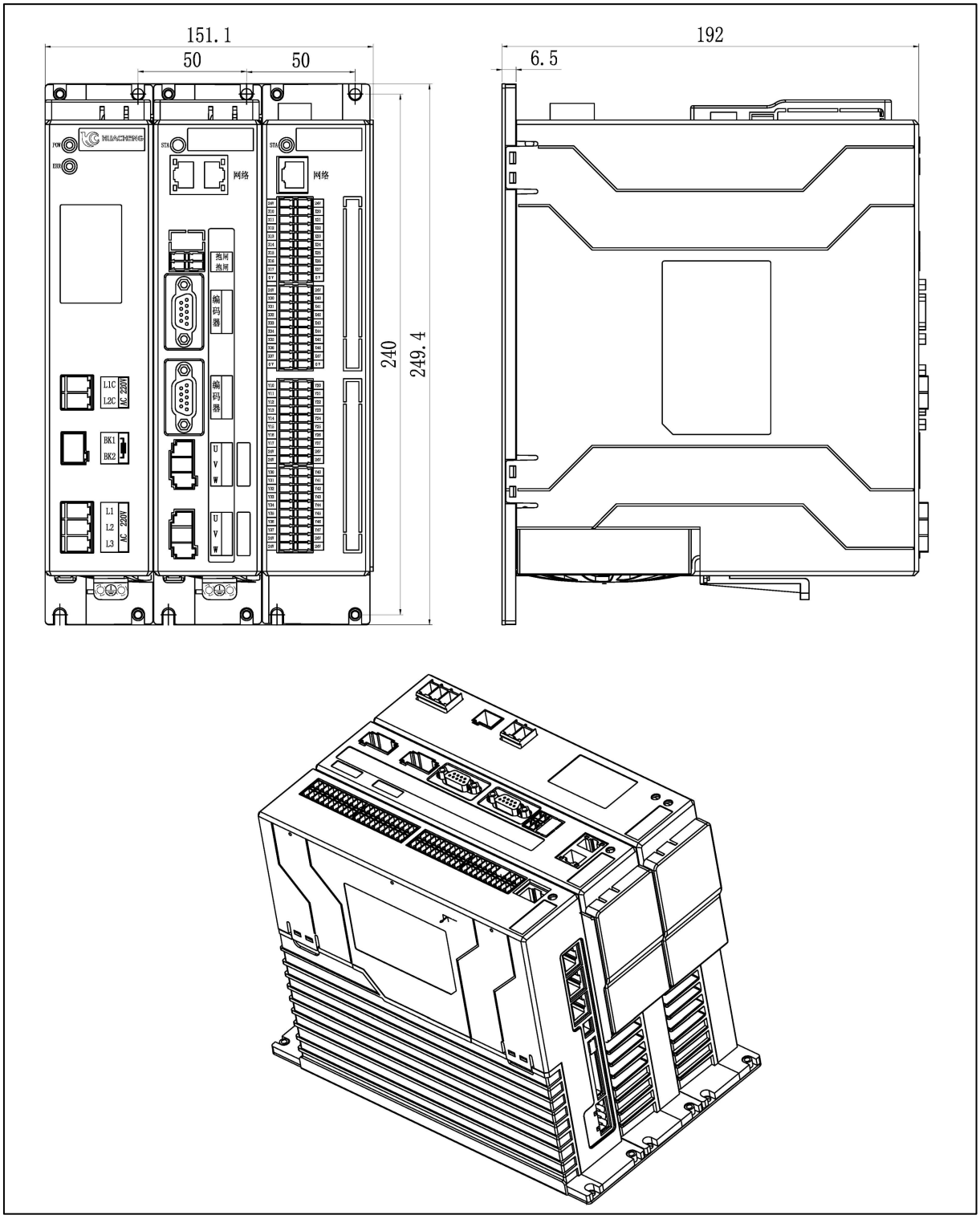
(1) Users need to evaluate whether the IO power supply exceeds the standard 50W. If it exceeds the standard 50W, they need to replace the high-power power supply by themselves.

(2) After wiring, the alarm on the manual controller shall be handled according to "8.4 alarm and its solutions" in the user manual.

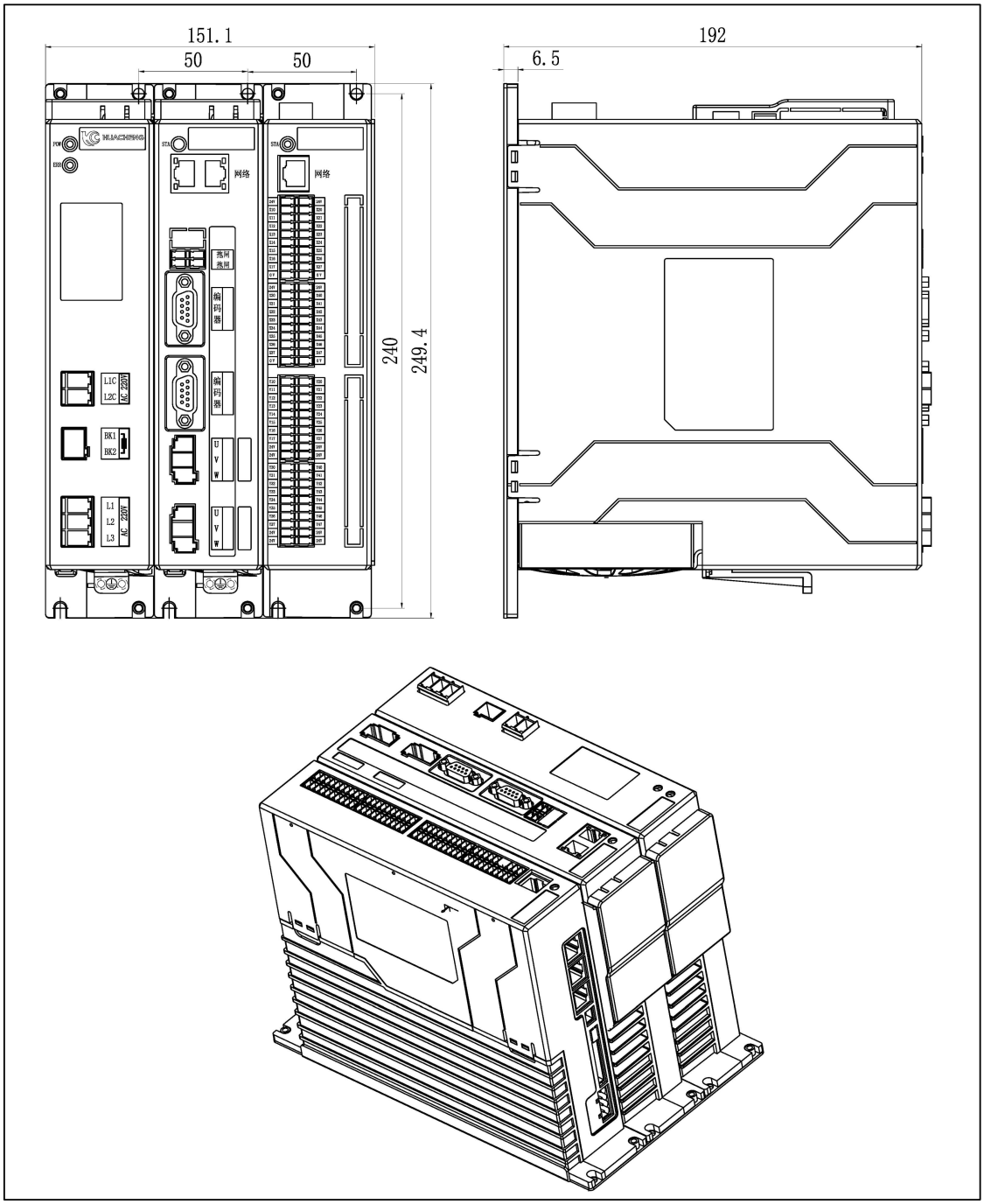
(3) The unit modules at the ellipsis are the same, and the number of system axis can be 2 axis,3 axis, 4 axis, 5 axis, 6 axis, 7 axis and 8 axis. The port connection mode is the same.

2.1.2 Dimension Drawing

2.1.2.1 Machine Wiring Diagram

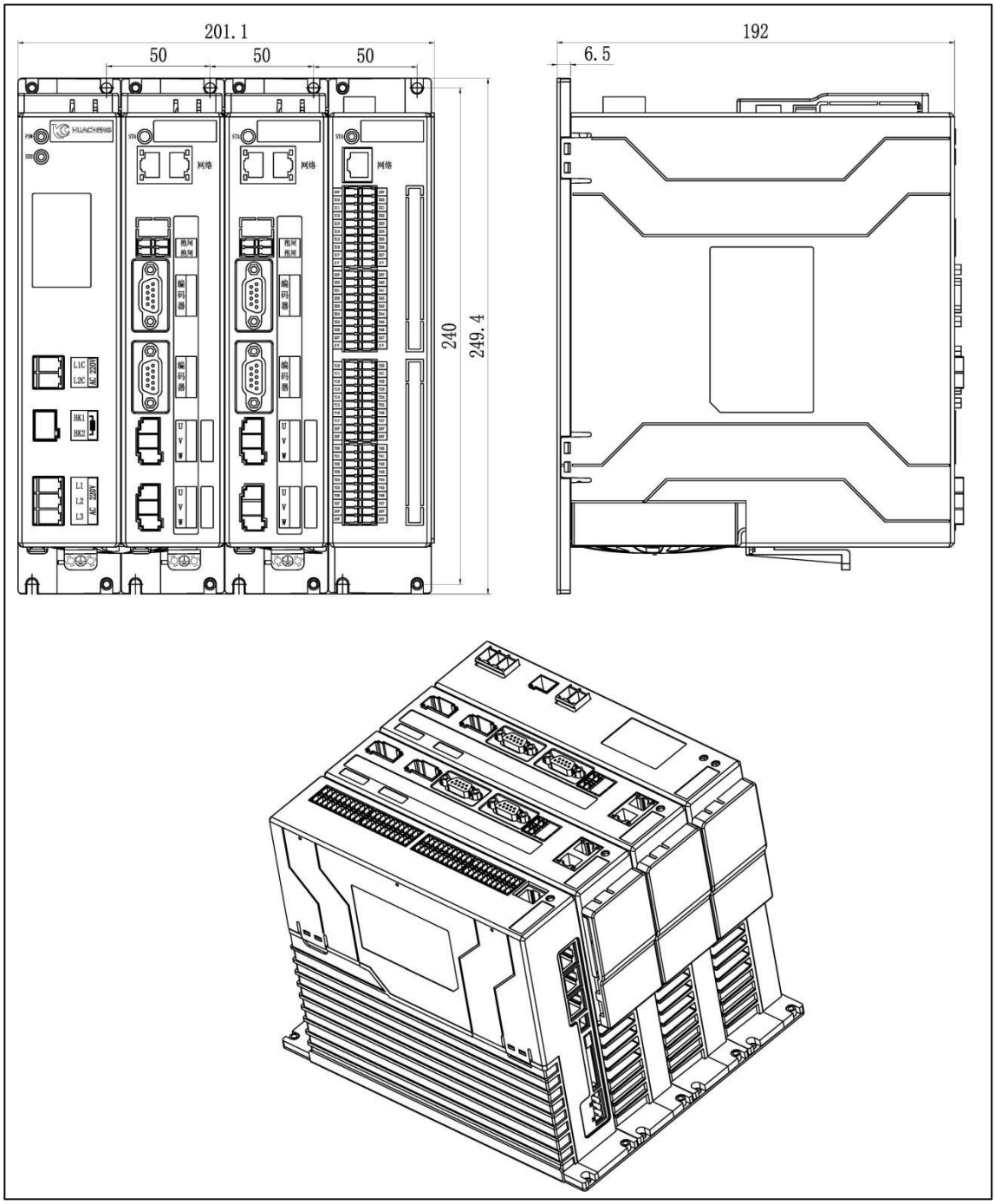


2.1.2.1 ECTC 2 Master Control Dimension Drawing



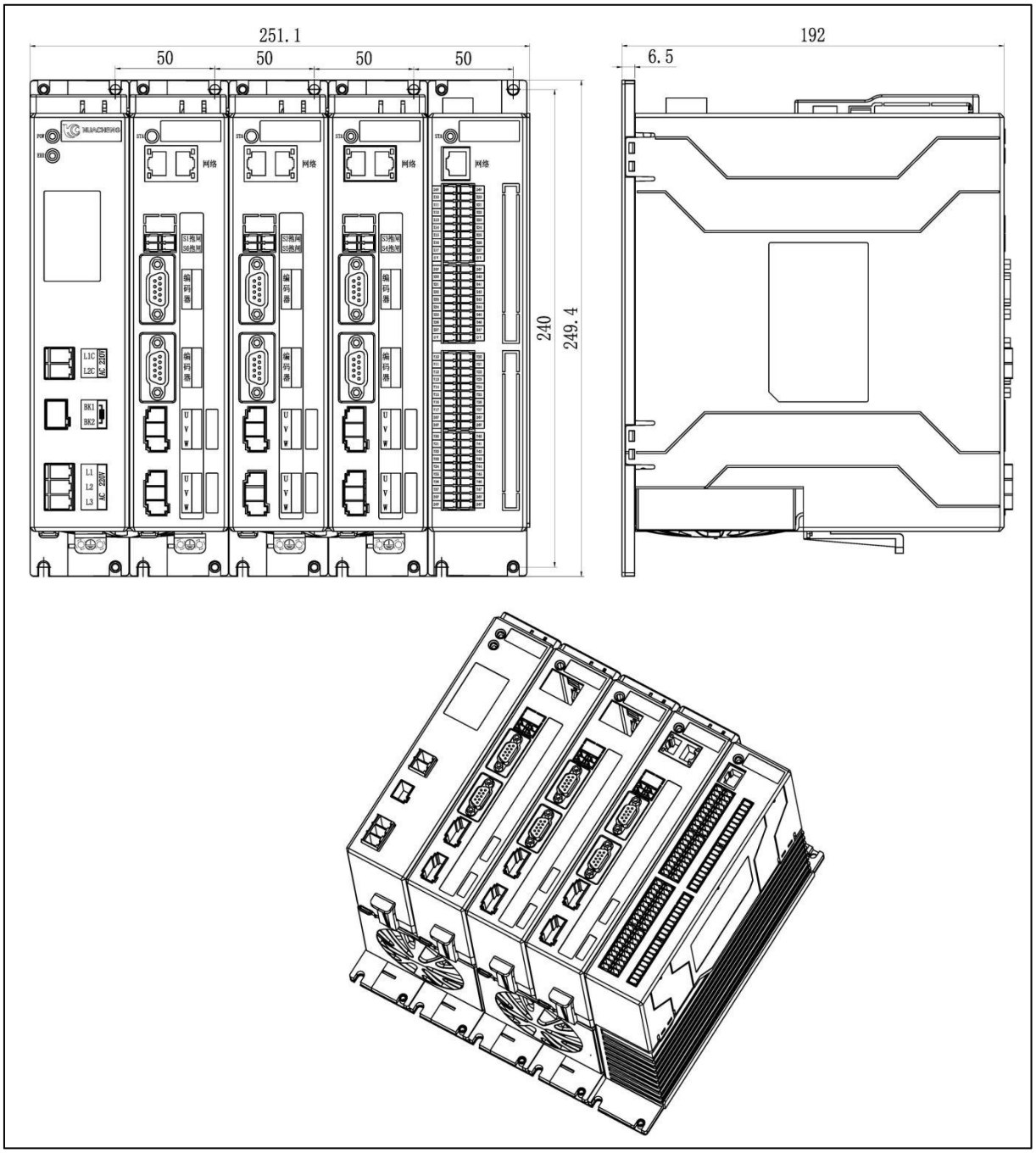
Installation mode	Screw specification	Length Code (max)	Installation torque (max)
Screw fixing	M5	12mm	7.5kgf.cm

2.1.2.1 Main Control Dimension Drawing of ECTC3 & ECTC4



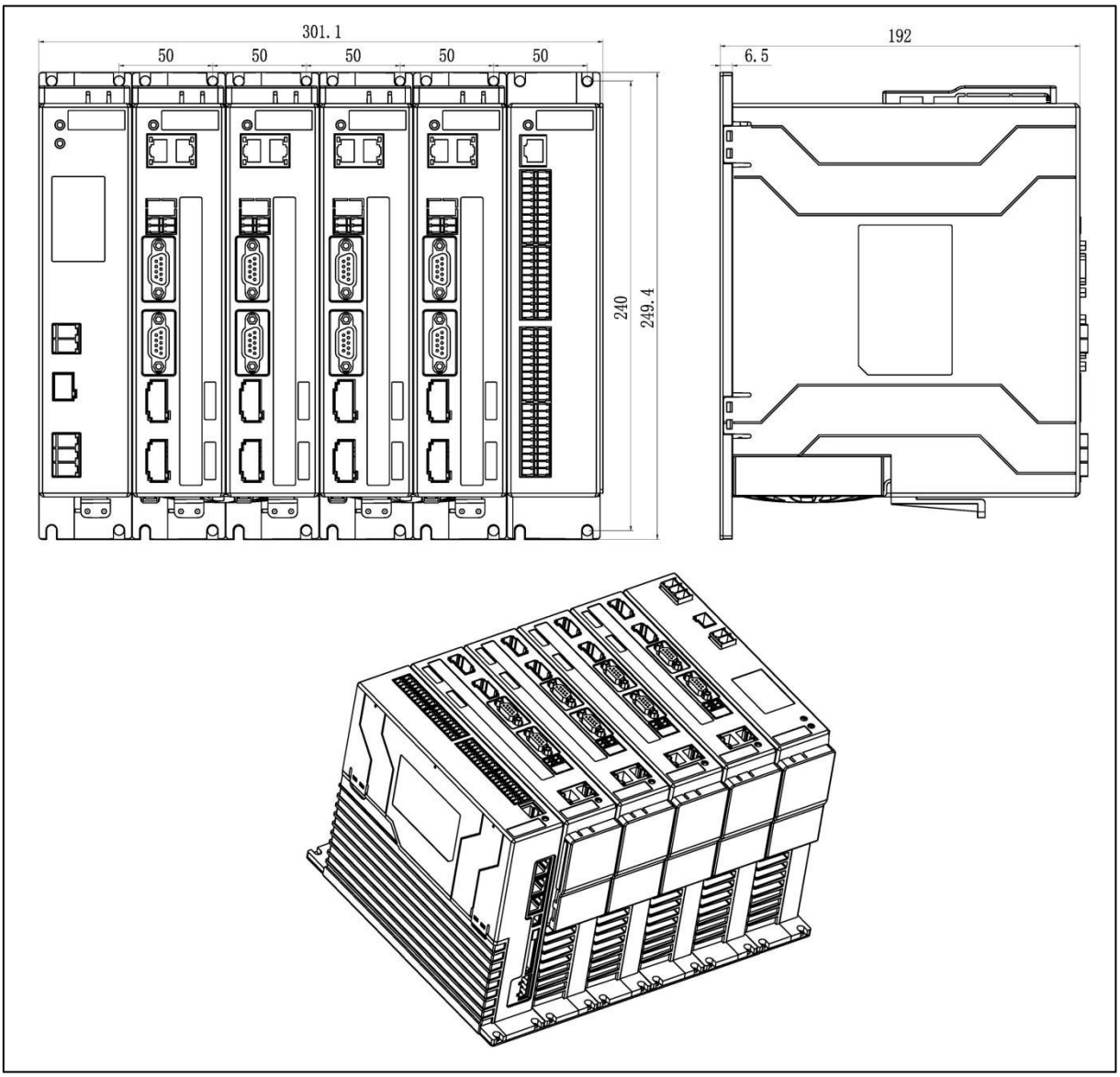
Installation mode	Screw specification	Screw length (max)	Installation torque (max)
Screw fixing	M5	12mm	7.5kgf.cm

2.1.2.1 Dimensional Drawing of ECTC5 & ECTC6 Main Control



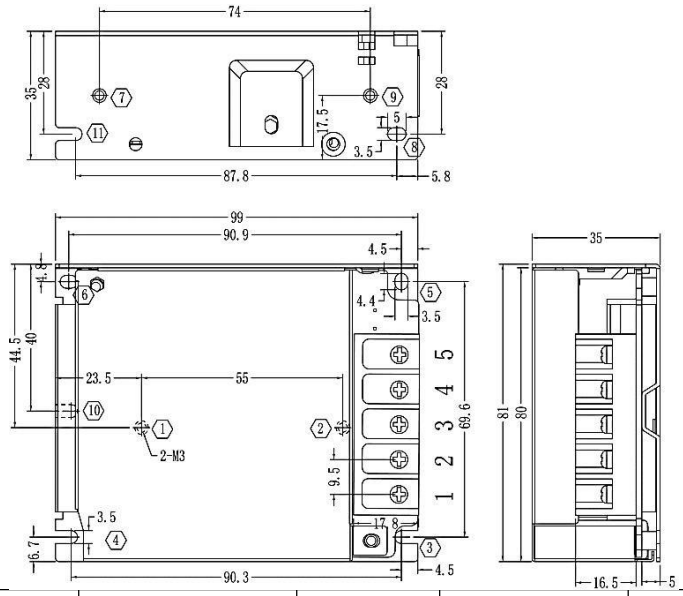
Installation mode	Screw specification	Length Code (max)	Installation torque(max)
Screw fixing	M5	12mm	7.5kgf.cm

2.1.2.11ECTC7 & ECTC8 Master Control Dimension Drawing



Installation mode	Screw specification	Length Code (max)	Installation torque(max)
Screw fixing	M5	12mm	7.5kgf.cm

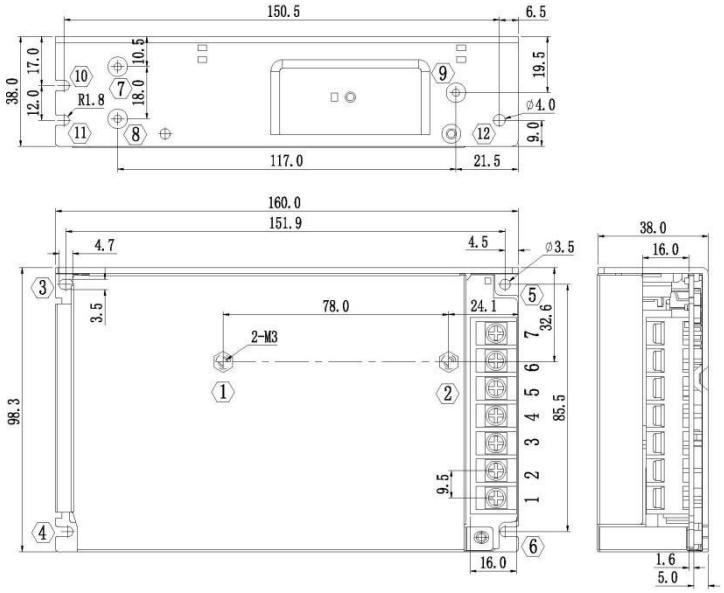
2.1.2.2 Single Circuit Switching Power Supply Diagram



Installation mode	Installation tag number	Screw specification	Length code (max)	Installation torque(max)
Screw fixing	①--② ⑦--⑨	M3	5mm	6.5kgf.cm
	③--⑥ ⑩--⑫	M3	3mm	7kgf.cm
Power size	50W	100W	150W	

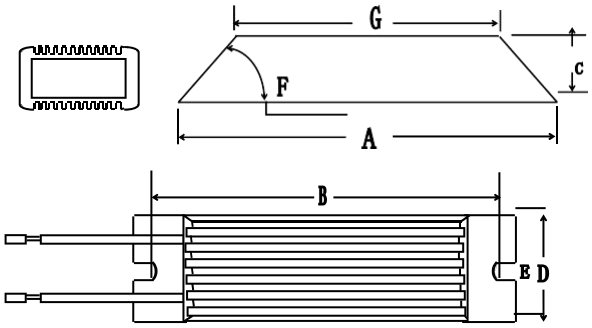
*Note: The injection molding industry is equipped with 50W power supply as standard, and other industries are equipped with 100W power supply as standard or optional according to the demand (according to the finished product configuration list). The customer is requested to evaluate whether the holding brake power is appropriate and whether it is necessary to increase the power supply power by himself.

2.1.2.3 Dual switching power supply diagram



Installation mode	Installation tag number	Screw specification	Length code (max)	Installation torque (max)
Screw fixing	①--② ⑦--⑨	M3	5mm	6.5kgf.cm
	③--⑥ ⑩--⑫	M3	3mm	7kgf.cm

2.1.2.4 Dimension Drawing of Braking Resistance



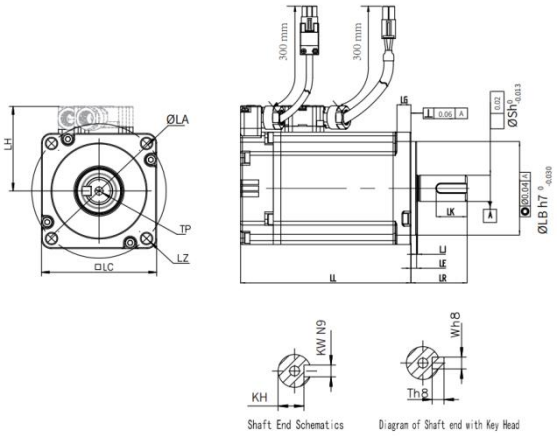
Installation mode	Screw specification	Length code (max)	Installation torque (max)
Screw fixing	M5	8mm	7.5kgf.cm

Mode	25℃-40℃ Rated power (W)	Overall Dimension (mm)							Resistance Range
		Resistor							
		A± 1.0	B± 1.0	C± 1.0	D± 1.0	E± 0.5	F	G± 1.0	0.1～20K
RXLG	200	165	147	30	60	5.6	45°	119	

2.1.2.5 Motor Parameters and Overall Dimension Drawing

Parameters and dimensions of 400W motor:

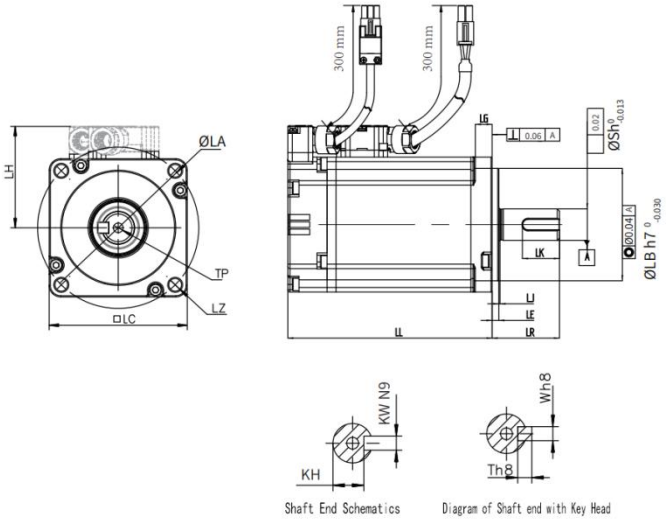
400W Motor Parameters									
Specification / Model	LL	LC	LR	LA	LZ	LH	LG	LE	LJ
400W with brake	<180	60	30	70	4- φ five point five	≤50	NA	3±0.5	1±0.35
400W without brake	<130	60	30	70	4- φ five point five	≤50	NA	3±0.5	1±0.35
Specification / Model	S	LB	TP	LK	KH	KW	W	T	Weight (kg)
400W with brake	14	50	M5*10	≤23	11	5	5	5	NA
400W without brake	14	50	M5*10	≤23	11	5	5	5	NA



(Dimension Drawing of 400W Motor)

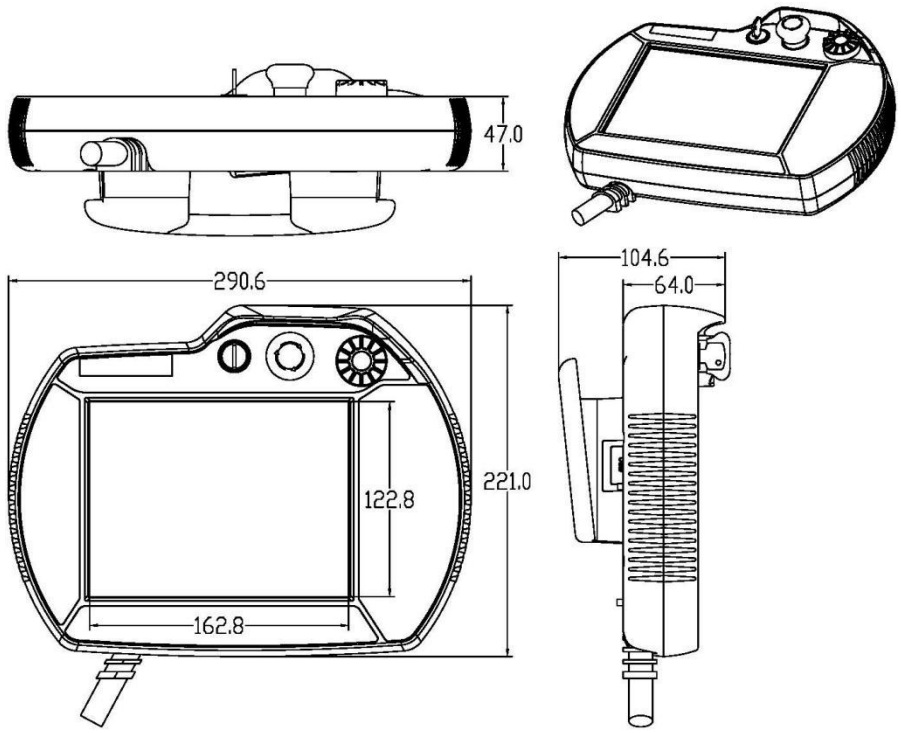
Parameters and dimensions of 750W motor:

700W motor parameters									
Specifications / Model	LL	LC	LR	LA	LZ	LH	LG	LE	LJ
750W with brake	<190	80	35	90	4- Φ seven	≤55	NA	3±0.5	1±0.35
750W without brake	<140	80	35	90	4- Φ seven	≤55	NA	3±0.5	1±0.35
Specifications / Model	S	LB	TP	LK	KH	KW	W	T	Weight (kg)
750W with brake	19	70	M6*12	25	16.5	6	6	6	NA
750W without brake	19	70	M6*12	25	16.5	6	6	6	NA



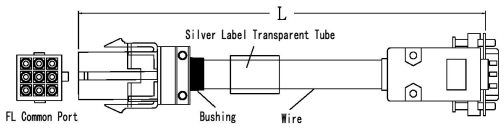
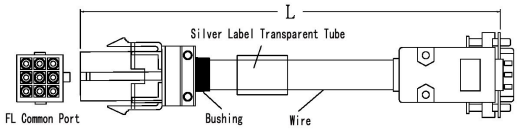
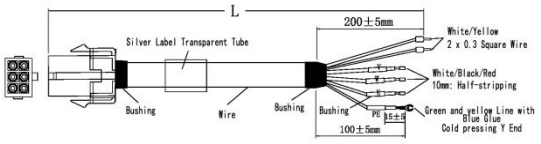
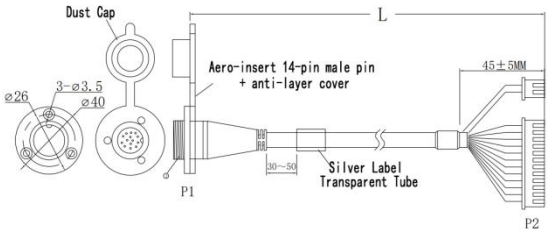
(80 flange motor dimension drawing)

2.1.2.6 Dimension Drawing of Manual Controller



*Note: The dimensions of the two axis, three axis, four axis, five axis, six axis, seven axis and eight axis manual controllers driven and controlled by the manipulator are the same

2.1.2.7Supporting Cable and Model

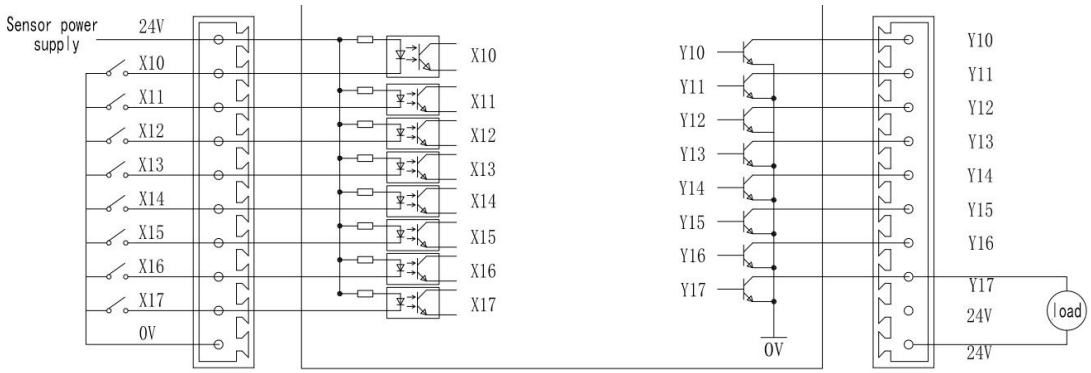
Cable Name	Cable Model	L Cable Length	Cable Appearance Drawing
Encoder Line (4 * 0.25)	PMXB1-5610054	0.5M	
	PMXB1-5610254	2.5M	
	PMXB1-5610304	3 M	
	PMXB1-5610454	4.5M	
	PMXB1-5610554	5.5M	
	PMXB1-5610604	6 M	
	PMXB1-5610704	7 M	
	PMXB1-5610104	10 M	
Power Line (4 * 0.75)	PMXB1-5640051	0.5M	
	PMXB1-5640091	0.9M	
	PMXB1-5640301	3 M	
	PMXB1-5640451	4.5M	
	PMXB1-5640551	5.5M	
Power Brake Line (4 * 0.75 + 2 * 0.3)	PMXB1-6640251	2.5M	
	PMXB1-6640451	4.5M	
	PMXB1-6640551	5.5M	
	PMXB1-6640601	6M	
	PMXB1-6640701	7M	
	PMXB1-6640101	10M	
Manual Controller Line	PMXB1-1301051	0.5M	
	PMXB1-1301101	1M	
Drag Chain Manual Controller Line	PMXB1-430225	2.5M	

2.2 Power Input Definition

Single phase 220V power connection			
L1	Empty	L1C	220V-L
L2	220V-L	L2C	220V-N
L3	220V-N		

Terminal Label	Terminal name	Function Description	Remarks
L1C L2C	Auxiliary power terminal	AC single phase 220V50 / 60Hz / power supply voltage range 200VAC ~ 240VAC	The auxiliary power supply is the power supply of the internal control circuit. The incoming main power line uses 3-core multi strand copper cable wire, single core, cross-sectional area 2.5 mm², insulation withstand voltage > = 600V
BP	Brake resistance terminal	External braking resistance connection spot	External resistance (33 Ω 200W).
L1 L2 L3	Main circuit power terminal	AC single-phase / three-phase 220V50 / 60Hz / power supply voltage range 200VAC ~ 240VAC	The main circuit power supply is the internal power high-voltage power supply. The incoming main power line uses 3-core multi strand copper power cable, single core, cross-sectional area 2.5 mm², insulation withstand voltage > = 600V
U V W	Servo motor access terminal 1-2	Connect the three phase servo motor	Connect according to UVW, otherwise the motor will not rotate or run fast.
PE	Geodetic connection point	Safeguard access point	This access point must be connect to the earth.

2.3 I / O Port Wiring Diagram



The wiring mode of other input signals X20 ~ X27, X30 ~ X37 and X40 ~ X47 is the same as figure X10 ~ X17.

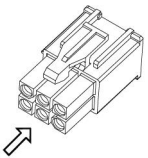
The wiring mode of other output signals Y20 ~ Y27, Y30 ~ Y37 and Y40 ~ Y47 is the same as figure Y10 ~ Y17.

Interface	Definition	Explain	Remarks
24V power port	24V	24V power supply	Generally used as digital input working power supply, 24V ± 10%, maximum output current100mA。
	0V	Digital input light Coupling common terminal	X10-X47 input optocoupler common terminal
Input terminal	X10-X47	Turn on optocoupler	Connect the negative pole of 24V power supply (0V).
Output terminal	Y10-Y47	MOS tube open drain output	Connected to 24V power supply through load, single channel output protection current 350mA, withstand voltage65V。 Larger current loads require relay isolation control
Injection molding output port	Relay output	Normally open relay	5A/250VAC/30VDC
Communication port (Model configuration)	CAN port	Reserve	
USB monitoring port	DP/DM	USB monitoring, debugging port	Please use the manufacturer's special cable and USB electrical interface for high-performance debugging and monitoring of servo system.

2.4 Servo Motor Wiring Definition

2.4.1 Power Line Definition

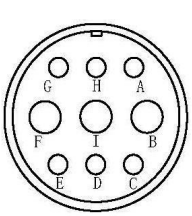
Motor power line below 750W - without brake

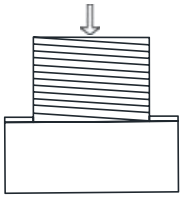



View direction

Plug: molex-50361672 pin: molex-39000059						
Needle number	1	2	4	5	3	6
definition	U	V	W	PE earth	NC empty	NC empty
colour	red	blue	black	Yellow green		

View direction

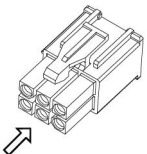




Socket model		Ms3102a 20-18p / 9 core		
Needle number	B	I	F	G
definition	U	V	W	FG earth

Motor power line above 850W without brake

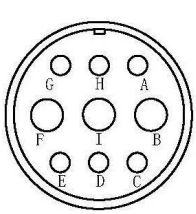
Motor power line below 750W - with brake

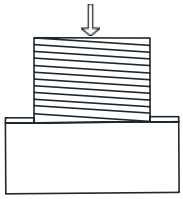



View direction

Plug: molex-50361672 pin: molex-39000059						
Needle number	1	2	4	5	3	6
definition	U	V	W	PE earth	Br brake	Br brake
colour	red	blue	black	Yellow green	Brown	white

View direction



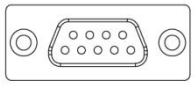


Socket model		Ms3102a 20-18p / 9 core				
Needle number	B	I	F	G	C	E
definition	U	V	W	FG earth	Brake+	Brake-

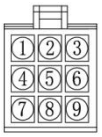
Motor power line above 850W with brake

2.4.2 Encoder Line Definition

Host encoder DB9 interface		Motor encoder AMP-TE / Female terminal/170361-1	
Pin number	Signal description	Pin number	Signal description
8	SD+	3	SD+
4	SD-	6	SD-
9	5V	9	5V
5	0V	8	0V
		7	FG
		1	Battery+
		4	Battery-



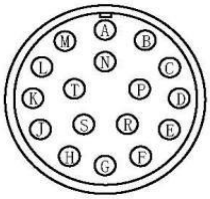
DB9 interface

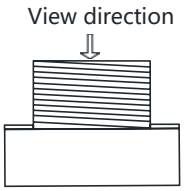


Motor end encoder

*Note: 95, 84 twisted pair
Encoder line of motor below 750W

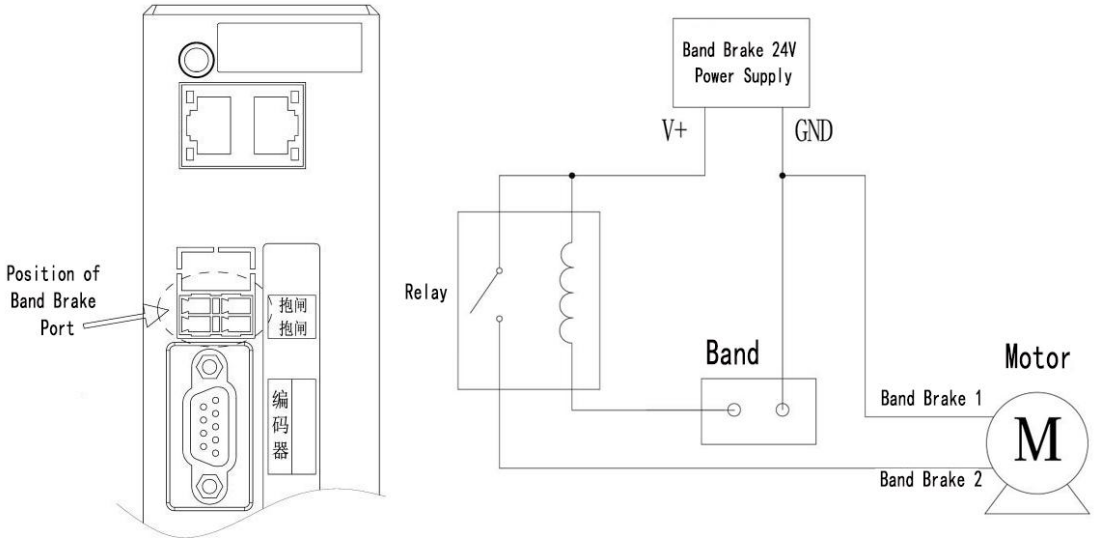
Host encoder DB9 interface		Motor encoder 17 core aircraft head interface	
Pin number	Signal description	Socket pin number	Signal description
8	SD+	A	SD+
4	SD-	B	SD-
9	5V	G	5V
5	0V	H	0V
		J	FG
		E	Battery+
		F	Battery-





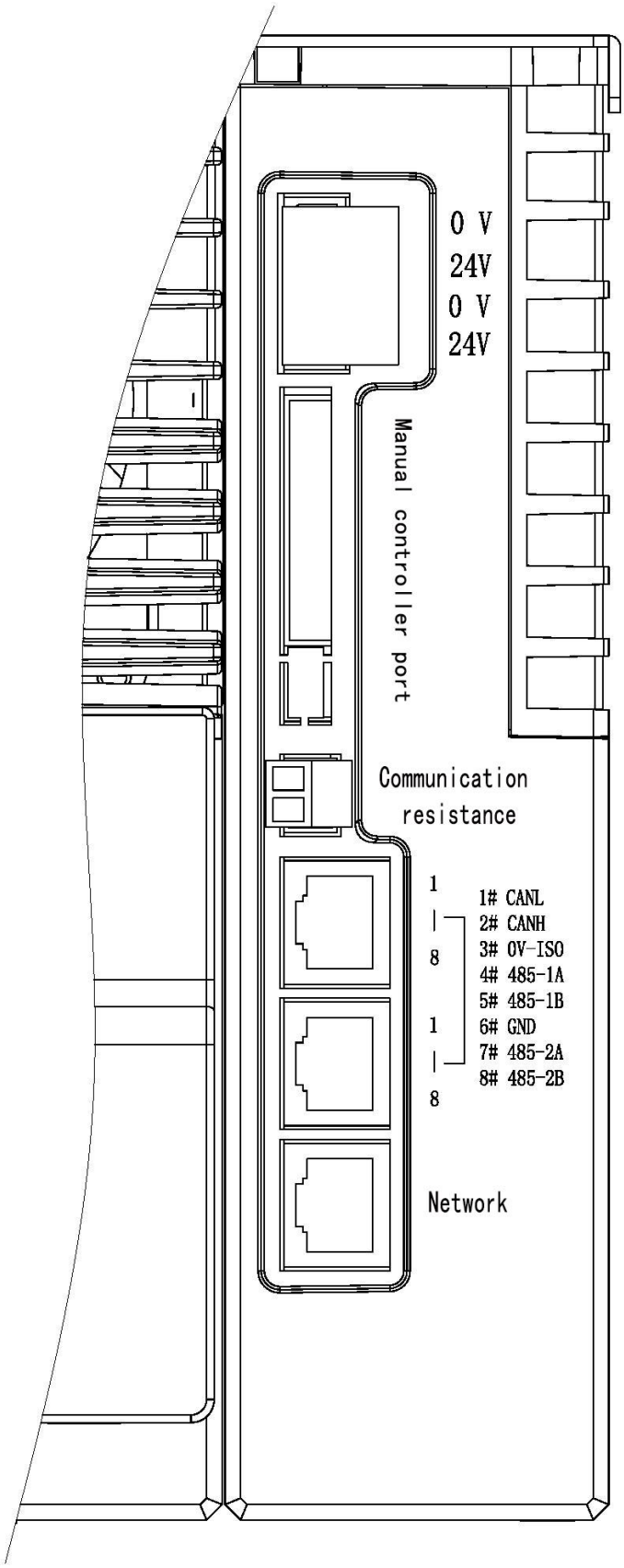
*Note: 95, 84 twisted pair
Encoder line of motor above 850W

2.4.3 Motor Band Brake Wiring Diagram



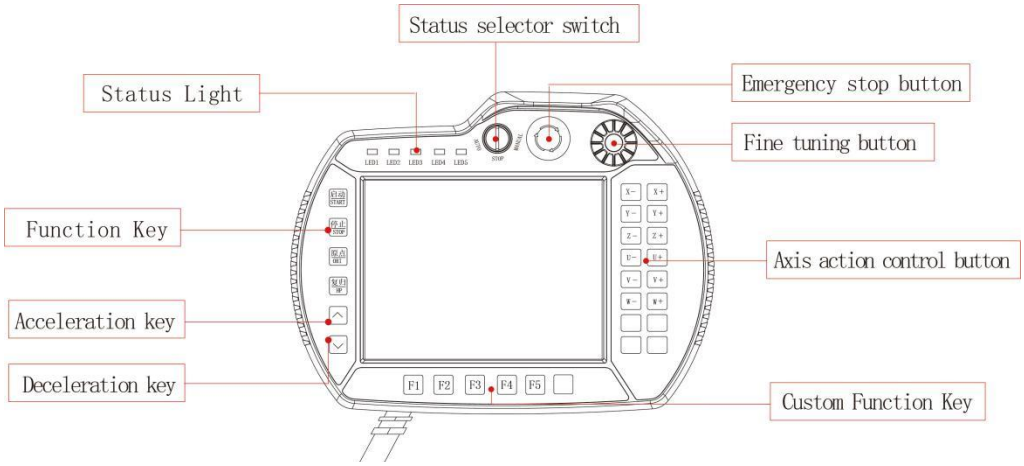
*Note:The band brake port must control the operation of the band brake through an external relay.

2.4.4 System Communication Port Definition Diagram

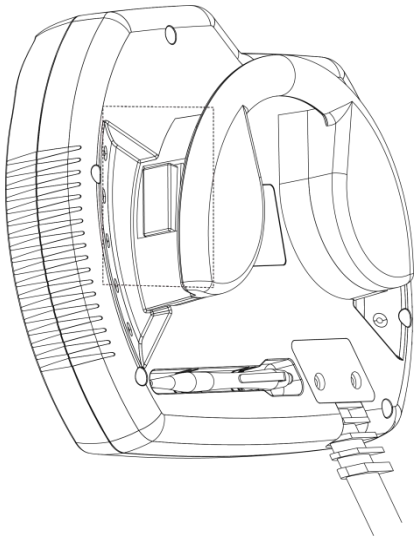


Chapter 3 Tuning and Operation Mode

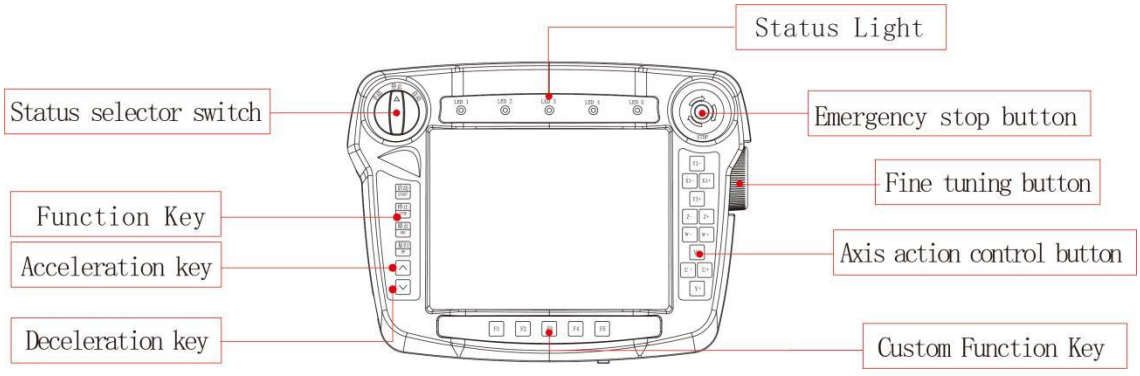
3.1 Appearance and Description



New Version of the Hand Controller Appearance (Front)



Appearance of the new manual control (Back)

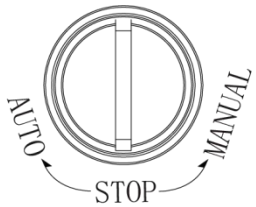


Appearance of Old manual controller

3.2 Key Function Description

3.2.1 Status Selector Switch

The system has three operation states: manual, stop and automatic. Turning the state selection switch to the right gear is the manual state. In this state, the manipulator can be operated manually; Turn the status selection switch to the middle gear to stop. In this state, the manipulator stops all actions, can reset the origin of the manipulator, and can also set parameters. Turn the status selection switch to the left gear and press the "start" key once, and the manipulator will enter the automatic operation state.The states of the manual controller are divided into three types: manual, stop and automatic.



Manual: Turn the state selection switch to the right to enter the manual state. In this state, manual operation can be carried out.

Stop: Turn the state selection switch to the middle to enter the stop state. In this state, parameters can be set.

Auto: Turn the state selection switch to the left to enter the automatic state. In this state, full-automatic operation can be carried out.

3.2.2 Function Button

Start: Function 1: Press the "start" button in the automatic state, and the manipulator will enter the automatic operation state;
Function 2: In the stop or manual state, press the "reset" key first, and then press the "start" key, then the manipulator will reset the origin.
Function 3: in the stop state, press the "origin" key first, and then press the "start" key, and the axis will enter the origin finding mode.

Stop: Function 1: In the fully automatic state, press this key, the system will enter the single cycle mode, and the program will stop after the end of the module. If you press the "stop" key again (twice in a row), the manipulator will stop moving immediately.
Function 2: When an alarm occurs, press this key in the stop state to clear the solved alarm display.

Origin: In the stop state, press this key, and then press the "start" key to start the origin reset action. See "5.3.6 origin setting" for details.

***Note:** You can select the method of returning to the origin and the order of returning to the origin in this key; The origin command cannot be modified in the "programmable key".

Reset: Press the "reset" key once, and then press the "start" key. All axes return to the origin position in turn.See "5.3.6 origin setting" for details.

*Note: Other commands can also be added to this key, such as disconnecting an output point when pressing reset to the origin; Reversion can be made in defined "programmable keys".

Acceleration / Deceleration: These two keys can be used to adjust the global speed in manual and automatic.

Emergency stop button: In case of emergency, pressing the emergency stop button will break the enabling of all axes, and the system will alarm "emergency stop". After turning out the knob, press the "stop" key to eliminate the alarm.

*Note: Please press the emergency stop button in the state of shutdown or upgrade to avoid special circumstances.

Custom key: See "5.2.4 keys and indicators" for details.Status light: See "5.2.4 keys and indicators" for details.

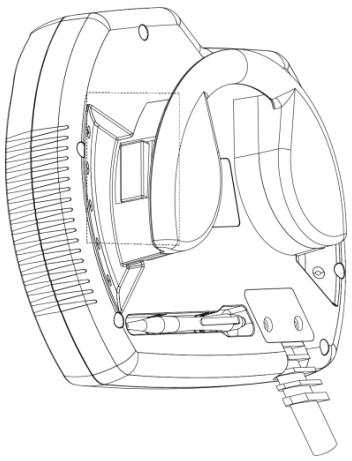
Axis action key: The key to control the movement of each axis. See "3.4.5.1 axis operation under manual gear" for details.

3.2.3 Enable Switch Button

There is an enable switch button on the right side of the back of the manual controller. When operating each axis action button or resetting under the manual page or stop page, it needs to be pressed for a long time to enable each axis. Otherwise, if the axis is not enabled, the manipulator will not move.

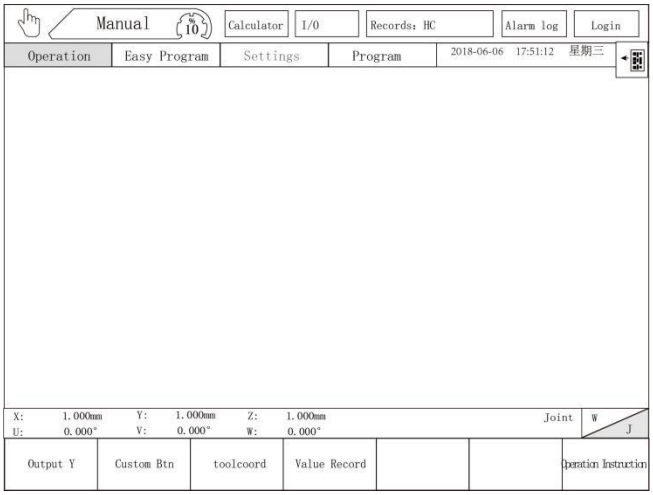
*Note: The enable switch button has two functional states: enable and disable; There are three use states: not press, lightly press and heavily press. The function status corresponds to the use status, as follows:

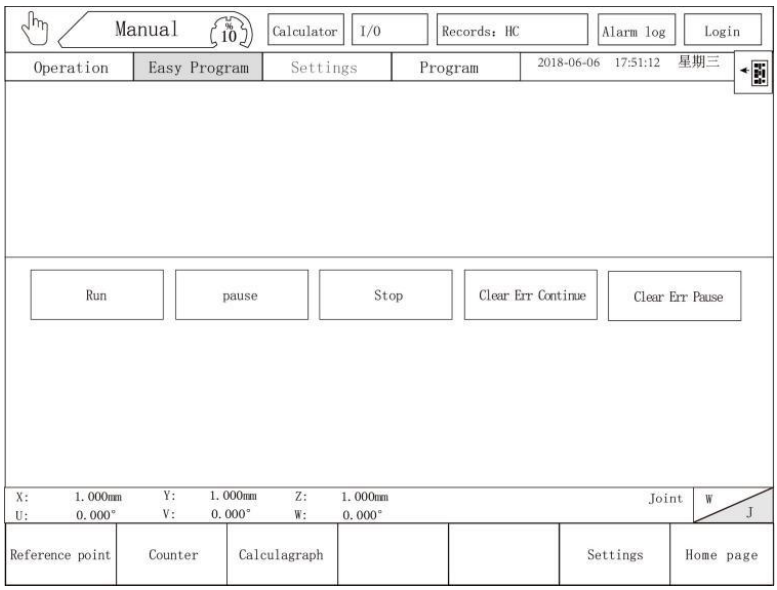
Functional status	Use status
Enable	Lightly press
Do not enable	Not press
	Heavily press

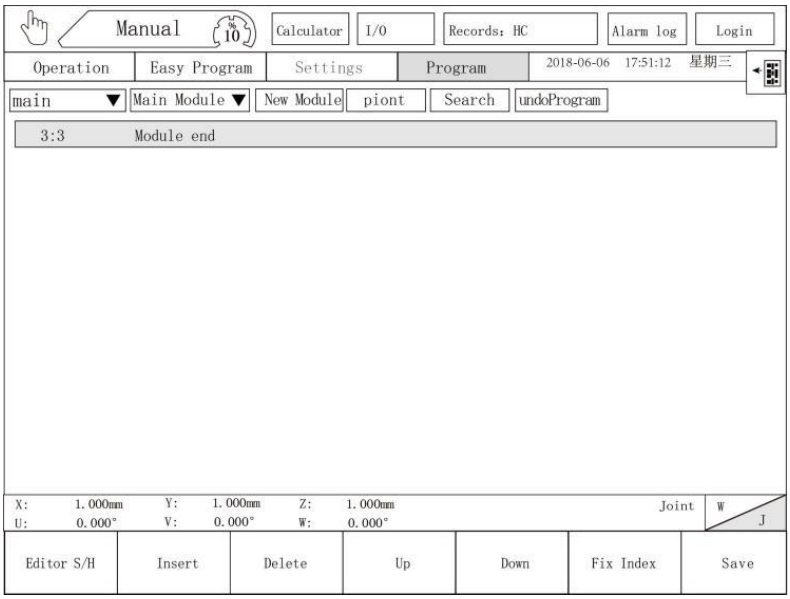


3.2.4 Trim Knob

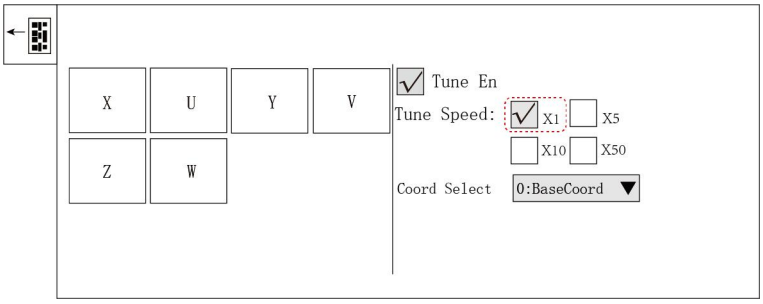
Function: This knob can be used to accurately move the shaft when the position is accurately adjusted in the manual state.







Operation method: Click to open the "virtual keyboard button", click to tick the "handwheel selection" option. Select the handwheel speed, select the axis to be fine-tuned in the left option box or press the axis button (on the hand control) and roll the fine-tuning knob to move the axis to the target point little by little.



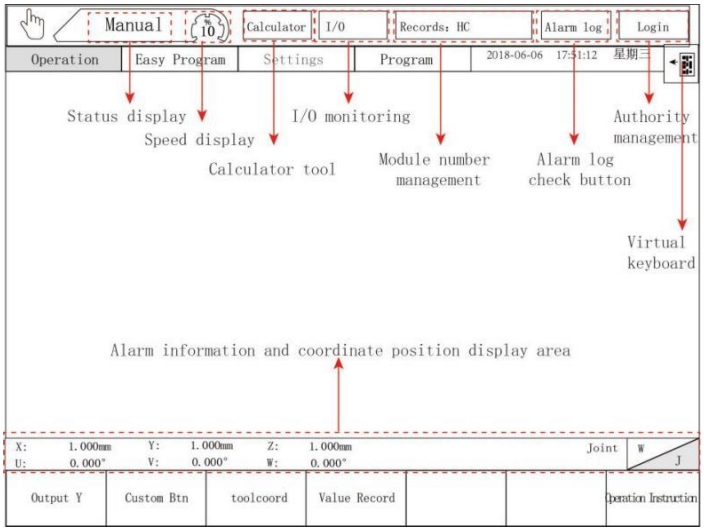
Handwheel speed Description:

- × 1: Move one grid, shift the axis by 0.01mm or rotate the axis by 0.01 degrees.
- × 5: Move one grid, shift the axis by 0.05mm or rotate the axis by 0.05 degrees.
- × 10: Move one grid, shift the axis by 0.1mm or rotate the axis by 0.1 degrees.
- × 50: move one grid, shift the axis by 0.5mm or rotate the axis by 0.5 degrees.

World coordinate: The position and attitude of the tool end point with the center of the manipulator base as the origin.

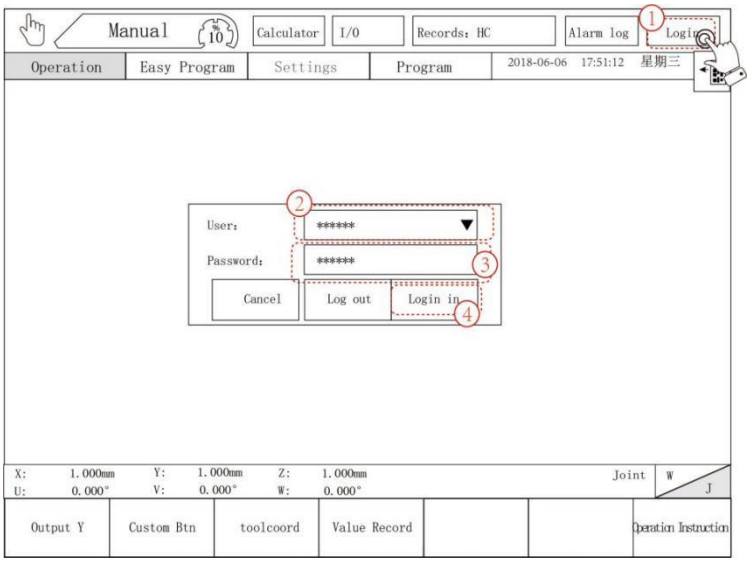
Joint coordinate: The coordinate value of the motor coordinate after being converted through the mechanism coupling relationship.

3.3 Main Screen Description



3.3.1 Log in

Permission log in: click "log in" to enter the login interface. First select the user type, enter the password, and then click "log in". If you need to exit to the lowest permission, directly click "log out", and the operation diagram is as follows



***Note:** Please log in before setting the system, because different user names have different management permissions.

Operator (OP): This authority can only move the axis in the manual state and cannot enter the teaching page for teaching. It can start the manipulator and adjust the speed in the automatic state, and reset the origin in the stop or manual state.

Administrator (admin): This permission can only move the axis in the manual state and cannot enter the teaching page for teaching. In the automatic state, it can start the manipulator and adjust the speed, and can reset the origin in other states.

Super administrator: All operations except user management can be performed under this permission.

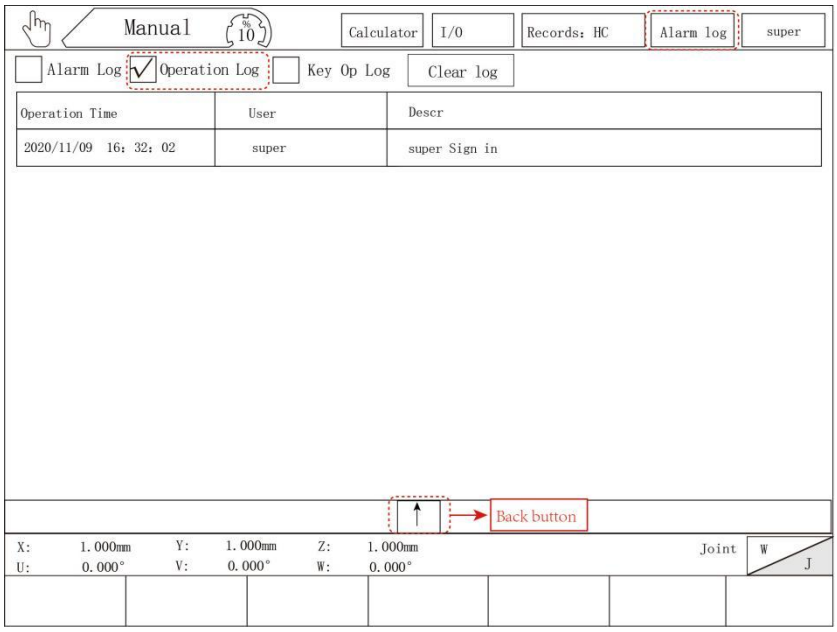
Super administrator (root): Users can perform all operations under this permission.

Permission size: operator < administrator < senior administrator < super administrator.

3.3.2 Alarm Record

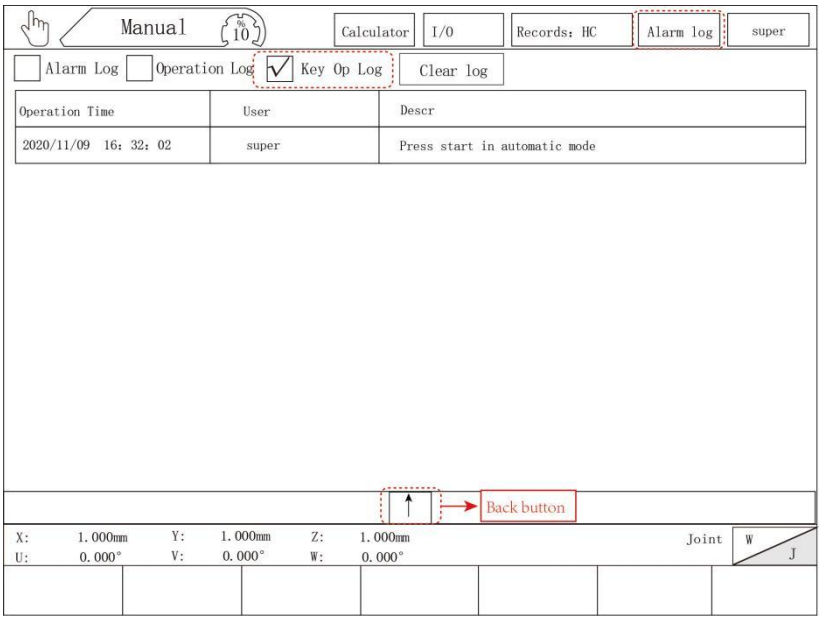
Alarm Record: Click the "Alarm record" button to view the alarm record, and check the operation record and key record to view the relevant contents.

Alarm record page:



***Note:** Drag up and down to see more.

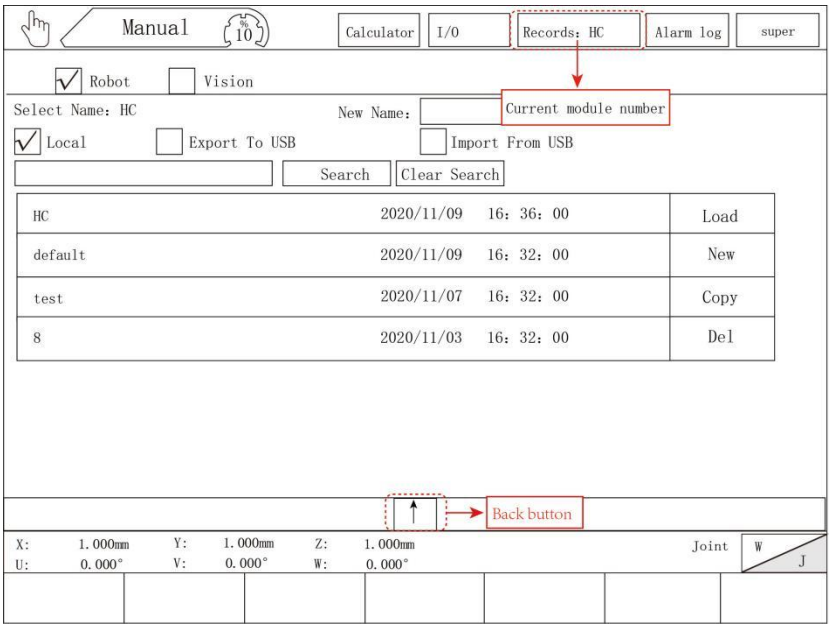
Operation record page:



*Note: Drag up and down to see more.

3.3.3 Module Number

Mold number: Display the mold number established according to different processes. Click the mold number to enter the mold number management page to "create", "load", "copy" and "delete", the module number page is as follows:



*Note: The module number page can only be opened with the permission of "Administrator" or above.

New: Enter the module number name to be created in the new file name text box, and then click the "new" button to create a blank module number program. The module number name can be entered in Chinese, English or numbers.

Search button: Open this button to search instructions in the page.

Copy: After entering a new name in the new mold number name text box, click the stored mold number name, and then click the "copy" button, the mold number naming box will pop up. Enter the new mold number name and click the "OK" button to copy the stored mold number program to the new mold number program.

Load: Click the stored module number, and then click the "load" button to load the selected module number. The program will run when it runs automatically.

Delete: Click the stored module number, and then click the "delete" button to delete the module number. The currently loaded module number cannot be deleted.

Export program: Click the stored module number, and then click the "export to USB flash disk" button to export the selected module number.

(* **Note:** the exported module number will be stored in the USB flash disk in the compressed package file named by time, for example, the compressed package name is HC Backup Robot_20190329183021. zip)

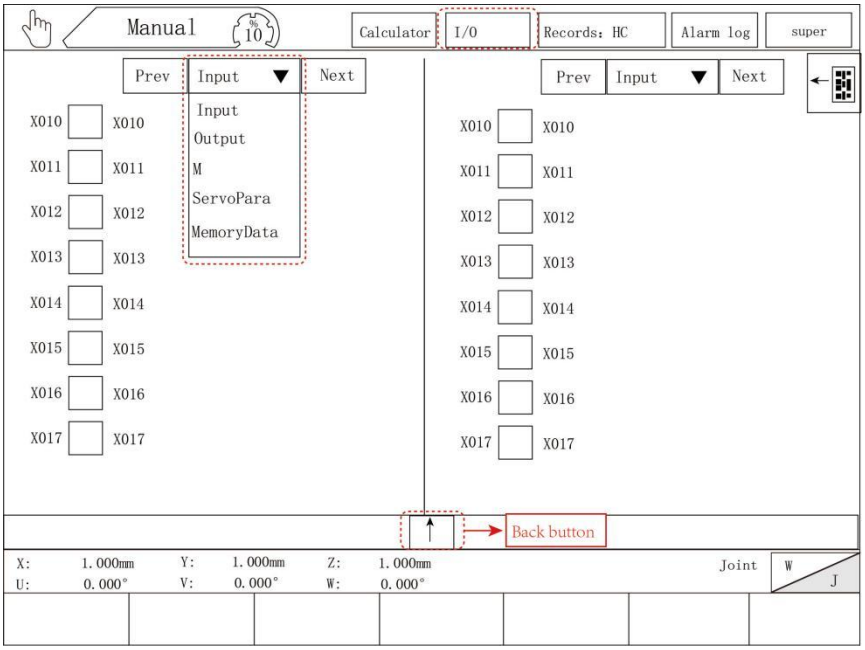
Import program: Insert the USB flash disk into the USB port of the manual controller, click the import from USB flash disk" button, select the module number to be imported, and Click "open" and then click "load" to import the module number.

Search: Enter the module number name in the edit box and click the "search" button to search for the existing module number.

Clear search: Click once to clear the search record.

3.3.4 I / O Monitoring

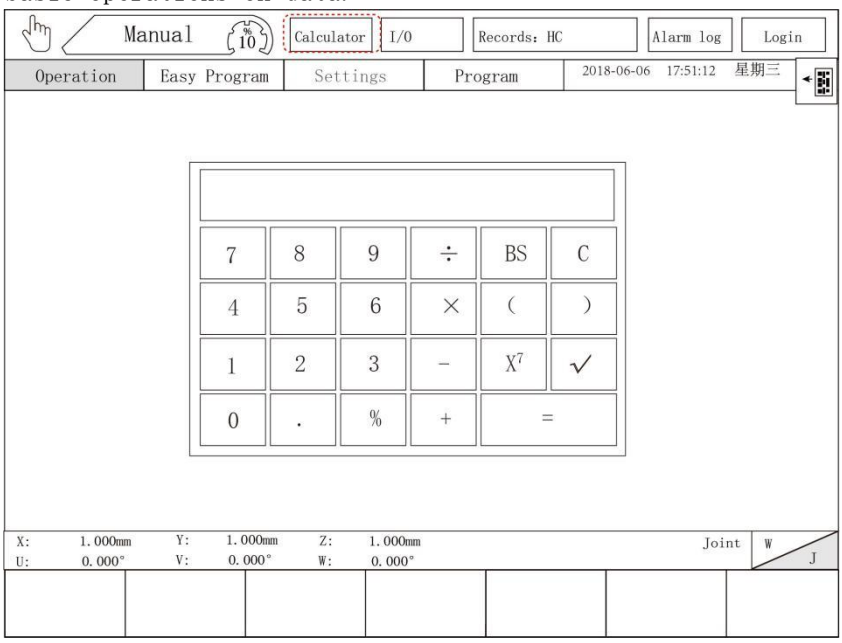
Click once to view inputs, outputs, intermediate variables, EU inputs, EU outputs, servo monitoring status, and memory data. Click second page retract.



*Note: Users can define the IO name by themselves. If you need to modify the IO name, please contact our sales or technical personnel. We will provide a word modification software for users to modify the IO name by themselves.

3.3.5 Calculator

Perform basic operations on data.



3.4 Operation mode

3.4.1 Pre-running Inspection

To ensure safe and correct operation, please confirm and check the following items before operation.

3.4.1.1 Inspection of Control Host

1. Check each connecting terminal of the host to ensure correct wiring and firm connection.
2. Check the external power supply of the host, such as incoming voltage, switching power supply output voltage, and ensure that the voltage is within the normal range.
3. Check the power line, encoder line and band brake line between the host and servo motor to ensure correct wiring and firm connection.

3.4.1.2 Inspection of Servo Motor

1. Check the fixed parts of the servo motor to ensure that they are firmly connected.
2. Check the servo motor shaft to ensure smooth rotation (servo motor with oil seal, shaft tightness is normal).
3. Check the power line, encoder line and band brake line between the host and servo motor to ensure correct wiring and firm connection.

3.4.1.3 Inspection of Input and Output Connection Lines

1. Check the connecting wires of input and output terminals to ensure correct wiring and firm connection. 220V is strictly prohibited to be connected to 24V terminal or IO terminal.
2. Check the power on and connect the host power. After entering the system, observe that there is no alarm on the manual controller. If there is an alarm, please troubleshoot according to the alarm content. If the fault is not eliminated, it will not continue to run. For the servo motor with

holding brake, in order to prevent the wrong action caused by gravity or external force (such as the drop of vertical axis), please power on and confirm when the servo motor and machinery are separated.

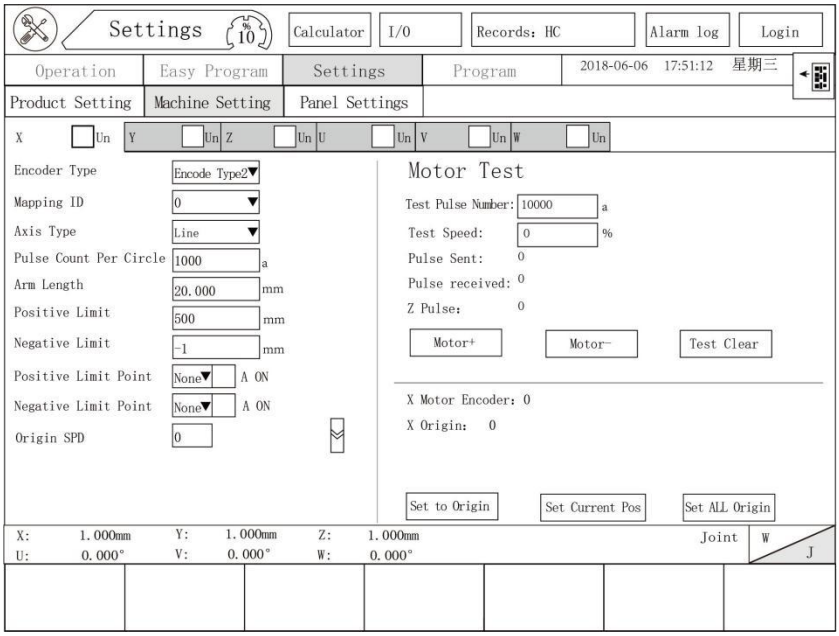
3. Check the band brake output signal and turn on the host power. After entering the system, press the emergency stop button on the manual controller to confirm that the band brake output signal on the host is disconnected. Turn up the emergency stop button on the manual controller, press the stop key to eliminate the alarm, and confirm again that the band brake output signal on the host is connected. After the holding brake operates normally, connect the servo motor to the machine and continue to operate.

3.4.2 Servo Axis Trial Run

In order to make the manipulator operate correctly, it is necessary to confirm whether each servo shaft can operate normally after the first power on. Please do the following to test.

Step 1: Please point the status selection switch to "STOP" and press the emergency stop switch. After power on, pull up the emergency stop switch to eliminate the alarm and observe whether the machine will move downward. If there is no downward movement, continue to step 2.

Step 2: In the "STOP" state, click the "Parameter Setting" option to enter the "Parameter Setting" page, then click "Machine Setting", click the "Motor Parameter" button in the "Machine Setting" page to enter the setting page of machine parameter, on which the parameters of each axis can be set. After entering the page, directly enter the parameter setting of X axis, as shown in the following figure:



Step 3: Carry out "motor forward and reverse rotation" test on this page.

Motor forward and reverse rotation test: Gently press the enable switch to enable the motor, click "motor forward rotation", and the motor will rotate one circle in the positive direction. After rotation, the sending pulse and receiving pulse in the current page are consistent with the set number of test pulses; Click "motor reverse", the motor will rotate in the

opposite direction. After rotation, the sending pulse and receiving pulse in the current page are consistent with the negative number of set test pulses.

*Note: The number of pulses sent is not necessarily determined according to the setting, and several may be lost. For example, if the set number of test pulses is 10000, the motor test page displays send pulse 9994 and receive pulse 9994 after forward rotation; After reversing, the motor test page displays send pulse - 9994 and receive pulse - 9994, which is normal

3.4.3 Origin Setting

1. In the manual state, move each axis to a safe position (the position to be set as the origin) through the axis action button. See "3.3.5 manual mode" for the method of moving the axis in the manual state.
2. Enter the open parameter page in the stopped state, select mechanical setting, open the motor parameter page, and the parameter setting page of each axis will be displayed. There is the option of "set all as origin" in the lower right corner. Click set all as origin to set the current coordinates of each axis as the origin.
3. In the manual state, check the joint coordinates of each axis. After setting the origin, the current joint coordinates of each axis are 0.
4. Open the subroutine in programming, select the "programmable button: Origin" subroutine, and check whether the program inside is correct.
5. After the above steps are completed, press the origin key and then press the start key to reset the origin.

3.4.4 Origin Reversion

In order to enable the manipulator to operate automatically correctly, after turning on the power every time, reset the origin in the stopped or manual state. The origin reset action will reset each axis of the driving manipulator to the origin position.

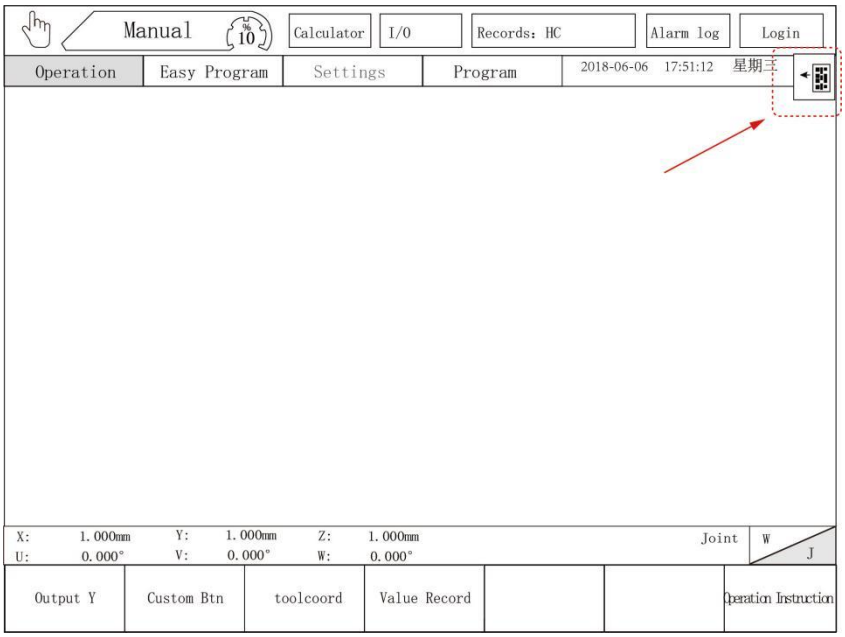
Operation method of origin reset: In the stop state, press the "reset" key once, and then press the "start" key to reset the origin.

*Note: When the origin is reset, the user cannot perform manual and automatic operation and parameter setting on the manipulator. In case of emergency, press "Stop" key to stop origin reset or press "emergency stop button"

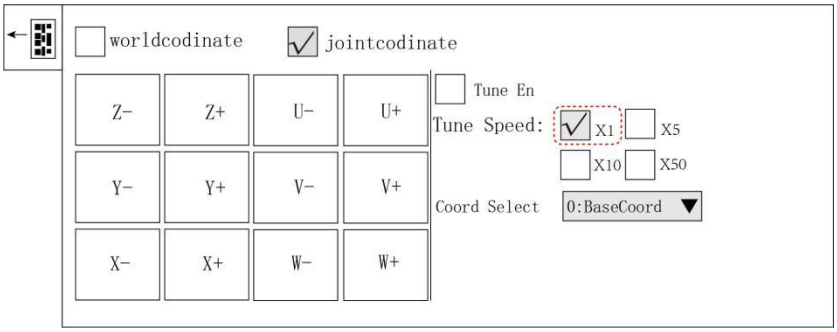
3.4.5 Manual Mode

After confirming that the servo axis operates correctly, we need to test whether the manual operation is normal. Please test according to the following operations. Point the status selection switch to "MANUAL", the robot enters the manual page for manual operation, press the axis action key of each axis, and check whether each axis moves normally according to the instructions of "3.4.5.1 axis operation under manual status".

Turn the third gear knob on the handle controller to "manual" to enter the manual state. In this state, the manipulator can be taught. As shown in the figure below:



Virtual keyboard button: Use this button to adjust the axis action. Click the "virtual keyboard" button to pop up the following page:



World coordinate: When checked, use the world coordinate mode to run manual action.
Joint coordinate: When checked, use single axis mode to run manual action.
Hand wheel enable: When checked, start the hand wheel fine adjustment function.
Hand wheel shaft selection: After checking, you can select the shaft in the shaft selection area and fine tune the shaft through the fine tuning knob.

Hand wheel speed:
X1: operate according to 1 time of the minimum unit.
X5: operate according to 5 time of the minimum unit.
X10: operate at 10 times the minimum unit.
X50: operate at 50 times the minimum unit.
Note: (the minimum unit is that when the hand wheel moves one grid, the shaft moves 0.01mm.)
Workbench selection: Select the workbench coordinate system to use.

3.4.5.1 Axis Operation in Manual Stat

X+ Press this key to move the axis to the positive x direction at the current speed;

X- Press this key to move the axis to the negative X direction at the current speed;

Y+ Press this key to move the axis to the positive Y direction at the current speed;

Y- Press this key to move the axis to the Y negative direction at the current speed;

Z+ Press this key to move the axis to the positive Z direction at the current speed;

Z- Press this key to move the axis to the negative Z direction at the current speed;

U+ Press this key to move the axis in the positive direction of u at the current speed;

U- Press this key to move the axis in the negative direction of u at the current speed;

V+ Press this key to move the axis to the positive V direction at the current speed;

V- Press this key to move the axis in the negative direction of V at the current speed;

W+ Press this key to move the axis in the positive direction of W at the current speed;

W- Press this key to move the axis in the negative direction of W at the current speed;

M7+ Press this key to move the axis in the positive direction of M7 at the current speed;

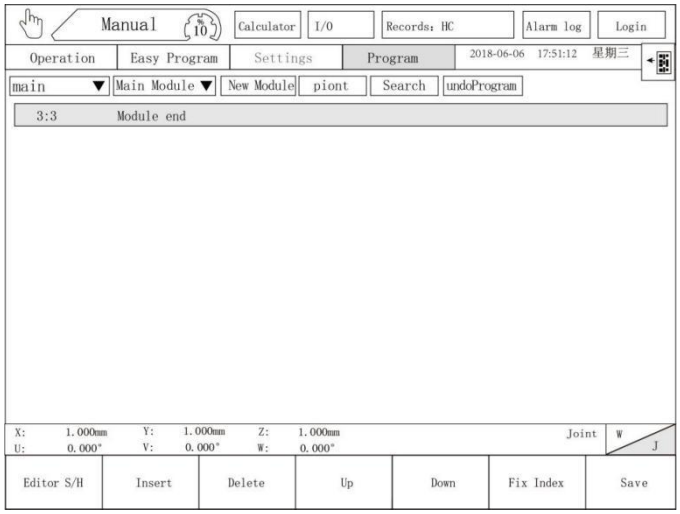
M7- Press this key to move the axis to the negative direction of M7 at the current speed;

M8+ Press this key to move the shaft in the positive direction of M8 at the current speed;

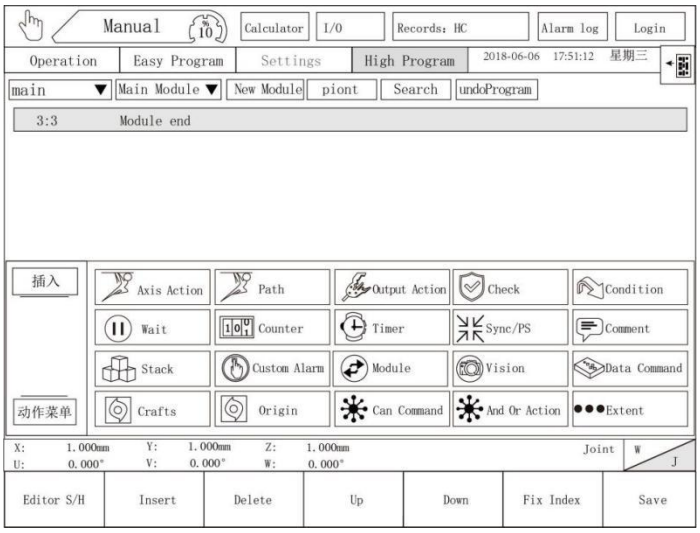
M8- Press this key to move the shaft to the negative direction of M8 at the current speed;

3.4.5.2 High Program

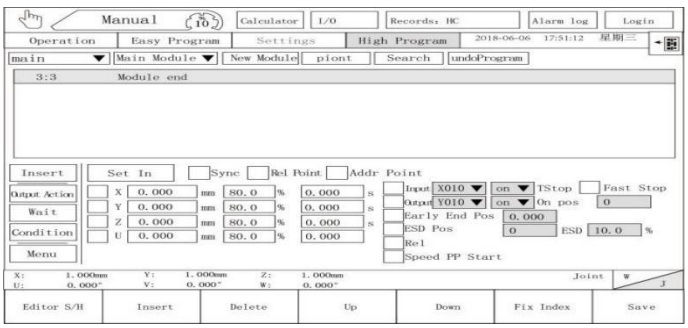
Point the status selection switch to "MANUAL", the manipulator enters the manual page, click the "High programming" button to enter the programming page, where the program can be edited and modified. For detailed operations, please refer to "4.3 High program"



Click the "action menu" button in the lower left corner to enter the action teaching main page, where you can edit various actions. As shown below:



Click "axis action" to enter the following interface:



Insert: Check the action, select the position to insert, and click Insert once to insert the target action. (* **Note:** The next action in the program to insert the target action must be selected first, that is, the inserted target action is the previous line of the selected action)

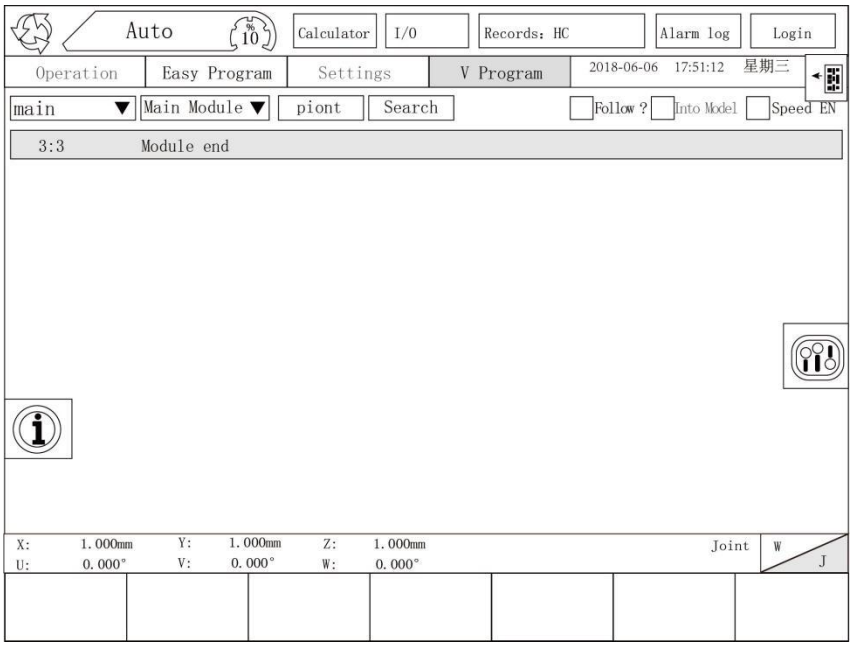
Set in: After manually controlling the axis to the target position, click "set in" to automatically set the point coordinates of the current position, and then click"Insert" can teach the position of the target point into the program.

Reference point: After creating a new node in the reference point edit button page, you can directly reference the existing joint points by checking the reference point.

Reference address: Check "reference address" to directly enter the address value to be referenced in the axis position box, which represents the content of the address referenced.

3.4.6 Automatic Mode

Point the status selection switch to "AUTO", and the manipulator enters the automatic page, as shown in the following figure:



In this interface, press the "START" key on the manual controller, and the manipulator will start running the taught program.

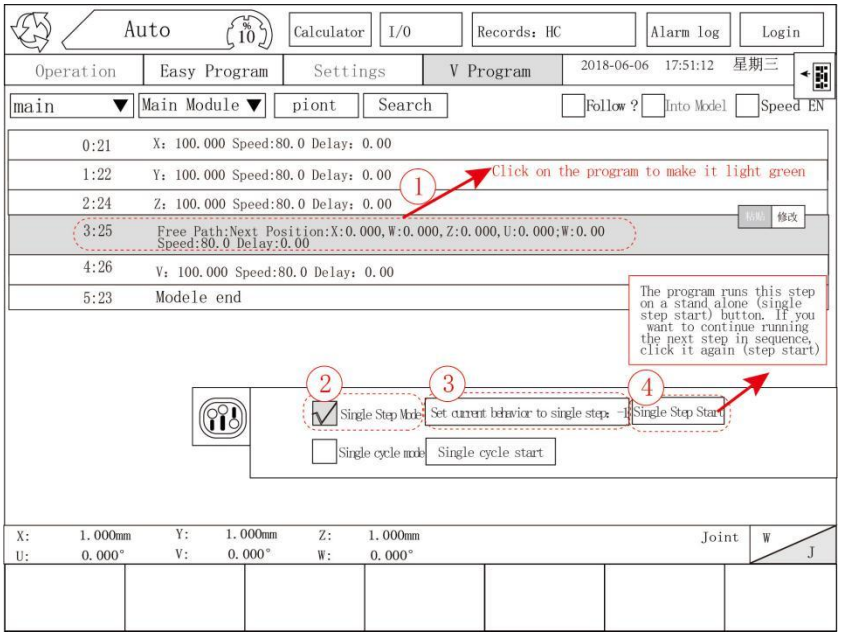
Speed regulation enable: When checked, the global speed can be adjusted.

Follow: When running the program after selection, the current running action will be marked by color difference.

Enter module: Only available after checking. After checking, it will follow and jump to the running action in the current running sub module.

Single step mode: Single step operation under automatic state.

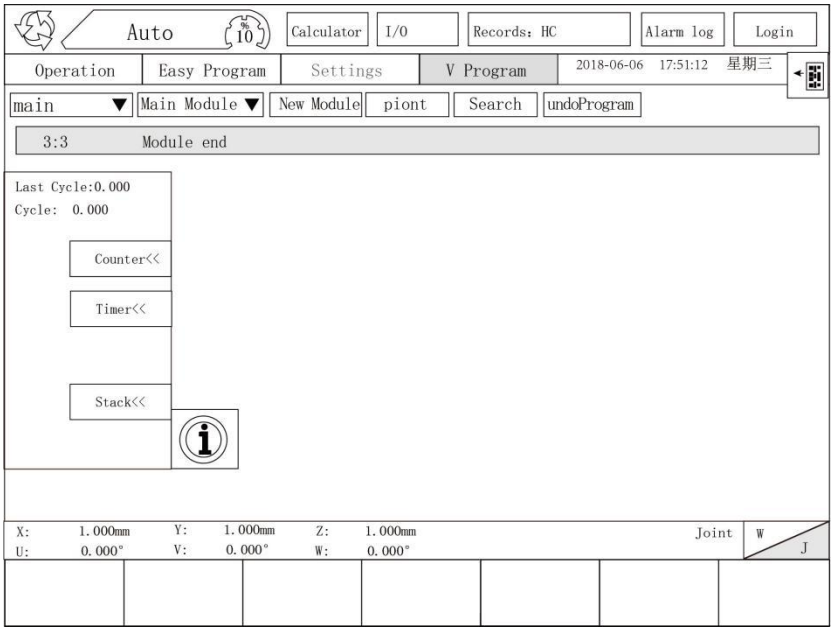
Please refer to the following figure for the use method of single step mode:

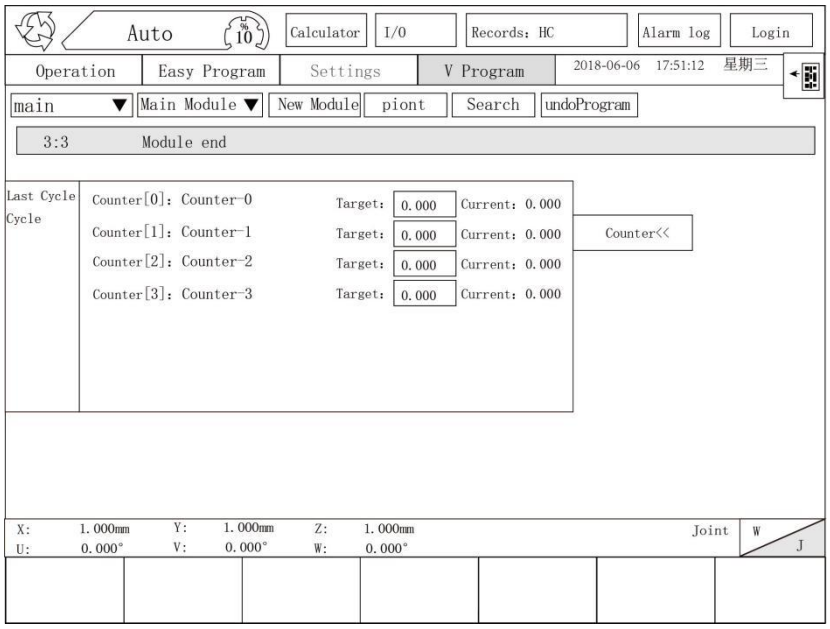


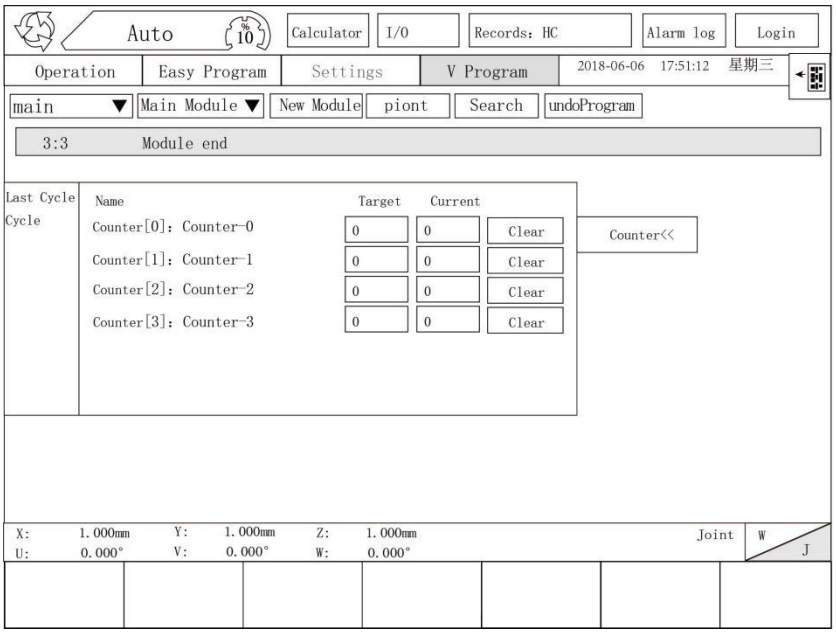
Single cycle mode: The program goes from the first step to the end of the module.

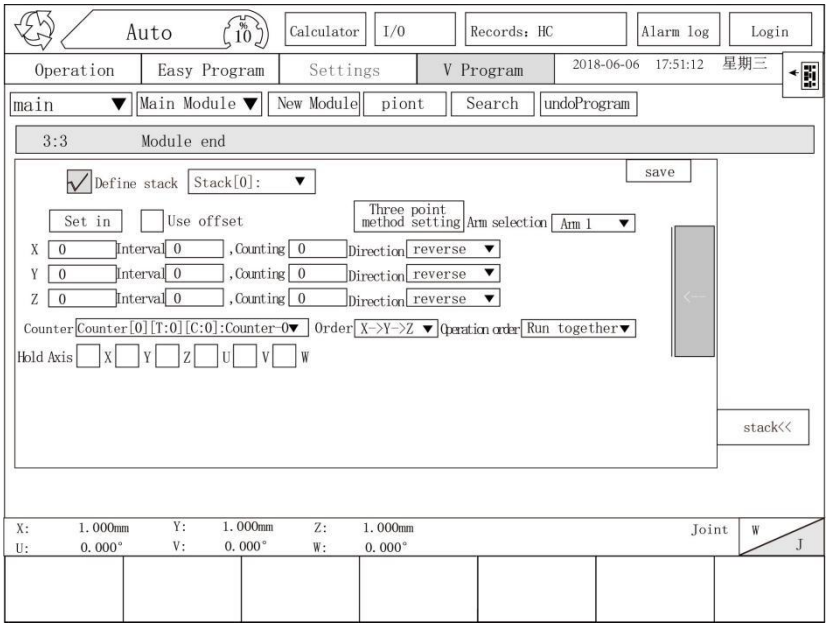
Cycle time: The time that the whole program runs to the end of the module.

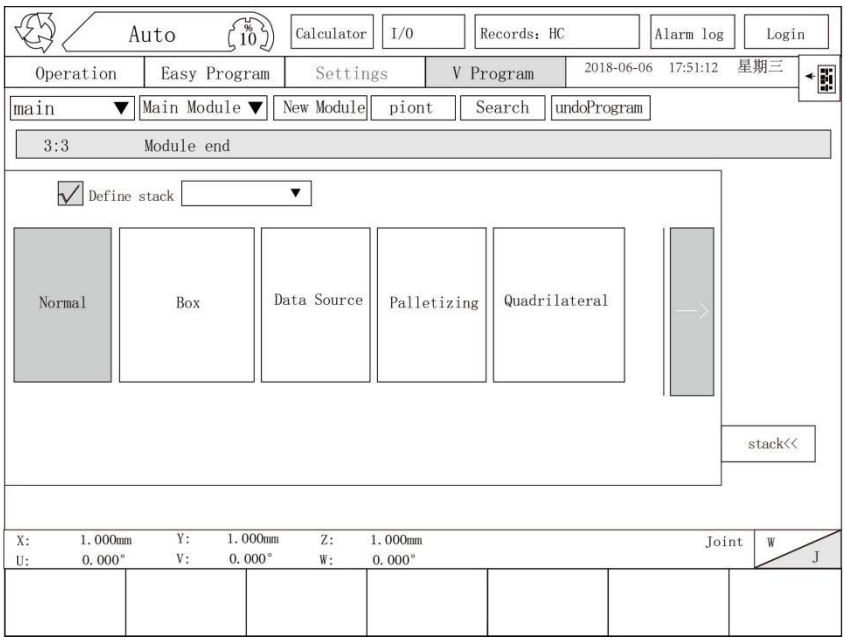
Cycle display button: Click this ⓘ button to display the upper mold cycle time and current cycle time, as well as the counting status of all counters, timer timing and stacking parameter setting.




Auto
10
Calculator
I/O
Records: HC
Alarm log
Login
Operation
Easy Program
Settings
V Program
2018-06-06 17:51:12 星期三
main
Main Module
New Module
piont
Search
undoProgram
3:3 Module end
Last Cycle
Cycle
Counter[0]: Counter-0
Counter[1]: Counter-1
Counter[2]: Counter-2
Counter[3]: Counter-3
Target: 0.000
Current: 0.000
Counter<<
X: 1.000mm
Y: 1.000mm
Z: 1.000mm
U: 0.000°
V: 0.000°
W: 0.000°
Joint
W
J


Auto
10
Calculator
I/O
Records: HC
Alarm log
Login
Operation
Easy Program
Settings
V Program
2018-06-06 17:51:12 星期三
main
Main Module
New Module
piont
Search
undoProgram
3:3 Module end
Last Cycle
Cycle
Name
Target
Current
Counter[0]: Counter-0
Counter[1]: Counter-1
Counter[2]: Counter-2
Counter[3]: Counter-3
Clear
Counter<<
X: 1.000mm
Y: 1.000mm
Z: 1.000mm
U: 0.000°
V: 0.000°
W: 0.000°
Joint
W
J


Auto
10
Calculator
I/O
Records: HC
Alarm log
Login
Operation
Easy Program
Settings
V Program
2018-06-06 17:51:12 星期三
main
Main Module
New Module
piont
Search
undoProgram
3:3 Module end
save
Define stack
Stack[0]:
Set in
Use offset
Three point method setting
Arm selection
Arm 1
X 0 Interval 0 ,Counting 0 Direction reverse
Y 0 Interval 0 ,Counting 0 Direction reverse
Z 0 Interval 0 ,Counting 0 Direction reverse
Counter Counter[0][T:0][C:0]:Counter-0
Order X->Y->Z
Operation order Run together
Hold Axis X Y Z U V W
stack<<
X: 1.000mm Y: 1.000mm Z: 1.000mm
U: 0.000° V: 0.000° W: 0.000°
Joint
W
J

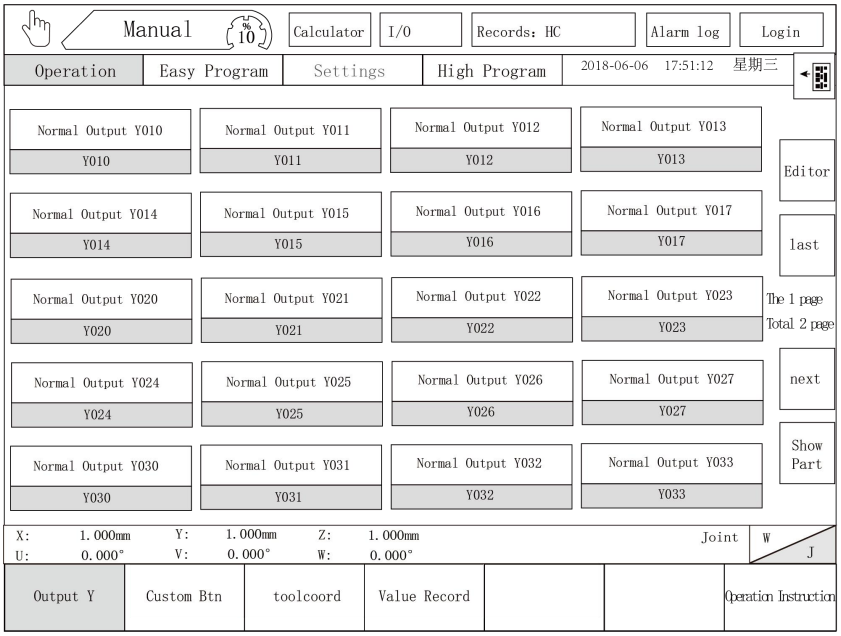

Auto
10
Calculator
I/O
Records: HC
Alarm log
Login
Operation
Easy Program
Settings
V Program
2018-06-06 17:51:12 星期三
main
Main Module
New Module
piont
Search
undoProgram
3:3 Module end
Define stack
Normal
Box
Data Source
Palletizing
Quadrilateral
stack<<
X: 1.000mm Y: 1.000mm Z: 1.000mm
U: 0.000° V: 0.000° W: 0.000°
Joint
W
J

Chapter 4 Manual State

4.1 Manual Operation

4.1.1 Signal Output

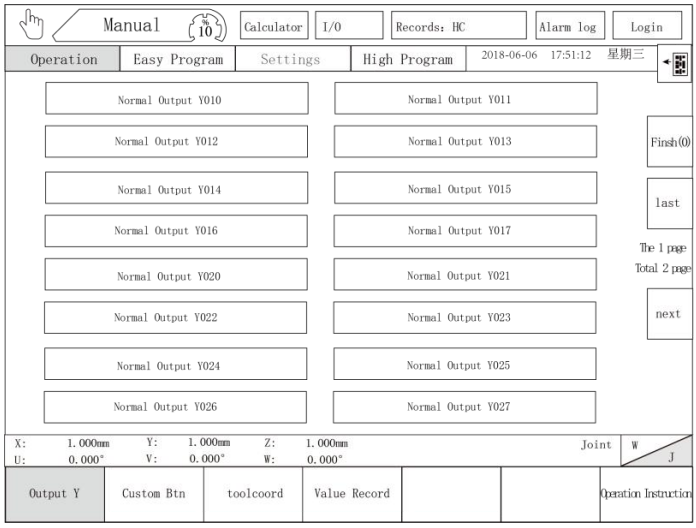
The signal output page is shown in the figure. The point text is displayed in the upper part and the corresponding output point is displayed in the lower part. Sliding page turning is not supported. You can only click the previous page and the next page to switch the page. Set the number of IO boards in "structure parameters" - "number of IO boards". This page will automatically display the points of all IO boards.

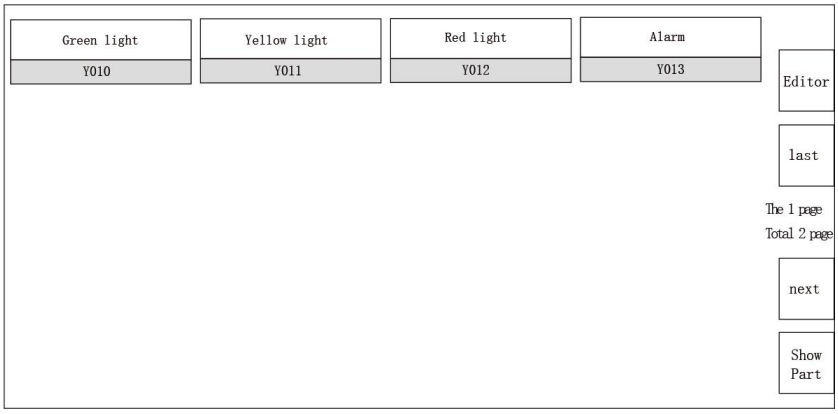


Edit: Click the Edit button to enter the output point display editing page. You can select the IO to be displayed. Green is display and gray is hidden. Click "finish" to exit the editing page.

Display part: Only the IO points selected on the edit page are displayed.

Display all: The point output buttons of all IO boards are display.



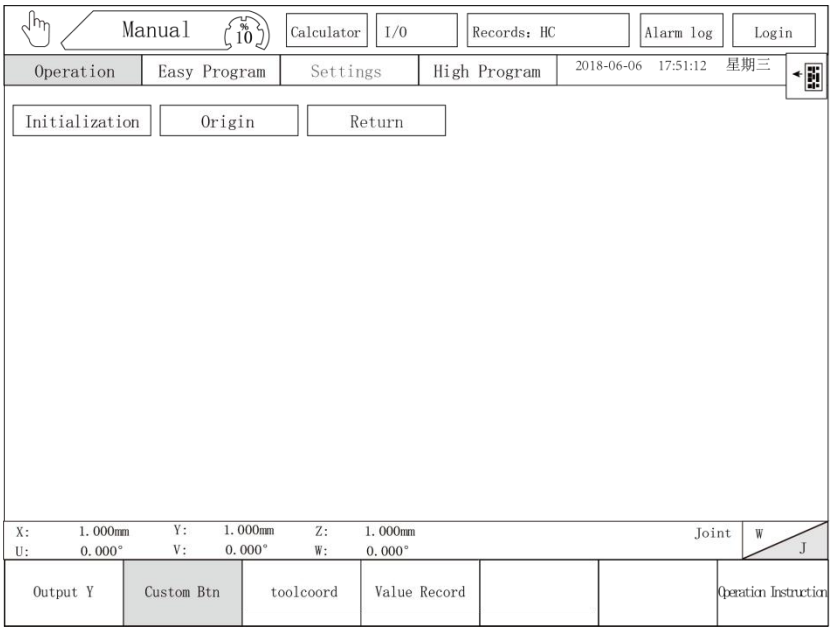


4.1.2 Programmable Keys

In this interface, you can view and use programmable keys.

Programmable key creation process: Click "High program" → program selection, click "programmable key [0]: Origin" → click "new programmable key" → enter a new key name → creation is completed (Note: teach the corresponding program on this page after creation).

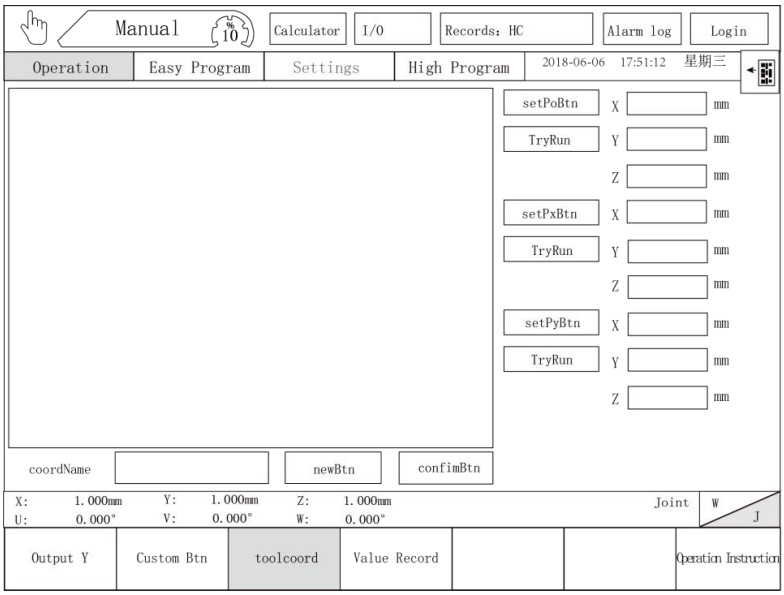
How to use the programmable key: Press the edited programmable key once, and the manipulator will automatically run the program taught in the key.



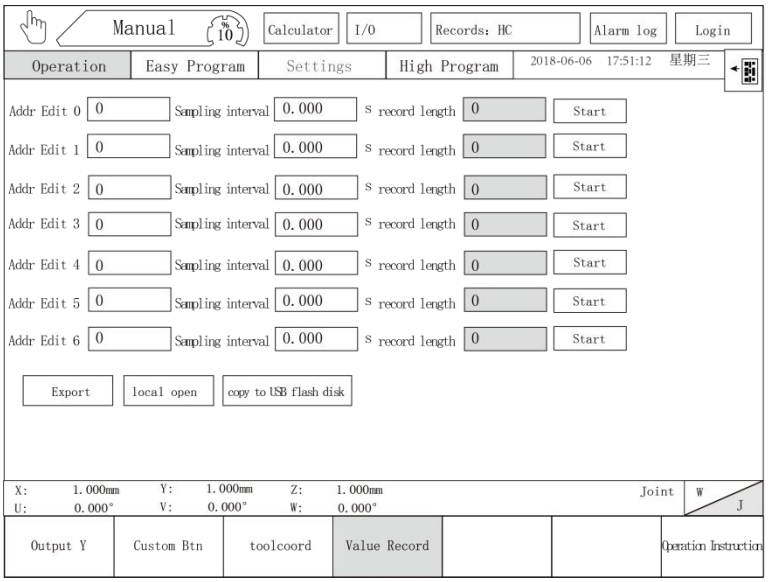
4.1.3 Bench Calibration

P0: starting point position.
PX: position on the X axis.
PY: position on Y axis. Enter the name of the coordinate system and click "new" to create a new coordinate system. Set P0, PX and PY points on the workbench. Click the "OK to modify" button to convert the coordinates.

***Note:** The intersection of lines P0, PX, P0 and PY is 90 °, and the four fingers of the right hand are held from the X axis to the Y axis, and the thumb should face up.



4.1.4 Address Data Monitor



Address data monitoring: Fill in the address and sampling time to be monitored, and click start to record the data in the address. Click export to export to USB flash disk with the name SystemAddrRecord.log.

Data address: enter the data address to query;

Sampling interval: the time interval between sampling again;

Record length: the maximum length of recorded data is 1000000, and the length of recorded data is displayed;

Start / stop: click the start button to start recording, click the stop button to stop recording, and then press start to continue recording;

Clear: clear the recorded data;

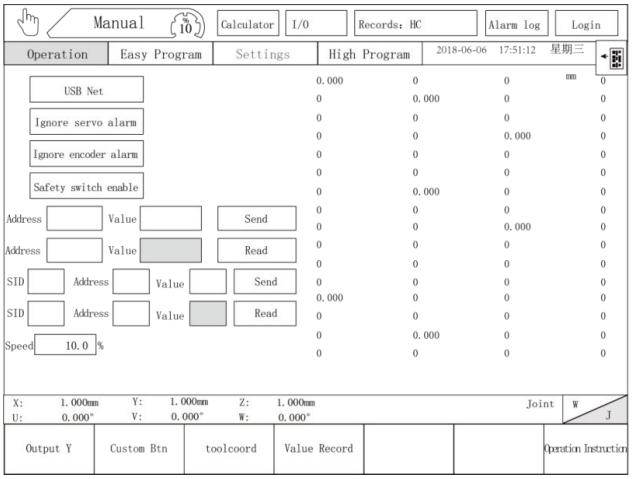
Export: export the recorded data from the host to the manual controller;

Open locally: open the data record file exported to manual control;

Copy to USB flash disk: copy the data record file exported to manual control to USB flash disk.

***Note:** the two functions of "open locally" and "copy to USB flash disk" should be exported before use, otherwise the opened data is exported before.

4.1.5 Operating Instruction



4.2 Shortcut Button

4.2.1 Citation Point

The reference point interface is as follows: add, replace, delete, save and close buttons.

Reference point edit button: Use this button to set reference points.

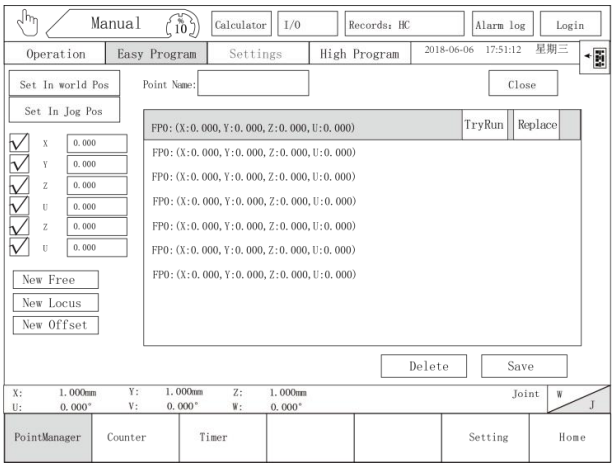
New joint point: You can select the axis contained in the point position, but not without any axis.

Trial: Press and hold the trial button, and the machine will run to the coordinate position displayed in the current line.

Replace: Clicking replace will replace the name entered in "point name" and the coordinates entered on the left to the current line, which is used to modify the coordinates stored in the current line. After replacement, the font color will change to light red to mark the modified reference point.

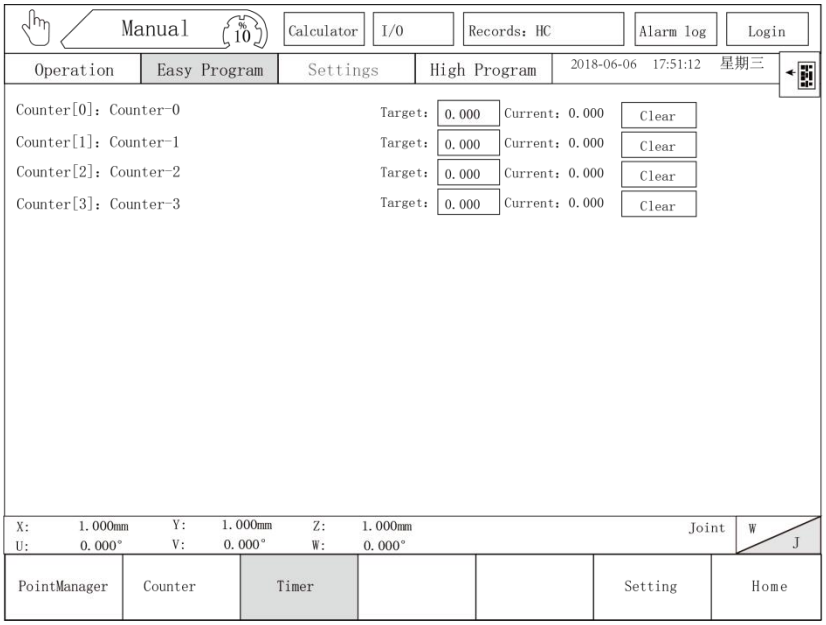
Delete: Delete the current reference point, you need to make sure that the reference point is not used in the teaching program, otherwise the deletion fails.

Save: Save the modified reference point. If there is no modification at present, it will not be saved. The reference point not used in the teaching program will not be saved after restart.



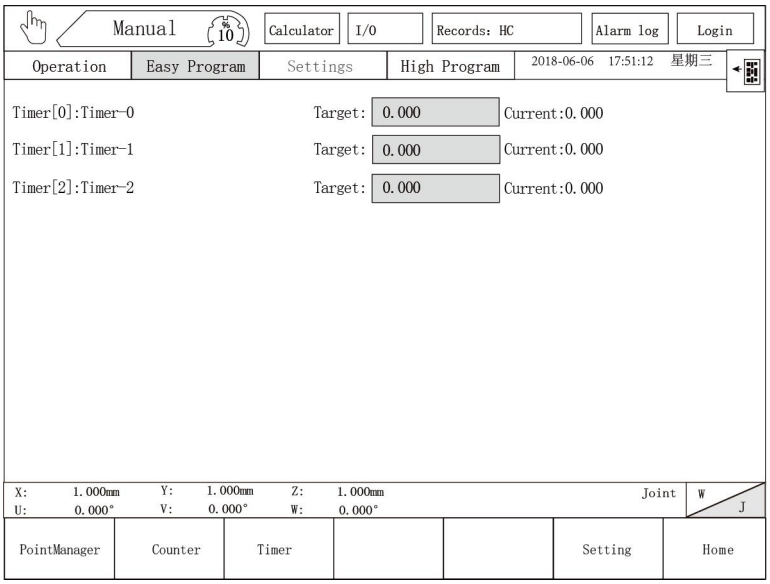
4.2.2 Counter

Displays the counters used in the current program. The "target" input box of pure count counter is disabled, and the target value of non pure count counter can be modified. The new counter needs to be added in "High program" - "action menu" - "counter".



4.2.3 Timer

Displays the timers used in the current program. The "target" input box of pure timer is disabled. Non pure timer can modify the target value. The new timer needs to be added in "High program" - "action menu" - "timer".



4.2.4 Setting

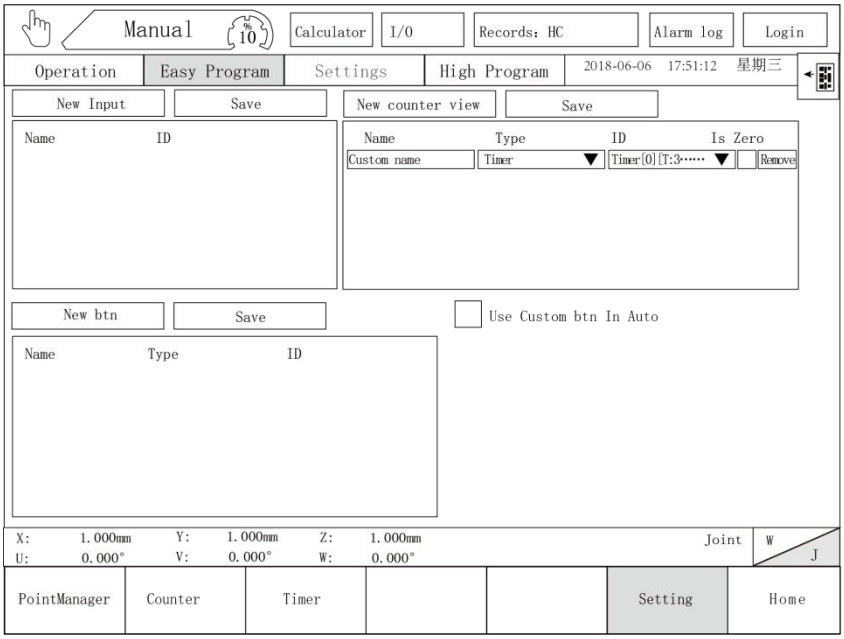
The setting page can display the input, output, counter and timer on the main page of simple programming, which is convenient to monitor the overall operation of the system. See "4.2.5 homepage" for homepage display.

New input monitoring: Input signals can be added and their names can be customized. Click Save after adding, deleting and modifying.

New custom key: You can add Y output and m value intermediate variables to quickly control the output.

New counter monitoring type: Counter or timer can be selected. When it is a counter, it can be checked to clear, and the reset button will be displayed on the main page.

Use custom button in automatic mode: Check the custom button, otherwise you can only control the user-defined button in manual mode it can be controlled in automatic mode.



4.2.5 Homepage

Simple programming home page can control the start, pause and stop of the system, input monitoring, output control, counter and timer monitoring. The displayed content can be added or deleted in "4.2.4 settings". The left side is the input monitoring part, which is green when input is on and red when input is off. On the right is the display of timer and counter. The lower part is system control and output control. The button is green when the output is on and white when it is off.

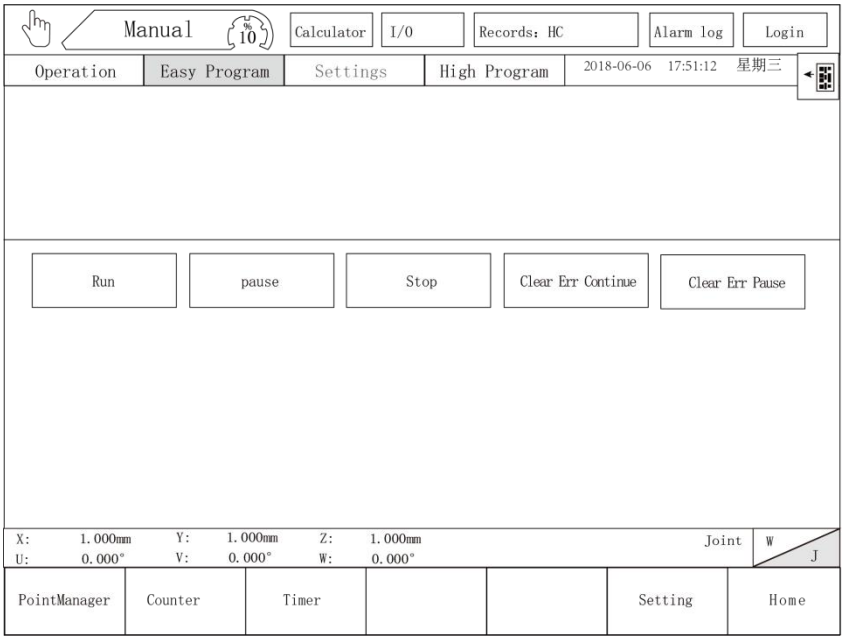
Start: Not available in manual mode, but available in automatic mode. After clicking, a confirmation box will pop up, as shown in the figure below. Click OK in the confirmation box to start

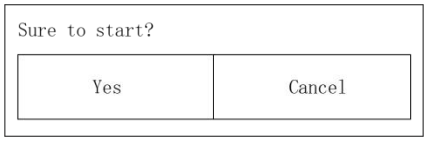
Pause: It is unavailable in manual mode and available in automatic state. After clicking, the system will pause immediately, and the program will continue to execute when clicking start next time

Stop: Not available in manual mode, but available in automatic mode. After clicking, a confirmation box will pop up. Click OK in the confirmation box to stop. The next time you click start, the program will be executed from the first line

Clear alarm and continue: It is unavailable in manual mode and available in automatic state. After the alarm, click this button to clear the alarm and continue running the program. If the alarm cannot be cleared as the current alarm, it can not be ignored, and it is necessary to find out the cause of the alarm.

Clear alarm and pause: It is unavailable in manual mode and available in automatic state. After the alarm, click this button to clear the alarm and pause the program. If the alarm cannot be cleared as the current alarm, it can not be ignored, and the reason for the alarm needs to be found.



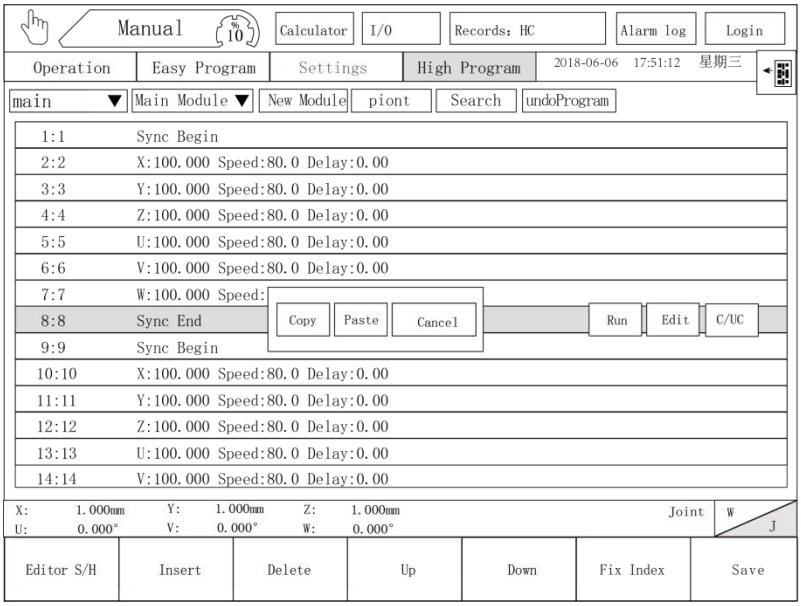


4.3 High program

The High program page is shown in the figure. You can teach actions, IO control and other instructions on this page. In the automatic state, the system will execute them in sequence. Please refer to "4.3.6 action menu" for instructions.

The teaching program is divided into main program, subroutine 1 - subroutine 8. In the automatic state, the main program and other subroutines other than subroutine 8 run at the same time, and subroutine 8 can run when powered on.For reusable instructions, you can create a new module and put the instructions into the module to simplify the operation.

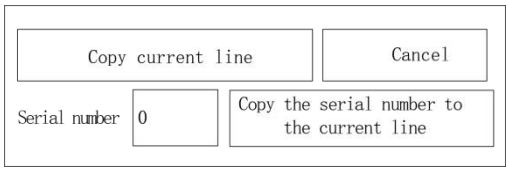
*Note: Subroutine 8 is not allowed to teach action instructions.
Modules can be used except subroutine 8.



Select a line of teaching program, you can display "trial", "modify", "Mask" and other buttons. Long press the current line to display "copy", "paste" and other buttons.

Trial: Keep pressing this key, and the manipulator will run this step.

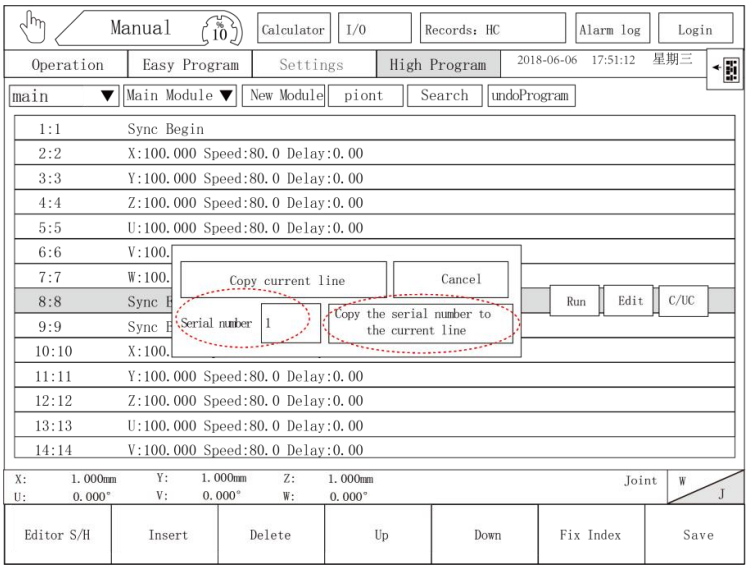
Copy: Click Copy to open the content selection box for copying, as shown in the following figure:



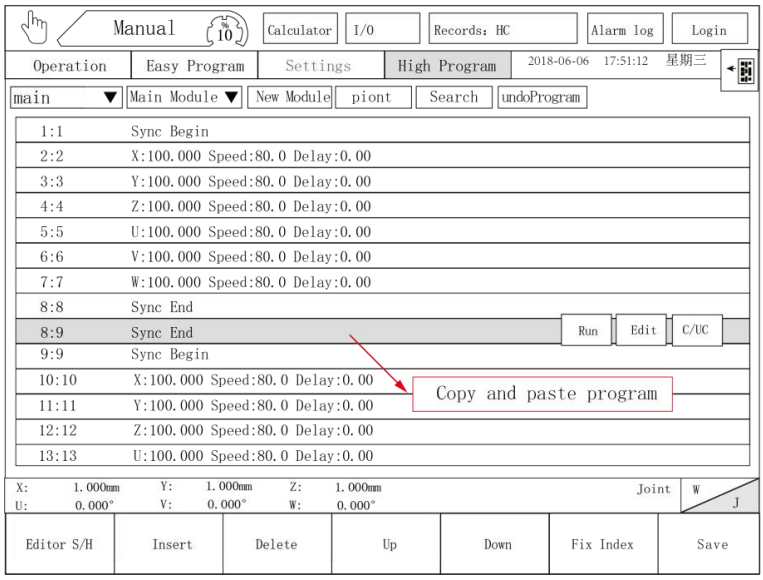
***Note:** The number entered in the "selected line" edit box represents the sequence number of the program.

Copy use case: Suppose you need to copy the programs with serial numbers 0 and 1 to wait for x011 communication. The following operation steps are as follows:

Step 1: Long press the action to start copying, click the copy button, enter 1 in the "selected line" edit box, and then click the "copy serial number to current.



Step 2: Select the next line of the program to be tested and click the "paste"



*Note: If the sentence "module end" is copied and passed into the program, it is invalid. The sentence "module end" must be in the last step of the program.

Paste: Click to paste the copied program.

Modify: Click Modify to open the modify dialog box to modify the program content.

Shielding: One click means shielding. To cancel, click shielding again.

Insert: Check the action, select the position to insert, and click Insert once to insert the target action.

(* Note: The next action in the program to insert the target action must be selected first, that is, the inserted target action is the previous line of the selected action)

Move up: Click the program to move up to the previous line.

Move down: Click the program to move down to the next line.

Delete: Click to delete this line of program.

Sorting number: Click the number in the automatic sorting program step sequence.

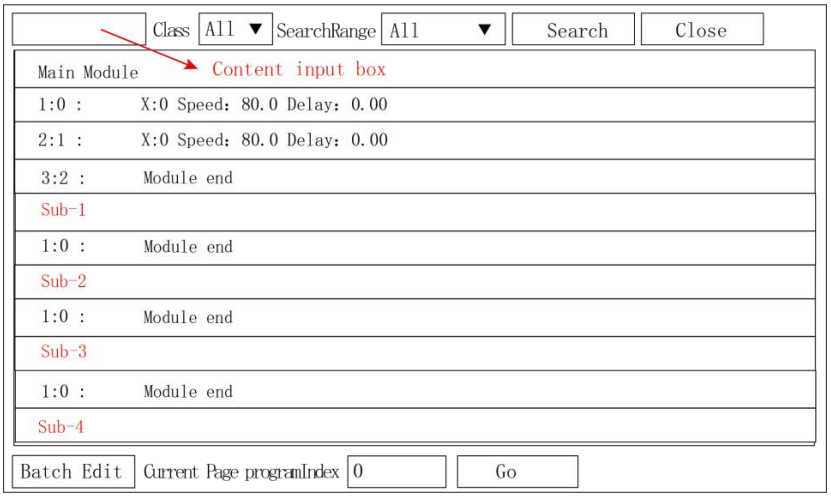
Save: Click to save all programs.

4.3.1 Reference point

Reference point" is the same as "reference point" on the "shortcut button" page. Please refer to "4.2.1 reference point".

4.3.2 Search

The search page can search the instructions in the teaching program and quickly jump to the instruction line. The page is shown as follows:



Content input box: Fill the keyword to be searched into the search input box. It is case sensitive. It can be left blank, but it can't be filled wrong.

Classification: The search results can be classified into all, action, IO signal and others.

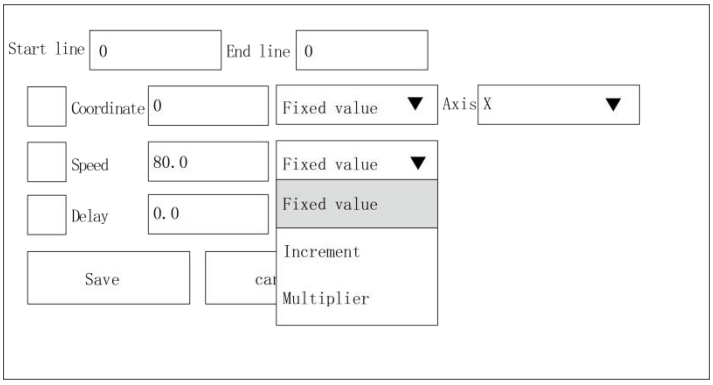
Search scope: The search scope can select all or specify subroutines, modules and programmable keys.

Search button: Search for saved programs in the current module number. Unsaved programs cannot be searched.

Close: Close the search page.

Batch modify: When the category selection action and program selection are not all, you can use the batch modify function. Click batch modify to open the following interface

Enter the start line number and end line number. You can batch modify the coordinates, speed and delay. You can select three methods: fixed value, increment and magnification.



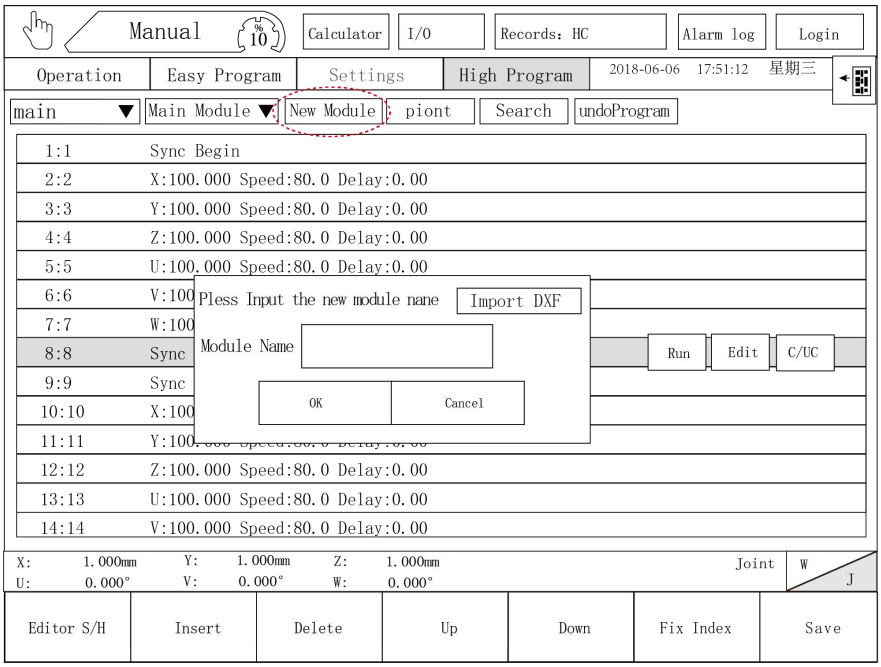
Fixed Value: Replaces the current input value into the modification action instruction.

Increment: Increase or decrease the value on the original basis.

Magnification: Multiply the input value on the original basis. Click "save" to finish the modification.

4.3.3 New module

Click new module and enter the module name to view the module content in the module drop-down list. Refer to "4.3.6.13 module" for calling module method.



4.3.4 Programmable keys

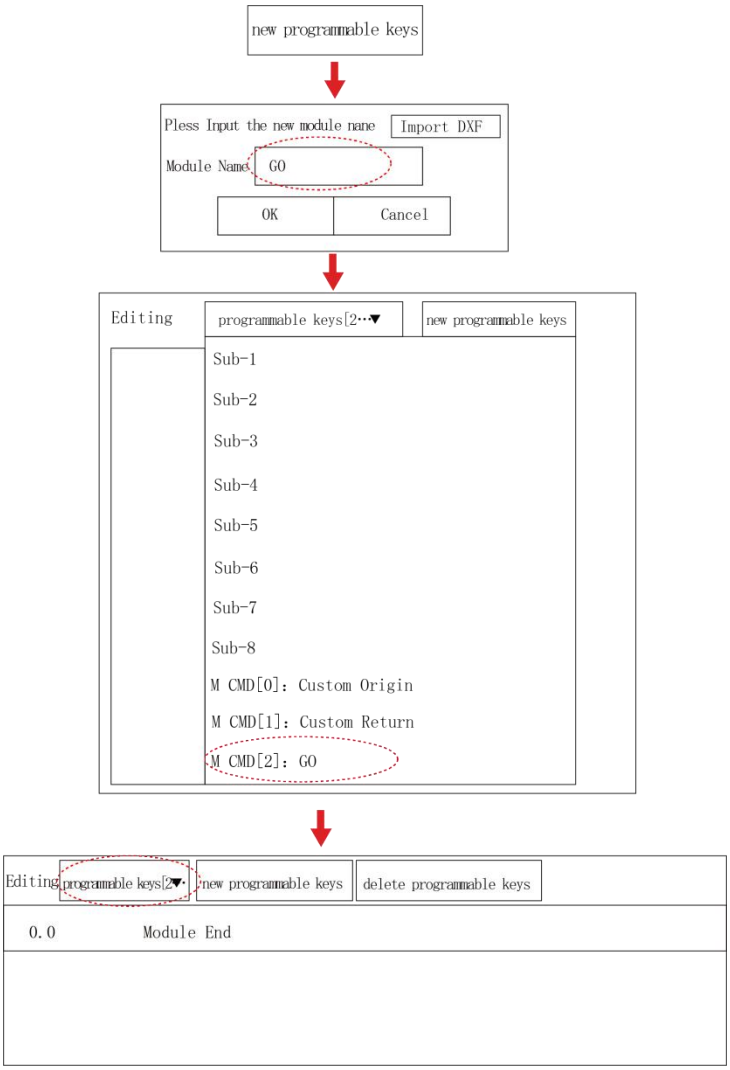
Click the "new programmable key" button to view the programmable keys in the program drop-down list.

Programmable key [0]: The default is the teaching program executed by the origin operation, which can be modified or automatically generated in the origin setting. Please refer to "5.3.6 origin setting".

Programmable key [1]: The default is the teaching program executed by reset operation, which can be modified or automatically generated in origin setting. Please refer to "5.3.6 origin setting".

On the "manual operation" -> "programmable keys" page, the programmable key programs other than origin and reset are displayed.

New programmable key flowchart:



4.3.5 DXF

New DXF: Used to create a new DXF to automatically generate programs.

Track color: When making CAD files, the color of the selected line, that is, the color of the running track, should correspond to the color, otherwise it cannot be read;

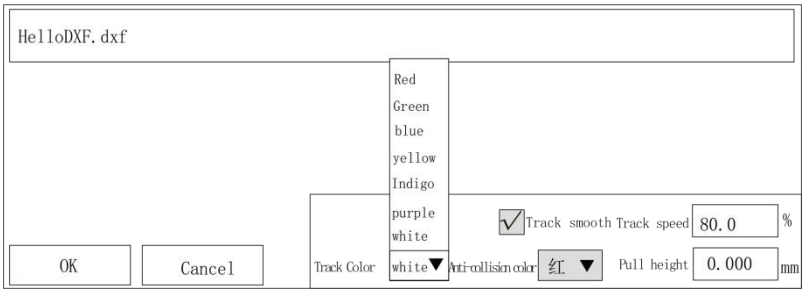
Anti collision color: When running, make a mark and a small yellow circle where it needs to rise to prevent it from hitting the work piece. If a small yellow circle is marked at the rising place in the CAD file, the anti-collision color is selected as yellow.

Pull up height: It is the height to be lifted.

Track smoothing: If checked, you can select to use track smoothing, and there will be more path speed smoothing actions in the automatically generated program actions. You can click this action to set the smoothing speed; If it is not checked, track smoothing is not used, that is, there is no path speed smoothing action in the generated program action.

The specific operation steps are as follows:

First copy the CAD file to the USB flash disk, then insert the USB flash disk into the manual controller, turn the manual controller to manual, click programming, click New DXF, and the following screen will appear:



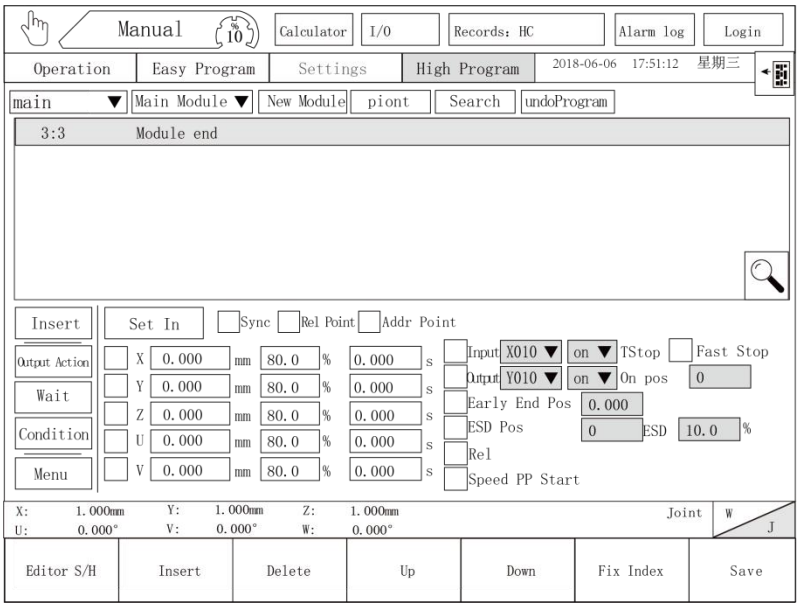
Select the DXF file to be created, set the track speed, track color, anti-collision color and lifting height according to the situation, and click OK to pop up a dialog box "file parsing, please don't pull out the USB flash drive", and the drawn CAD graphics will appear automatically after parsing. In the generated CAD drawing, you can view the CAD drawing by zooming in and out and sliding up, down, left and right buttons.Click the "hide DXF" button to automatically hide the CAD drawing and display the automatically generated program action to view the program. Click The "show DXF" button displays CAD drawings.

4.3.6 Active Menu

4.3.6.1 Axis Action

Click 

Press this button to enter the following interface:



Insert: Check the action, select the position to insert, and click Insert once to insert the target action.

Set in: When the axis goes to the target position, click "set in" and then click "insert" to teach the position of the target point into the program.

Synchronization: Select several axes and check the "synchronization" button, then the selected axes will move together at the same time during operation.

Reference point: After creating a new node in the reference point edit button page, you can directly reference the existing joint points by checking the reference point.

Reference address: Check "reference address" to directly enter the address value to be referenced in the axis position box, which represents the content of the address referenced.

Early end position: Inserting this step in the instruction indicates that the next action has started when the axis has not reached the target position when it reaches the early end position.

Use case: If the advance position is set to 200 and the position is set to 1000, the next action will be carried out when the axis moves to 800 (1000-200), and the program of this step will continue to 1000.

Early deceleration position: Insert this step in the instruction to indicate that when the shaft reaches the early deceleration position, the shaft decelerates at the set speed.

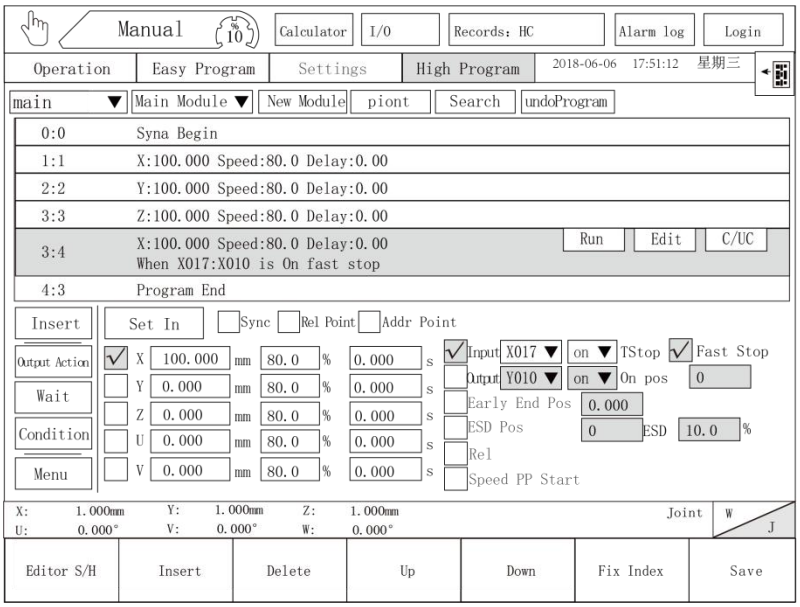
Use case: If the advance position is set to 200, the advance deceleration speed is 5%, the position is set to 1000, and the speed is set to 80%. Then the shaft starts from0-800 runs at 80% speed and 800-1000 runs at 5%.

Stop when the input is on or off or stop immediately: When an input signal is detected, slow down and stop or stop immediately.

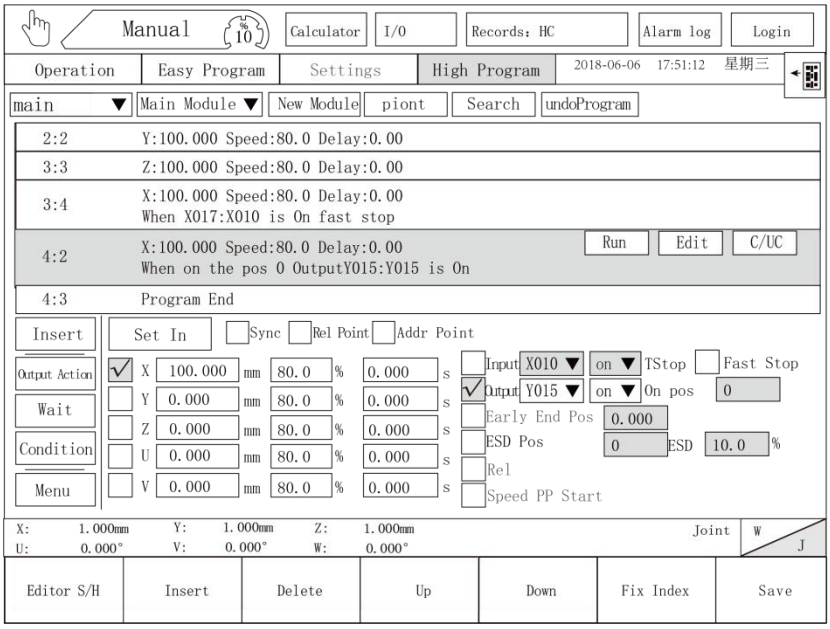
Case 1: When the program runs to the first sentence, if x17 is general, axis X will slow down and stop.

Case 2: When the program runs to the second program, if x17 is general, axis X will stop running immediately.

The instruction of the program is shown in the figure below:



When reaching the advance position, output on or off: When the distance from the set value of the advance position, the signal is output.For example, to output Y15 signal when the X axis moves to 70mm, 30 (100-70 = 30) can be input in the advance position.



Relative: Move the set distance relative to the current position.

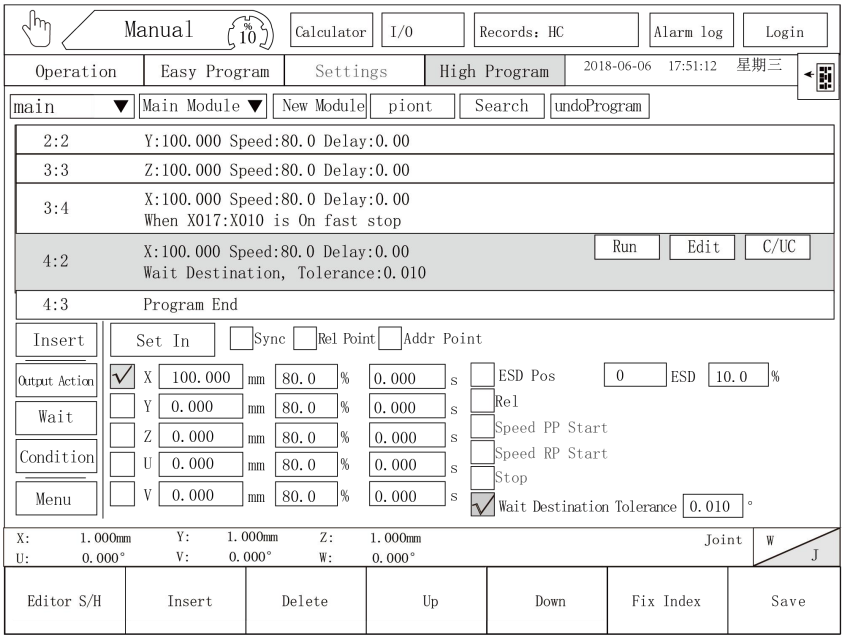
Stop: Check "stop" while selecting an axis, and the axis will stop immediately when the program runs to this step during automatic operation.

(* **Note:** This function is only applicable to the axis with speed start)

Speed forward start: Keep moving in the positive direction at a certain speed.

Speed reverse start: Always move in the opposite direction at a certain speed.

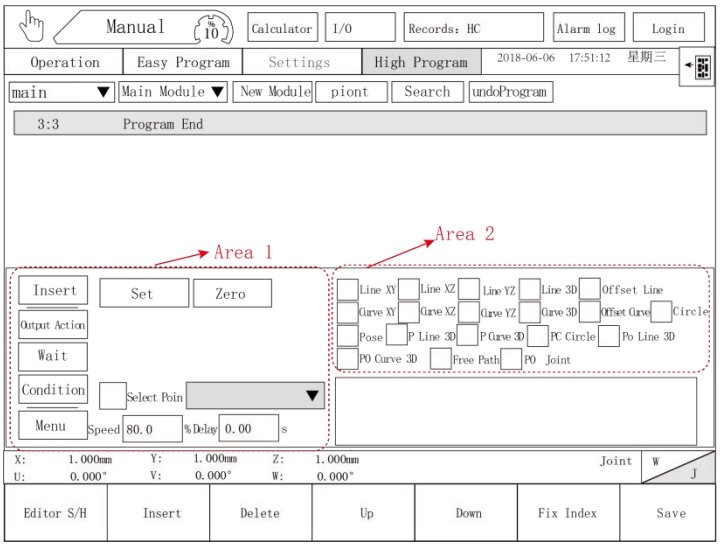
Detection end point & accuracy: Detect whether the actual end point position and the taught end point position are within the set accuracy range. If the end point position of the actual movement and the taught end point position are within the set accuracy range, it is determined that this step of action is completed, and the next action can be continued. If it is not within the accuracy range, Then run this step until the end position of the actual motion and the taught end position are within the set accuracy range.



4.3.6.2 Route

Click 

Press this button



Area 2 is the type of action to insert:

Line 2D (line XY, line XZ, line YZ): The position from the current position to "set as end point" in a plane. Keep your posture in a straight line.

Straight line 3D: Walk a straight line from the current position to the "set as end point" position in space.

Curve 2D (curve XY, curve XZ, curve YZ): In a plane, from the current position to the "set as middle point"Position and "set as end point" position keep posture and walk an arc.

Curve 3D: Keep the pose one step from the current position to the "set as the middle point" and the "set as the end point" in space A curve.

Pose: Transforms from the current pose to the target pose.

Relative line: Offset to the coordinate direction with the current point as the starting point.

Relative curve: Offset to the coordinate direction with the current point as the starting point.

Pose straight line: A straight line from the current point to the target pose to the position set as the end

Posture curve: The curve goes from the current point to the target posture to the positions of "set as the middle point" and "set as the end point".

Pose circle: A circle drawn from the current point to the target pose to "set as the middle point" and "set as the end point".

Free path: No track movement, the axis moves and stops at the same time.

Relative joint: Offset in the axis direction relative to the joint coordinates.

Relative pose line: With the current point as the starting point, u, V and W maintain a pose offset to the coordinate direction.

Relative pose curve: Taking the current point as the starting point, u, V and W maintain a pose offset to the coordinate direction.

Circle: Draw a circle using three known points.

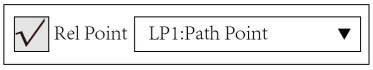
***Note:** Some actions in the above path can only be realized by using at least three axes.

Area 1 is the method of setting the coordinate position.

There are two methods of setting:

First, if you edit the coordinate position displayed on the current manual controller into the coordinate position editing box, you need to click "set" first press the "enter" button and then click "set as end point". If you need to set zero, directly click the "set zero" button.

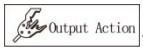
Second, use the reference point, check the reference point selection box,



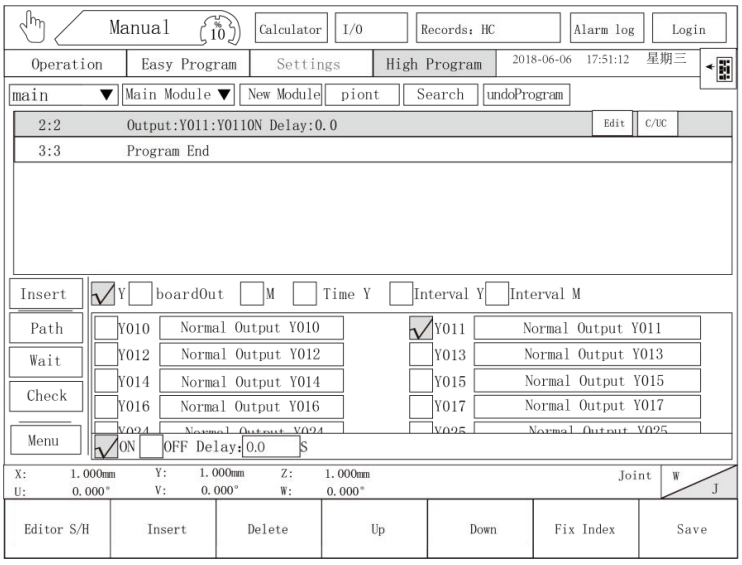
select the "point" to be referenced by the drop-down triangular arrow, and finally click the "set as middle point" or "set as end point" button to replace the coordinate value of the reference point with the target coordinate value.

Please refer to "4.2.1 reference points" for the use method of reference points.

4.3.6.3 Signal Output

Click 

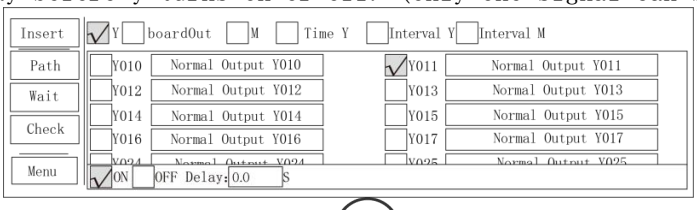
the button to enter the following interface:



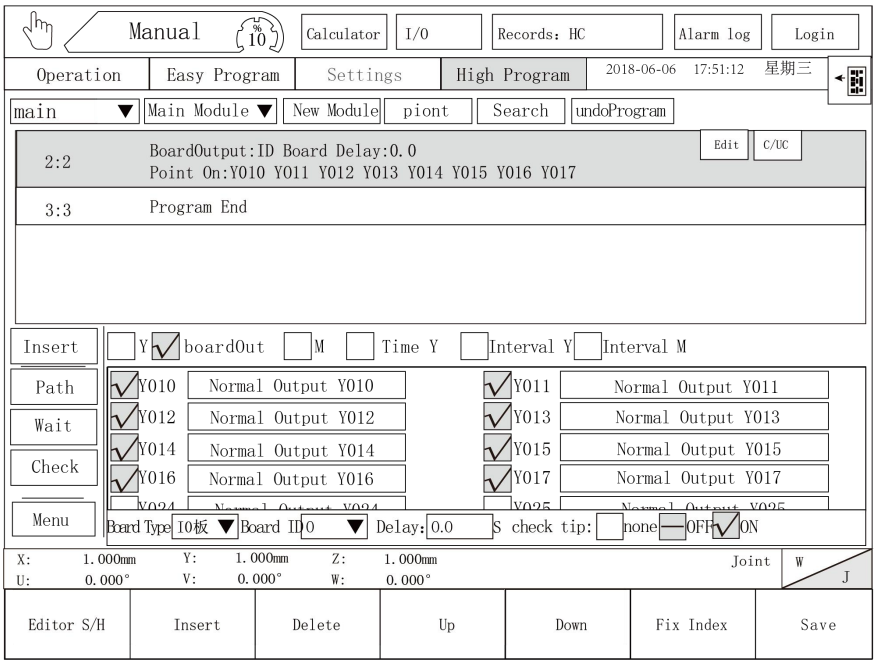
Output signal insertion method: Select the output point type Y / ☐ board output / intermediate variable / ☐ time output Y / ☐ interval output y/☐ interval output (m) → select on / off of output point (☐ on / ☐ off) → set delay time → Click"Save" → select the position to be inserted on the teaching page, and then click "insert".

***Note:** Click an output button to turn green, that is, the output point currently has output.

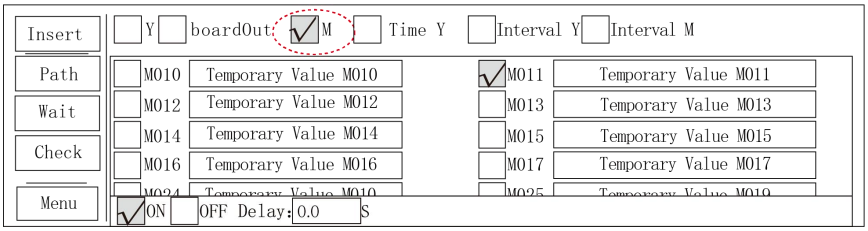
Y: Wait for the delay before y turns on or off. (only one signal can be controlled)



Board output: By selecting the board type as IO board or m board, the number of board ID represents the point on the IO board or m board to wait for delay for output (multiple signals can be controlled), as shown in the figure below:

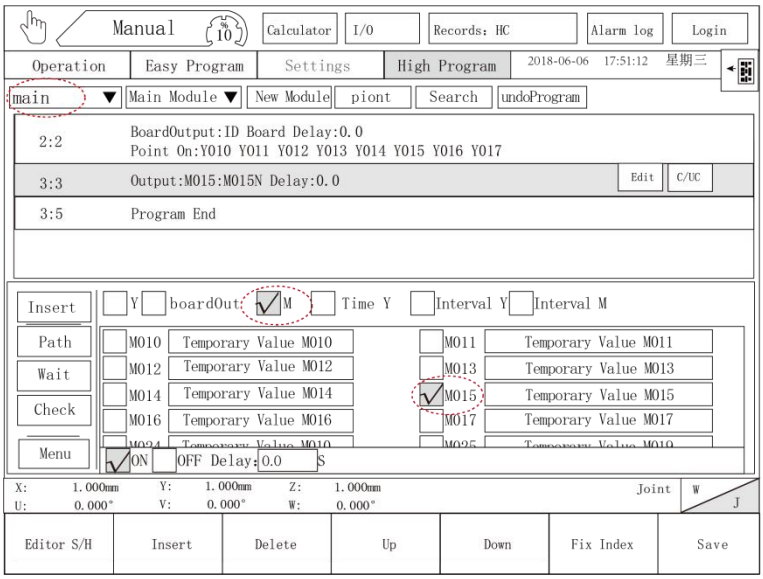


Intermediate variable: A variable value that can be changed. (only one signal can be controlled)

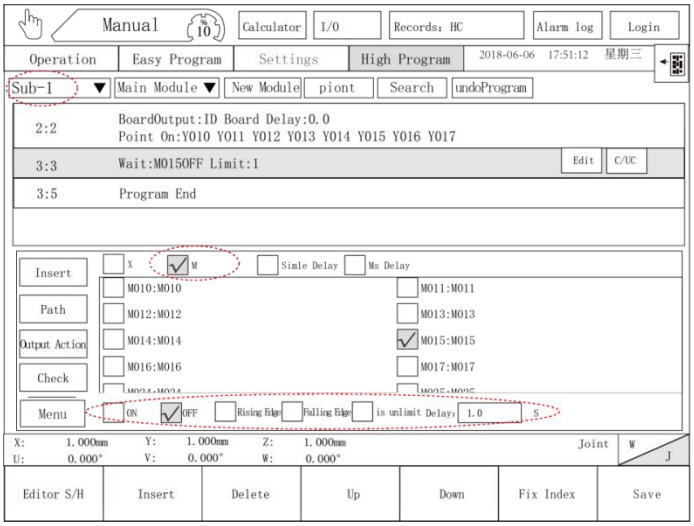


Use example of intermediate variable: Teach m015 intermediate variable output in the main program and wait for m015 intermediate variable in the subroutine.

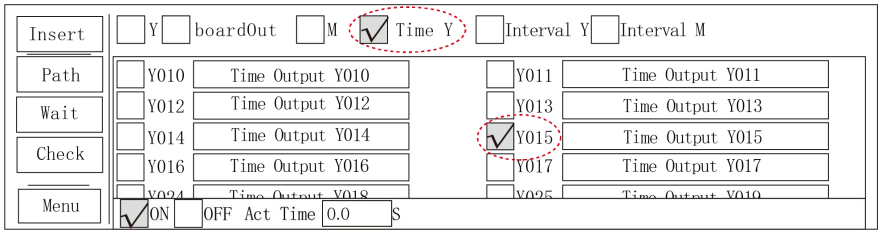
Teaching of main program:



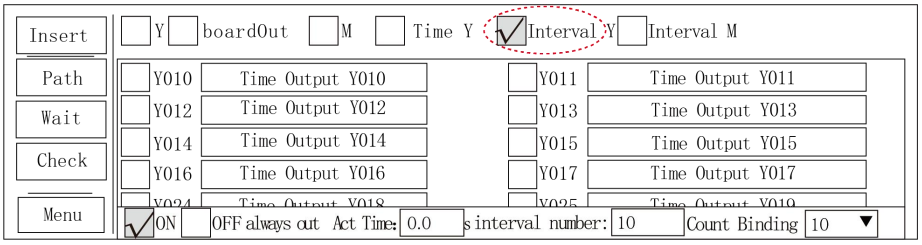
Instruction of subroutines:



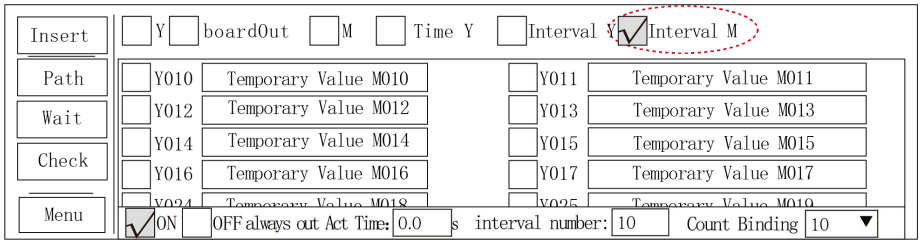
Time output Y: When the program reaches this step, first make the Y output on, and then automatically disconnect it according to the set time. While waiting for disconnection, the program will execute the next step synchronously.



Interval output Y: Output y according to the action time after the module set by the interval.



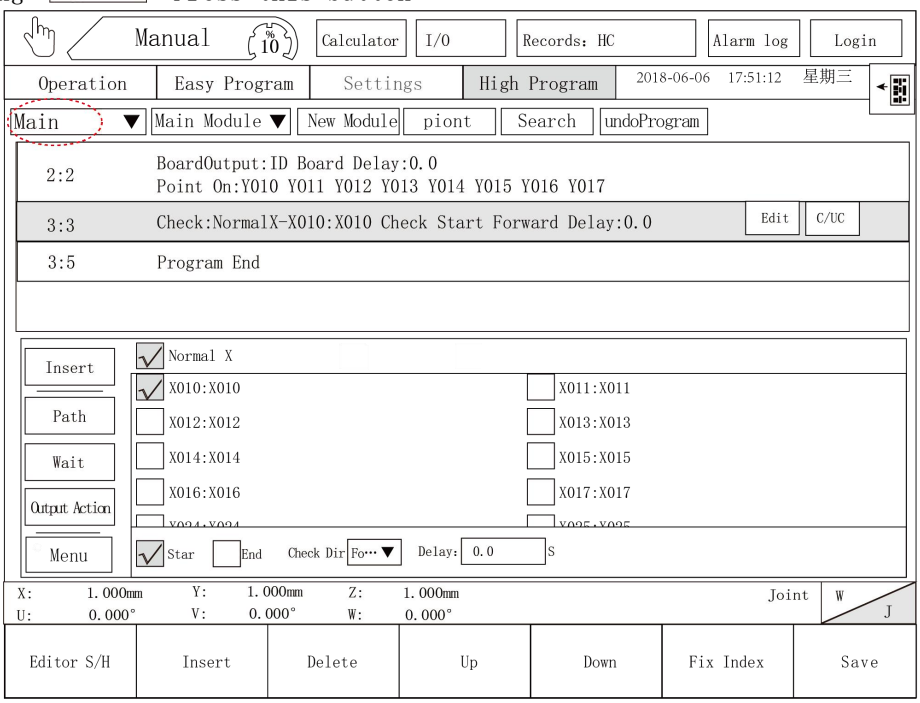
Interval output M: Output m according to the action time after the module set by the interval.



4.3.6.4 Signal Detection

sing 

Press this button

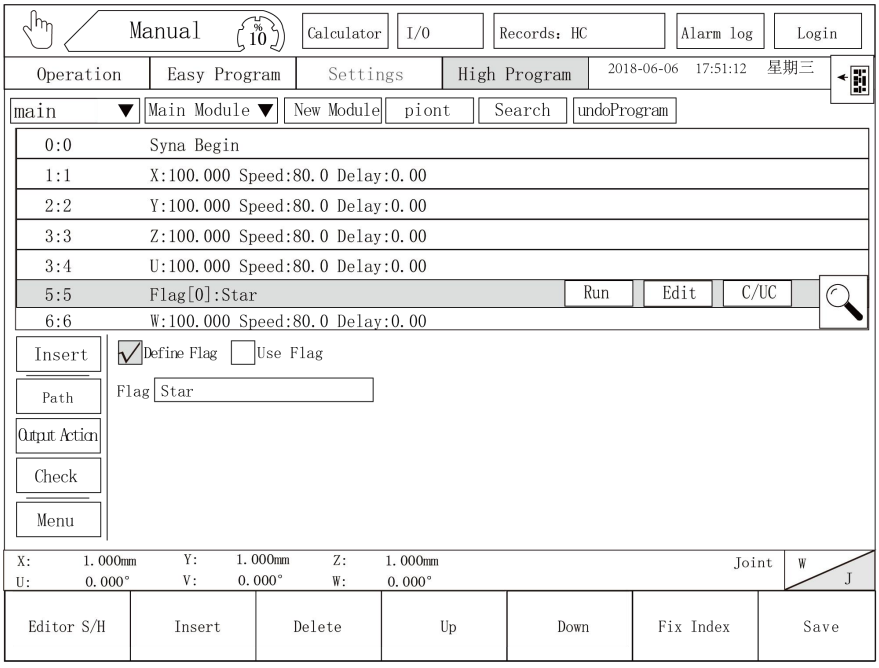


Insert the start detection and end detection actions, detect whether there is an input signal from the start detection action to the end detection action, and alarm immediately if the conditions are met. As shown in lines 1 and 3 above.

4.3.6.5 Conditional Jump

Click 

the button to enter the following interface:

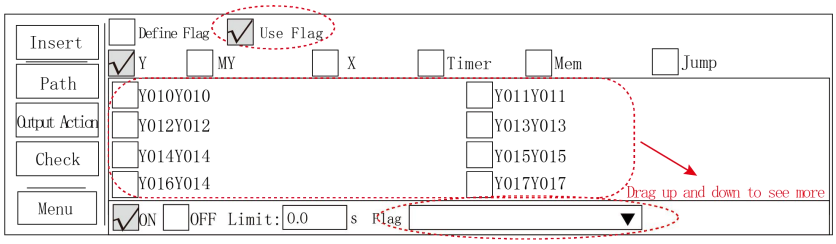


Label usage:

1. Check the "define label" option, click the label edit box, and the keyboard will pop up to edit the name for customization.

2. Insert the tag name from the previous step where you need to jump in the program.

3. Check the "☐ use label" option to enter the condition selection interface:



Note: Counter and timer functions will not be displayed on this page until they are added.

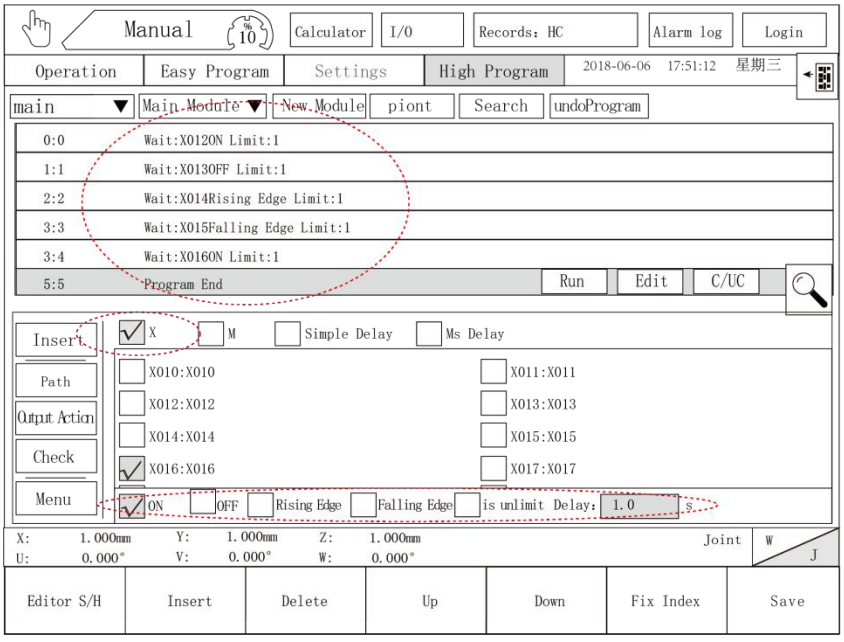
4. After editing the conditions, click the "insert" button at the position to be inserted.

Note: The label must be inserted before using conditional jump.

4.3.6.6 Wait

Click 

the button to enter the following interface:



Insertion method of waiting signal: Select the type of waiting point (x or intermediate variable) → select the on-off condition of the waiting point → set the delay time → click the "save" button → click "insert" in the next step of the position to be inserted on the teaching page.

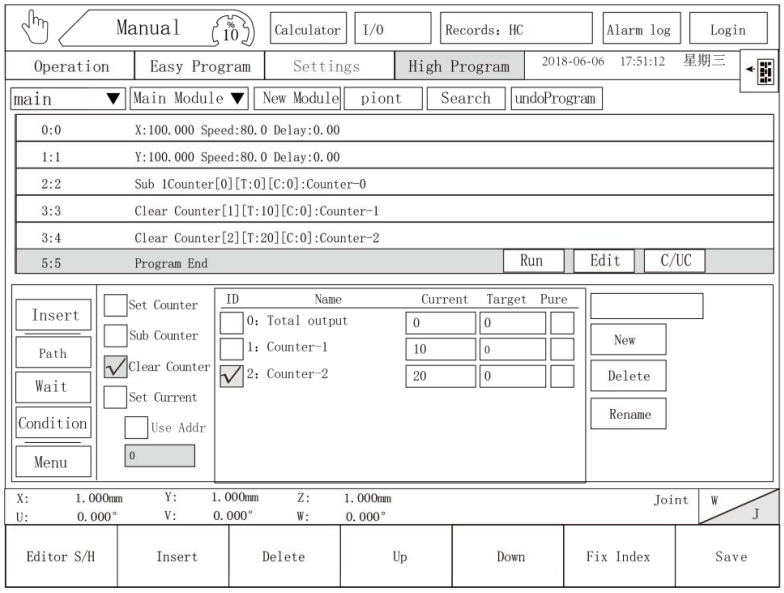
Simple delay: After inserting a simple delay action, the running will automatically run to this action and wait for the set delay time before continuing to run the next action.

Rising edge: Signal from scratch.
Falling edge: Signal from yes to No.
Time limit: When the time limit expires and the signal conditions are not met, an alarm will be given.
Unlimited time: Wait in the current line until the signal conditions are met.
Confirmation time: When the signal condition is reached and remains unchanged within the confirmation time, execute the next line, otherwise continue to wait (*** Note:** It can only be used when unlimited is checked).

4.3.6.7 Counter

Click 

the button to enter the following interface:In this interface, you can edit the counter.



Counter classification: Add type 1 counter, clear type counter, set the current value counter, minus type 1 counter.
Counter creation method: Select counter type → create counter name → click "new" → click "save"→ done.
Current: the count value of the current counter. The value can be set according to the actual situation of the user.The first mock exam is set up in the current value setting: if the counter used in defining the stack is a self defined counter, assuming that the current value of the counter defined by itself is set to 2, then the manipulator starts to pile up from second items when it re runs the first mode.

Target: The target output counted by the counter.

Counter plus 1: Execute the instruction in this line after insertion, and the current value of the corresponding counter is + 1.

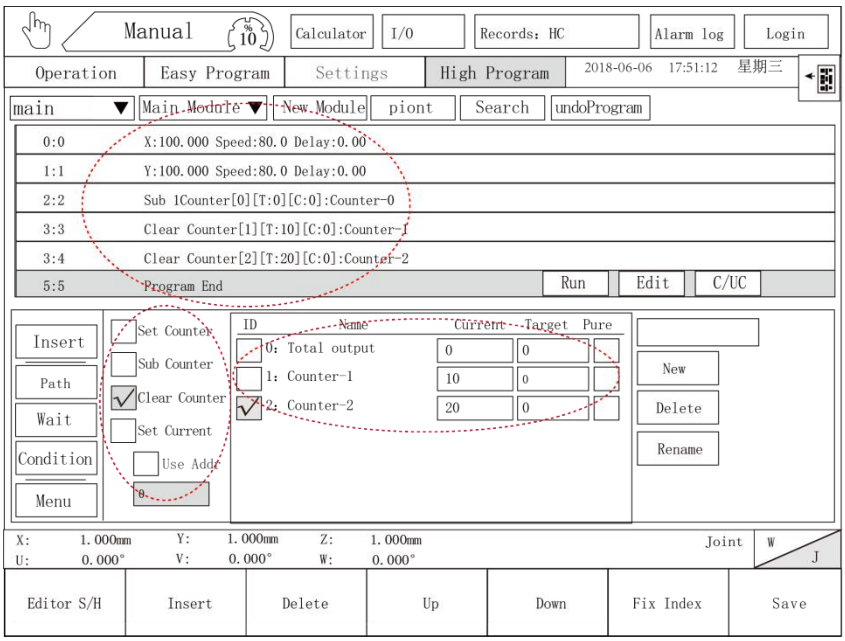
Counter minus 1: Execute the instruction in this line after insertion, and the current value of the corresponding counter is - 1.

Counter reset: After insertion, execute the instruction in this line, and the current value of the corresponding counter becomes 0.

Use address: Enter a value in the input box below. The value represents the address used by the counter, and the current value of the counter is the data value in the address.

Use case: If the address 800 = 100, check the use address and enter the value: 800 in the lower input box. Check any counter and insert it into the teaching page. After saving, switch to the automatic mode and run automatically. The result shows that the current value of the selected counter changes to: 100.

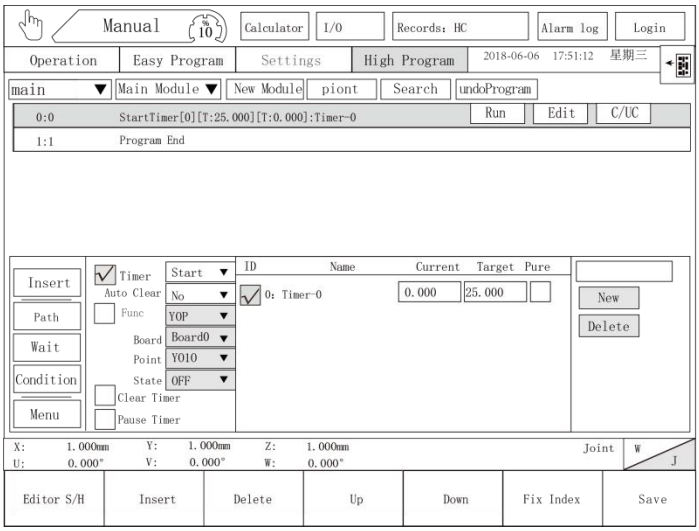
Set current value counter: After checking the set current value, directly enter the value in the input box under the use address, it means that the value is the current value of the counter; If the use address is checked after setting the current value, the value entered in the input box is the value, and the value under the address is the current value of the counter. The instruction is shown in the figure below:



4.3.6.8 Time

Click 

this button to enter the following interface:



If the timer starts the first mock exam, it starts running automatically when the timer is running, and the timer does not count or zero when it reaches the target value. If reset start is selected, it means that the timer will be cleared and timed again when it reaches the target value and runs to this action; When the automatic reset function is selected, the timer will be reset automatically once when the timer is timed. When it runs to this action, it will start to count again.

Timer creation method: Create a counter name → click "new" → click "save". After checking the ID and timer buttons and selecting their types, click "insert" in the next step of the position to be inserted on the teaching page.

Current: The time value of the current timer. The time value can be set according to the actual situation of the user.

Target: The target time of the timer.

After the "function" button is checked, the following functions can be selected:

Single point output: Output or disconnect at a y value point on the IO board after the timing time in the timer expires.

Whole board output: After the time in the timer expires, select an IO board in the IO board column to output or disconnect all y values on the whole IO board.

EU output: output or on-off at an EU point on the EU board after the timing time in the timer.

M-point output: When the time in the timer reaches a certain m-value point on the M board, it will be output or disconnected.

M board output: After the time in the timer expires, select an M board in the IO board column to output or disconnect all m values on the whole m board.

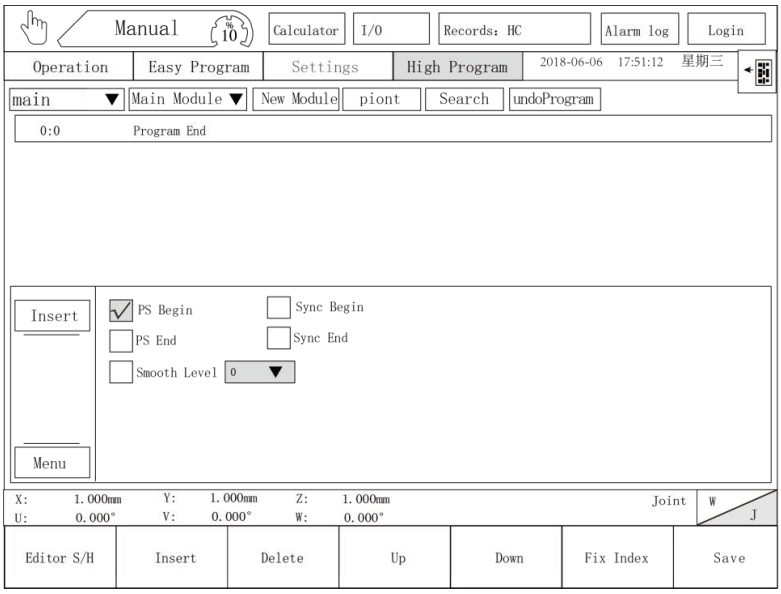
Detection input: After the timing time in the timer expires, detect whether there is a signal at an x input point on the IO board. If it is detected that the conditions are not met, alarm immediately. If the target value of the teaching timer is 5, the detection input X25 is on. When the timer time reaches 5S in automatic operation, the X25 signal will be detected. If there is no signal input for X25, the alarm will be given immediately.

Reset timer: The timer will be reset when it runs to this action (it will be re timed only when it runs to start the timer action).

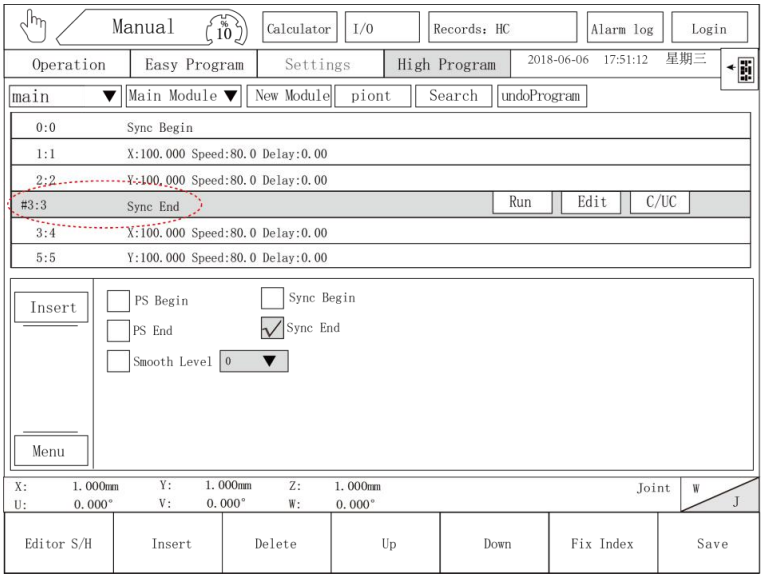
Pause timer: When running to this action, the timer will pause the timer (it will continue only when running to start the timer action)Timing).

4.3.6.9 Synchronization / Smoothing

Click Sync/PS the button to enter the following interface, including synchronous action and smooth action.



Synchronization function:



The start and end of synchronization are inserted before and after a program, indicating that the program is combined and moves at the same time.

*Note:

1. Synchronization cannot be nested.
2. The jump cannot use the synchronization function.
3. Synchronization start and synchronization end must be combined. If there is synchronization start, you must teach another synchronization end.
4. Conditions can use the synchronization function.

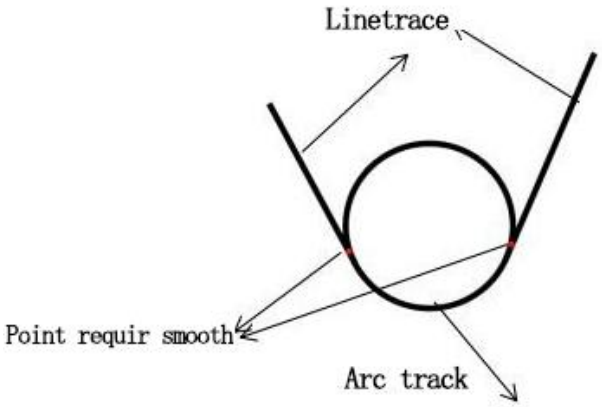
Smoothing function:

Function: Used to adjust the speed of the connecting point when walking straight line and arc.

Scope of application: Only applicable to straight line and curve motion in the path.

Smoothing level: The higher the smoothing level is, the larger the arc is. The maximum is 9 and the minimum is 0. When the smoothing level is 0, it is not smooth

Start speed: Inserted between straight line and curve statements. If the speed of the previous sentence is less than that of the next sentence, the start speed setting is the same as that of the next sentence. If the speed of the previous sentence is greater than that of the next sentence, the starting speed setting is the same as that of the previous sentence.

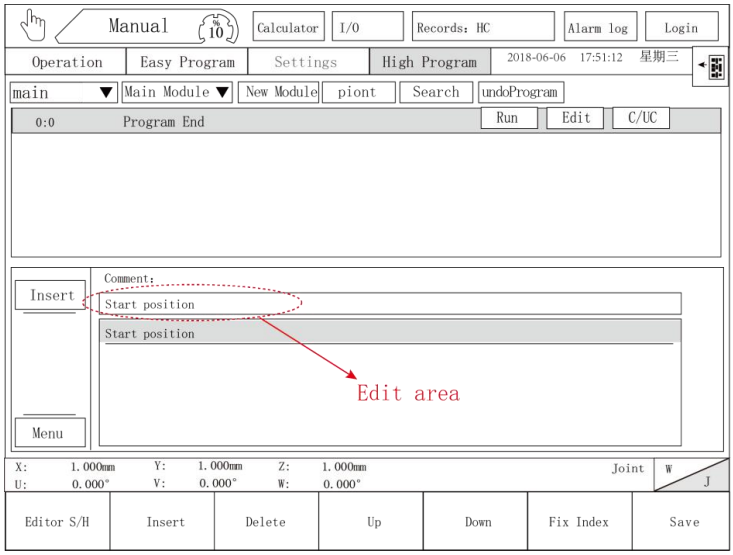


4.3.6.10 Notes

Click 

the button to enter the following interface:

Annotation means marking. When users teach many programs, it will look messy if there are too many programs. At this time, corresponding annotations can be made before and after different programs to facilitate problem finding.

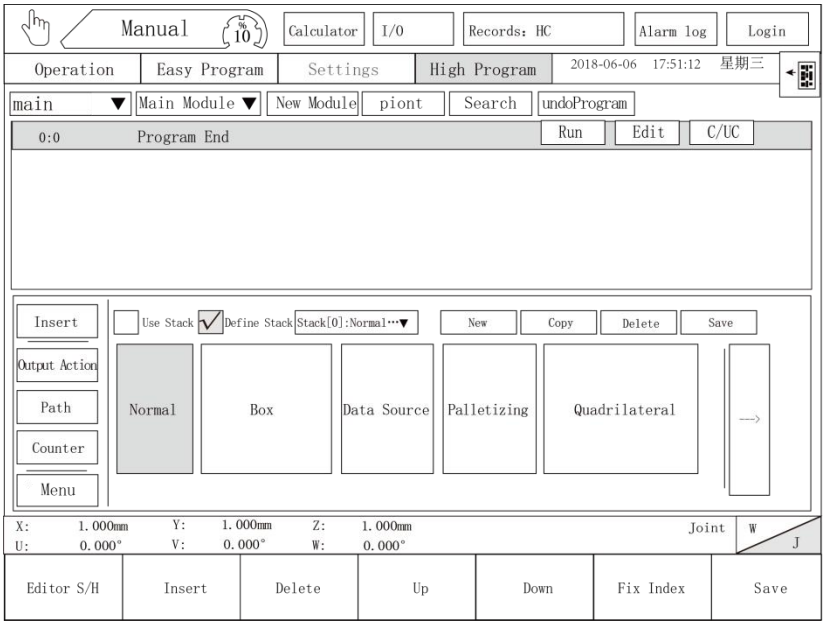


Note editing method: Click in the blank to open the text editing box → edit the name and click "save" → select the next line of the position to insert and click "insert".

4.3.6.11 Stack

Click the 

button to enter the stack editing page, as shown in the following figure:



The stacking types are classified into five categories: General stacking, packing and box stacking, data source stacking , stacking , rectangular material tray.

1.General stacking

General stacking can be divided into two categories:

1).Rectangular shape, as the name suggests, can stack square items;

2).The offset stack can be stacked into a diamond shape or on an inclined plane (Z axis offset).

2.Operation method of stacking moment shape:

1)First click the "new" button to create a new stack name or open the created file name.

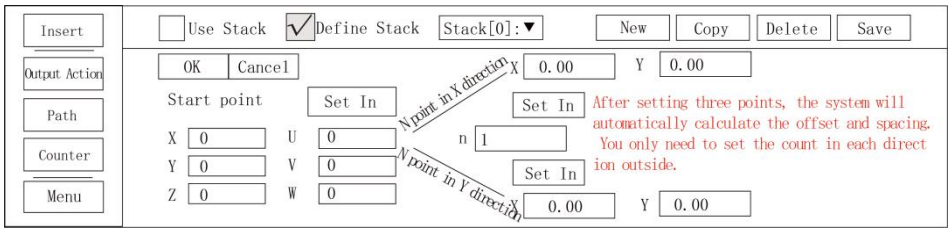
2)Click "→" to enter the stacking editing interface.

3)Set the starting point coordinates and spacing.

There are two settings:

Use the three-point method: the three-point method is to automatically calculate the offset and spacing by using the three points already set.

Step 1: Click the "three-point method setting" button in the manual state to enter the editing page as shown in the figure below.



Step 2: Move the manipulator to the stacking starting point in the manual state, and then click the "set" button to set the current coordinate value into the coordinate editing box of each axis.

Step 3: Move the manipulator to the nth point in the X axis direction, and then click the "set" button to set the coordinate value into the X and Y coordinate editing boxes. Then move the manipulator to the nth point in the Y axis direction and click The "set in" button sets the coordinate value to the X and Y coordinate edit boxes.

Step 4: Enter the value of N in the n value input box

Step 5: Click "OK" to return to the previous page for other settings.

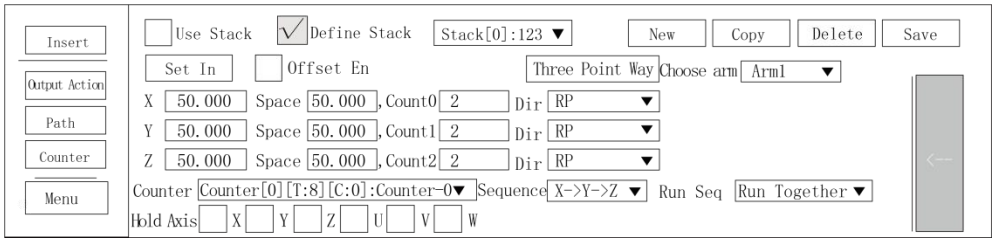
Do not use the three-point method: Calculate the spacing manually.

Step 1: After entering the interface shown in the figure below, move the manipulator to the starting point of stacking in the manual state, and then click the "set" button to set the current coordinate value into the coordinate editing box of each axis.

Step 2: Manually measure the spacing between points in each axis direction and edit the spacing value to the corresponding edit box.

Step 3: Set the stacking direction of each axis. The positive direction refers to the direction of axis position + (press the axis on the manual controller)The reverse direction refers to the direction of the axis position -.

4) Set arm, stack count, sequence, counter and running sequence. The interface is shown in the figure below:



Arm selection: When six XYZUVW axes are used, arm 1 is the XYZ axis stack, arm 2 is the UVW axis stack, arm 3 is the ZUV axis stack, and arm 4 is the XYW axis stack. The arms to be stacked can be selected according to the situation.

Count: Set the number of stacking points on the axis.

Operation sequence: Set the sequence of operation when stacking each axis.

Counter selection: "The self" indicates that the program runs the first mock exam, and the default counter of the system has been increased by 1. Custom counter (can be set in "action menu" → "counter").

5) Click the "save" button after editing the data.

6) Tick √ "use stack", select use stack in "stack", set the stacking speed, select a good position in the program, and click "set in" to edit the stack into the instruction.

7) If you use a custom counter, you should insert the stack counter plus 1 in the teaching process, otherwise the counter will not count.

Operation method of offset heap: The offset stack can be stacked in a diamond shape or on an inclined plane (Z axis offset)

1) First click the "new" button to create a new stack name or open the created file name.

2) Click "→" to enter the stacking editing interface.

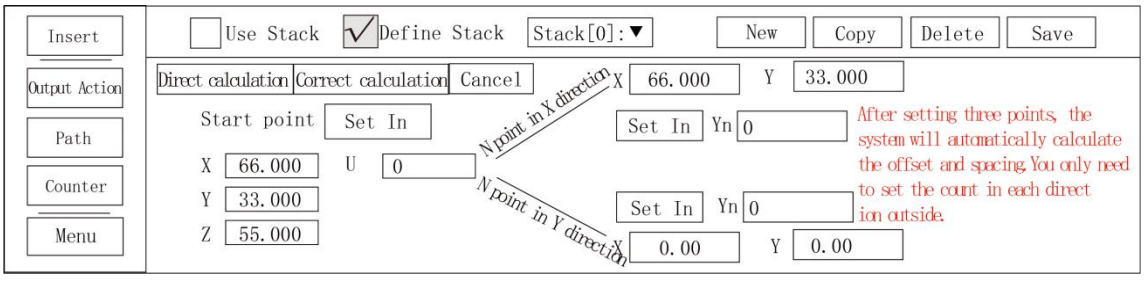
3) Check the "use offset" option.

4) Set the starting point coordinates and spacing.

There are two methods to set the starting point and spacing of diamond stacking:

Use the three-point method: The three-point method is to automatically calculate the offset and distance by using the three points already set.

Step 1: Click the "three-point method setting" button in the manual state to enter the editing page as shown in the figure below.



Step 2: Move the manipulator to the stacking starting point in the manual state, and then click the "set" button to set the current coordinate value into the coordinate editing box of each axis.

Step 3: Move the manipulator to the next point in the X axis direction, and then click the "set" button to set the coordinate value into the X and Y coordinate editing boxes. Then move the manipulator to the next point in the Y axis direction, and then click the "set" button to set the coordinate value into the X and Y coordinate editing boxes.

Step 4: Click "OK" to return to the previous page for other settings.

Do not use the three-point method: Manually calculate the offset distance and spacing of each axis.

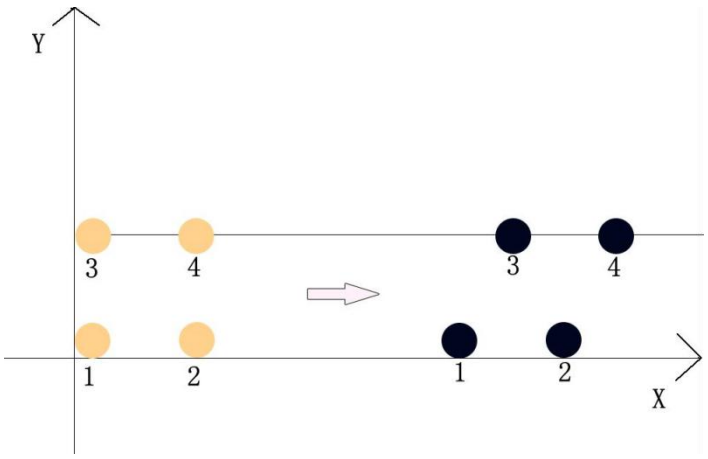
Step 1: After entering the interface shown in the figure below, move the manipulator to the starting point of stacking in the manual state, and then click the "set" button to set the current coordinate value into the coordinate editing box of each axis.

Step 2: Manually measure the spacing and offset between points in each axis direction, and edit the spacing and offset values to the corresponding edit box.

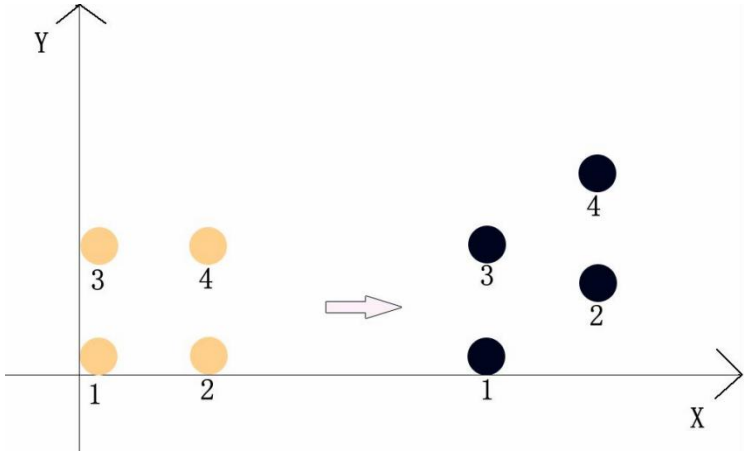
Step 3: Set the stacking direction of each axis. The forward direction refers to the direction of axis position + (it can be identified by pressing the axis key on the manual controller) and the reverse direction refers to the direction of axis position -.

X,Y Offset effect.

The effect diagram of X offset is as follows. The left is not offset, and the right is the effect after X offset.(left) offset front (right) offset back



The effect diagram of Y offset is as follows. The left is not offset, and the right is the effect after X offset.



Slope stacking starting point and spacing setting method:

Step 1: Move the manipulator to the stacking starting point in the manual state, and then click the "set" button to set the current coordinate value into the coordinate editing box of each axis.

Step 2: Set the offset distance in the Z axis direction (the default is to offset Z in the x-direction). If you want to offset Z in the y-direction, check the "offset Z in the y-direction" option.

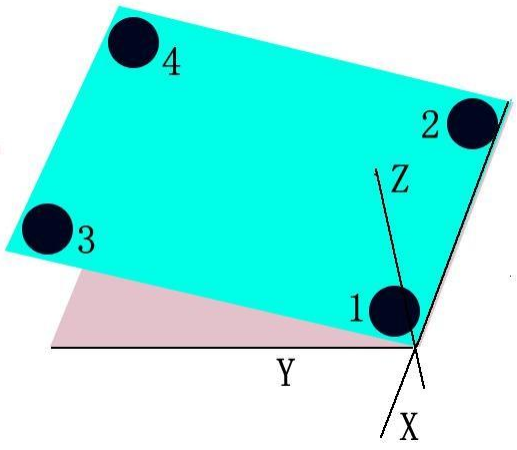
Step 3: Set the stacking direction, count, sequence, counter and operation sequence.Direction: positive, axis position + direction, negative, axis position - direction. Count: sets the number of points stacked on the axis.Operation sequence: set the sequence of operation when stacking each axis.Counter selection: "the self" indicates that the program runs the first mock exam, and the default counter of the system has been increased by 1. Custom counter (can be set in "action menu" → "counter").

Step 4: After editing the data, click the "save" button.

Step 5: Check √ "use stack", select use stack in "stack", and set the stacking speed. Select a good position in the program and click "set in" to edit the stack into the instruction.

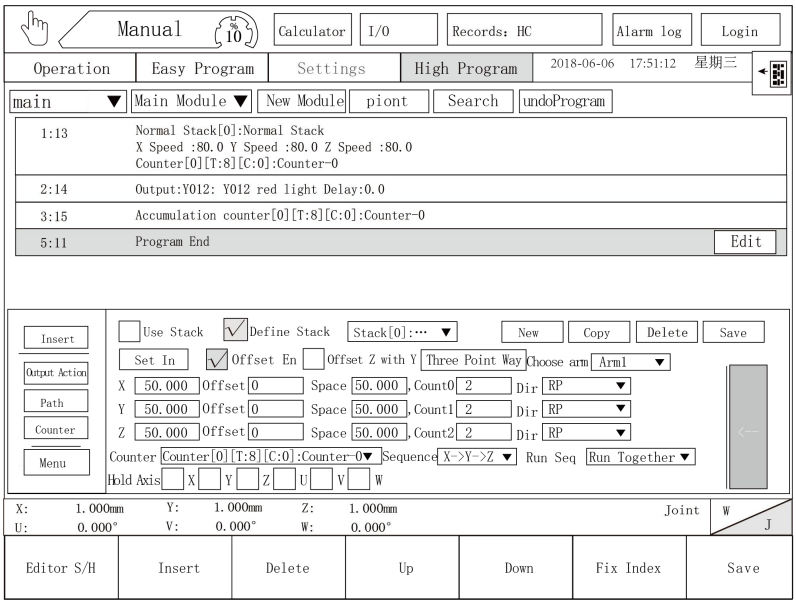
Step 6: If you use a custom counter, you should insert the stack counter plus 1 in the teaching process, otherwise the counter will not count.

Use example of slope offset stack:



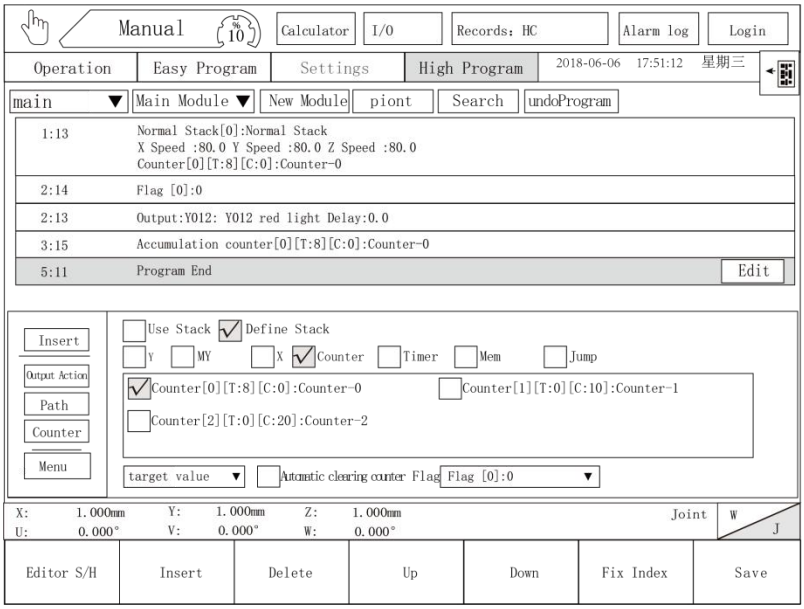
Suppose you need to stack four circles on the following slope

Teaching page setup:



*Note: 1. Because the counter is a custom counter, you need to teach one more sentence after stacking, and the counter is increased by 1;

2. If the counter is full, if you need to restart after it is full, you need to use conditional jump to reset. The setting of conditional jump page is shown in the following figure:



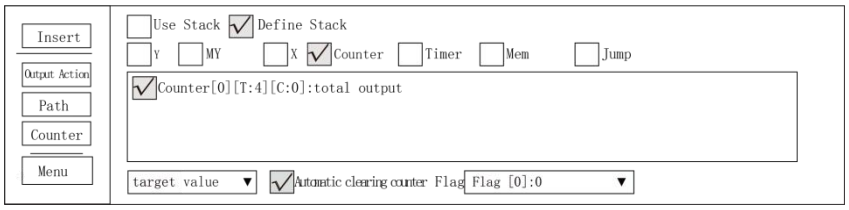
General stacking examples:

Known conditions:

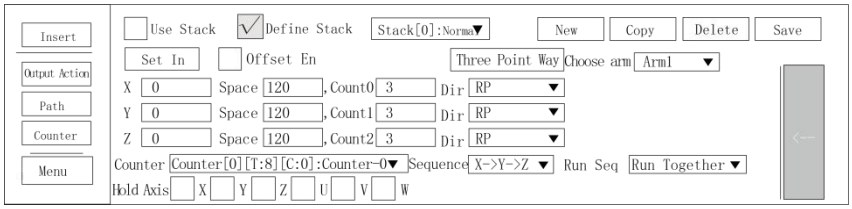
1. The size of the small square is 100*100*100(mm).
2. need to stack 3 products in XYZ direction, the total number of products in the box is 27.
3. The distance between front and back, left and right, up and down is 20mm.
4. Use custom counter, create a new counter called "box stack counter" plus 1 counter in the counter.

The specific settings are shown in the figure below:

Step 1: First customize a counter.



Step 2: Enter the stacking page and set as shown in the figure below. All coordinates of the stacking starting point are set to 0.

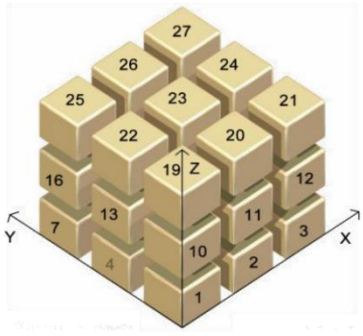


The editing of the program is shown in the following figure:

0:0	Flag [0]:Clear 0
1:1	Stack[0]:Stack1 speed:80.0 Counter[0][T:27][C:0]:Stack1 Counter
2:2	Accumulation counter [0][T:27][C0]:Stack1 Counter
3:3	IF:Cumulative Counter[0][T:27][C:0]:Stack1 Counter arrive jump to the flag[0]:clear the counter
4:4	Program End

The final stacking effect is shown in the figure below:

***Note:** The serial number marked in the figure below indicates the order of heap products



Stack start point

2.Packing and stacking

Packing and stacking methods:

1.Select the box and box stacking option.

2. Click "→" to enter the stacking editing interface.

3. First click the "new" button to create a new stack name.

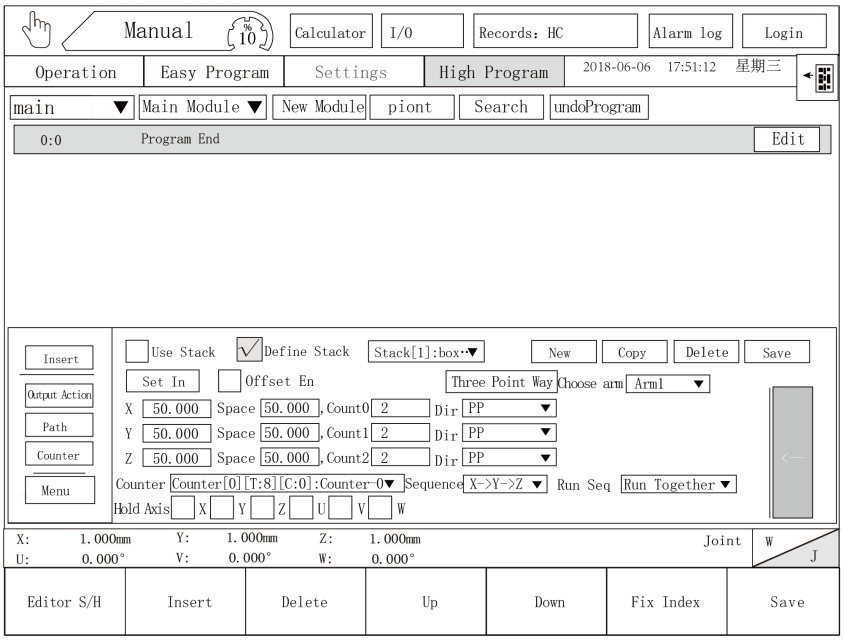
4. In this interface, set the spacing, quantity, sequence, direction and counter selection between products in the first box.

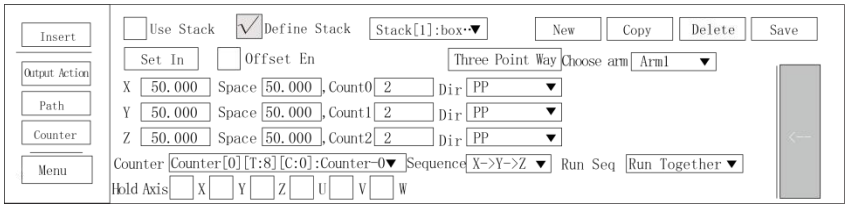
5. Click "→" to enter the next editing interface, which sets the spacing, quantity, sequence, direction and counter selection between each stacking box.6. Set all data and click the Save button.

6. Tick √ "use stack", select which stack to use in "stack", set the stacking speed, select a good position in the program, and click "set

in" to edit the stack into the instruction.

7. "Use offset": when checked, offset the set distance from the previous stacking point.



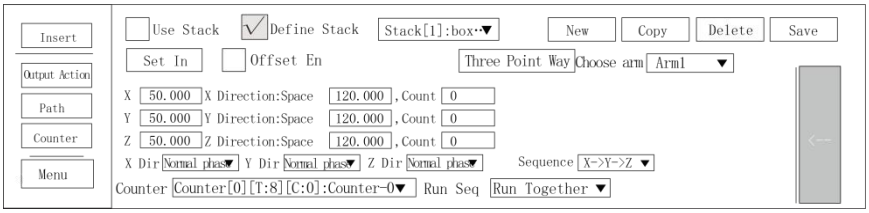


Case stacking example:

Known conditions in the box:

1. The size of the small square of the article is 100 * 100 * 100 (mm).
2. Three products need to be stacked in the XYZ direction, and the total number of products in the box is 27.
3. The distance between front and back, left and right, up and down of the product is 20mm respectively.
4. The counter uses a custom counter, and a new counter called "bin stack counter" plus 1 is created in the counter.

The teaching page is as follows:



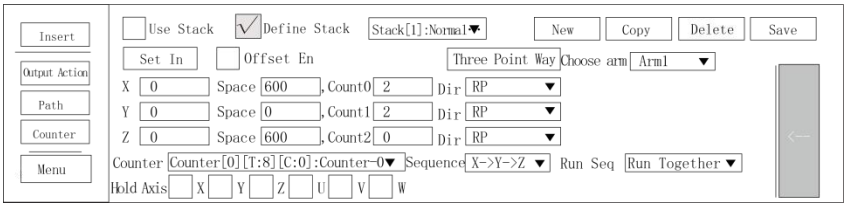
Known conditions outside the box:

A total of four boxes will be stacked.

It is necessary to stack 2 boxes in the positive direction of X axis, 2 boxes in the positive direction of Y axis and 0 boxes in the positive direction of Z axis. The stacking sequence is: X → Y→ Z.

The distance between boxes is 500mm, and the upper and lower distance is 0mm.

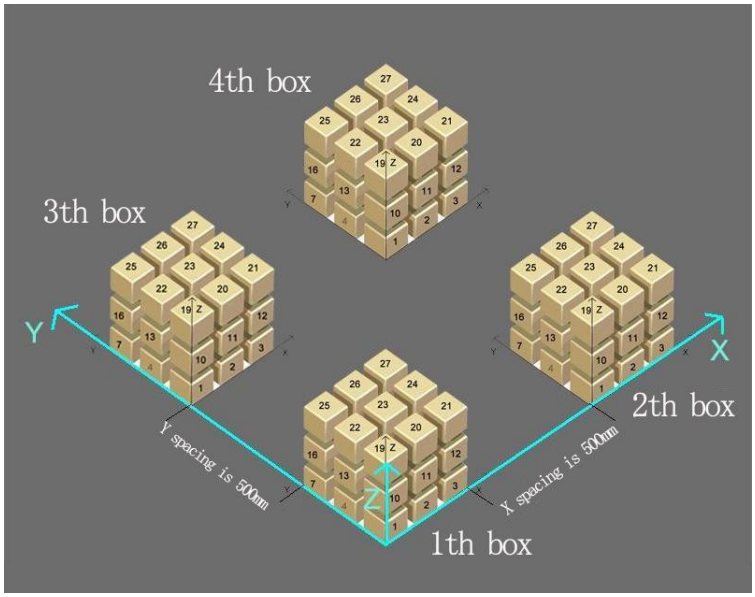
The teaching page is set as follows:



The editing of the program is shown in the following figure:

0:0	Flag [0]:Clear 0
1:1	Packing and stacking[1]:packing and stacking Box stacking speed: X 80.0 : Y 80.0 : Z 80.0 Counter [[T:108]: box stacking counter:self
2:2	Accumulation counter [0][T:27][C0]:Stack1 Counter
3:3	IF:Cumulative Counter[0][T:27][C:0]:Stack1 Counter arrive jump to the flag[0]:clear the counter
4:4	Program End

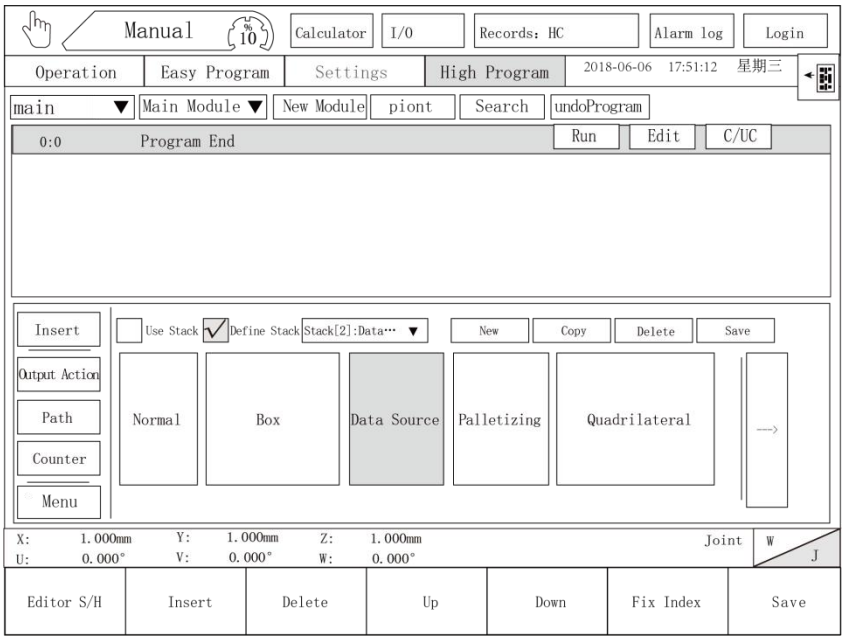
The final stacking effect is shown in the figure below:

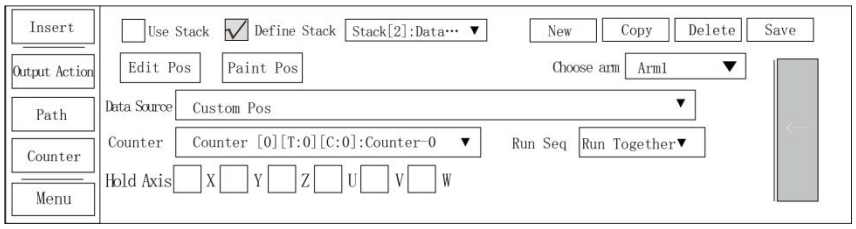


3. Data source stack

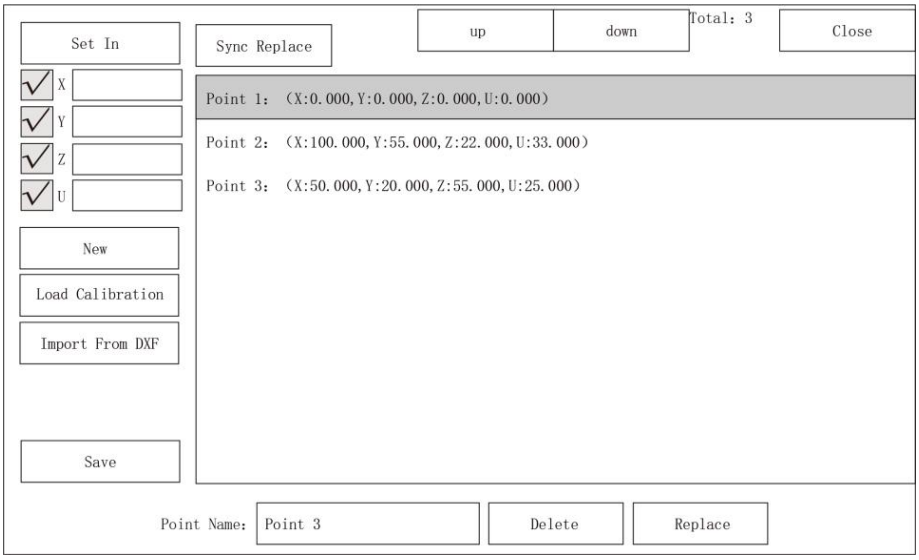
Data source stack Usage:

1. Select the data source stack option.
2. First click the "new" button to create a new stack name.
3. Click "→" to enter the stacking editing interface.
4. Select the data source type. The data source type is divided into two types of 1) irregular points (irregular stacking). If this option is selected, click "edit point" to enter the edit point box and edit 2) special user ID for the position.
5. Tick √ "use stack", select which stack to use in "stack", set the stacking speed, select a good position in the program, and click "set in" to edit the stack into the instruction.





The data source type option is "irregular point", and then click the "edit point" button to enter the point editing interface, as shown in the following :

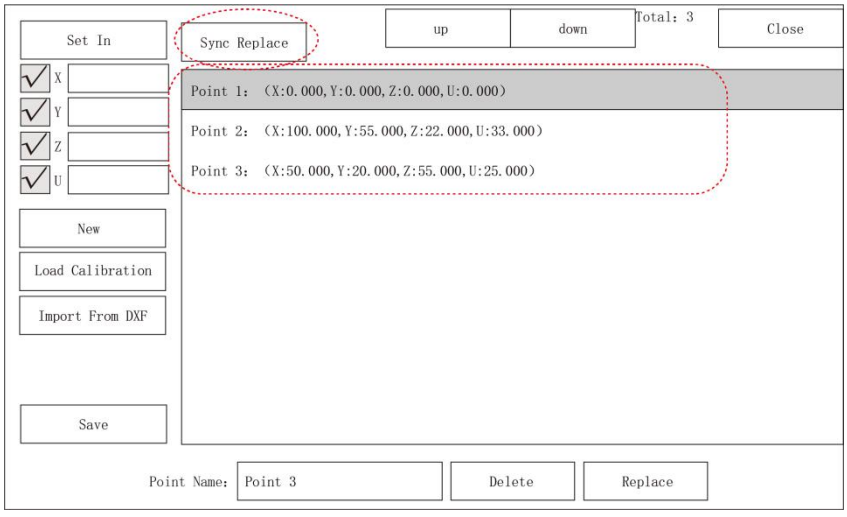


Replace position: Click the edited position and click the "replace position" button once to replace the old coordinate position with the current position.

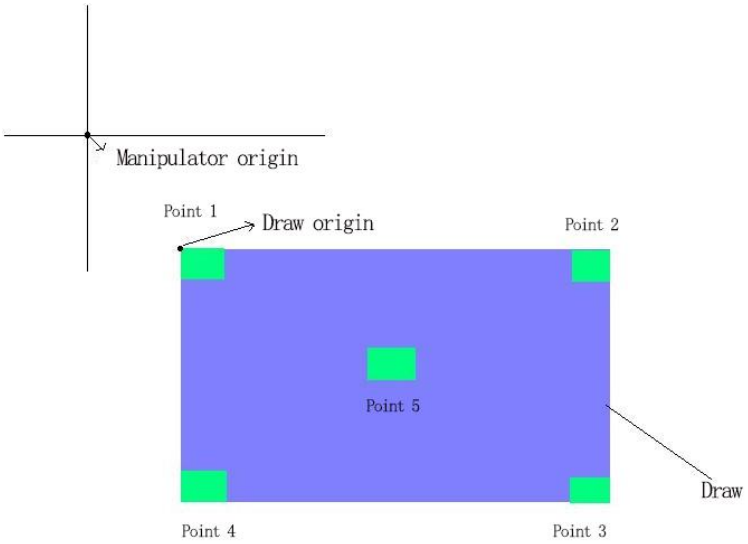
Synchronous replacement: If the user has a position drawing and the starting coordinates of the drawing are inconsistent with the origin coordinates of the manipulator, synchronous replacement can be used to easily set the position of the drawing into irregular points.

The operation method when using the six axes of XYZUVW is as follows:

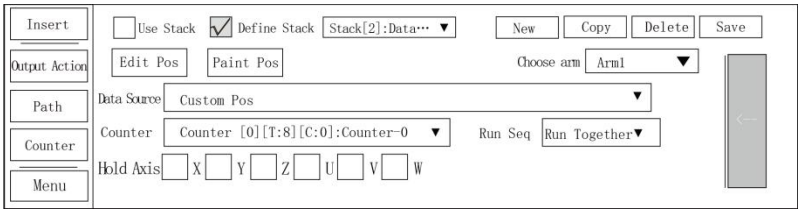
1. Edit the target points first. Suppose you need to edit 5 points, as shown in the figure below:



2. Click the first point to change the coordinate value of the current point to the coordinate value of the drawing origin (the first point), and finally click save, as shown in the following figure:



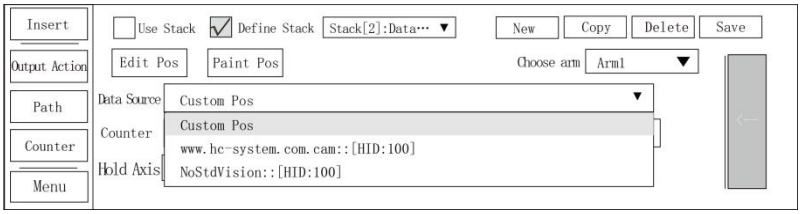
Special user ID display interface:



Examples of irregular stacking:

Take stacking 6 irregular points on a horizontal plane as an example. Set six positions on the point editing page and select the counter to complete the setting. The specific setting steps are as follows:

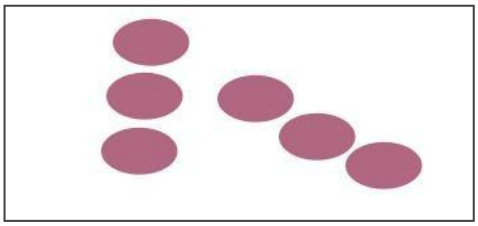
1. Enter the following interface, drop down the triangle arrow of data source and select "irregular point".



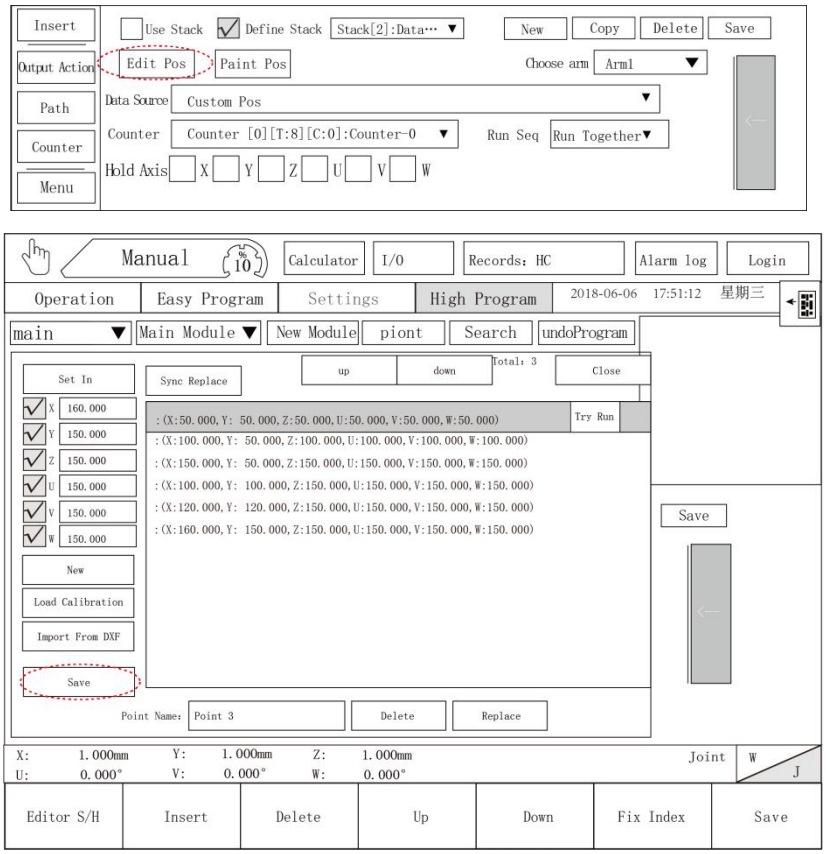
2. Click the "edit point" button to enter the edit point box and export six positions.

3. Select the counter type. The default is self counter.

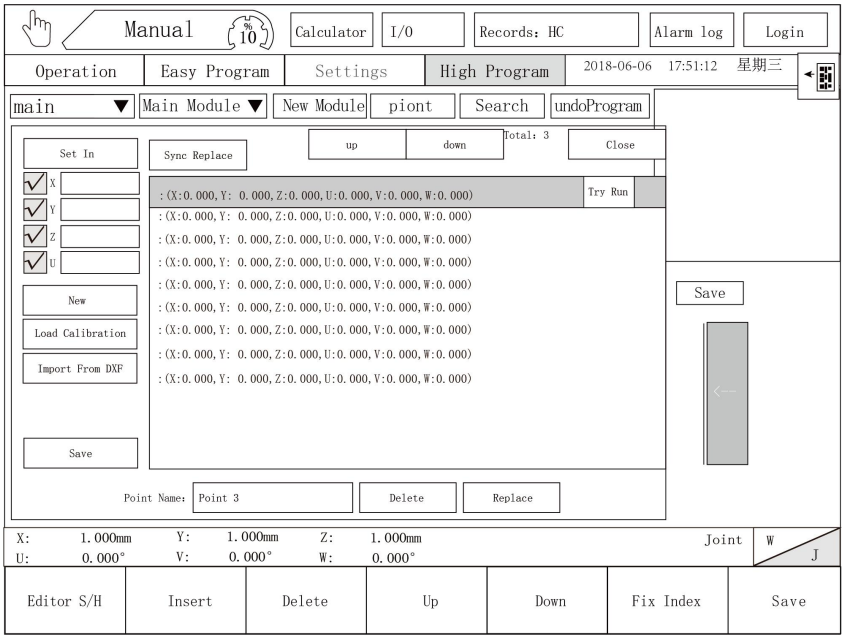
The stacking effect is shown in the following figure:



Automatically generated points can be viewed by clicking "edit points"



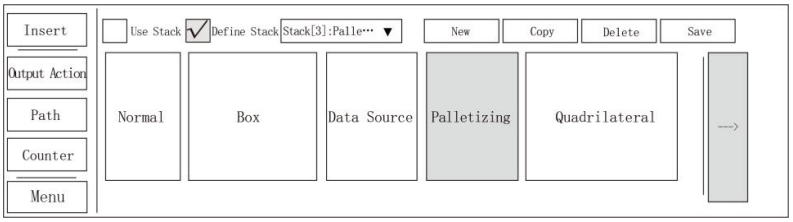
Finally, click the "save" button and insert the stacking action into the main program.



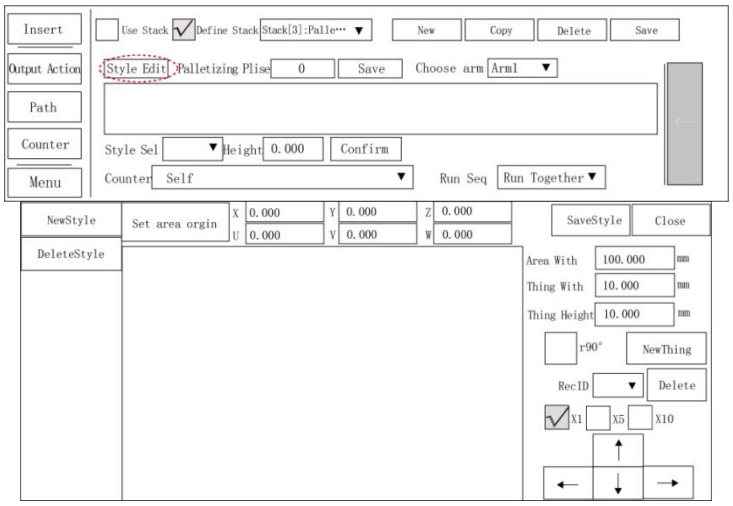
4. Pallet stacking

Stacking Stacking method:

1. Select the data source stack option.
2. First click the "new" button to create a new stack name.
3. Click "→" to enter the stacking editing interface.



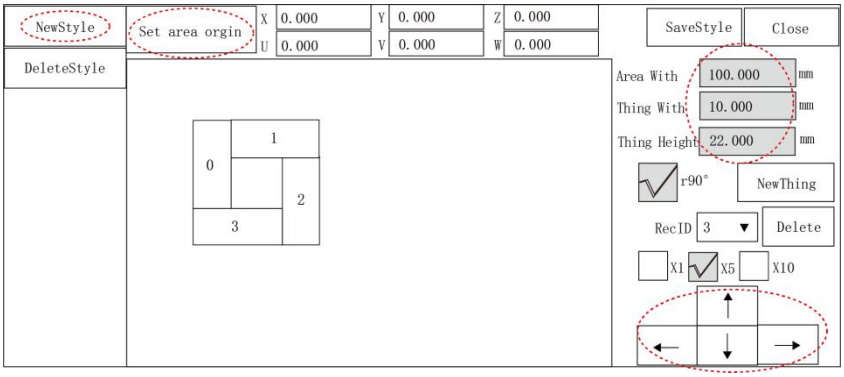
4. Click "Edit style" to enter, design the desired stacking style, and then define the stacking. The specific methods for editing styles and defining stacks are as follows:



Edit style:

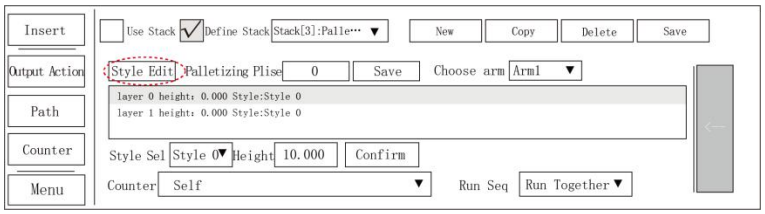
1. Set the area origin, that is, the starting position.
2. Click new style, and "style 0" will be displayed below. Click new style again, and "style 1" will be displayed, and so on.
3. Enter the area width and item length and width.
4. Click the new item, and the first item shape will appear in the white edit box. You can click the up, down, left and right arrows in the lower right corner to move the newly created item to the desired position, and then click the new item to automatically generate the same item. Each time you click the new item, 0,1,2,3 will appear in turn, Each item is placed in each position as needed, as shown in the square below.
5. Save the style and close.

*Note:
1. There can be multiple styles, which can be set as needed.
2. Before creating a new item, check the direction of the item that can be rotated by rotating 90 ° to facilitate editing the required type.
3. X1, X5 and X10 are the speed of moving articles, and the direction key is to control the moving direction of articles. Check X1 to move articles the slowest, X5 to move articles faster and X10 to move articles the fastest.



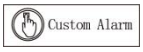
Define stack:

1. Edit stacking layers
2. Select the style, edit the height, counter and running order, and then save.
3. Check use stack and insert the stack into the corresponding position of the program.

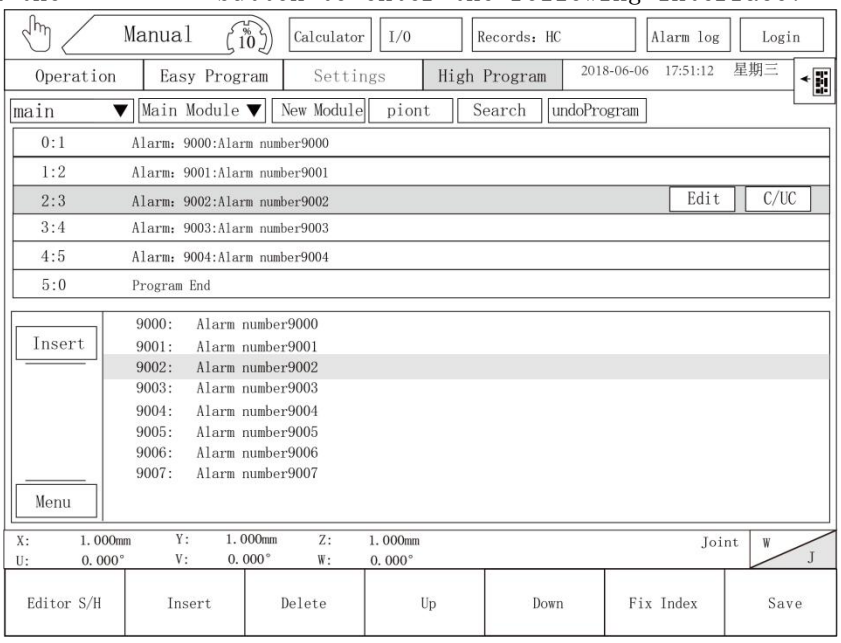


***Note:** The above stacking examples all use the XYZ axis.

4.3.6.12 Custom alarm

Click the 

button to enter the following interface:



Select the alarm number and click the "insert" button to insert the alarm into the program. When the program runs to the "alarm program", the manipulator stops running and the alarm content pops up.

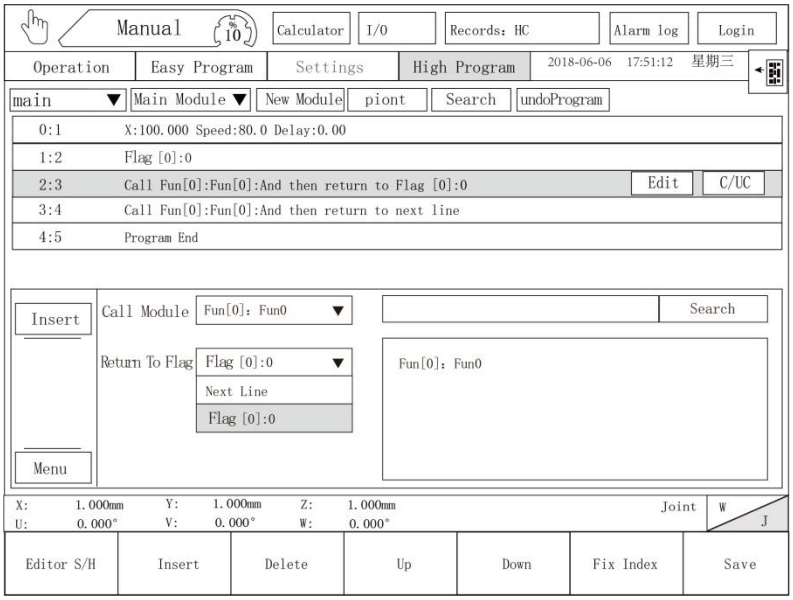
***Note:** The user-defined alarm content can be modified by the word change tool. The alarm number range is 9000-9999. Please refer to "5.4.4 word change tool" for details.

4.3.6.13 Modular

Click 

button to enter the following interface:

in this interface, you can call the module



New module: Click the "new module" button → new module name → save → teach the import program in the current module → save.

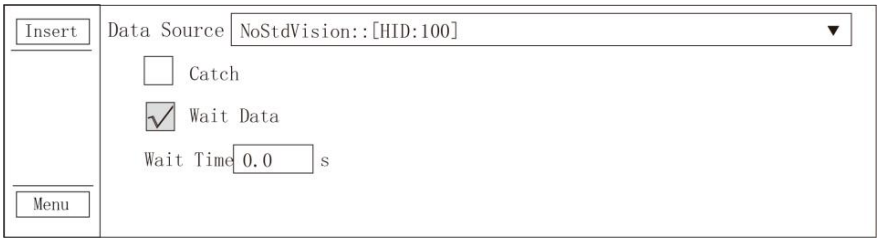
Delete module: Drop down the module menu, select the module name and click "delete module".

Module insertion method: Pull down the menu of "call module" and select the module to be called → pull down the menu of "return label" and select the return type (Note: If you select the label type, please define the label first and insert it into the program in advance) → select the position to be inserted. Next, click "insert".

4.3.6.14 Visual instruction

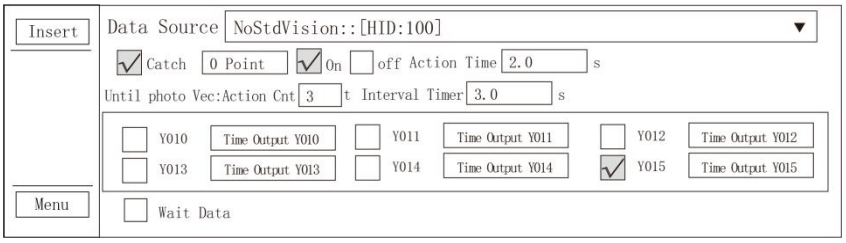
Click 

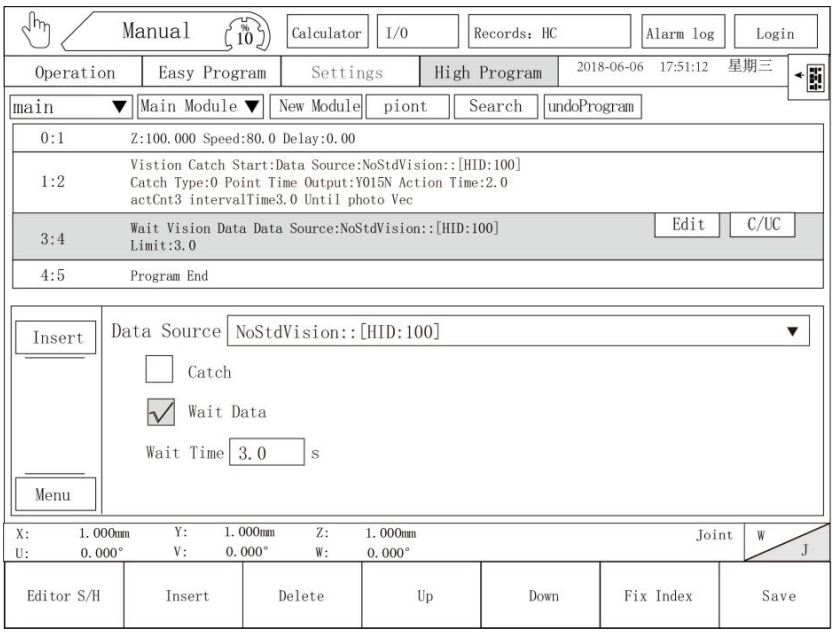
the button to enter the visual instruction page



Select a data source, check photographing, select an output point according to the situation, and set its action time, output times and interval time, indicating how many seconds to take pictures after an output point has output, and how long to take pictures after the interval. Take pictures several times in total, insert it into the main program, and then enter the visual instruction page. Check waiting for visual data to set the limit time, Indicates how long to wait for an alarm after the camera is unsuccessful and there is no data feedback. For example, if you

want to output Y15 to take pictures for 2S, output Y15 every 3S to take pictures. After taking pictures for three times, if you wait for 2S and do not take pictures successfully, the alarm will be given. The parameter settings are as follows:

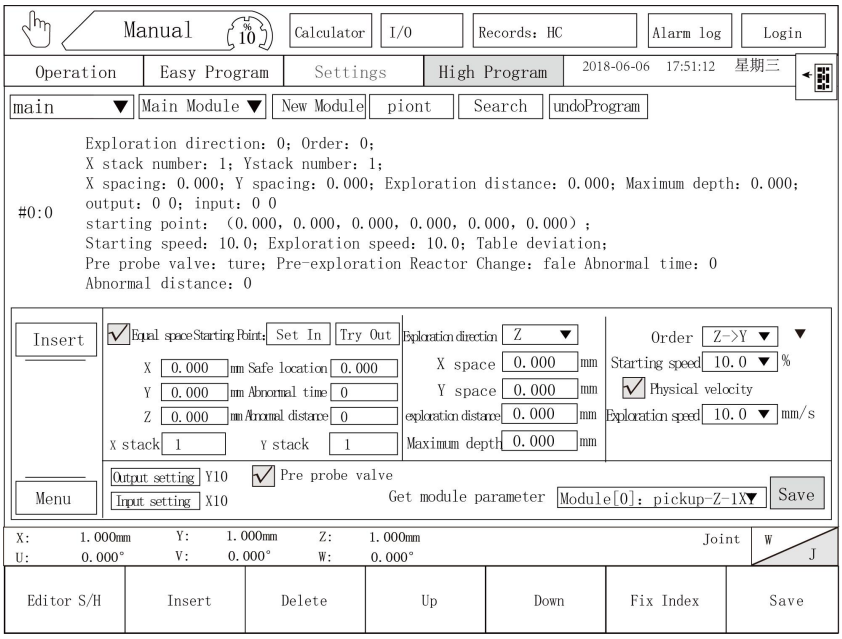




4.3.6.15 Workmanship

Click 

the button to enter the following interface:

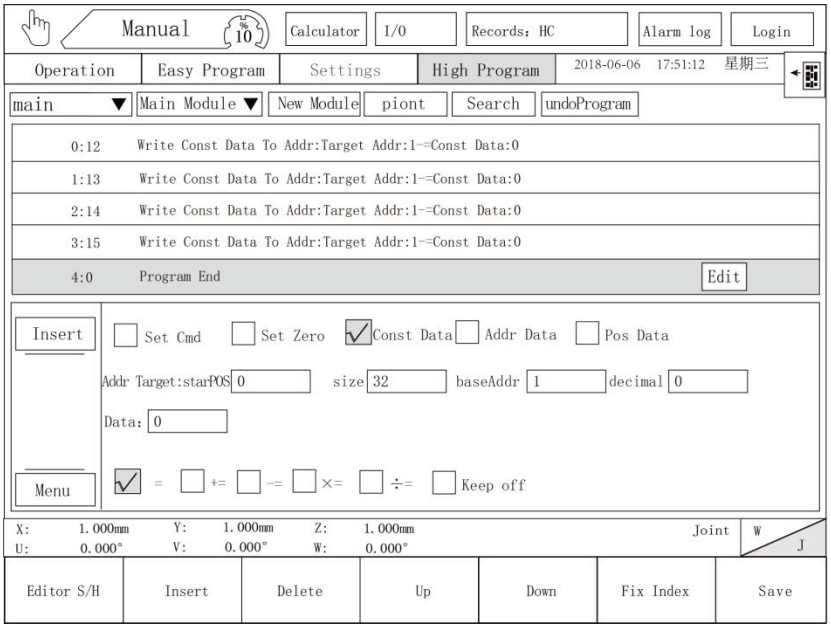


*Note: Please refer to "5.2.1 product setting" for process type modification.

4.3.6.16 Data Instruction

Click 

the button to enter the following page, including five functions: control command, origin command, immediate number, address data and location data.



Control command function:

Start: When the program runs to the current line, execute the start button, which is generally used for subroutine 8.

Stop: Press the stop button when the program runs to the current line; (*Note:

Insert one for single cycle and two for pause)

Clear the alarm and continue: When the program runs to the current line, execute the stop + start button, which is generally used for subroutine 8.

Origin command: The program executes to the current line and sets the current position of the selected axis as the origin.

Immediate function:

Destination address:

Start bit: 0
Data length: 32
Base address: 1
Precision: 0

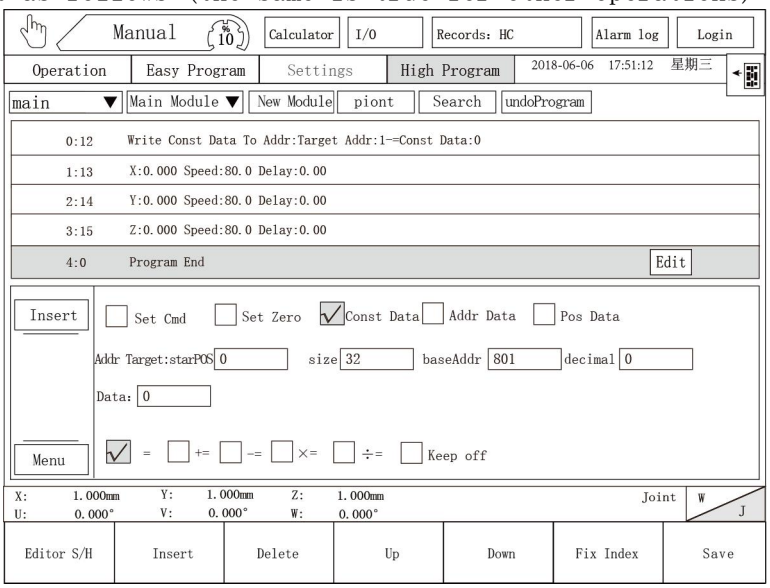
Immediate data:

1: Manual gear
2: Automatic gear
3: Stop gear
2560: Start button
2561: stop button
2562: origin key
2563: reset button
2566: clear alarm and continue
2567: run the next command after clearing the alarm
2568: pause instruction
2569: clear alarm and pause

***Note:** It is recommended to add a 0.1s delay between two adjacent immediate instructions to prevent the program from executing too fast and the state is not switched over.

Address data: Generally used for the operation of address data.

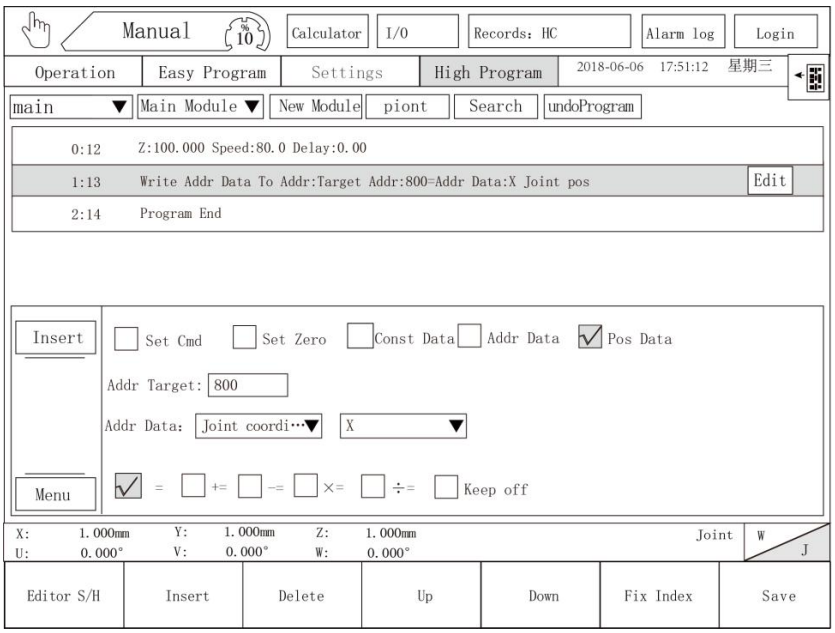
Use case: If the data of address 801 is written into address 800, the program is taught as follows (the same is true for other operations)



Position data: Write the world coordinate value / joint coordinate value of the current

axis into the target address (Note: multiply the data by 1000)

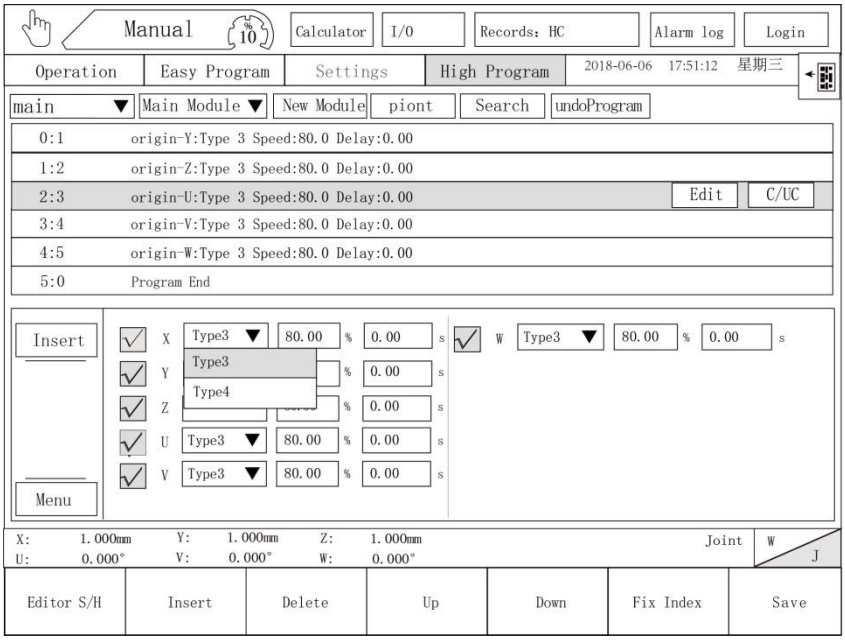
Use case: If the X axis joint coordinate value is 18.230, use this command to write the X axis coordinate value into address 800, and the final written value is 18230; The program is taught as follows (the same is true for other operations)



4.3.6.17 Set Origin

Select the programmable key [0]: origin, and click 

to enter the following editing interface:



Function of origin command: The sequence and speed of axis returning to origin can be set in this interface.

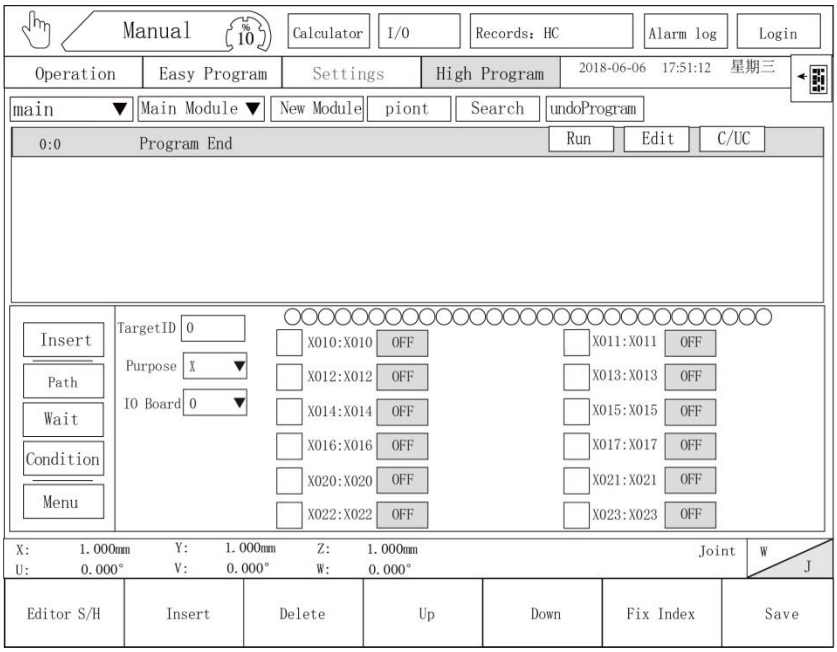
There are two ways to return to the origin. Users can choose according to their own organization:

1. Short origin (automatically set the origin plus switch short origin).When returning to the origin, as soon as it touches the origin iron plate, the origin switch is on, which is the origin position. The setting process of setting the origin for the first time or modifying the method of returning to the origin:
   Press the "origin" key and then press the "start" key, and the manipulator will return to the origin in sequence according to the set sequence. When the origin of each axis is found, the system will give an alarm and pop up a selection box, asking "the origin has changed, need to reset the origin position?" If you need to reset, click the "reset origin" option. If you don't want to reset the origin, click the "stop" option.
2. Long origin (automatically set the origin plus switch).When returning to the origin, once it touches the origin iron sheet, continue to walk the whole origin iron sheet, and the end of the origin iron sheet is the origin position.
   The setting process of setting the origin for the first time or modifying the method of returning to the origin:
   Press the "origin" key and then press the "start" key, and the manipulator will return to the origin in sequence according to the set sequence. When the origin of each axis is found, the system will give an alarm and pop up a selection box, asking "the origin has changed, need to reset the origin position?" If you need to reset, click the "reset origin" option. If you don't want to reset the origin, click the "stop" option.

***Note:** Please refer to "5.3.6 origin setting" for origin signal, direction and other settings.

4.3.6.18 CAN command

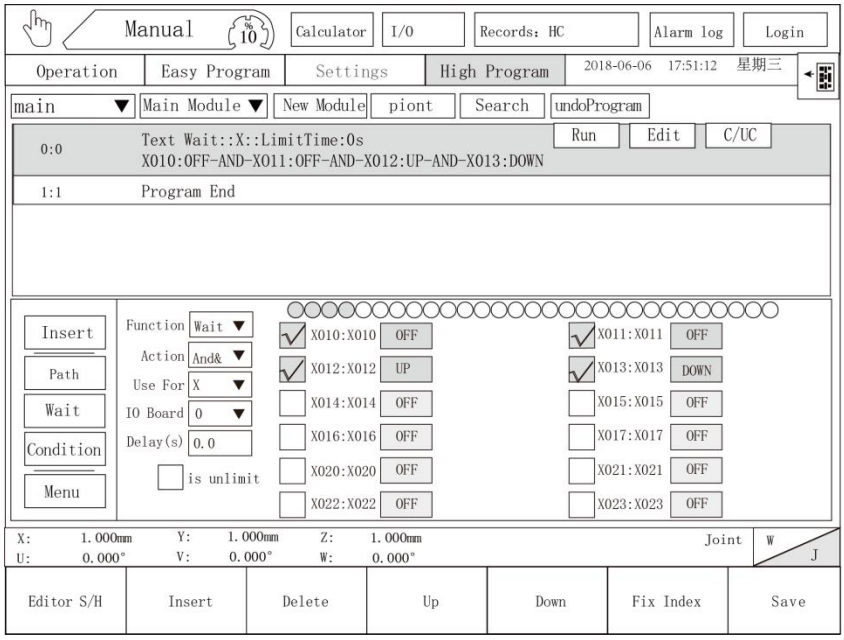
Click the Can Command press CAN command page:



*Note: This function needs to be in CAN network communication mode to be available.

4.3.6.19 AND OR ORDER

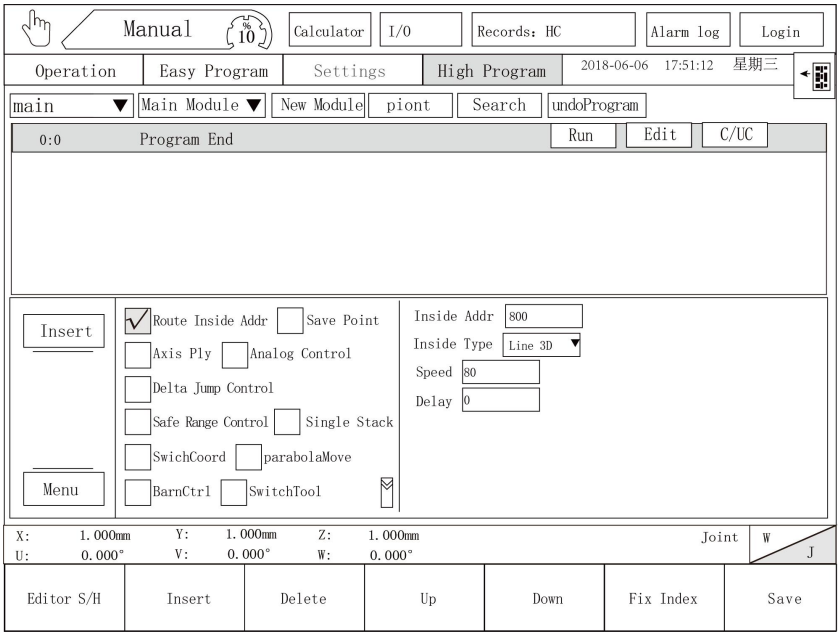
Click the And Or Action button to enter the following interface:



The command function is mainly used in the case of waiting for more than one signal. If the command is selected as with, it is to wait for more than one signal at the same time and alarm as long as one of the signals is not available; if the command is selected as or, it is to wait for more than one signal as long as more than one of them is available.

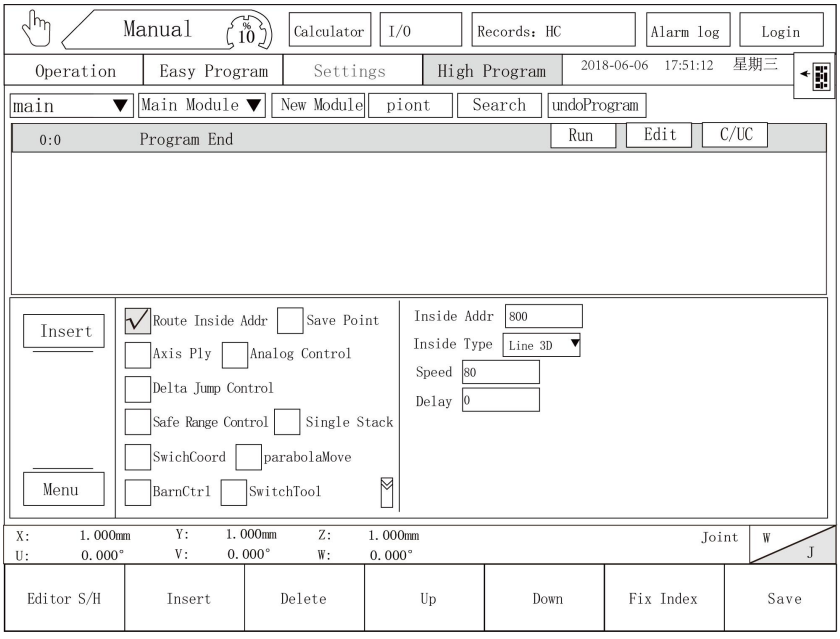
4.3.6.20 Extend

Click ●●● Extent the button to enter the following interface:



4.3.6.20.1 Path Reference Address

The path reference address function mainly refers to the path by referring to the address. To use this function, you need to use the data instruction function at the same time. First define the address and assign a value to the address.



Reference address: 800-890 addresses can be referenced.

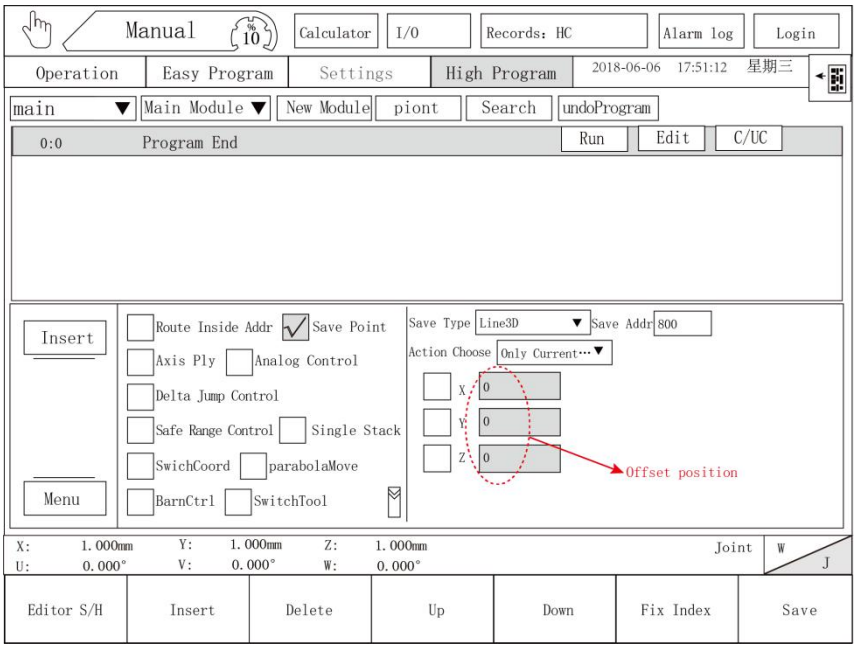
Reference type: Three path types can be referenced: straight line 3D, pose straight line and free path.

Straight line 3D: Only use the XYZ axis to go straight line. If the reference address is 800, the content in the 800 address is assigned to the X axis by default, The content in 801 address is assigned to the Y axis, and the content in 802 address is assigned to the Z axis.

Pose straight line: Use the six axes of XYZUVW to walk the pose straight line. If the reference address is 800, the content in the 800 address is assigned to the X axis, the content in the 801 address is assigned to the Y axis, the content in the 802 address is assigned to the Z axis, the content in the 803 address is assigned to the U axis, the content in the 804 address is assigned to the V axis, and the content in the 805 address is assigned to the w axis by default.

Free path: Use the six axes of XYZUVW to walk a free path. If the reference address is 800, the content in 800 address is assigned to X axis, the content in 801 address is assigned to Y axis, the content in 802 address is assigned to Z axis, the content in 803 address is assigned to u axis, the content in 804 address is assigned to V axis, and the content in 805 address is assigned to w axis by default.

4.3.6.20.2 Point Storage



The point storage function is mainly to store and remember the current position point. Even if the manipulator suddenly presses the stop key to pause and then start the operation, it can still remember the current position point and continue to operate normally.

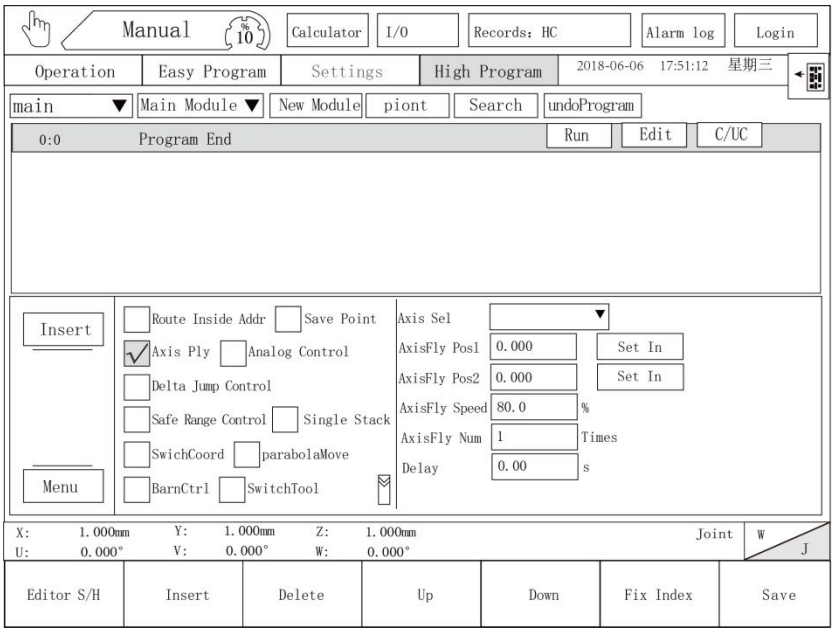
Storage type: Mainly including world coordinates XYZ, world coordinates XYZUVW, joint coordinates and reference points, where world coordinates XYZ indicates that only the world coordinates of XYZ axis are stored; World coordinates XYZUVW represents the world coordinates of the stored XYZUVW; Joint coordinates represent the joint coordinates of XYZUVW stored; The reference point represents the coordinates where the reference point is stored.

Storage address: 800-890 addresses can be stored.

Action selection: There are two types: storing current coordinates and storing current coordinates plus offset coordinates. The storage of current coordinates is only the storage of current coordinates, while the storage of current coordinates plus offset coordinates can set the offset position of each axis in addition to the storage of current coordinates.

4.3.6.20.3 Single Axis Reciprocating

Check √ single axis reciprocating option, and the rear axle can perform single axis reciprocating motion.



Axis selection: Drop down the triangular arrow to select the reciprocating axis.

Start position: Manually move the axis to the start point position, and then click the "set in" button to set the position of the current axis into the position editing box, or manually edit the start point position.

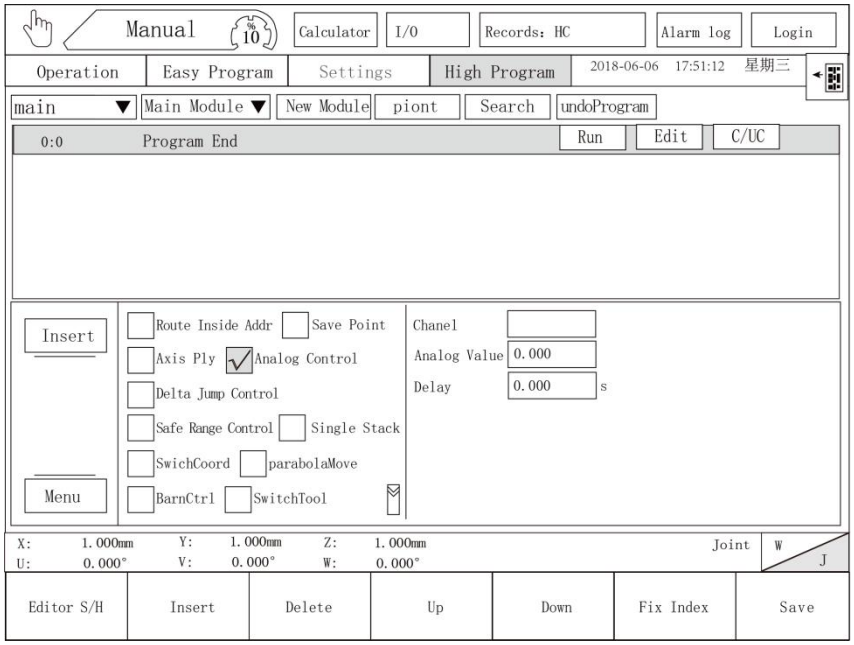
End position: Manually move the axis to the end position, and then click the "set" button to set the position of the current axis into the position editing box, or manually edit the end position.

Speed: Set the speed at which the shaft reciprocates.

Times: Set the number of times the shaft reciprocates.

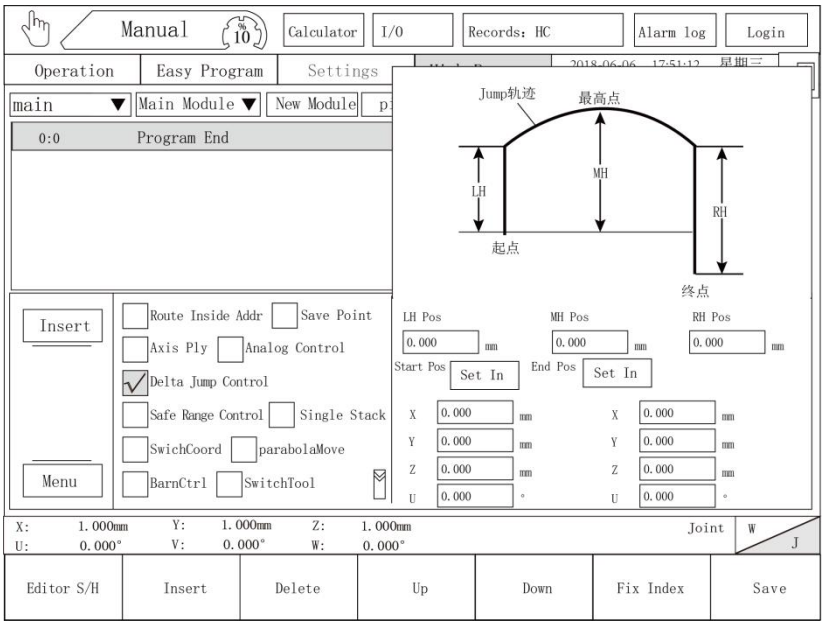
Delay: Set the delay time when the shaft moves back and forth.

4.3.6.20.4 Analog Control



Channel: The system provides 6 channels for users.
Analog quantity: It can be set as an integer of 1-6
Delay: Set the delay time before the analog command.

4.3.6.20.5 Delta Path

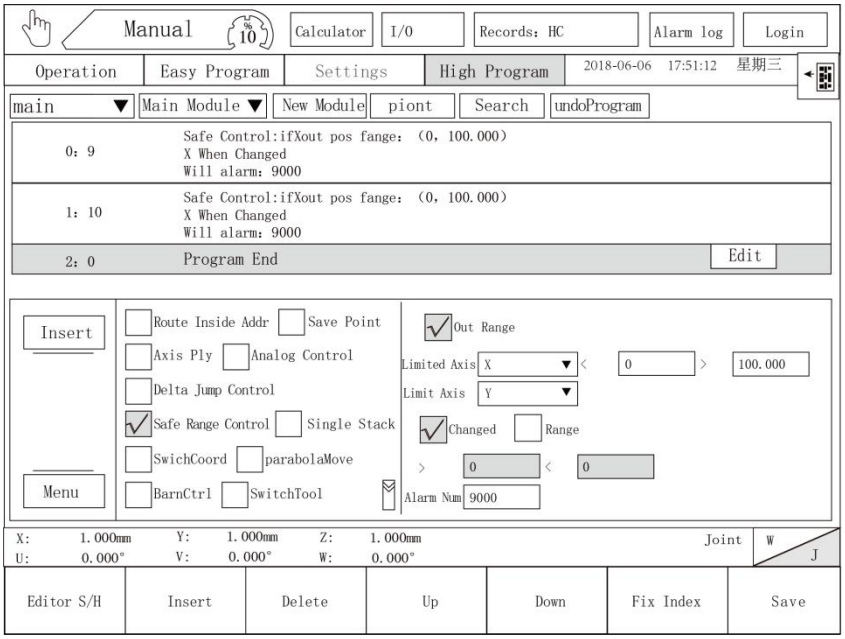


Starting point height (LH): Set the height of starting point height. Refer to the schematic diagram of the interface.
Mid point height (MH): Set the height of the highest point. Refer to the schematic diagram of the interface.
End point height (RH): Set the height of the end point. Refer to the schematic diagram of the interface.

Set end point: Move the manipulator to set the end point in the manual state, and click the "set in" button to set the current coordinate into the position editing box.

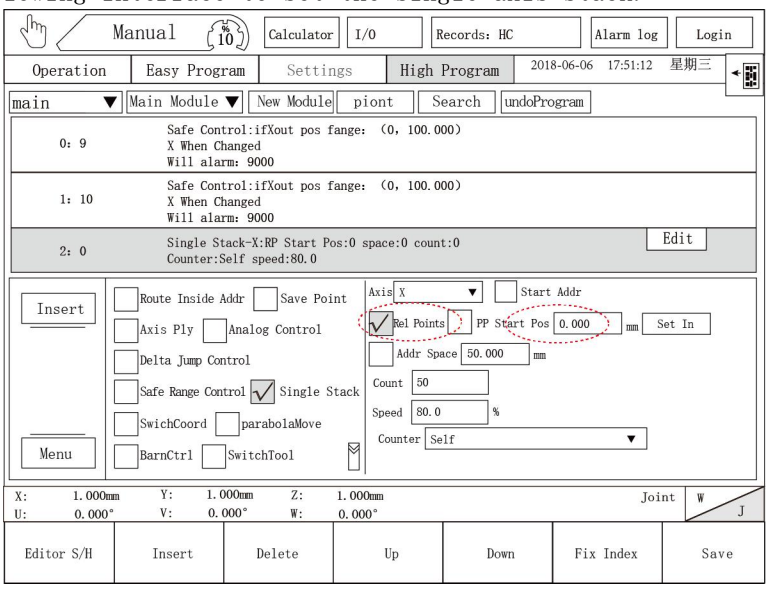
4.3.6.20.6 Safety Zone

Enter the following interface to set the safety zone. The safety zone needs to be taught in the subroutine, otherwise it cannot be detected in real time.



4.3.6.20.7 Single Axis Stack

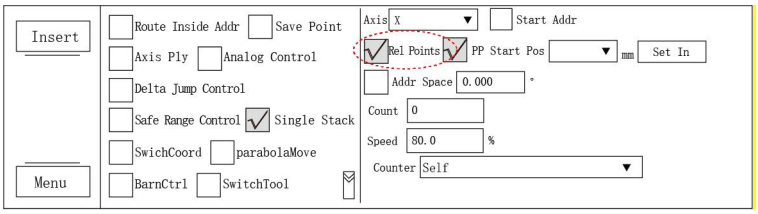
Enter the following interface to set the single axis stack.



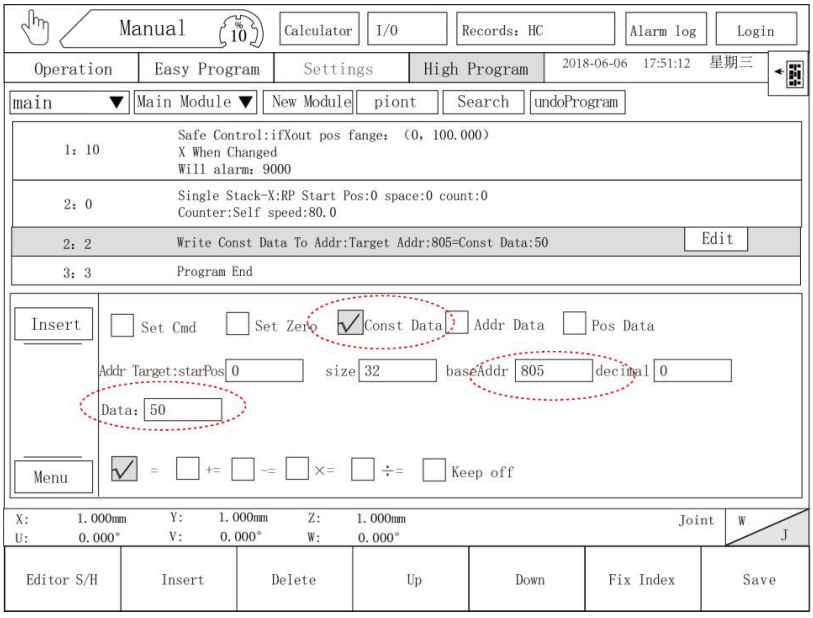
Step 1: √ Select single axis stacking and select the axis for stacking.
Step 2: Edit the starting point position. There are two ways to edit the starting point coordinate position.

Method 1: Manually move the axis to the starting point position, and then click the "set" button to set the current coordinate value into the starting point position editing box, or manually edit the input coordinate value.

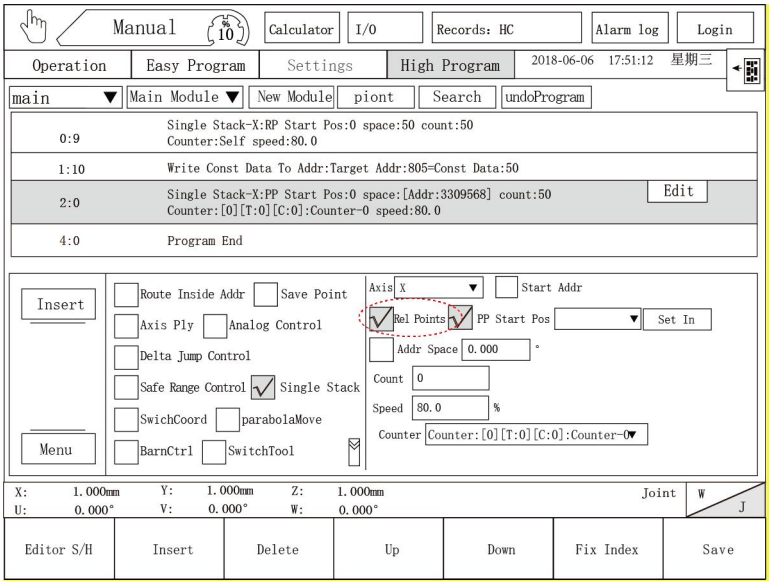
Method 2: √ After selecting a reference point, the screen will become as shown in the figure below, and the option of starting point will become that a reference point can be selected as the starting point.



Step 3: Set stack space, there are two ways to set stack space.
Method 1: Directly edit the value in the space edit box.
Method 2: Use address variables to set space.



Enter the address variable in the address spacing (801, this value is not the actual spacing).

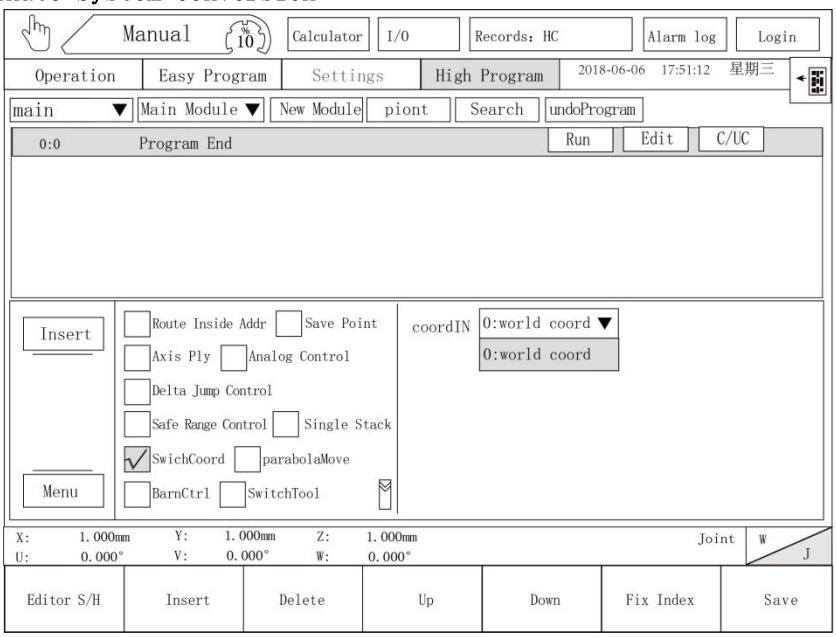


Step 4: Set the number of stack counts.

Step 5: Set the stacking speed.

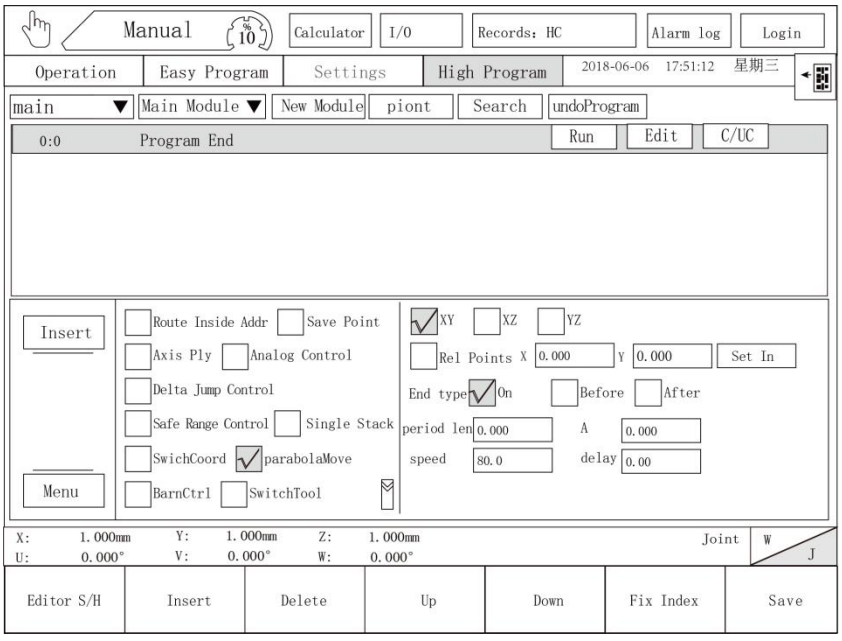
Step 6: Select a counter. You can select yourself or customize one in the counter.

4.3.6.20.8 Coordinate System Conversion



Coordinate system ID: The entered ID number is related to the ID number of the new coordinate system in the bench calibration. If a new coordinate system is used, the coordinate system ID number must be inserted at the front of the programming.

4.3.6.20.9 Sinusoidal Motion



As the name suggests, the axis motion moves in the form of a sine wave.

1. **Select a plane:** XY, XZ, or YZ plane,

2. **Select start point:** You can directly set or enter the position, or use the reference point.

3. **End method:**

① **Parallel:** When the sinusoidal motion is not a multiple of half a cycle, the manipulator will stop directly above or below the end point.

② **Advance:** When the sine of motion is not a multiple of half a cycle, the manipulator will stop at half a cycle before the end point.

③ **Delay:** When the sine of motion is not a multiple of half a cycle, the manipulator will stop at half a cycle after the end point.

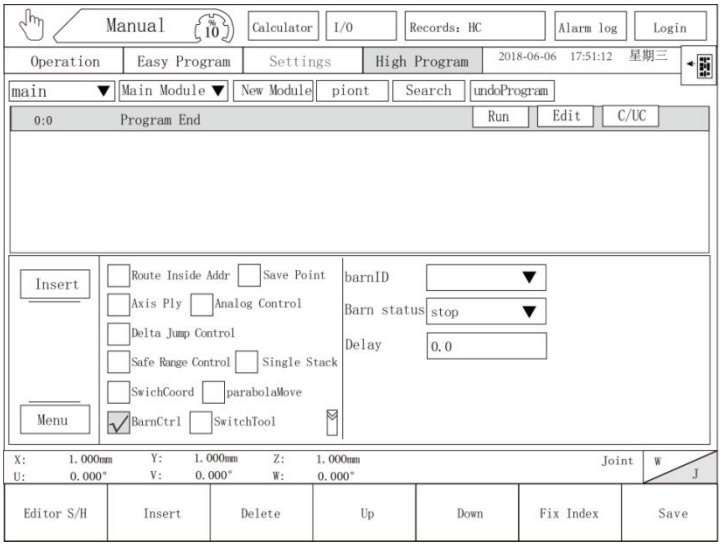
④ **Period length:** The length of a sinusoidal period.

⑤ **Amplitude:** The maximum height of the sine.

⑥ **Speed:** The speed when walking automatically.

⑦ **Delay:** Set the delay time of sinusoidal motion.

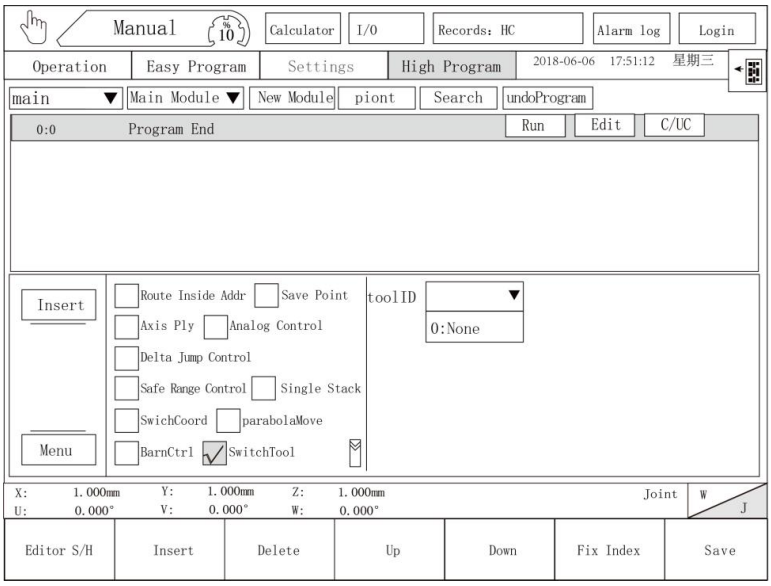
4.3.6.20.10 Silo Control



It is necessary to set the bin definition in the IO setting, and then control the rise, fall or stop of the bin here.

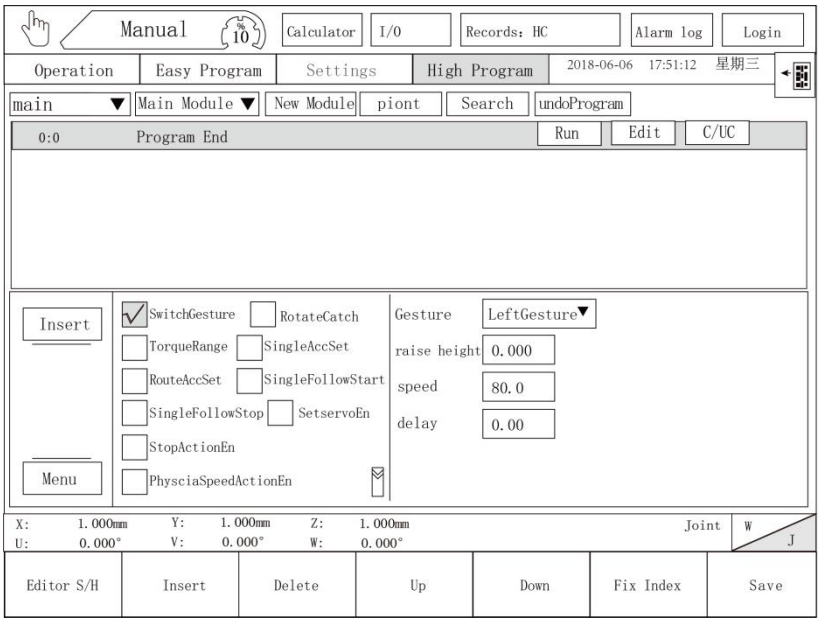
4.3.6.20.11 Switch Tool

Enter the following interface to switch and set tools.



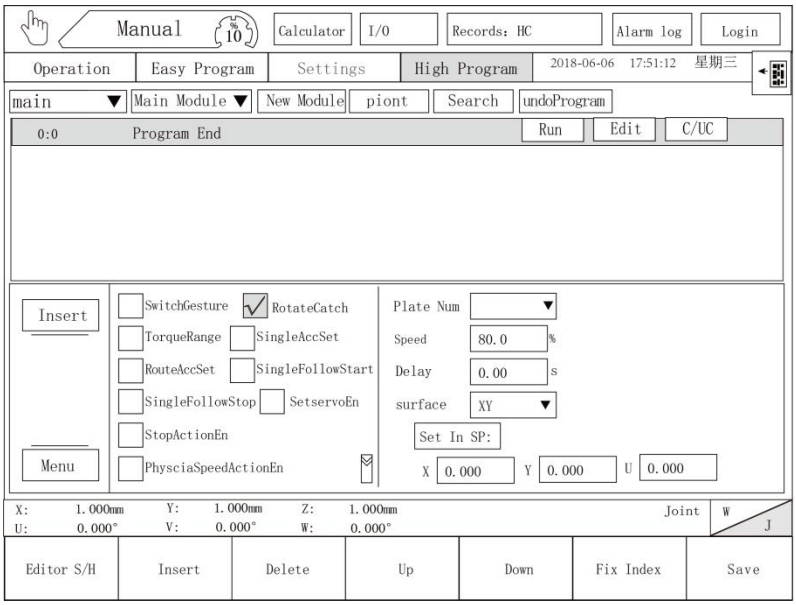
4.3.6.20.12 Gesture Switch

Enter the following interface to gesture switching settings.



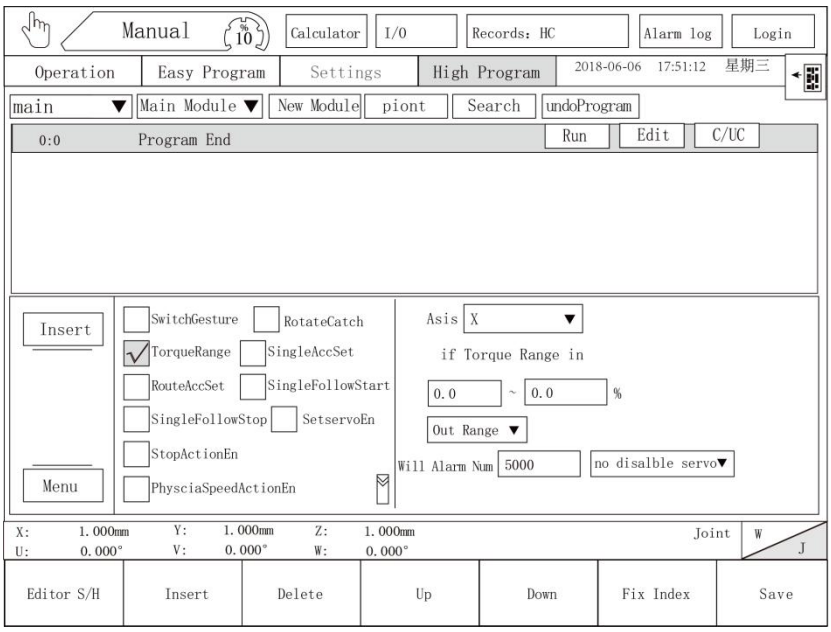
4.3.6.20.13 Rotary Grab

Enter the following interface to set the rotary grab.



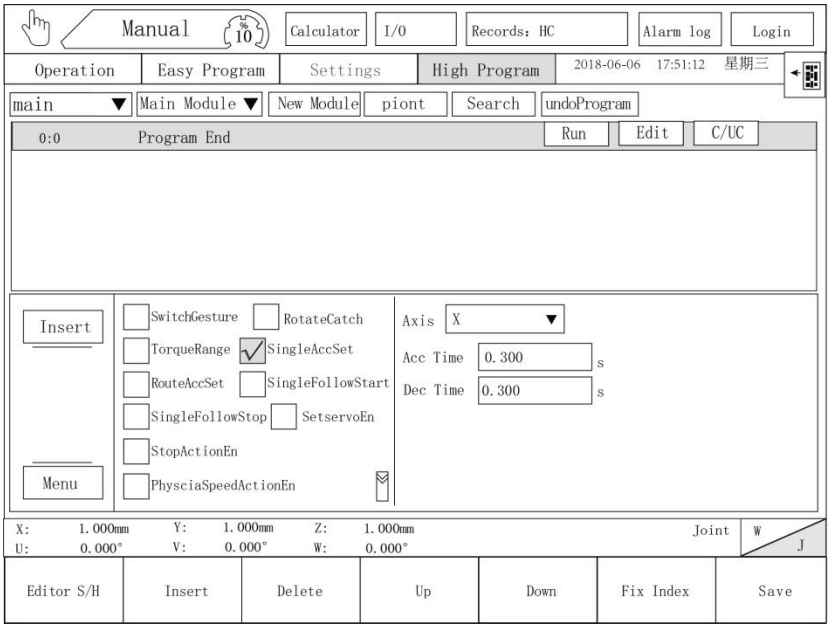
4.3.6.20.14 Safety Torque

Enter the following interface to set the safe torque. When it is not within the safe torque range, alarm and disconnect the enable switch.



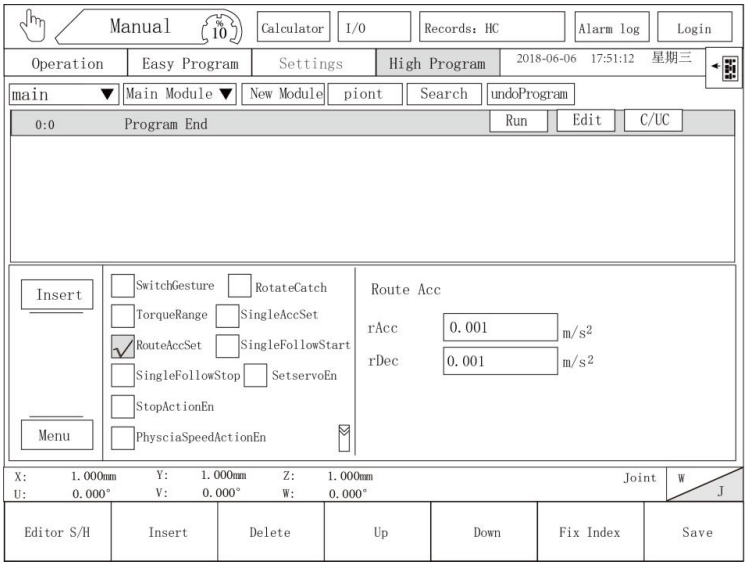
4.3.6.20.15 Shaft Acceleration and Deceleration Setting

Enter the following interface to set the acceleration and deceleration time of the shaft.



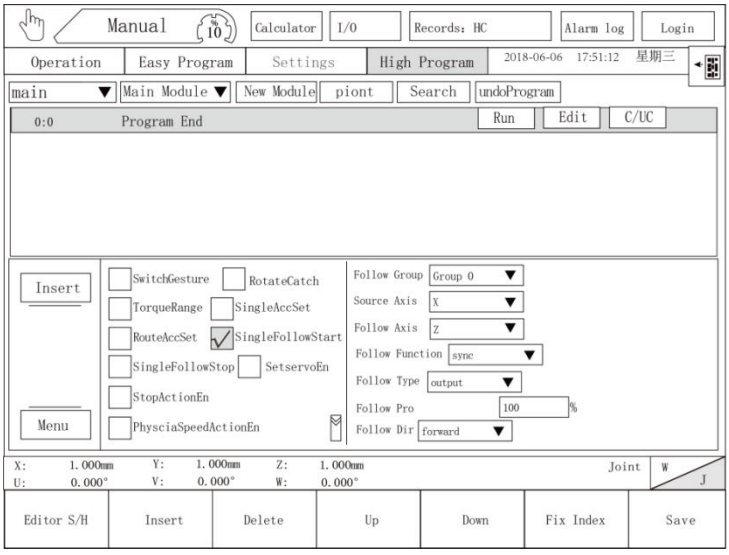
4.3.6.20.16 Path Acceleration and Deceleration Setting

Enter the following interface to set the acceleration and deceleration of the path.



4.3.6.20.17 Single Axis Follow Start

Enter the following interface to set the single axis follow start function.



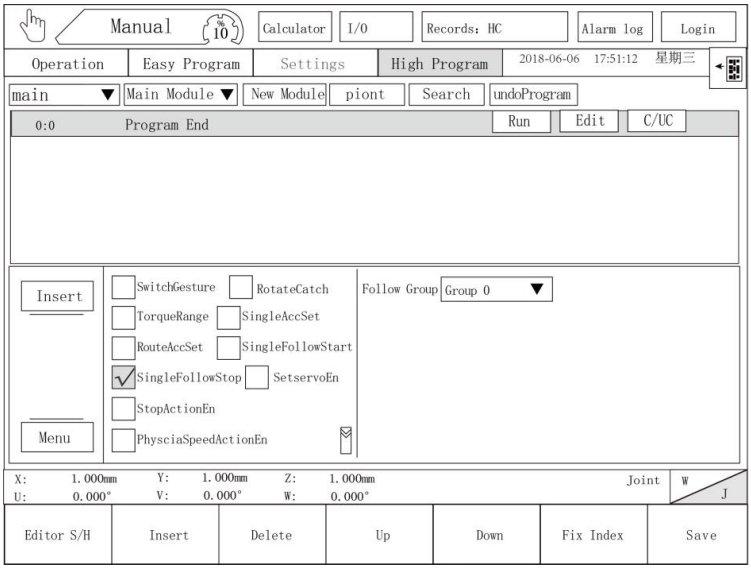
The single axis follow function allows one axis to follow another axis in a forward or reverse direction.

For example, to teach the Z axis to follow the X axis to move forward from 0mm to 100mm, set the parameters of single axis follow start as shown in the above figure and click insert into the main program. The teaching action is as follows:

0: 1	X:118.000 Speed: 80.0 Delay: 0.00
1: 2	Y:100.000 Speed: 80.0 Delay: 0.00
2: 3	The 0 groupSingle Follow Start:sourceID:X,followID:Y, followfunc:sync,followftype:output,followpro:100%,followdir:forward
3: 4	X:100.000 Speed: 80.0 Delay: 0.00
4: 5	Y:0.000 Speed: 80.0 Delay: 0.00
5: 6	The 0 groupSingle Follow stop
6: 0	Program End

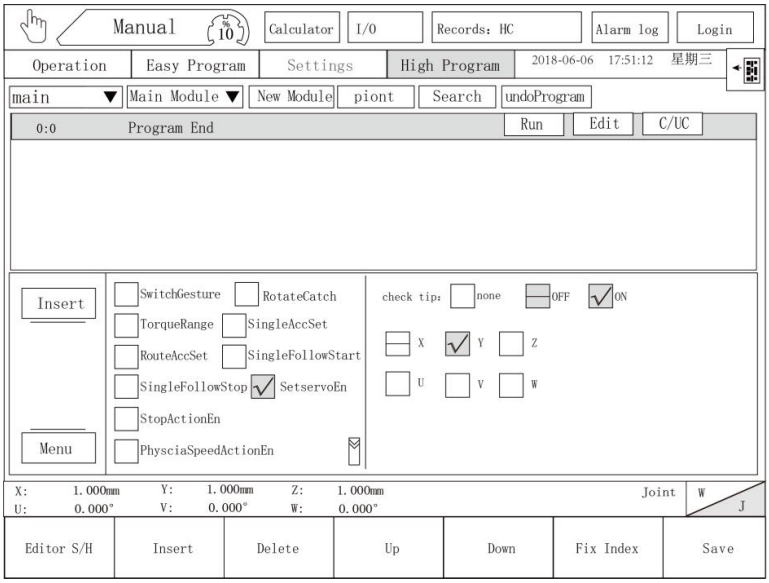
4.3.6.20.18 Single Axis Follow Stop

Enter the following interface to set the single axis follow stop function. The single axis follow stop function is used to stop one axis from following another axis for forward or reverse movement.



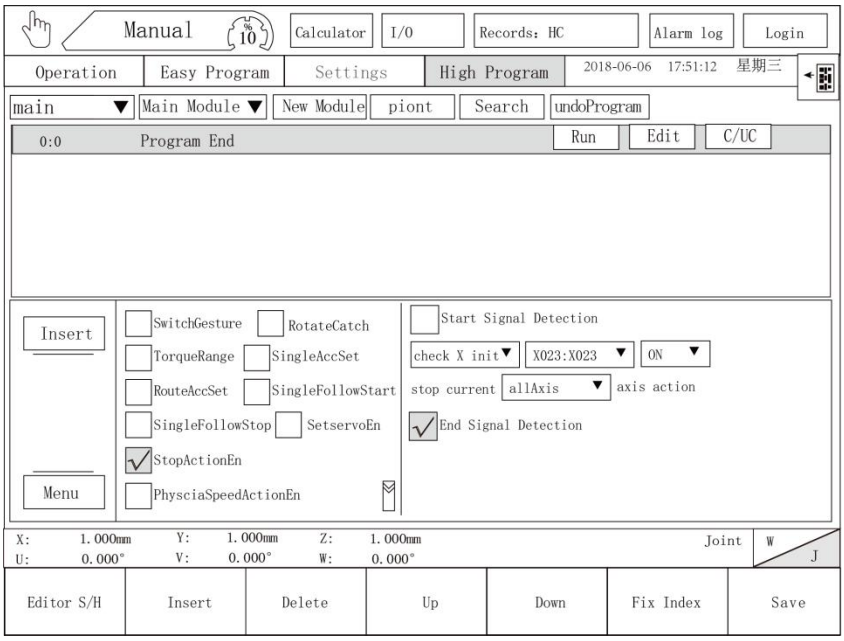
4.3.6.20.19 Enable Setting

Enter the following interface to set the enable. The enable setting function can be used to turn on or off the servo enable of the shaft.



When the program runs to "set servo enable: X off; Y on;" action, the servo enable of X axis is off, and the servo enable of Y axis is on. Later, when it runs to X axis action, it will alarm that the servo is not enabled.

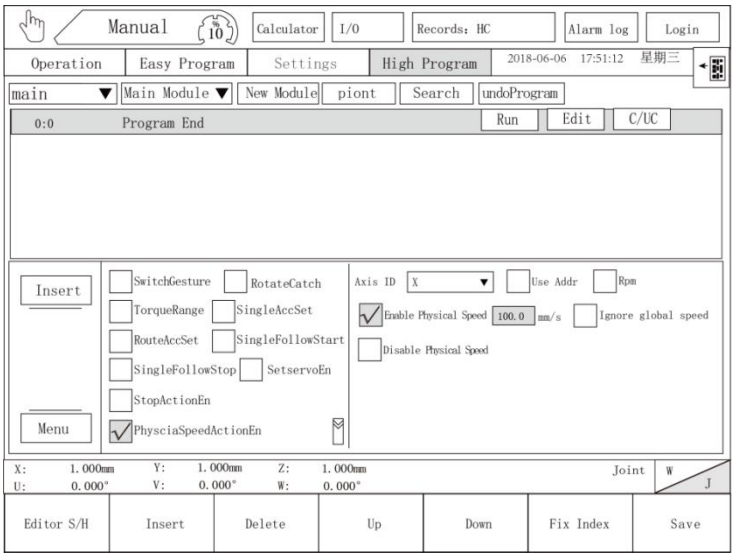
4.3.6.20.20 Stop Action Setting



As shown in the figure, it is necessary to insert two instructions of start signal detection and stop signal detection. When the action instruction between start detection and stop detection is executed, once the detection signal conditions are met, all the action instructions skip and directly execute the next one.

***Note:** The stop action instruction cannot be nested, and the start and end +must be used at the same time.

4.3.5.20.21 Physical Velocity

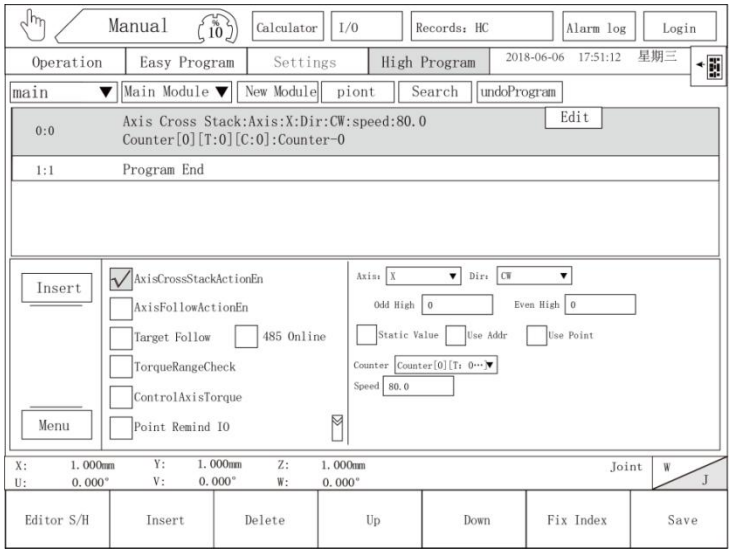


After inserting and using the physical speed, the axis action instruction will run according to the physical speed * global speed. If you check ignore global speed, the axis action instruction will run directly according to the physical speed, and the global speed cannot affect the instruction using the physical speed.

*Note: If the physical speed is too large and exceeds the maximum speed of the motor, it will run at the maximum speed of the motor. For the modification of the maximum speed, please refer to "5.3.2 motor parameters".

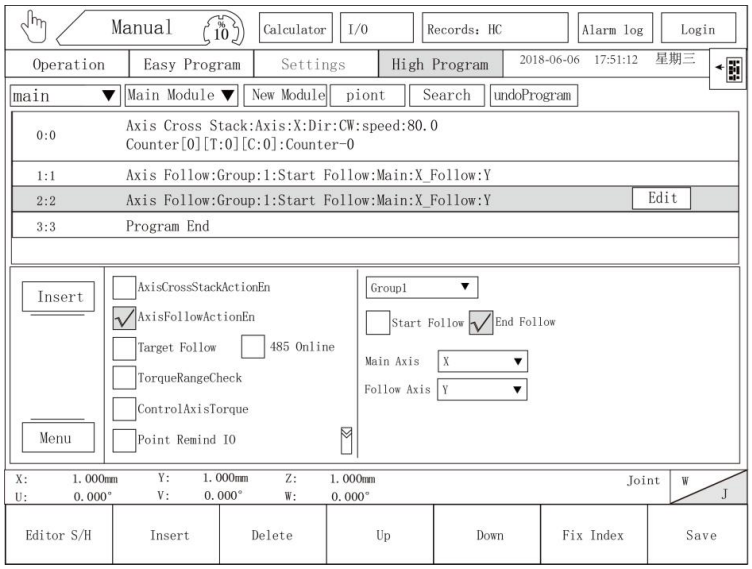
4.3.6.20.22 Single Axis Alternate Stacking

Enter the following interface to set the single axis alternate stack function, which is used in scenes with inconsistent heights of odd and even layers.



4.3.6.20 .23 Single Axis Follow

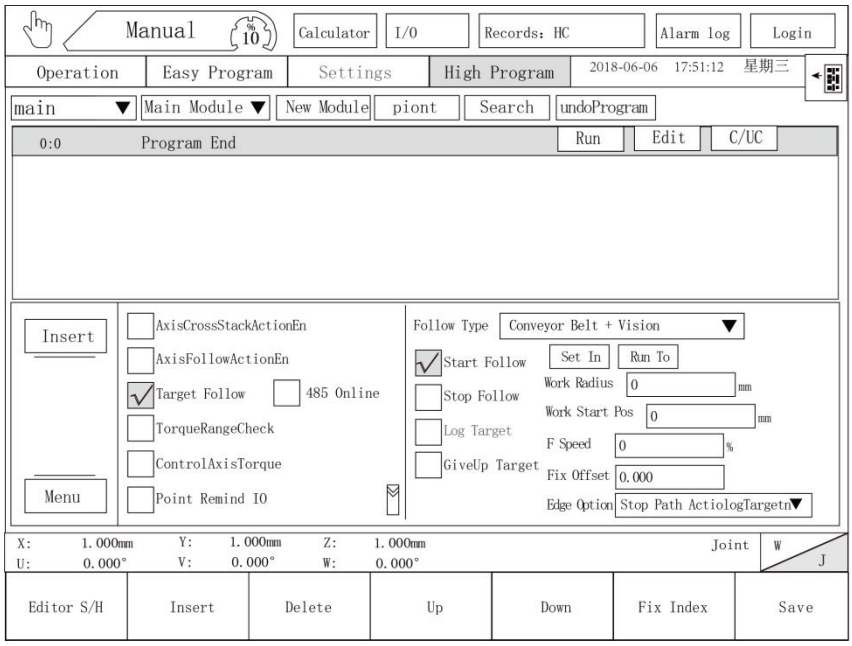
Enter the follow interface to set the single axis follow function. After starting the follow, the two axis



will move at the same linear speed until the following is completed.

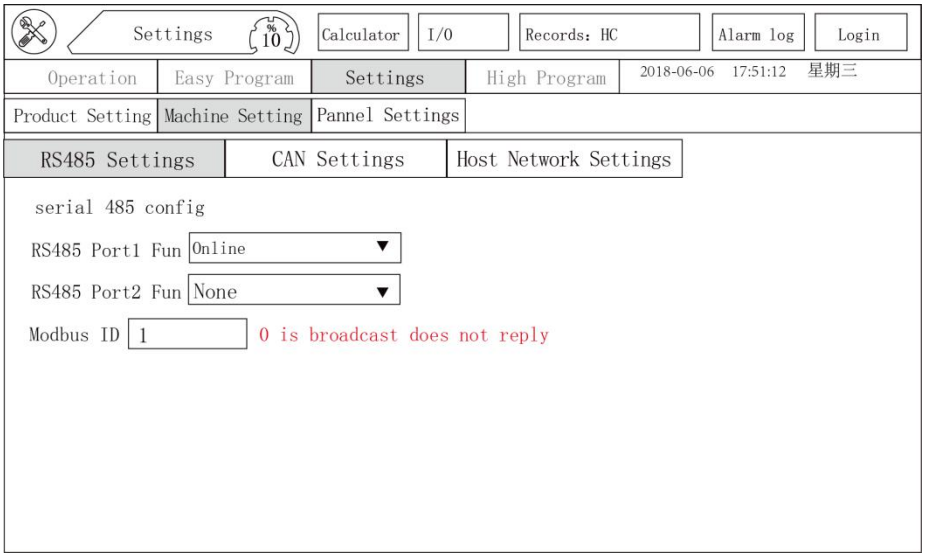
4.3.6.20.24 Target Follow

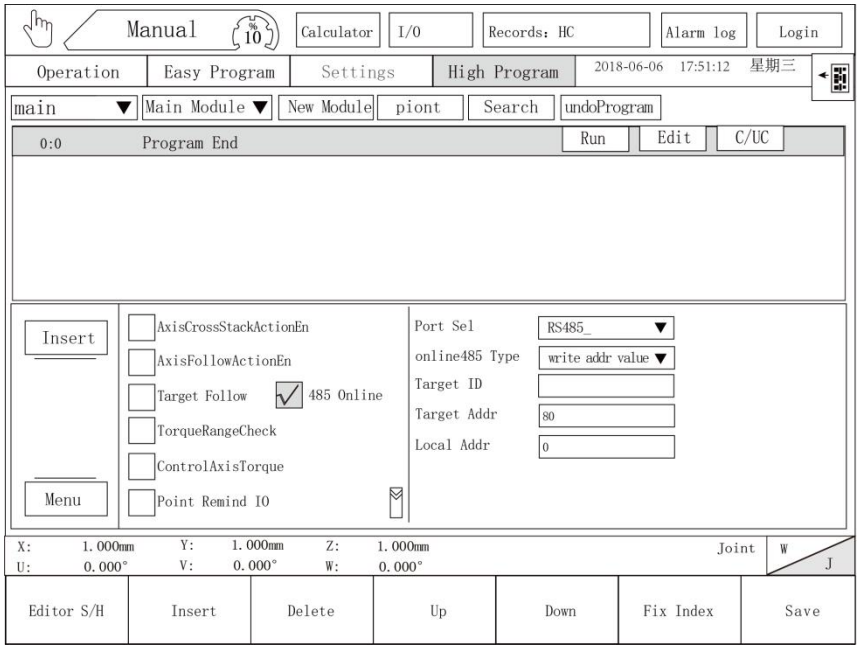
Enter the follow interface to set the target follow function. Please refer to "visual follow description" for details.



4.3.6.20.25 485 Online

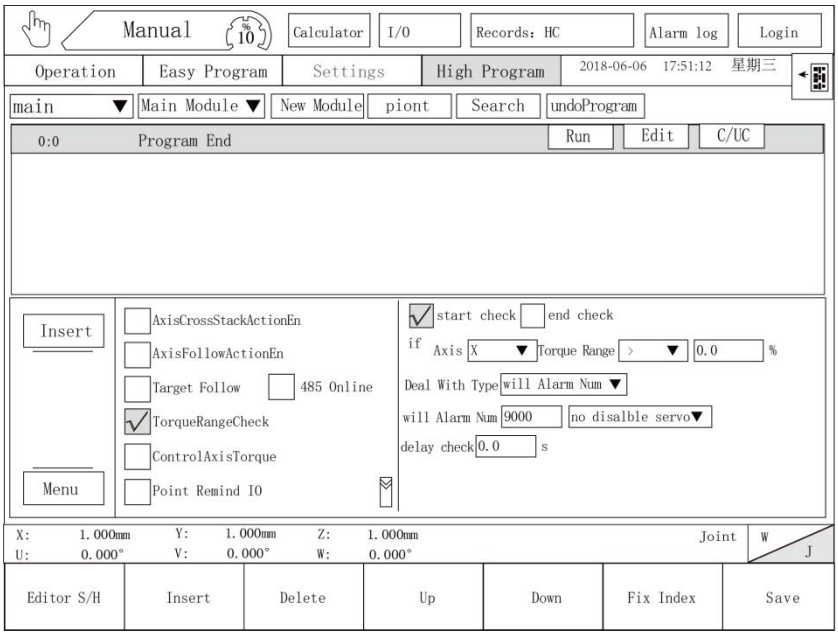
Enter the following interface to set the 485 online function. Select the 485 function in the communication configuration: online, and set the follow settings.



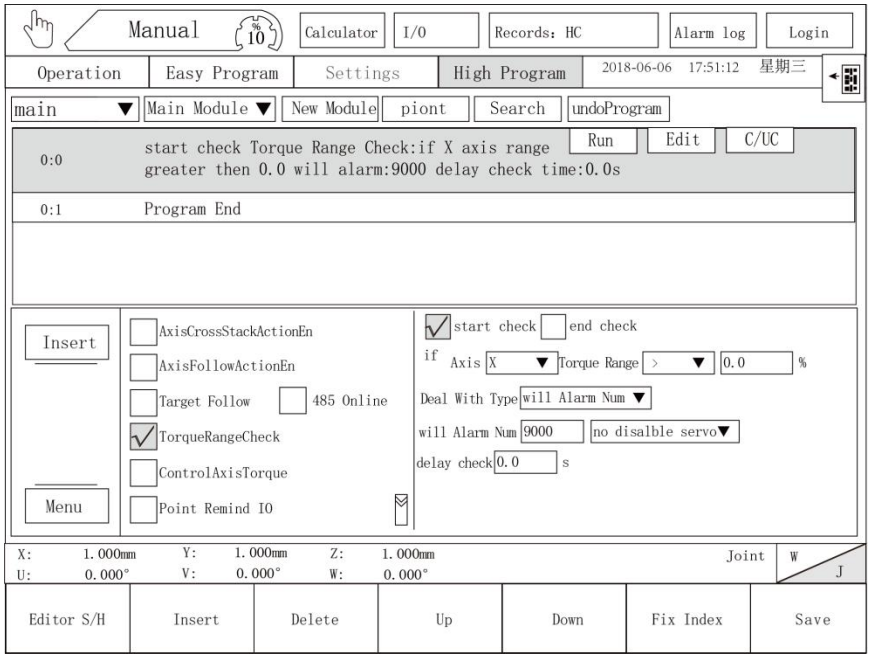


4.3.6.20.26 Safety Torque Detection

Enter the following interface to set the safe torque detection function, detect the current torque value of the selected shaft, and select the next command after the conditions are met.

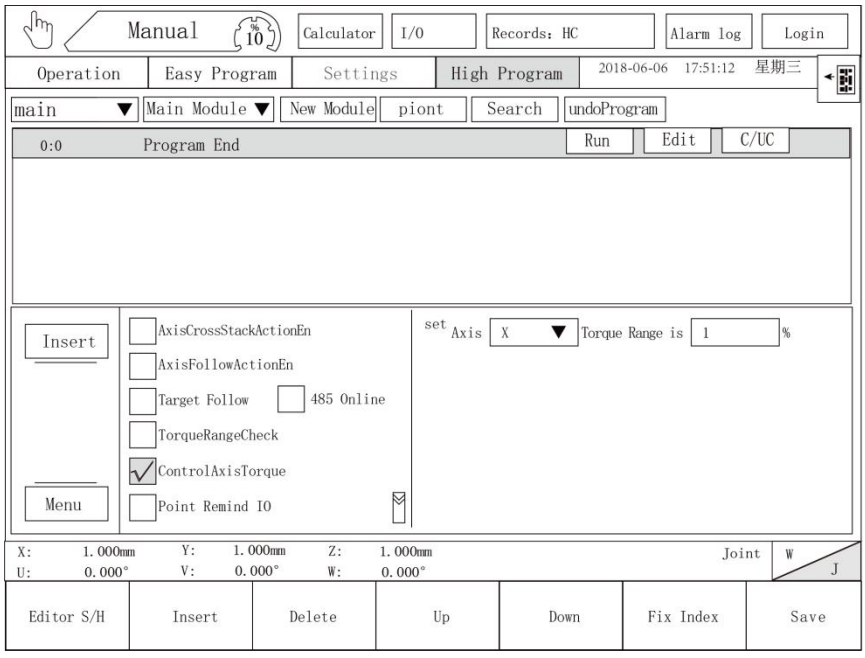


Example: If the X axis torque is greater than 3 between the start and end of the program, the alarm number is 9000; The procedure is shown in the figure below:

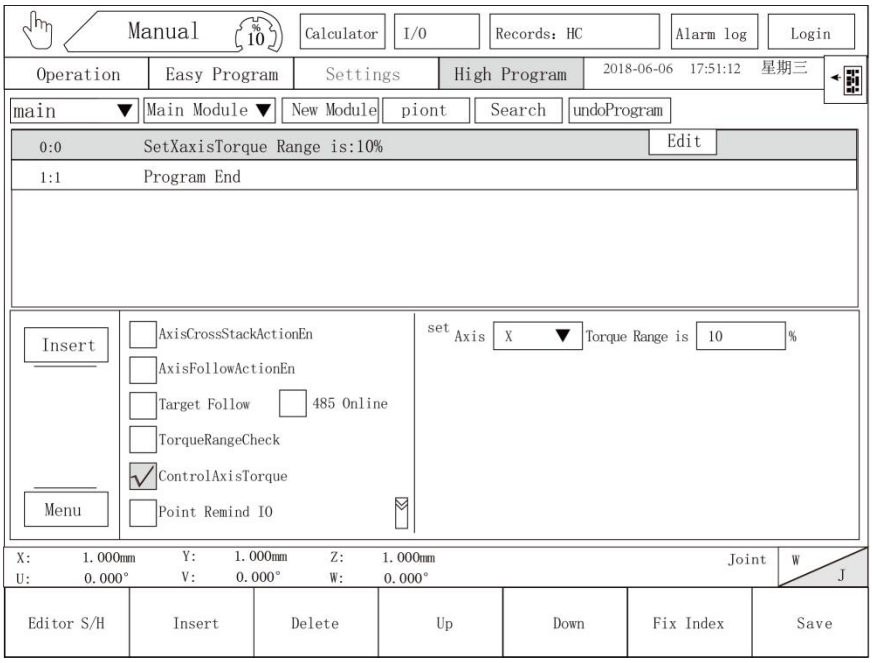


4.3.6.20.27 Control Shaft Torque

Enter the following interface to set the torque function of the control shaft and set the torque value of the selected shaft, unit:%. When the program runs to the current line, the torque percentage of the selected shaft is greater than the set torque percentage, and the machine structure is stuck. If the maximum torque is exceeded, an overload alarm will be given.

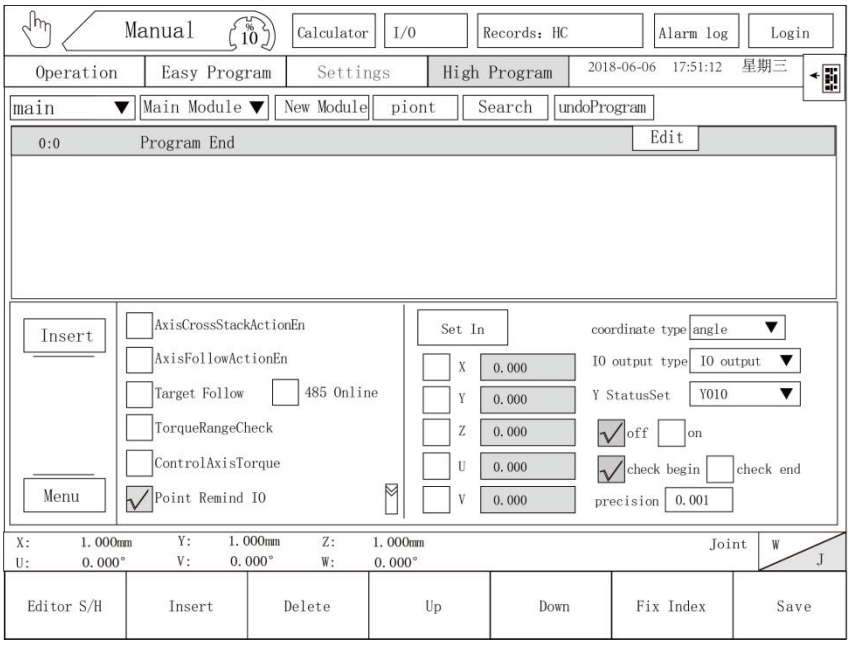


Example: If the rated torque of 400W motor is 1.27n/m, the current torque value of x axis is greater than or equal to 0.127n/m, and the structure is stuck; The procedure is shown in the figure below:

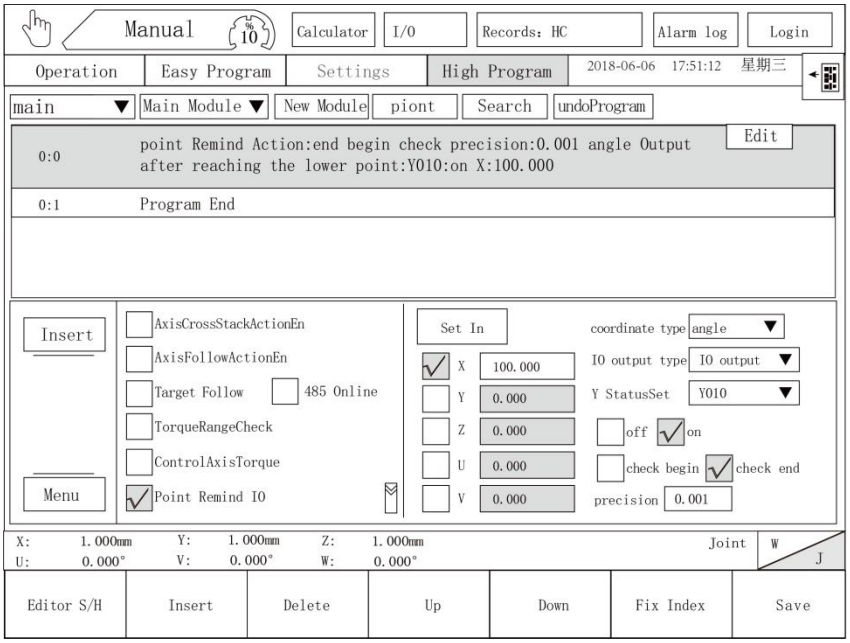


4.3.6.20.28 Tips for Point IO

Enter the following interface to set the point-to-point IO prompt function, and output the corresponding signal after the selected axis reaches the set target value.



Example: After the machine reaches the set coordinates (Note: the precision can be set), the output signal is generally used to output the signal without stopping the current action during automatic operation; The procedure is shown in the figure below:



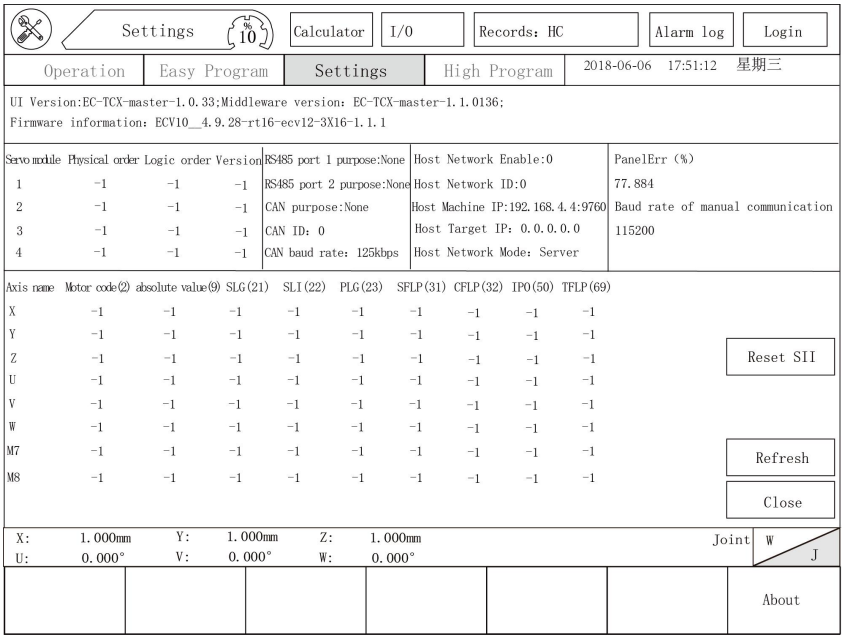
Chapter 5 Stop State

Turn the third gear knob to the stop gear to display the standby page, click "parameter setting" to enter the setting page, and click "diagnostic information" in the lower right corner to enter the diagnostic information page.

5.1 Diagnostic Information

Under "stop status", click "diagnostic information" in the lower right corner to display the following page.

The page contents include: Manual control version number, host version number, model, number of axes used, SII configuration, 485 port, CAN port, host network port, servo parameters and other information.

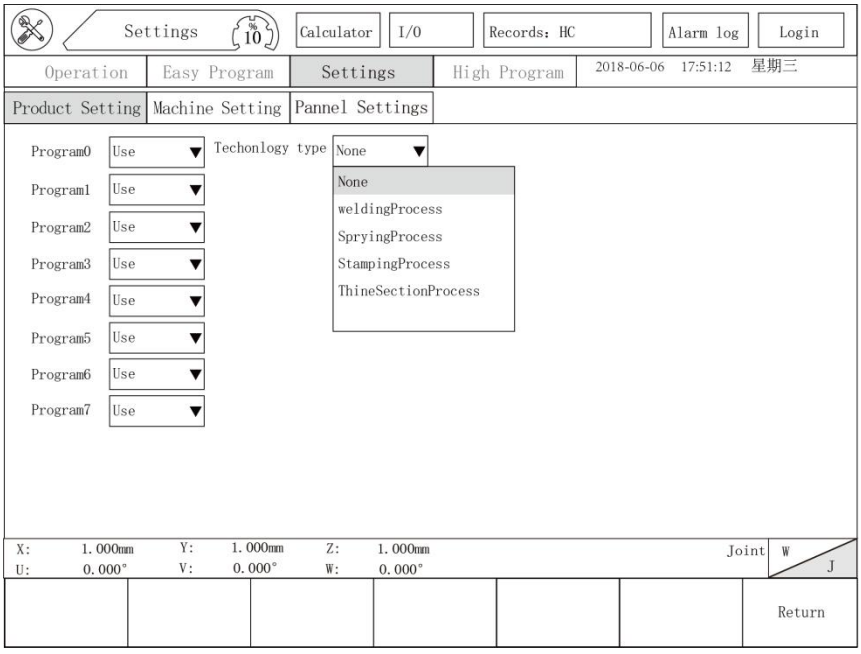


5.2 Product Setting

5.2.1 Product Settings

On the product setting page, you can set the use status of the subroutine. If you choose not to use it, the corresponding subroutine will not run in the automatic state.

At present, the "process type" lathe system only supports the chip taking process. After selection, it can be used in the "process" command in the "action menu". Please refer to "4.3.6.15 process".



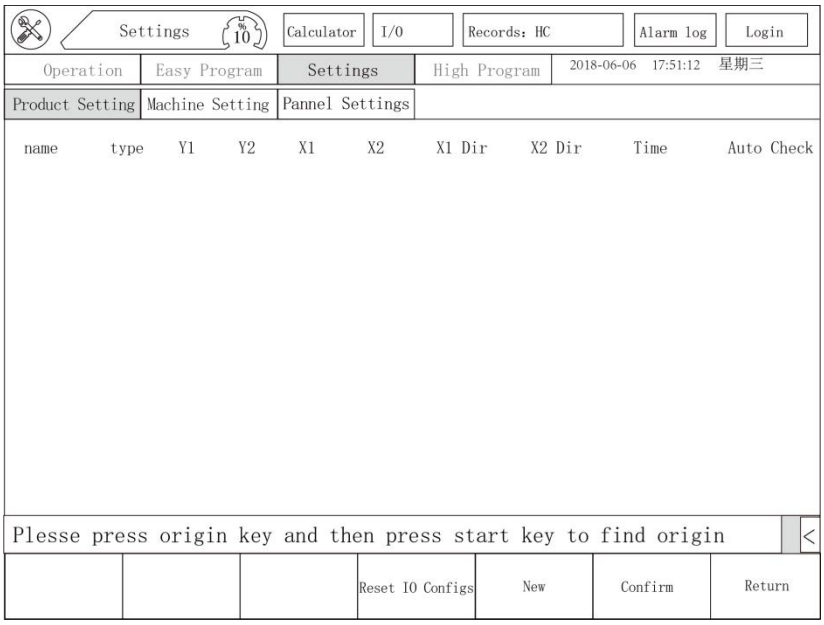
5.2.2 Valve Setting

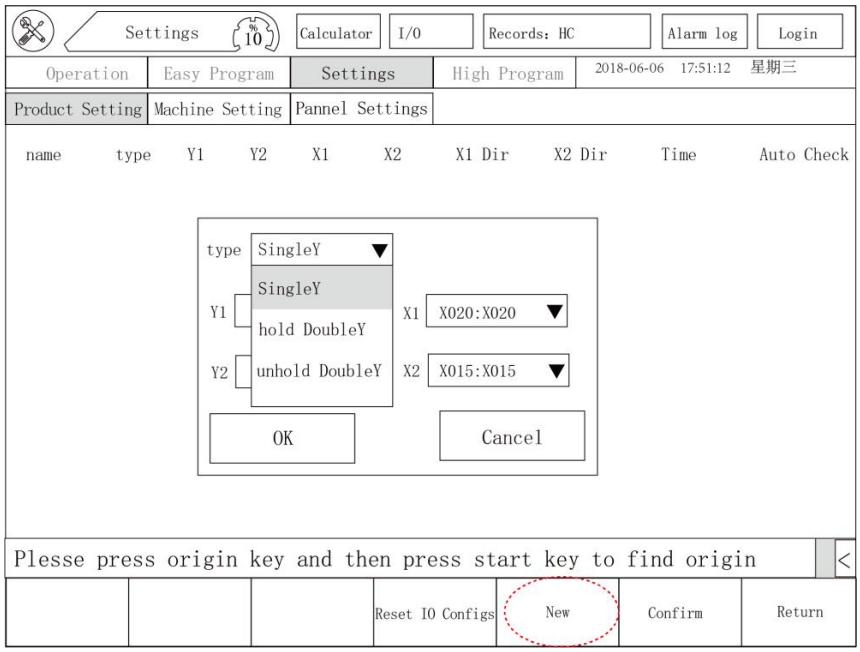
On this page, you can create new single head valve, holding double head valve and non holding double head valve, modify valve parameter settings and reset valve definitions. As shown in the figure.

New: Click the new button, select single head valve, non holding double head valve or holding double head valve in the pop-up page, and select the corresponding output input point. Click OK to complete the creation. It will take effect after restarting.

Confirm modification: After modifying the input IO direction, automatic detection and timeout time, click OK to make the modification effective, otherwise it will not take effect.

Reset IO valve definitions: All valve definitions can be deleted.

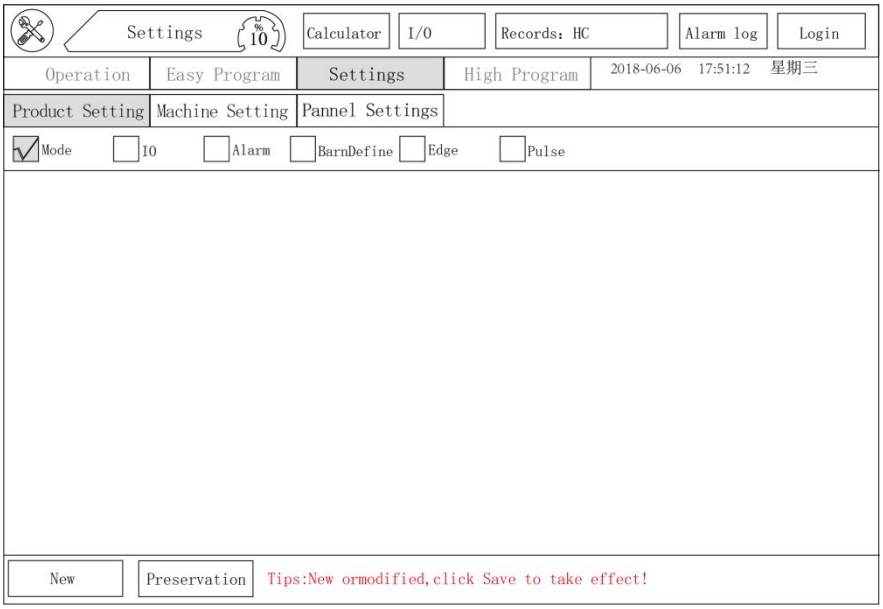

Settings
Calculator
I/O
Records: HC
Alarm log
Login
Operation
Easy Program
Settings
High Program
2018-06-06 17:51:12 星期三
Product Setting
Machine Setting
Pannel Settings
name type Y1 Y2 X1 X2 X1 Dir X2 Dir Time Auto Check
Plesse press origin key and then press start key to find origin
Reset IO Configs
New
Confirm
Return


Settings
Calculator
I/O
Records: HC
Alarm log
Login
Operation
Easy Program
Settings
High Program
2018-06-06 17:51:12 星期三
Product Setting
Machine Setting
Pannel Settings
name type Y1 Y2 X1 X2 X1 Dir X2 Dir Time Auto Check
type SingleY
SingleY
hold DoubleY
unhold DoubleY
Y1
Y2
X1 X020:X020
X2 X015:X015
OK
Cancel
Plesse press origin key and then press start key to find origin
Reset IO Configs
New
Confirm
Return

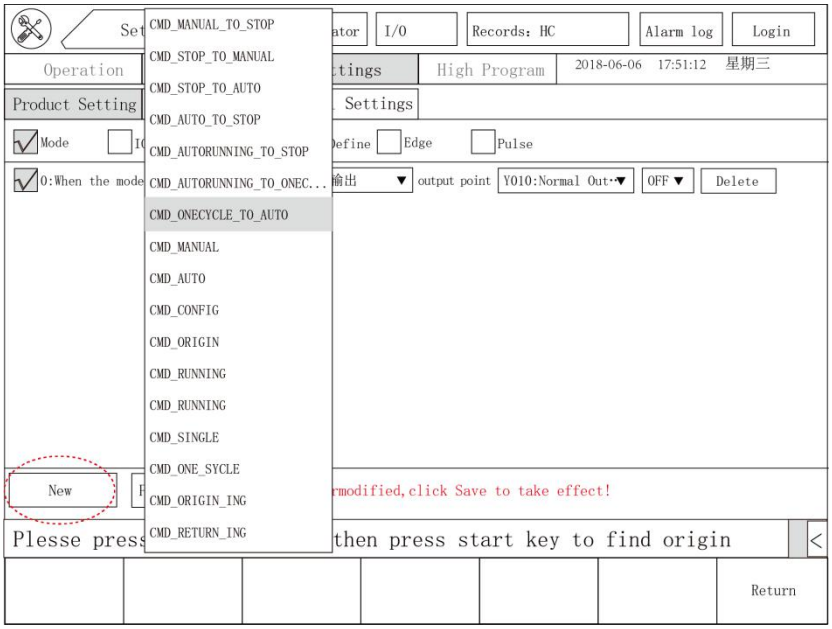
5.2.3 IO Setting

Click 

the button to enter the interface shown below, where you can set IO.



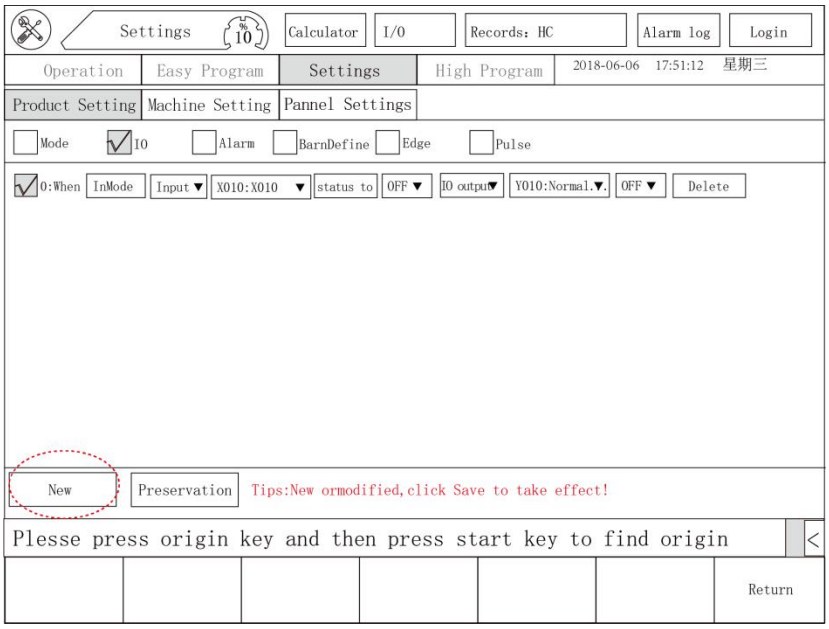
1. The mode state function is mainly used to automatically control the on-off state of the signal after switching to a certain mode.



First click the new button and check the newly built, and then select the corresponding status in "when mode is switched to", such as manual, automatic, automatic transfer to stop, etc. Then select IO output or m-value output in "output", and then select the corresponding point in "output point".

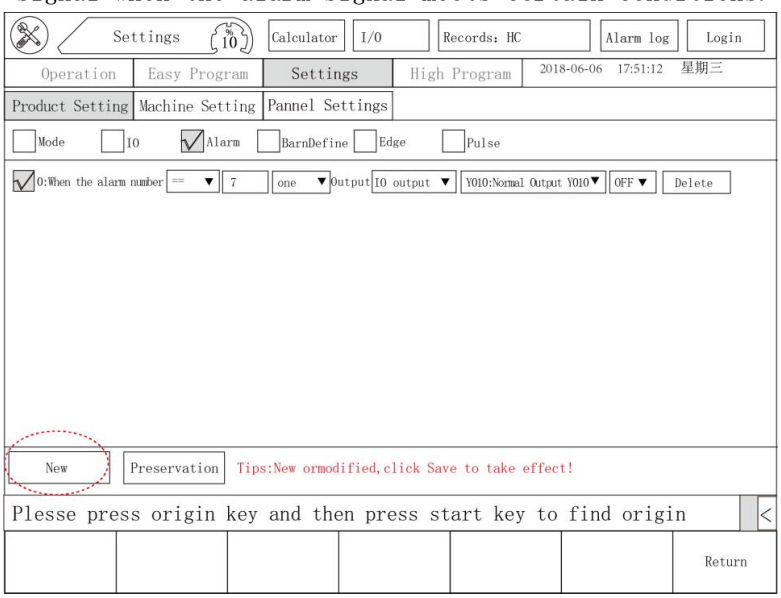
*Note: You can create multiple and only click save can it take effect. You can remove them when ☑ not in use or click delete later(you also need to click save).

2. The IO status function is mainly used to automatically turn on and off another output signal by controlling the on-off status of one input and output signal under some modes.

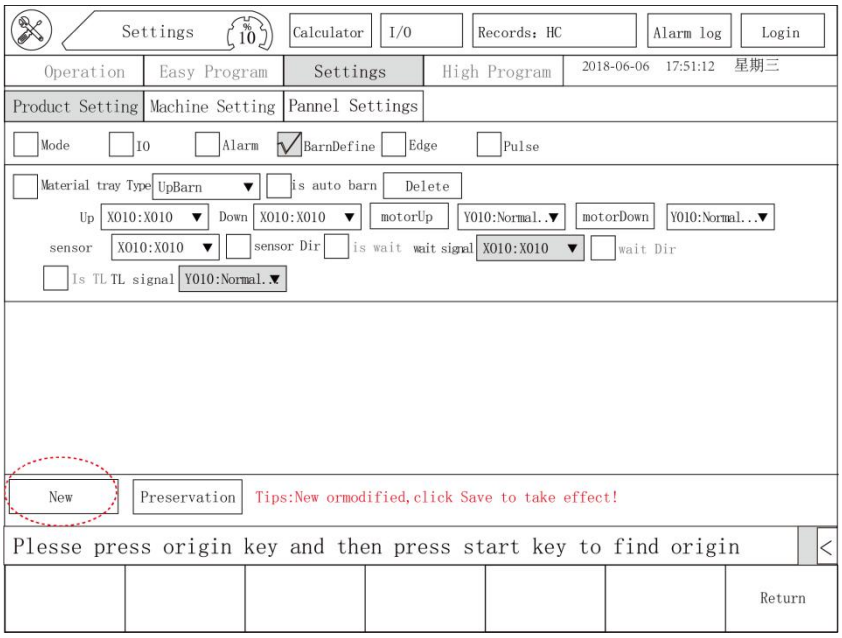


Click the new button, check the newly built, and then click "in mode" to select the corresponding status, such as: manual mode, stop mode, automatic mode, etc. Then select the input or output point on or off to make an output point on or off.

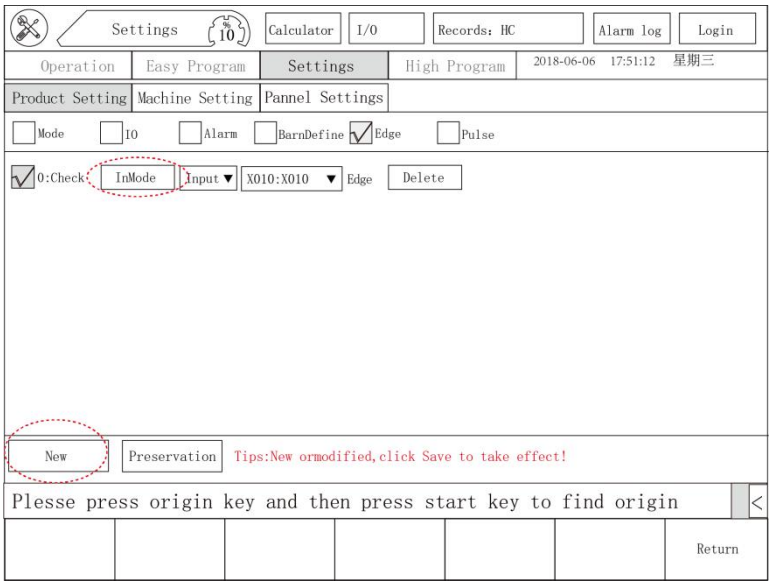
3. The alarm operation function is mainly used to control the on-off state of an output signal when the alarm signal meets certain conditions.



4. The bin definition function is used to define the bin.



5. The edge signal function is mainly used to check whether there is a rising edge or falling edge signal in some modes, that is, the edge signal can not be detected only in automatic operation, but also in non automatic state.

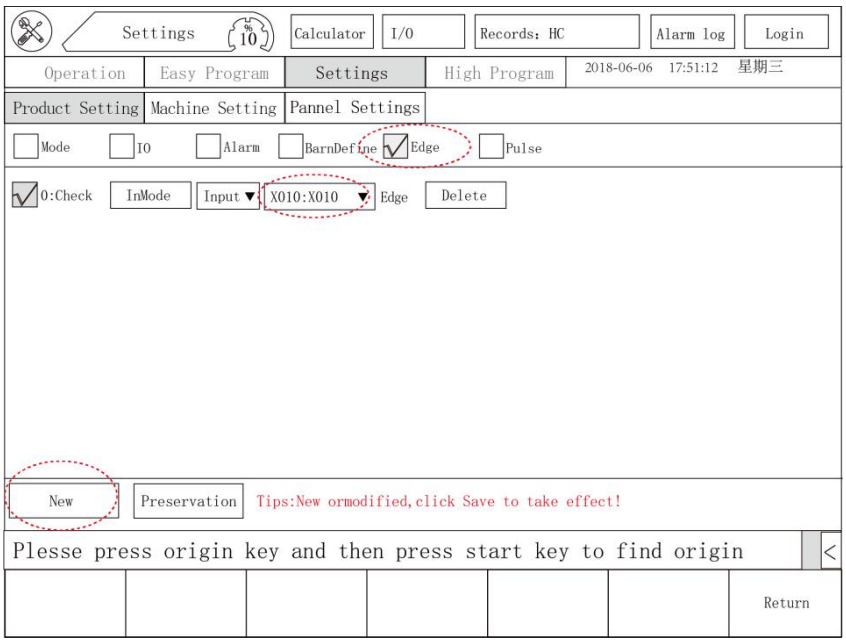


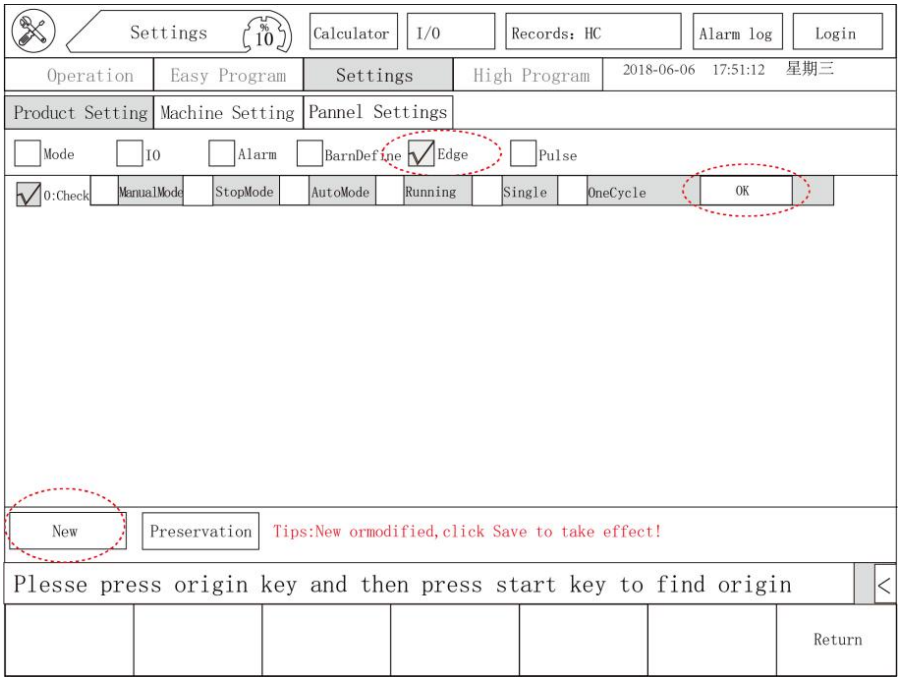
First click the new button and check the newly built, and then click "in mode" to select the corresponding status, such as manual mode, stop mode, automatic mode, etc. Then select the input type and input point.

Specific applications are as follows:

(1)Teach the movement of X axis and the movement of Y axis only when there is X10 rising edge signal. The procedure is as follows:

(2)Turn to the stop status, enter the IO setting page, check the edge signal, create a new edge signal check, click the "in mode" button, select Manual, stop, automatic mode and automatic operation, and then click the OK button. Then select the input signal X10 and click the Save button.

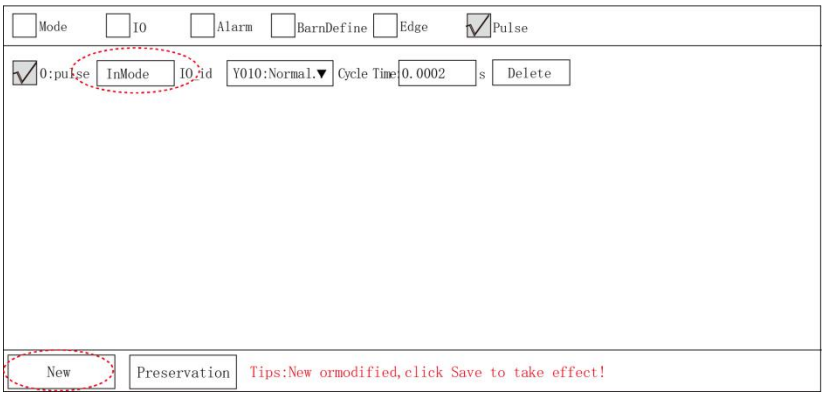




(3)When a X10 rising edge signal is given in the manual state or stop state or automatic state or automatic operation, it is directly switched to the automatic running mode. After the X axis moves, the Y axis also moves.

6. Pulse signal

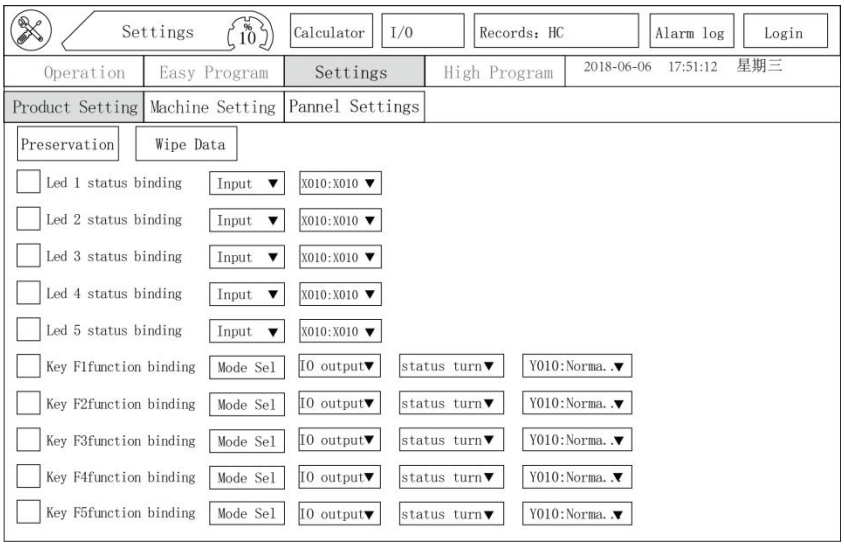
On this page, set the specified IO as pulse output. When the signal output is on in the program, the signal will be on and off according to the cycle until the signal output is off.



5.2.4 Keys and Indicators

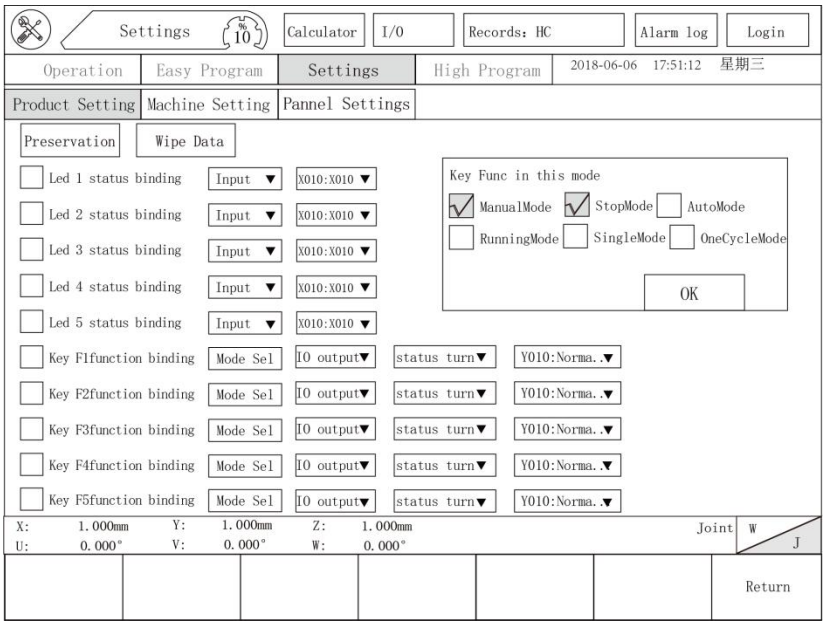
Click 

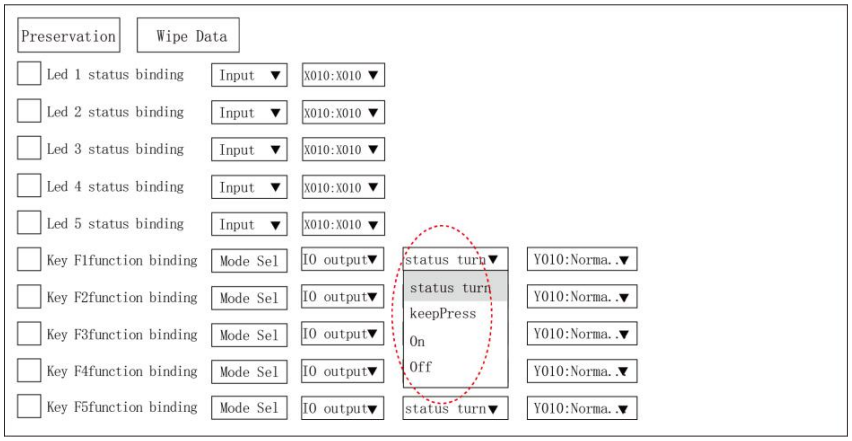
the button to enter the interface shown below, where you can set IO.



LED 1-5 status function is the same as IO setting. The LED light on the manual controller is controlled by selecting the corresponding input, output and m value.

In the function binding of keys F1-F5, the on-off state of IO point and m value is controlled through the use of keys F1-F5 in a certain mode. If the F1 function binding is checked, click the "mode selection" button to select the manual mode and stop mode, and then click OK, and then select the m value. The status is on, and the m point is M10. Click the Save button to switch to the manual state or stop state, and press the F1 button to output M10.

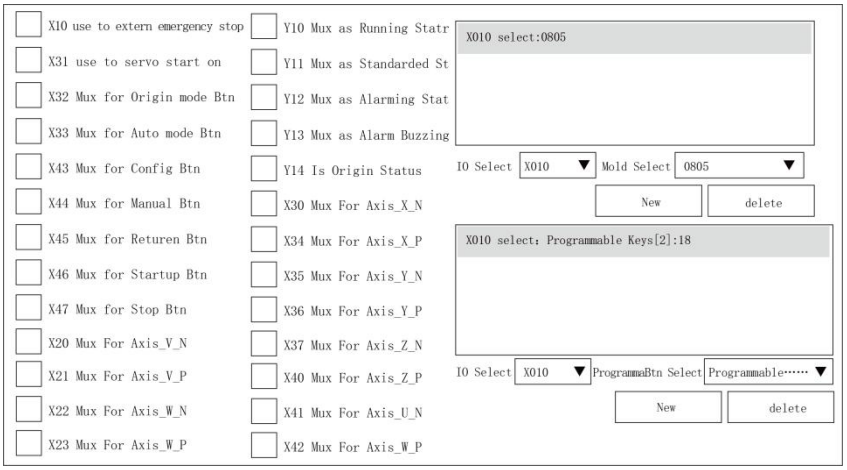




When "state reversal" is selected, press F1 to M10 output, and press M10 again to disconnect the output. When "pulse" is selected, press F1 to output M10, release F1 to disconnect M10. When "on" is selected, press F1 to output M10 all the time without disconnection. Press F1 when "off" is selected, and M10 will be disconnected all the time.

5.2.5 Multiplex IO

The multiplexed IO page can use the second function of input or output IO, and can control the start, stop, axis action and other functions of the system through external IO. It can also switch the module number and execute the programmable key program. The specific functions are consistent with the key operation of the manual controller.



X10 is used as external emergency stop: When checked, X10 signal is disconnected as emergency stop, and connected as emergency stop release.

X34 multiplexing: X axis positive: In the manual state, when the corresponding IO is on, X axis positive starts, and when IO is off, X axis stops moving.

X35 multiplexing: Y axis negative: In the manual state, Y axis negative starts when the corresponding IO is on, and Y axis stops when IO is off.

X36 multiplexing: Y axis positive: In the manual state, Y axis positive starts when the corresponding IO is on, and Y axis stops when IO is off.

X37 multiplexing: Z axis negative: In the manual state, when the corresponding IO is on, Z axis negative starts, and when IO is off, Z axis stops moving.

X40 multiplexing: Z axis positive: In the manual state, when the corresponding IO is on, Z axis positive starts, and when IO is off, Z axis stops moving.

X41 multiplexing: U-axis negative: In the manual state, when the corresponding IO is on, the U axis negative starts, and when the IO is off, the U axis stops moving.

X42 multiplexing: U-axis positive: In the manual state, when the corresponding IO is on, the U axis is starting, and when the IO is off, the U axis stops moving.

X20 multiplexing: V axis negative: In the manual state, when the corresponding IO is on, the V axis negative starts, and when the IO is off, the V axis stops moving.

X21 multiplexing: V axis positive: In the manual state, when the corresponding IO is on, V axis positive starts, and when IO is off, V axis stops moving.

X22 multiplexing: W axis negative: In the manual state, when the corresponding IO is on, W axis negative starts, and when IO is off, W axis stops moving.

X23 multiplexing: W axis positive: In the manual state, when the corresponding IO is on, W axis positive starts, and when IO is off, W axis stops moving.

X31 multiplexing: external enable switch: When the external enable switch is used, the enable switch of the manual controller is invalid, and the motor enable state is subject to the external enable signal.

X32 multiplexing: enter the origin mode: When checked, when X32 signal is input, the system will enter the origin mode. The current mode must be in stop mode to enter the origin mode, which is equivalent to the origin key.

X33 multiplexing: enter automatic mode: When checked, when x33 signal is input, the system will enter automatic mode, which is equivalent to turning the third gear knob to automatic gear.

X43 multiplexing: enter stop mode: When checked, when x43 signal is input, the system will enter stop mode, which is equivalent to turning the third gear knob to stop gear.

X44 multiplexing: enter manual mode: When checked, when x44 signal is input, the system will enter manual mode, which is equivalent to turning the third gear knob to manual gear.

X45 multiplexing: enter reset mode: When checked, when x45 signal is input, the system will enter reset mode. The front mode must be in stop mode or manual mode to enter reset mode, which is equivalent to reset button.

X46 multiplexing: Start: When checked, the X46 signal is equivalent to the start button.

X47 multiplexing: pause: When checked, when x47 signal is on, the current program will be suspended in automatic operation mode.

Y10 is used as normal output: If checked, it is normal output; if unchecked, it is the automatic operation indicator light and the green light.

Y11 is used as normal output: If checked, it is normal output; if unchecked, it is the stop status indicator light and yellow light.

Y12 is used as normal output: If checked, it is normal output; if unchecked, it is alarm status indicator light and red light.

Y13 is used as normal output: If it is checked, it is normal output and if it is not checked, it is alarm buzzer. The number of buzzer calls can be set in the operation parameters. Please refer to "5.3.1 operation parameters".

Y14 as the origin status indicator: When checked, if the current system has no origin, it will be off, and if there is an origin, it will be on.

Signal control module number: Select the signal point and module number, and click new. When the corresponding signal is on, it will switch to the corresponding module number.

Signal control programmable key: Select the signal point and programmable key, and click new. When the corresponding signal is on, the corresponding will be executed programmable key program, the signal will stop running when it is disconnected

5.3 Structure Setting

5.3.1 Operating parameters

you can set system speed, tolerance, alarm sound, etc.on the operation parameter page.

Tolerance (pulse): The maximum difference between the servo command pulse and the feedback pulse is allowed. If it exceeds the tolerance setting range, the axis deviation will be too large. It is necessary to check whether the mechanism, servo wiring and servo parameters are correct.

Number of alarm sounds (Times): The number of alarm times of the buzzer after alarm, ranging from 0 to 255. When 255 is set, it will ring until the alarm is eliminated.

Manual speed level: The higher the manual speed level is, the faster the manual axis key moves.

Delay start time of subroutine 8 (s): Delay start time of subroutine 8 after system startup.

Edge signal filtering level (20ms / P): Reasonably setting the edge signal filtering level can effectively prevent repeated reception or failure to receive edge signals.

Disable enable safety switch: Restart after checking, and you can enable it without pressing the enable switch.

Power on speed: Check use power on speed

Automatic speed: Switch to the default speed in automatic state

Only single cycle during operation: Only single cycle is carried out in the automatic state, and the operation is completed once

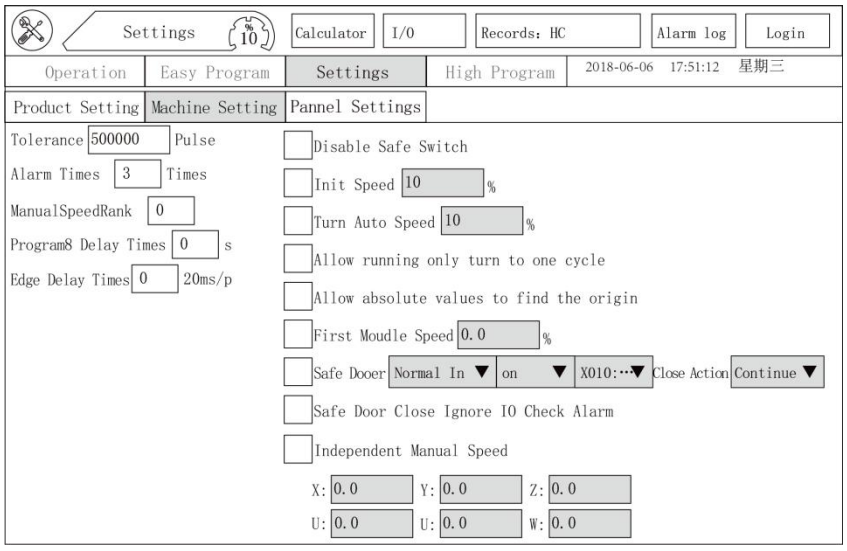
Allow absolute value to find the origin: When the encoder is an absolute value, do not check it. Press the origin key without response. After checking it, you can execute the original point program of the programmable key.

First mold speed: The first operation speed under automatic state.

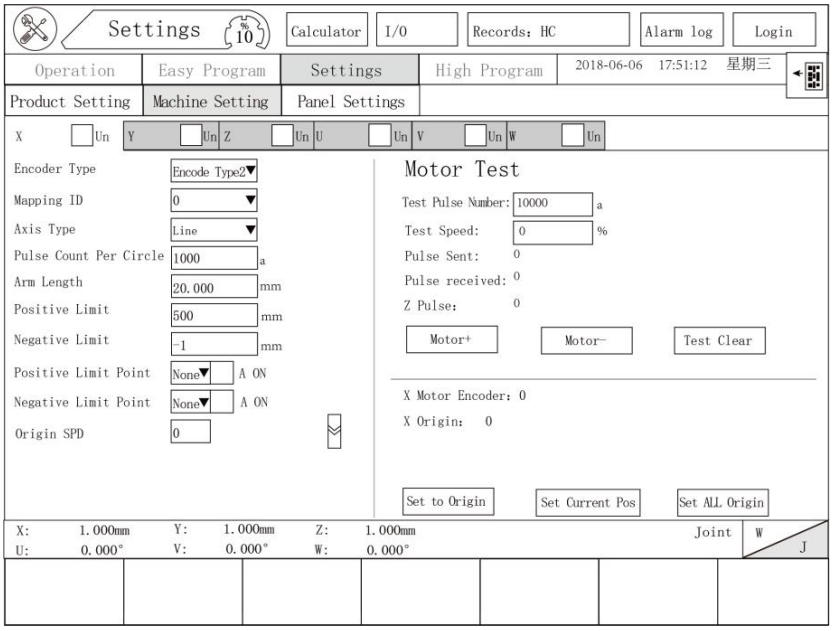
Safety door: The safety door signal can be set. When the safety door is opened, it will give an alarm. When it is closed, it can clearly give an alarm and continue or stop. When there are multiple safety doors, it can be taught manually in subroutine 8.

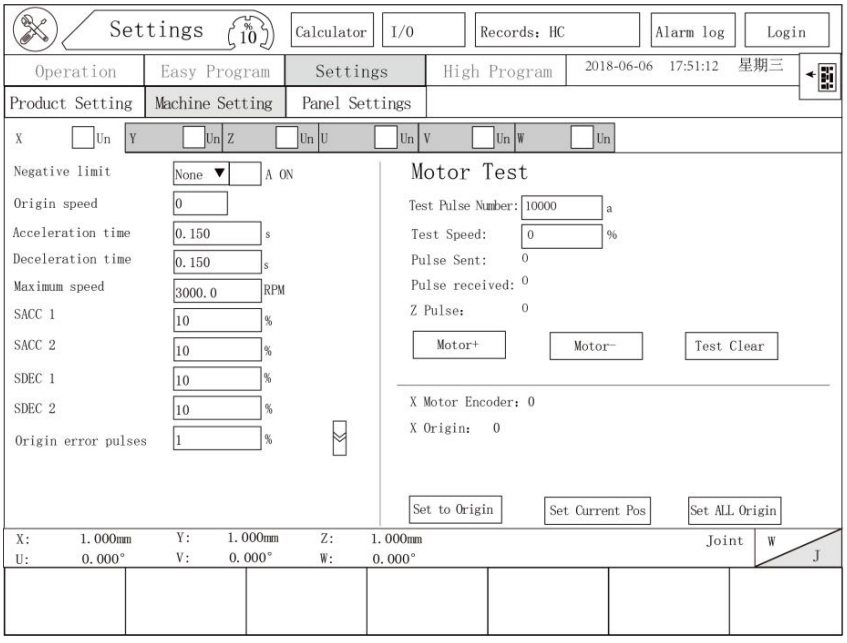
Ignore the signal detection alarm when the safety door is closed: When the signal detection alarm is checked, the signal will not be detected when the safety door is closed no. alarm until the end of detection.

Independent control of manual shaft speed: When checked, the manual speed can be set for each shaft, and the corresponding shaft movement will automatically switch the corresponding speed, which is applicable to the case of large difference in deceleration ratio of each shaft.



5.3.2 Motor Parameter





Encoder type: increment, step, absolute value, grating ruler, rotary encoder.
Motor mapping: fill in the servo ID and correspond the logical axis to the physical axis.
Shaft type: there are three types of shaft: rotation, straight line and rotation reset.
Pulses per revolution: set the number of pulses per revolution of the servo motor.
Distance per revolution: set the running distance of each servo shaft motor per revolution. Click the forward rotation of the motor to measure the actual running distance of the corresponding shaft, which is the running distance of the motor of the shaft rotating for one circle.
Positive limit: the maximum distance the axis moves.
Negative limit: the minimum distance the axis moves.
Positive limit point: this item can define the positive limit point of X axis by itself. It is normally closed by default. If checked, it is set as normally open.

Negative limit point: this item can define the negative limit point of X axis by itself. It is normally closed by default. If checked, it is set as long open point.
Origin speed: sets the speed when returning to the origin.
Acceleration time: set the acceleration time of servo motor.
Deceleration time: set the deceleration time of servo motor.
Maximum speed: set the maximum running speed of the servo motor.
S Acceleration 1: the first segment changes to "acceleration segment". For details, please refer to "5.3.3 structural parameters".
S Acceleration 2: the third segment changes to "acceleration segment". For details, please refer to "5.3.3 structural parameters".
S Deceleration 1: Section 5 becomes "deceleration section". Please refer to "5.3.3 structural parameters" for details.
S Deceleration 2: Section 7 becomes "deceleration section". For details, please refer to "5.3.3 structural parameters".
Origin error pulses: the number of error pulses allowed when returning to the origin.
Motor test: Number of pulses per test: the number of pulses sent each time during motor test.
Test speed: set the speed of the motor for forward and reverse rotation test.
Send pulse: the number of pulses sent each time.
Received pulse: the number of pulses received each time.
Z pulse: single turn position of motor.
Motor direction: the motor direction is divided into forward rotation and reverse rotation.
Motor forward rotation: carry out the motor forward rotation test. The test shows 10000 and the feedback shows 10000, indicating that the test is successful and the shaft is normal.
Motor reverse: carry out motor reverse test. The test shows - 10000 and feedback shows - 10000, indicating that the test is successful and the shaft is normal.
Clear test: clear the motor forward and reverse rotation test data.
Encoder value: current encoder value.
Set as origin: move a single axis to the origin, and then set the point as the origin.
Set all as the origin: move all axes to the origin, and then set all points as the origin.
Origin position: the encoder multi turn value or single turn value of the current origin position of the system.

5.3.3 Structure Parameters

The structural parameters page can set the motion parameters of the manipulator during interpolation action,
including acceleration and deceleration curve, acceleration and deceleration time and maximum speed of the path,
which can be distinguished from the acceleration and deceleration time in the motor parameters.

S acceleration: The acceleration during interpolation. The larger the number, the faster the acceleration and the shorter the acceleration distance

S deceleration: When performing interpolation movement, the greater the number, the faster the deceleration and the shorter the deceleration distance

S maximum speed: The maximum linear speed of the machine when performing interpolation movement

Number of axis: You can set the number of axes used by the current system, ranging from 0 to 8

Number of IO boards: The number of system IO boards can be set. Each IO board has 32 input and 32 output IO boards,with a maximum of 5 IO boards and at least one. Except for the first IO board, other expansion IO boards are controlled by communication through 485 port.

Machine type: kSttLathe-6p lathe model 6-axis

Relative motion parameters: Generally used for the safety limit of double arm collision. Select two relative axes, set the zero point interval, safety distance and check the distance. After the detection is enabled, the double arm distance is less than or equal to the safety distance, and the alarm will be given if the signal detection is enabled. The safety signal can be selected if the signal is on, and the alarm will be given if the reverse direction is checked, To use this function, you need to check use and click OK to modify.

Zero point interval: The distance between two axis after zero point reset.

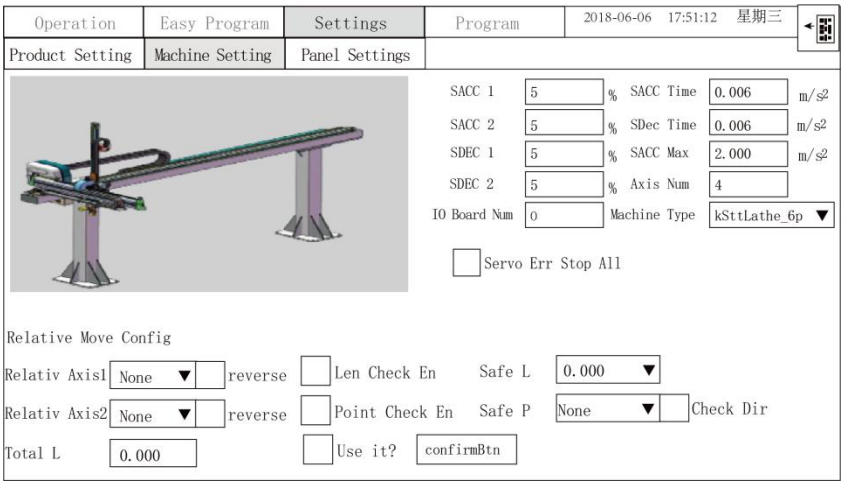
Distance detection enable safe distance: The safe distance between two axis. If the distance between two axis is less than or equal to this safe distance, an alarm will be given immediately.

Signal detection enable - safety signal: Alarm immediately when there is safety signal input. If reverse is checked, it will alarm when there is no safety signal input.

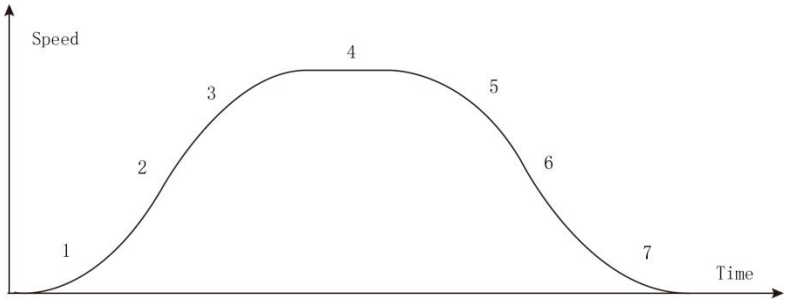
The specific usage is as follows:

Assume that the distance between X1 and X2 is 800mm after the origin is reset, it is unsafe when the distance between X1 and X2 is 100mm. In order to ensure that X1 and X2 do not collide, set the relative axis 1 as x1, the relative axis 2 as X2, and the zero point interval as 800. Check the distance detection enable and set the safe distance as 100. When the X1 axis moves to 400mm, the X2 axis can only move to 295mm at most (800-400-100 = 300, but for safety reasons, when x2 moves to 300 with a difference of about 5mm). If the signal detection enable is checked and the safety signal is set to 1, no matter how far away X1 X2 is, as long as there is a safety signal X10 will call alarm immediately.

Servo alarm close all enablers: When a servo motor alarm is checked, all motor enablers will be disconnected. Please set it reasonably.



S-curve acceleration:



S-curve Velocity curve

1.Variable acceleration section: The acceleration increases from 0 to the maximum acceleration according to the set acceleration, and the speed increases according to the acceleration.

2.Uniform acceleration section: The acceleration keeps the maximum acceleration unchanged, and the speed increases according to the maximum acceleration.

3.Variable acceleration section: The acceleration decreases from the maximum acceleration to 0 according to the set acceleration, and the speed increases according to the acceleration.

4.Constant speed section: The acceleration is 0, and the speed remains the same as the

target speed.

5.Variable deceleration section: The acceleration increases from 0 to the maximum acceleration according to the set acceleration, and the speed decreases according to the acceleration.

6.Uniform deceleration section: The acceleration keeps the maximum acceleration unchanged, and the speed decreases according to the maximum acceleration.

7.Variable deceleration section: The acceleration decreases from the maximum acceleration to 0 according to the set acceleration, and the speed decreases according to the acceleration.S acceleration and deceleration settings correspond to the above line segments respectively, as shown below:

S acceleration 1: Paragraph 1 "variable acceleration".
S acceleration 2: Paragraph 3 "variable acceleration".
S deceleration 1: Section 5 "variable deceleration section".
S deceleration 2: Section 7 "variable deceleration section".

5.3.4 Communication Configuration

5.3.4.1 Rs 485 Setting

The host has two 485 ports, which can be set separately. You can choose to use encoder, analog module, mod bus, online, etc. In addition to the normal function, 485 port 1 is configured as an extended IO communication port when using the extended IO board and cannot be changed. Please refer to "5.3.3 structure parameters" for the settings of the extended IO board.For the selection of analog module and encoder, please contact the sales personnel of Huacheng company.

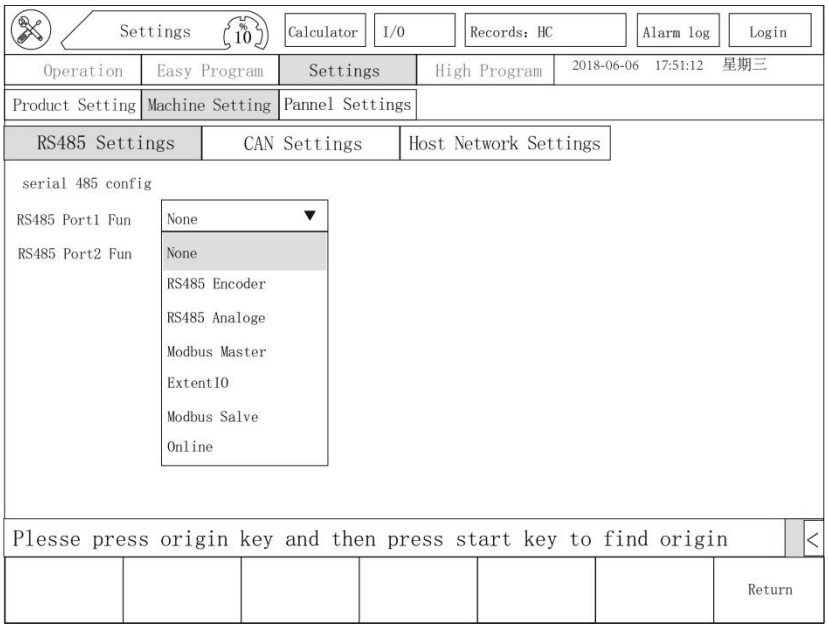


Figure 1 (drive control)

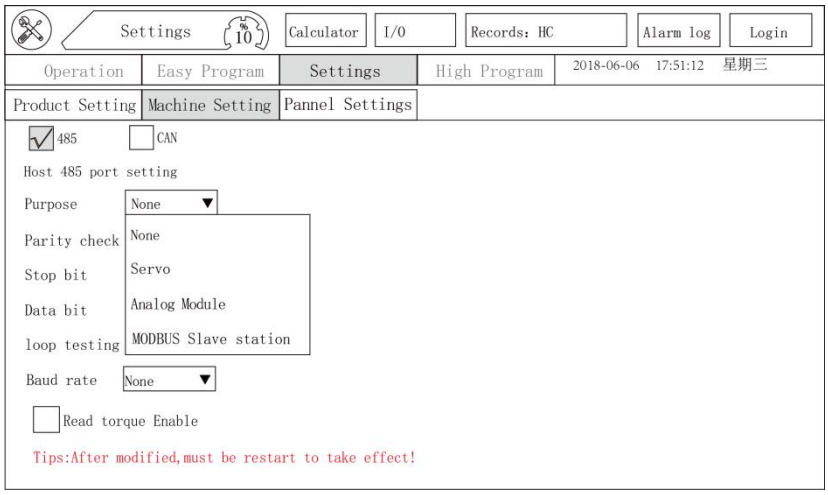


Figure 2 (single board)

The purpose of the single board is divided into three types: servo, analog module and MODBUS slave.

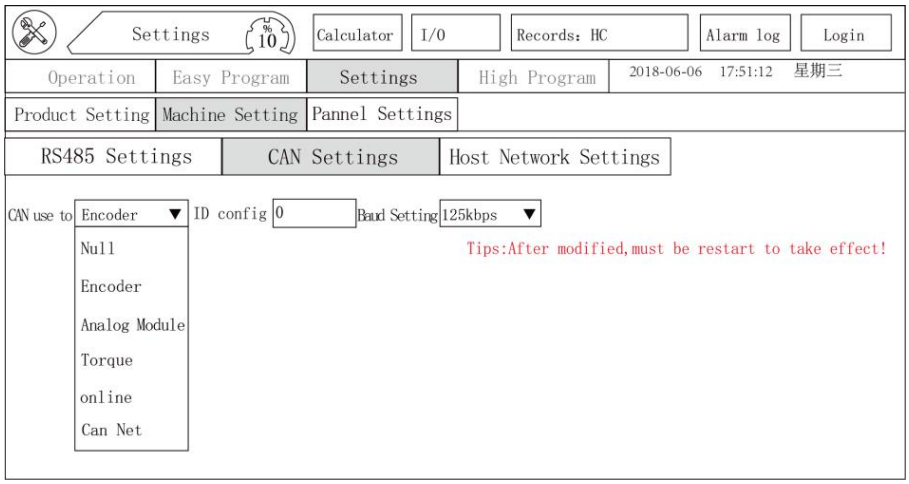
① **Servo:** When absolute value servo is used, it communicates with servo driver through 485.

② **Analog module:** It can communicate with Huacheng analog module and support analog input and output.

③ **Modbus Slave:** For the use of Modbus slave, please refer to Huacheng MODBUS slave protocol.

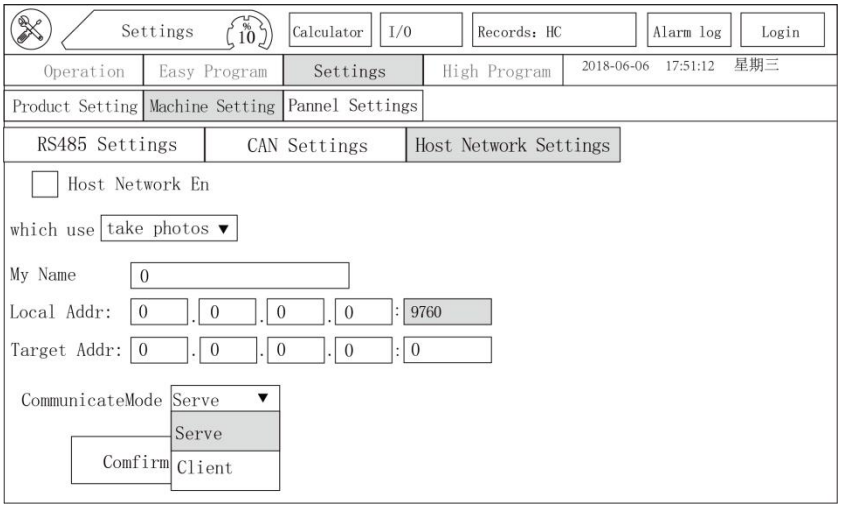
5.3.4.2 CNA Setting

The host has a CAN bus port, and the optional functions include encoder, analog module, servo torque, on-line, can network communication, etc. After the ID and baud rate are configured correctly, it needs to be powered off and restarted to modify the configuration.



5.3.4.3 Host Network Setting

The host network can be set on the host network setting page, and the communication mode can be set as server or client. Please refer to the TCP remote communication protocol of Huacheng control system for specific functions.

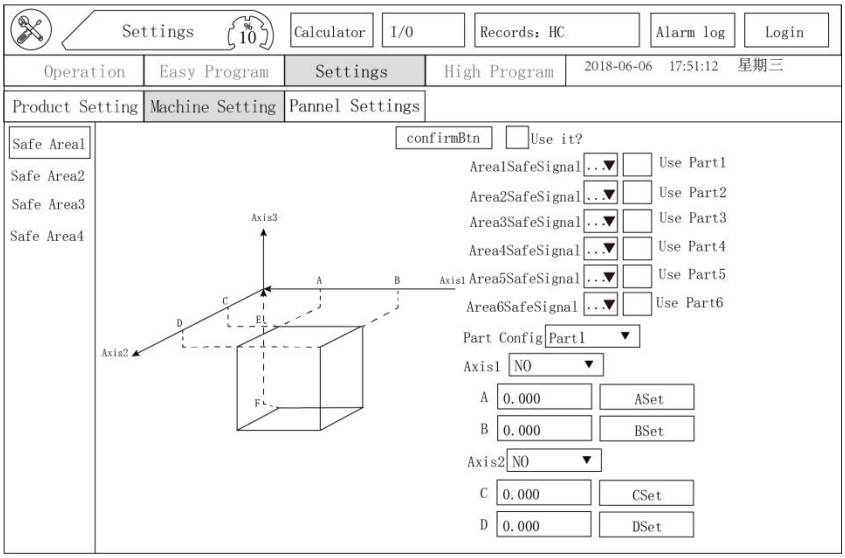


*Note: The board has no host network setting function.

5.3.5 Security Zone Parameter

Click 

to enter the following interface:

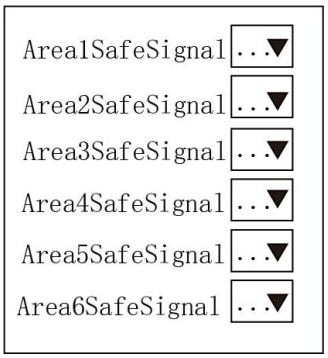


Type I:

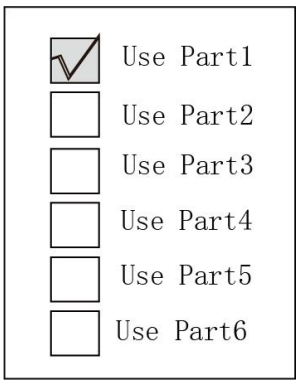
At most 6 safety zones can be set in this interface.

Note: red area indicates non safe area.Operation flow:

1.Set regional safety signal points.

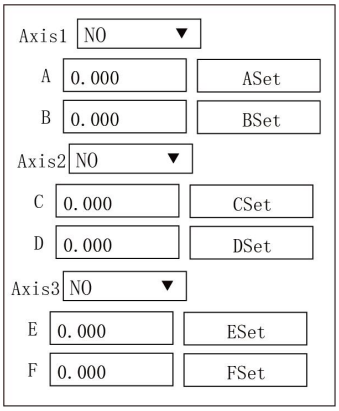


2.Check the area to use.

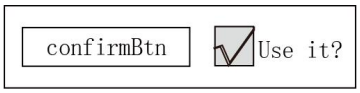


3.Select and set the position of the limit point on each axis. You can edit the position directly, or move the axis to set

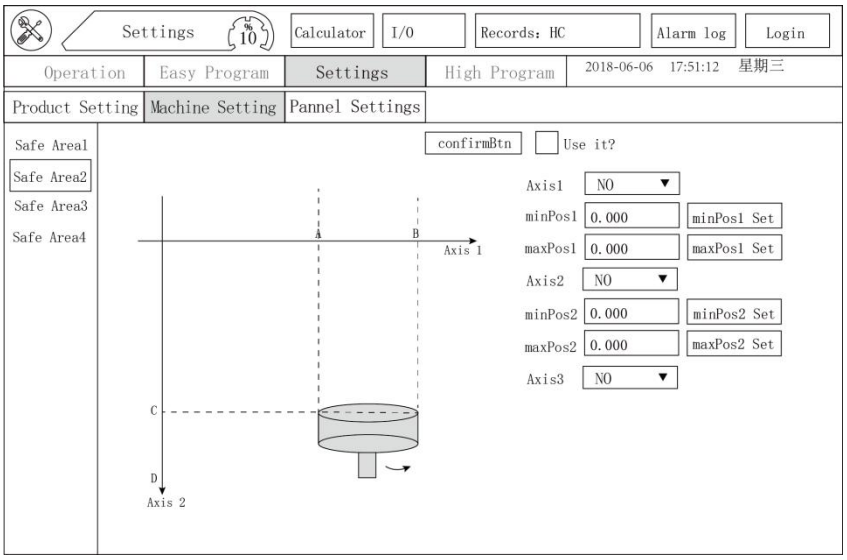
the target point in the manual state, and then set the position in the stop state.



4. After setting the limit points of all axes, check the use box and click the "OK to modify" button.



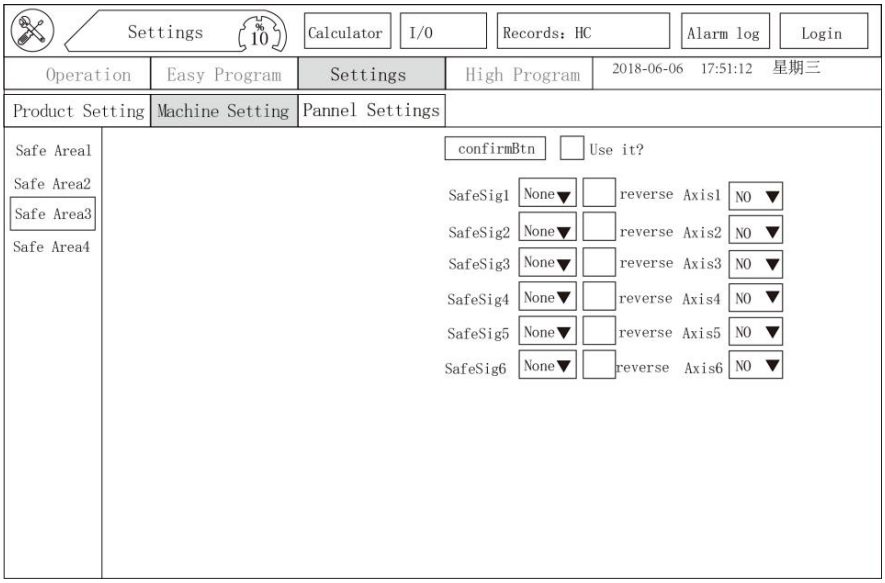
Type II:



When the manipulator enters the area composed of A, B, C and D, the turntable in this area cannot rotate. Setting method:

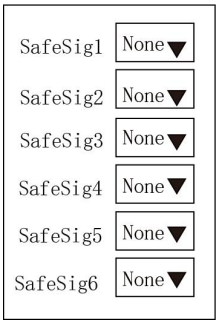
1. Set the axis represented by Axis1 and Axis 2 (drop-down triangular arrow) for selection.
2. Set the position of points A, B, C and D, you can directly enter the coordinate position, or manually move the axis to the target point, and then click the "set" button to set the current coordinate value into the edit box.
3. Finally, click the "use" button to complete the setting.

Type III:

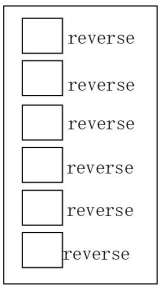


When reverse is not checked, it means that the axis can be moved only when there is a safety signal. On the contrary, if reverse is checked, it means that the axis can be moved when there is no safety signal.Operation flow:

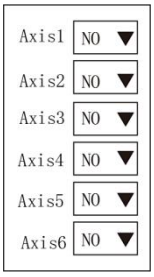
1.Set safety signal point:



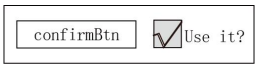
2.Select whether to reverse:



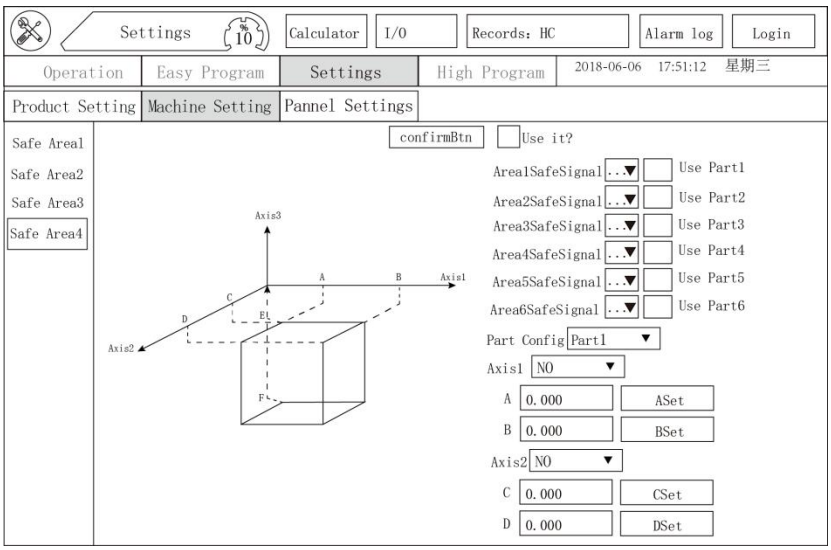
3.Select the axis you want to limit:



4. Finally, check use and click OK to modify



Type IV:



The operations of type 4 and type 1 are not very different. For specific operations, please refer to the operation process of type 1, type 4 and the difference of type 1 lies in the number of safety zones. Type 4 is 4 safety zones and type 1 is 6.

5.3.6 Origin Setting

The origin setting page can set the setting content of the origin finding program, including origin finding sequence, origin speed, origin signal, origin signal status, first origin finding direction, reset sequence, reset speed, IO signal in origin returning, etc.

The origin mode is divided into two types: long origin and short origin:

Long origin: after sensing the origin signal, continue to move until the origin signal disappears, and then move in the opposite direction until sensing the origin signal again. The stop position is the origin position.

Short origin: after sensing the origin signal, immediately reverse one circle, and then find the origin at low speed in the initial direction of returning to the origin. After sensing the origin signal again, stop. The stop position is the origin position.The smaller the number of the origin sequence, the earlier to return to the origin. The numbers are the same and return to the origin at the same time.

The origin speed is the movement speed from starting to return to the origin to touching the origin signal. Reasonably setting the origin speed is very helpful to the accuracy of the origin position.

The input IO of the origin sensing switch signal must be set. The factory default is none. If the origin signal is not set, an alarm will be given: The origin signal is not set.

State iron sheet contact induction switch, the signal is on-off, normally open, and the signal is off, normally closed.

The direction origin signal selects the positive direction in the negative direction of the axis and the reverse direction in the positive direction of the axis. By default, the system finds the origin in the negative direction.

The reset sequence is the same as the origin sequence (changeable).

Reset speed is the same as the origin speed (changeable).

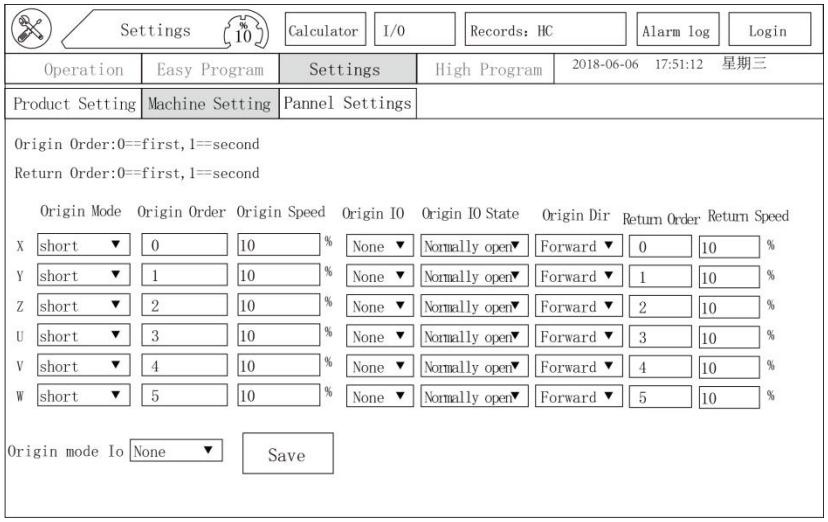
Return to the original IO after setting this IO, the corresponding IO will be output on during the return to the origin and off after the return to the origin.

Note: clicking save will directly overwrite all programs in "programmable key [0]: Origin" and "programmable key [1]: reset". Please set the origin program and reset program according to the actual situation.

Origin finding process:

Find the origin switch for the first time according to the set origin direction and speed. After touching the origin switch, change the direction, reduce the speed and leave the origin switch. If the motor does not turn for a full circle at this time, it will turn one circle away from the origin switch. After turning for a full circle, find the adjustment direction again, find the origin switch, approach the origin switch at a slower speed, and after touching the origin switch, Start the program of finding the encoder single turn value of the last recorded origin position until the last recorded position is found. End of return to origin. If it does not end for a long time, please increase the "origin error pulse". For setting of "zero point error

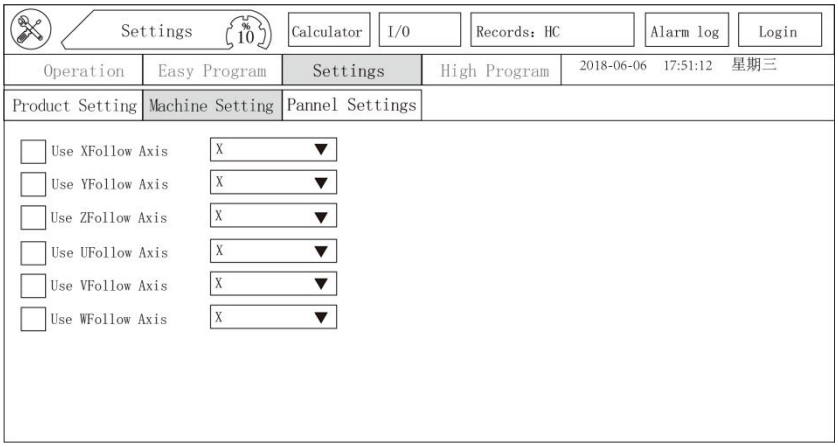
pulse", please refer to "5.3.2 motor parameters". If the origin deviation recorded twice is too large, it will alarm the origin offset, and



the origin position has changed.

5.3.7 Gantry Setting

After checking the use of heel, the checked axis moves with the selected central axis (*Note: the reduction ratio and distance per revolution must be set correctly).

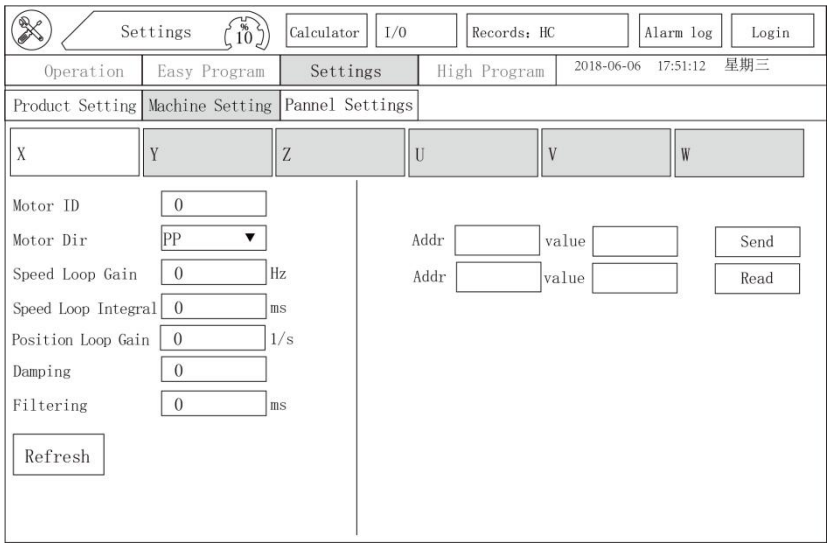


5.3.8 Servo Parameter

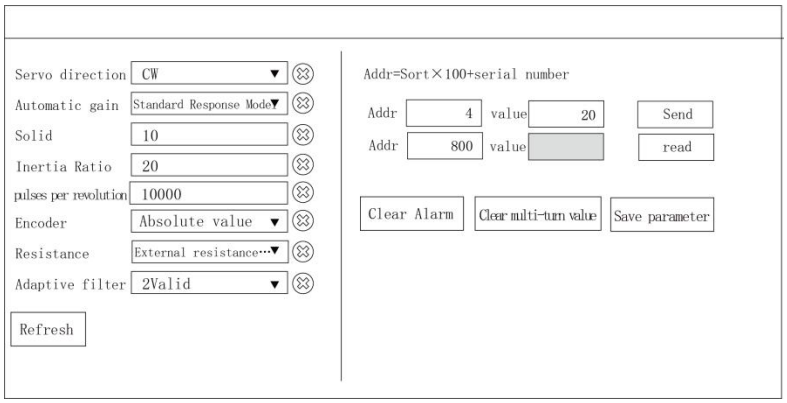
5.3.8.1 Drive Control Integrate System

*Note: 1. For servo parameter debugging, please refer to the servo parameter table of Huacheng drive control integrated system.

3. Check whether the motor code is correct.



5.3.8.2 RTEX System



Refresh: Click refresh to successively read the servo parameters in the list on the left.

Clear the alarm: Clear the servo communication alarm. The motor alarm cannot be cleared and must be powered off and restarted.

Clear multi turn value: Clear the multi turn value of servo motor, power off and restart after clearing, and reset the origin.

Save parameters: For some servo parameters, click save and the parameters will take effect after restart. Please refer to Panasonic servo motor manual for details.

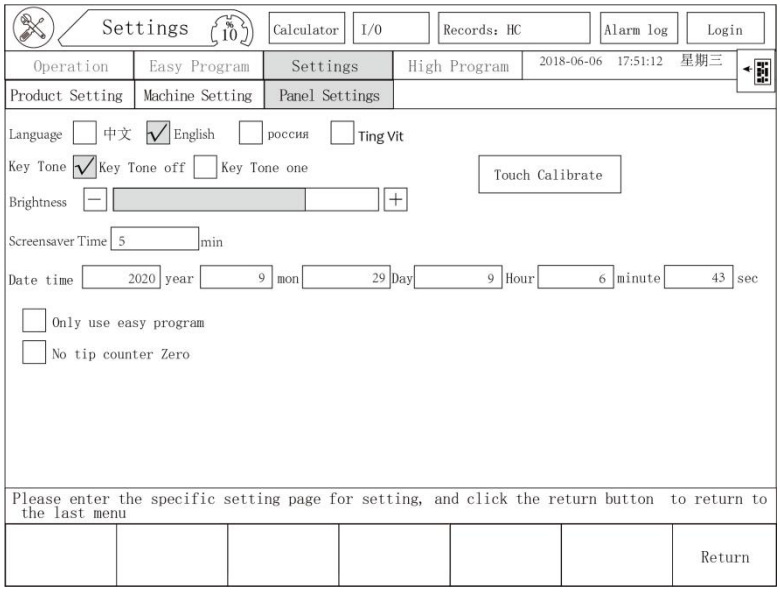
Address usage: For special servo parameters, please refer to Panasonic servo manual settings, fill in the value of classification * 100 + number in the address input box, and click read / write.

For example, read the servo parameter category 2, the parameter No. 1, and fill in 201 for the address.

5.4 Hand Control Setting

5.4.1 Hand Control Setting

The manual control setting page can set the settings about the manual control display.



Language: Select the language displayed by the manual controller.

Key tone: When checked, the buzzer will sound when the screen is clicked, pressed, etc.

Touch correction: If the screen touch position is not on time, click touch calibration to enter the screen calibration page. After calibration, it is necessary to manually power off and restart. For the method of calibrating the screen when the screen cannot be used normally, please refer to "5.4.1 manual setting".

Screen brightness: Click the +, - buttons to set the screen brightness.

Screen protection time: If there is no operation during the screen protection time, the manual screen goes out, and the program will continue to run. Click the screen or press the key, and the screen will light up.

Date and time: Set the date and time of the current manual controller.

No prompt for deleting the teaching program: When checked, there will be no pop-up prompt for deleting the teaching program on the teaching program page.

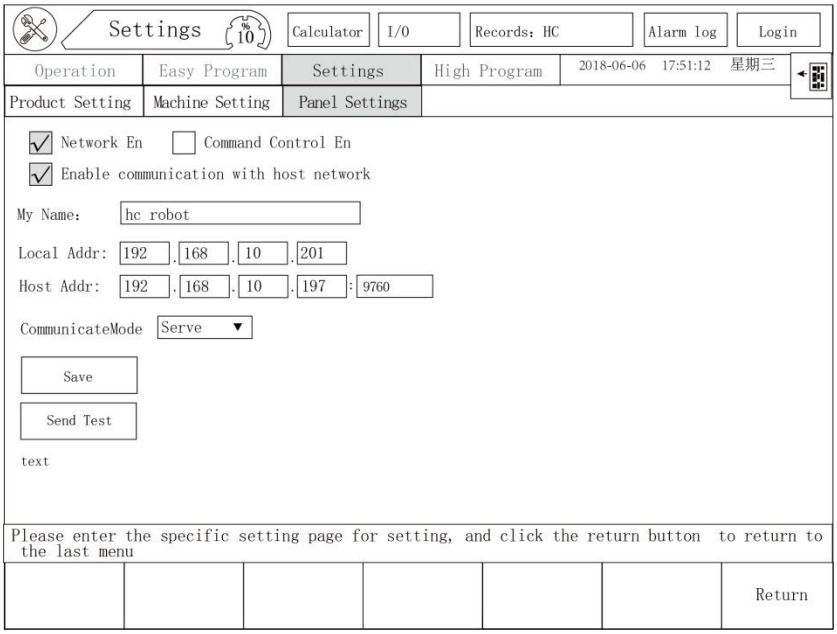
No prompt for mobile teaching: When checked, the mobile teaching program will not pop up a prompt on the teaching program page.

Only use simple programming: After checking, you cannot enter the advanced page to modify the program logic. You can only control counters, timers, stacks, reference points, etc. in simple programming.

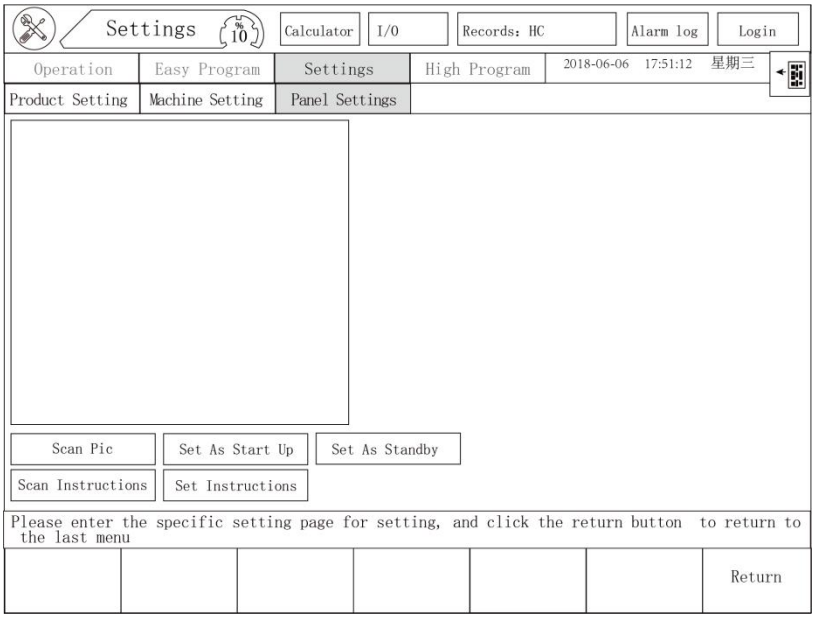
Do not prompt that the counter has not been cleared: When the manual controller is switched to the automatic state, if the current value of any counter is not 0, it will prompt that the counter has not been cleared. After checking, it will not prompt.

5.4.2 Network Configuration

The network configuration page can configure the network port of the manual controller, and the system can be remotely controlled through the network port of the manual controller. Please refer to TCP remote protocol of Huacheng control system for communication protocol.



5.4.3 Image Setting



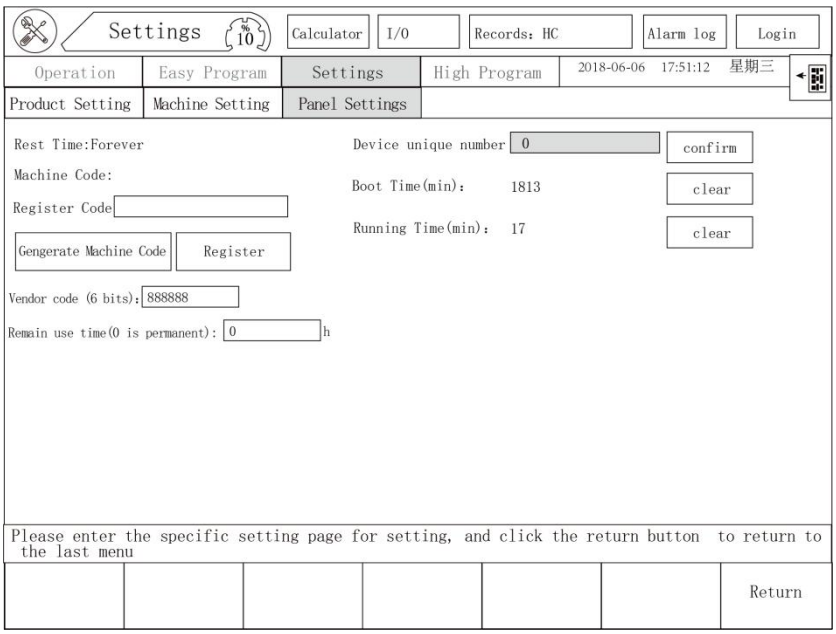
Startup page and standby page update method:

1. **Make pictures:**
   Picture size: Startup page picture: width * height is 800 * 600 (unit: pixels).
   Standby page picture: width * height is 800 * 400 (unit: pixels).
   Format: PNG format.
2. Create a new "hcupdate_pic" in the root directory of the USB flash disk and copy the pictures to this folder.
3. Insert the USB flash disk into the manual controller to enter the picture setting interface, click the scanned picture, select the picture, and select set as the start page or set as the standby page.
4. If it is set as the standby page, the standby page can be updated successfully by changing the status of the third gear knob. If you start the page, you need to power on the manual controller again to view the effect.

Installation and operation instructions and methods:

1. Open the word document of the manual, click Save as and select other formats.
2. Select the format as a single web page file
3. The file name is fixed: "index. HTML" Click Save. After saving, you can open it with a computer browser to check whether the content is normal.
4. Create a new folder "instructions" in the root directory of the USB flash disk, and put the "index. HTML" file into the folder.
5. Insert the USB flash disk into the manual controller, click the scanning instructions and then the installation instructions.

5.4.4 Log In

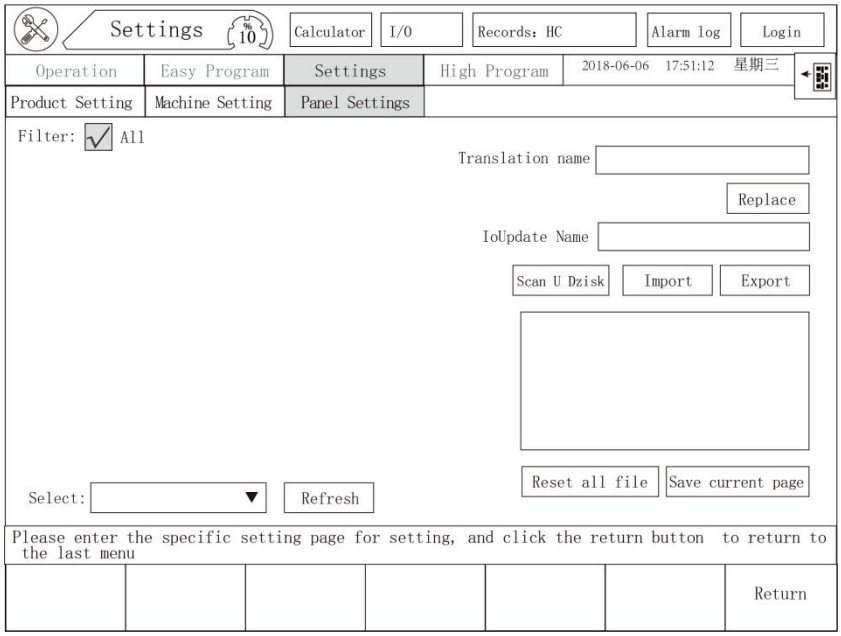


Registration process:

1. Log in to the highest authority to view the manufacturer code, and then click the "generate machine code" button to generate a 6-digit machine code.

2. Provide the manufacturer code and machine code to the supplier and let the supplier register the production registration code.
3. Enter the 20 digit registration code provided by the manufacturer into the "registration code" edit box.
4. Click the "register" button to complete the registration.

5.4.5 Word Changing Tool



This page can change IO input / output points, custom alarms, axis definitions, etc.

Click the selection drop-down box, select the file to be modified, select the line to be modified, fill in the translated text in the translation name on the right, click Replace, after the whole file is modified, click save the current modification, and it will take effect after restart.

Add alarm: The alarm number can be added based on the current 9000-9020.

Replace: Modify the translation name.

Scan USB flash disk: Read USB flash disk IO files.

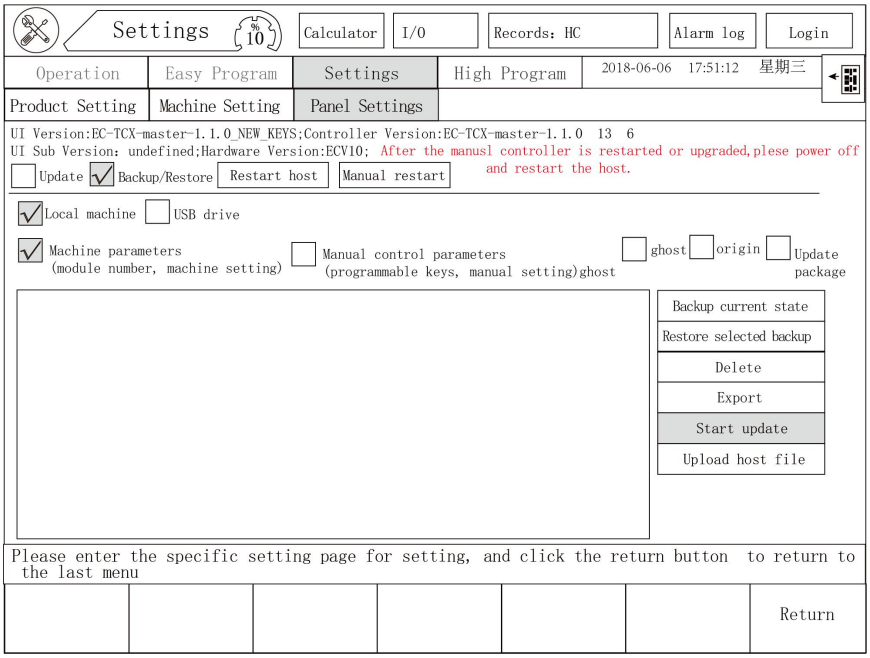
Export: Fill in the name of the exported file in the upgrade package name, click export to export the translated file to USB flash disk, and you can import the translated file on other manual controllers.

Import: Click "refresh USB flash disk" to find the translation file exported by the export function, and the file suffix is "io. Hcdb".Select to switch and modify the directory.

Reset all files: All translated files will be restored to the default state, which will be used in case of errors or restoring the default.

Save current modification: The corresponding translation after modification. Click save current modification to update the translation and take effect after restart.

5.4.6 Maintain

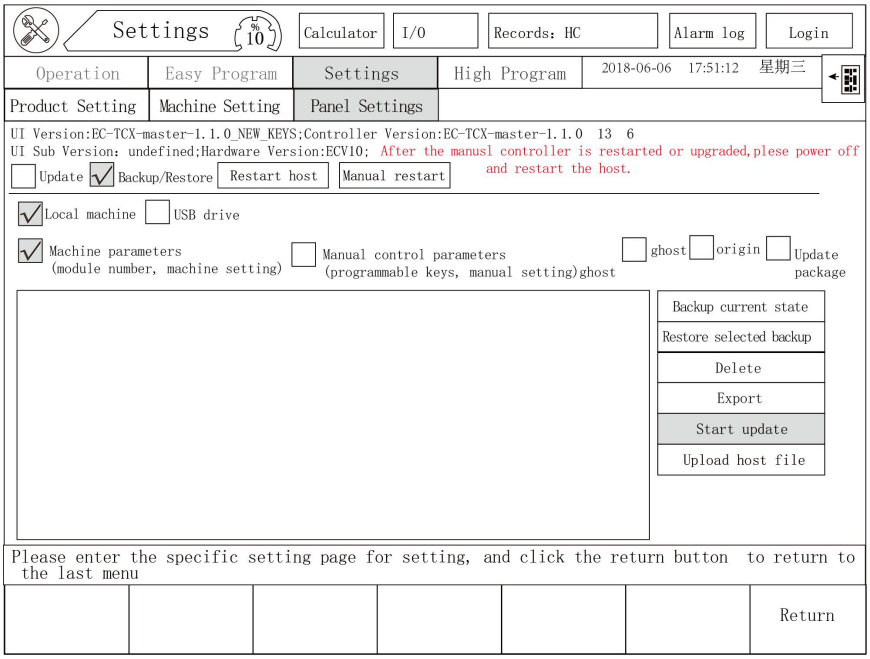


Version update method:

Check the update rotation 

box → insert the USB flash disk. After a few seconds, click "scan update package" → select the version to be upgraded → click "start update" to enter the update interface for update. The system will automatically back up each update Ghost, start automatic update after the backup is completed.

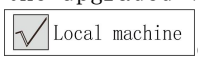
Backup / restore:

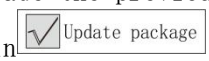


Machine parameters: Refer to the setting of shaft parameters, including soft limit and distance per revolution.

Manual control parameters: Parameter setting in programmable keys and all settings under manual control setting.

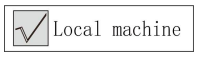
Ghost: backup all the data of the current manual controller.

Update package: the system will automatically store the upgraded version. If you need to upgrade the previous version again, 

check it again 

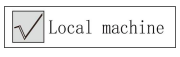
Select the version number to update the version, or export the program to USB flash disk in this interface to version other manual controllers to update.

Backup operation process:

Check 

→ select the data to be backed up (machine parameters / manual parameters / ghost) → Click to back up the current status → enter the backup name in the pop-up backup name dialog box → click OK. The above steps are to back up the parameters to the local machine. To back up to the USB flash disk, insert the USB flash disk on the basis of the above steps, and then select the name of the parameters just backed up to the local machine→ click export → click OK after the export completion dialog box pops up. You can also rotate the third gear knob at will, and then use the shortcut keys on the manual controller to press F5 → F2 → F4 → F2 → F3 → F2 → F1 → F5 in order to enter the backup interface and backup according to the prompt.

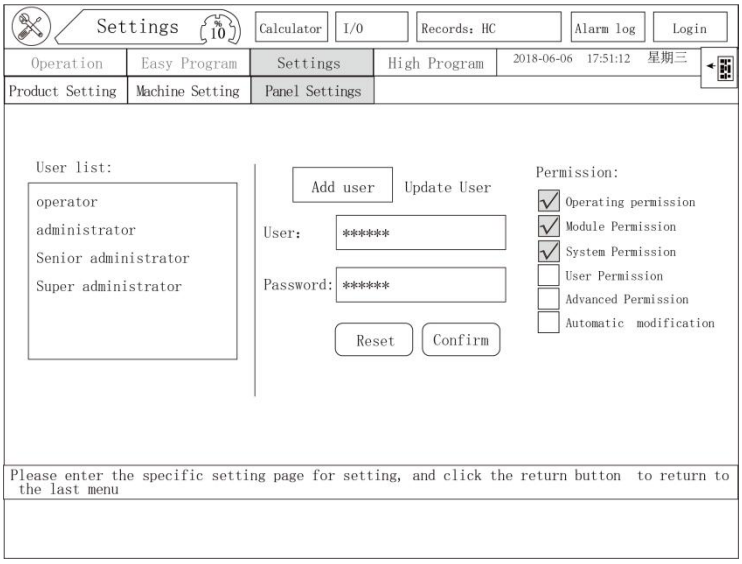
Restore process:

Check 

or → 

select the data to be restored (machine parameters / manual parameters / ghost) → click the "restore selected backup" button → according to the prompt, the manual controller will restart and wait for the restart to complete the restoration.

5.4.7 User Management



In this interface, you can set the administrator's permissions and modify the password.

Permission Description:

Operation permission (OP): the permissions of this item include:

1. The axis can be moved in the manual state, but cannot enter the teaching page for teaching;
2. It can start the manipulator and adjust the speed under automatic state;
3. In the stop state, it can reset the origin and enter the product setting page to set parameters;
4. You can enter the registration page.

Mold permission: Permission includes:

1. All rights of OP;
2. Settings related to module number;
3. You can enter the teaching page to teach;
4. The program action can be edited automatically to modify the position, speed and delay.

System permission: permission includes:

1. All rights of OP;
2. Machine parameters can be modified;
3. Most manual setting pages can be accessed.

User permission: permission includes:

1. All rights of OP;
2. Can enter the user management page.

Advanced permission (root): permission includes:

1. All rights of OP;
2. The vendor code on the registration page is visible.

Auto modify: permission includes:

1. All rights of OP;

2. The program action can be edited automatically to modify the position, speed, delay, etc.

New user name: edit user name → set password → check permission → operation permission → click "OK".

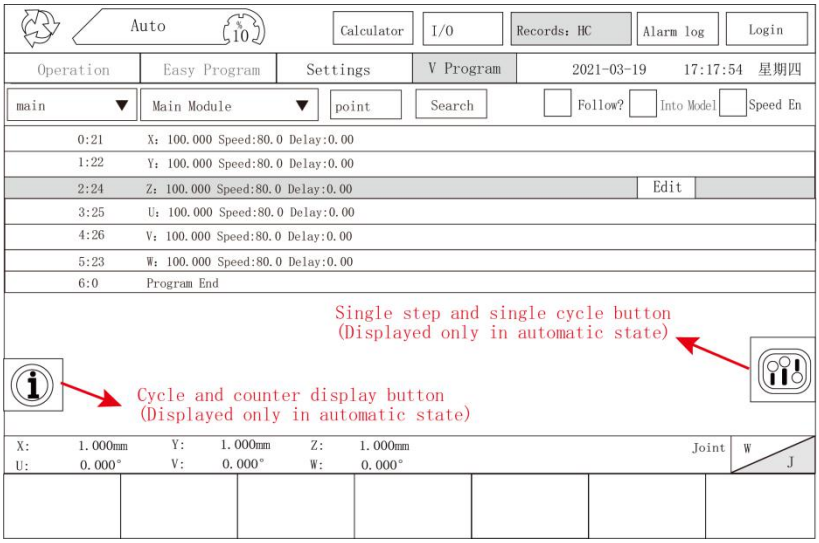
- ☐ operation authority
- ☐ module number authority
- ☐ system authority
- ☐ user authority
- ☑advanced permissions
- ☐ auto modify

***Note:** when selecting permission, if operation permission is not selected, the system will automatically check it.

Delete user name: check the user list → click the "delete" button

Chapter 6 Automatic Status

Turn the third gear knob to "automatic" to enter the automatic state as follows: In this interface, press the "start" key on the manual controller, and the manipulator will start the program .



Speed regulation enable: After checking, press the key speed reduction key on the manual controller to regulate the global speed.

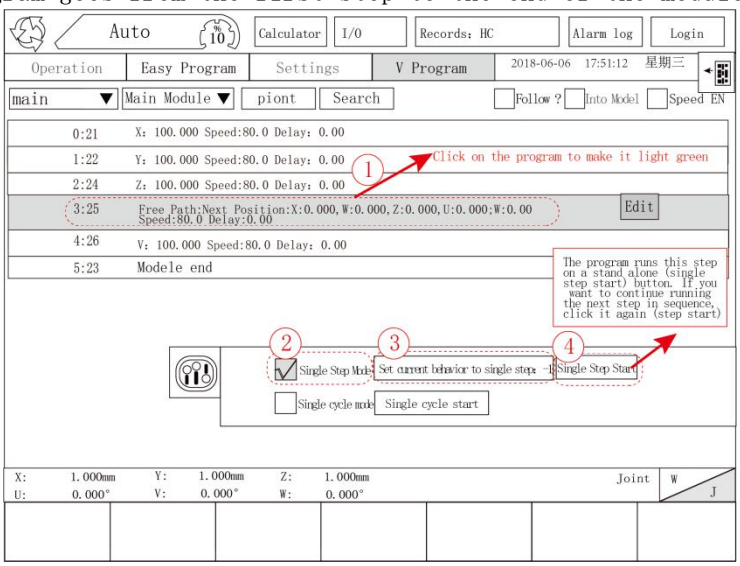
Follow: After selecting which step the program runs to, the color of that step will become dark.

Enter module: When checked, the following work will automatically switch to the currently running module, otherwise the module mode will not be switched.

Single step: Single step operation in automatic state.

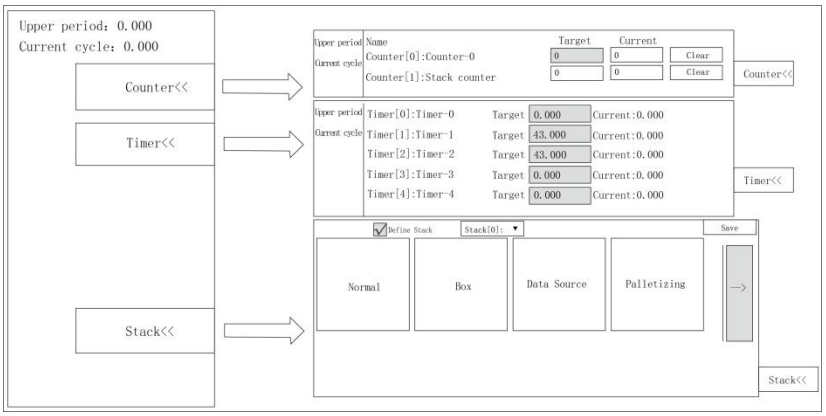
Please refer to the following figure for the use method:

Single cycle mode: The program goes from the first step to the end of the module.



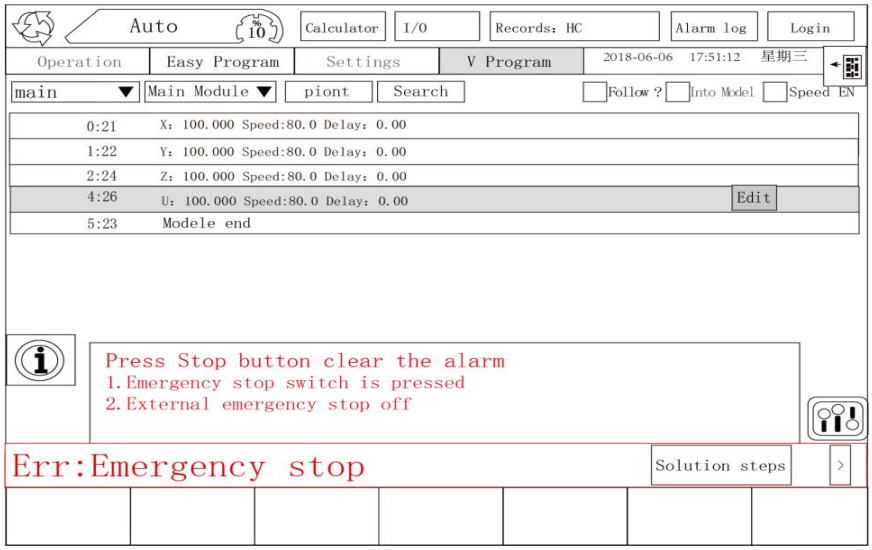
Cycle time: The time that the whole program runs to the end of the module.

Cycle display button: Click this button to display the upper mold cycle time and current cycle time, as well as the counting status of all counters, timer timing and stacking parameter setting.



Chapter 7 Alarm Content and Handling Plan

7.1 Alarm Clear Operation



When there is an alarm in the system, a yellow alarm information bar will appear at the bottom of the screen, which is composed of alarm number and alarm information. After solving the problem, press the "stop" button to clear the alarm information. If it cannot be cleared, the problem is not solved.

Solution steps: Click this button to display the possible causes of the current alarm, click Hide again, click the ">" button on the far right to hide the prompt bar of the current alarm information, and click display again.

7.2 Alarm Content and Response

Alarm Numb-er	Chinese name	Alarm reason	Solutions
1	Incomplete initialization		It will be cleared automatically after startup
2	Main engine shaft configuration and manual control shaft Different configuration		Select host or manual control as required
3	Main engine axis configuration parameter error		Reset motor parameters
4	insufficient memory		If the teaching program is too long, you can use the module to integrate the same actions back and forth.
5	Teaching data parsing error		Error in the tutorial program, hand control and host program version does not match, update the matching program version.
6	Teach data editing errors		1. Error in editing program, reload module number or create a new module number 2. The running instruction is not allowed to be modified
7	Emergency stop		1. The emergency stop switch is pressed. 2. The emergency stop switch port on the host is not wired
8	Auto run jump error		1. Teach whether the label of program jump is invalid or deleted.
9	Failed to connect to host		Host version error
10	Teaching program error		Press the stop key to clear the alarm
11	Configuration parameter store failed		Restart or press the stop key to clear the alarm.
12	Model setting error		Reset model
13	Single step / single cycle commissioning procedure setting error		Restart or press the stop key to clear the alarm.
14	Read from host flash wrong data		Error in data read from host flash
15	Communication with IO board failed		1. Repair wiring 2. Check main board and IO board

16	Servo absolute position read fail		Check the host and servo wiring
17	Servo absolute position read verification failed		Check the host and servo wiring
18	Servo absolute position read function code error		Check the host and servo wiring
19	Servo absolute position read overtime		Check the host and servo wiring
20	Communication with IO board 2 failed		1. Repair wiring 2. Check main board and IO board
21	Communication with IO board 3 failed		1. Repair wiring 2. Check main board and IO board
22	Communication with IO board 4 failed		1. Repair wiring 2. Check main board and IO board
23	Communication with IO board 5 failed		1. Repair wiring 2. Check main board and IO board
24	FPGA alarm, please power off and restart Open!		Power off and restart
25	Analog output module output verification error		1. Test wiring 2. Unsupported analog module
26	Analog output module read timeout		1. Test wiring3. Unsupported analog module
27	The current workbench coordinate system is wrong error, switching failed	Workbench parameters number error	Reset workbench parameters
28	Stack interval output failed	Counter setting set error	Reset counter
29	Position stable	Synchronizing position	Auto clear
30	No current workbench coordinate system	No current worker workbench coordinate system	
31	The current turntable is not defined	Current turntable undefined	

31	The current turntable is not defined	Current turntable undefined	
32	The current tool coordinate system is wrong, switching failed	Tool seat calibration system parameter setting error	
33	No current tool coordinate system	No current worker with coordinate system	
34	Communication with euio board 1 failed		1. Repair wiring 2. Check mainboard and IO board
35	Communication with euio board 2 failed		1. Repair wiring 2. Check mainboard and IO board
36	Safety door open		Close the safety door
37	Single axis reference address error	Unsupported address value	The address value should be between 800-899
38	Path reference address error	Unsupported address value	The address value should be between 800-899
39	Axis mapping error	Repeated mapping	Check each axis mapping
40	Manual control and host teaching procedures are inconsistent	Teaching program verification error	1.Contains unsupported instruction, check version 2.Resave all programs
41	Single axis following error	The axis follows multiple axis	
42	Servo not enabled	Servo is not enabled during running	Press the enable switch
43	Return to origin failed	nothing	nothing
44	Analog module baud rate search failed	Can't find supported analog module	Check the wiring
45	Baud rate setting of analog module set successfully	nothing	Please restart
46	Follow target to boundary		Improve the execution speed in the following process
70	485 online communication timeout		Check 485 wiring

90	Motor 1 alarm		Motor wiring fault or host circuit faultCause: 1. The connecting line between the host and the servo driver is broken; 2 servo alarm fault
91	Motor 2 alarm		Motor wiring fault or host circuit faultCause: 1. The connecting line between the host and the servo driver is broken; 3 servo alarm fault
92	Motor 3 alarm		Motor wiring fault or host circuit faultCause: 1. The connecting line between the host and the servo driver is broken; 4 servo alarm fault
93	Motor 4 alarm		Motor wiring fault or host circuit faultCause: 1. The connecting line between the host and the servo driver is broken; 5 servo alarm fault
94	Motor 5 alarm		Motor wiring fault or host circuit faultCause: 1. The connecting line between the host and the servo driver is broken; 6 servo alarm fault
95	Motor 6 alarm		Motor wiring fault or host circuit fault cause: 1. The connecting line between the host and the servo driver is broken; 7 servo alarm fault
96	Motor 7 alarm		Motor wiring fault or host circuit fault cause: 1. The connecting line between the host and the servo driver is broken; 8 servo alarm fault
97	Motor 8 alarm		Motor wiring fault or host circuit fault cause: 1. The connecting line between the host and the servo driver is broken; 9 servo alarm fault
100	Axis 1 movement failure		Press the stop key to clear the alarm. Move again. Reasons: 1. Teach the same axis to move at the same time; 2. The main program and subroutine have the same axis and move at the same time; 3. Teach trajectory motion and single axis motion to run at the same time

101	Axis 2 movement failure		Press the stop key to clear the alarm. Move again. Reasons: 1. Teach the same axis to move at the same time; 2. The main program and subroutine have the same axis and move at the same time; 3. Teach trajectory motion and single axis motion to run at the same time
102	Axis 3 movement failure		Press the stop key to clear the alarm. Move again. Reasons: 1.Teach the same axis to move at the same time; 2. The main program and subroutine have the same axis and move at the same time; 3. Teach trajectory motion and single axis motion to run at the same time
103	Axis 4 movement failure		Press the stop key to clear the alarm. Move again. Reasons: 1.Teach the same axis to move at the same time; 2.The main program and subroutine have the same axis and move at the same time; 3. Teach trajectory motion and single axis motion to run at the same time
104	Axis 5 movement failure		Press the stop key to clear the alarm. Move again. Reasons: 1.Teach the same axis to move at the same time; 2. The main program and subroutine have the same axis and move at the same time; 3. Teach trajectory motion and single axis motion to run at the same time
105	Axis 6 movement failure		Press the stop key to clear the alarm. Move again. Reasons: 1. Teach the same axis to move at the same time;2. The main program and subroutine have the same axis and move at the same time; 3. Teach trajectory motion and single axis motion to run at the same time
106	Axis 7 movement failure		Press the stop key to clear the alarm. Move again. Reasons: 1. Teach the same axis to move at the same time; 2. The main program and subroutine have the same axis and move at the same time; 3. Teach trajectory motion and single axis motion to run at the same time

107	Axis 8 movement failure		Press the stop key to clear the alarm. Move again. Reasons: 1. Teach the same axis to move at the same time; 2. The main program and subroutine have the same axis and move at the same time; 3. Teach trajectory motion and single axis motion to run at the same time
110	Axis 1 speed setting error		Press the stop key to clear the alarm. Re movement
111	Axis 2 speed setting error		Press the stop key to clear the alarm. Re movement
112	Axis 3 speed setting error		Press the stop key to clear the alarm. Re movement
113	Axis 4 speed setting error		Press the stop key to clear the alarm. Re movement
114	Axis 5 speed setting error		Press the stop key to clear the alarm. Re movement
115	Axis 6 speed setting error		Press the stop key to clear the alarm. Re movement
116	Axis 7 speed setting error		Press the stop key to clear the alarm. Re movement
117	Shaft 8 speed setting error		Press the stop key to clear the alarm. Re movement
120	Shaft 1 run over speed		Press the stop key to clear the alarm. Move again. Cause: 1. The track acceleration setting is too large
121	Shaft 2 run over speed		Press the stop key to clear the alarm. Move again. Cause: 1. The track acceleration setting is too large
122	Shaft 3 run over speed		Press the stop key to clear the alarm. Move again. Cause: 1. The track acceleration setting is too large
123	Shaft 4 runt over speed		Press the stop key to clear the alarm. Move again. Cause: 1. The track acceleration setting is too large
123	Shaft 4 runt over speed		Press the stop key to clear the alarm. Move again. Cause: 1. The track acceleration setting is too large
124	Excessive movement of shaft 5		Press the stop key to clear the alarm. Move again. Cause: 1. The track acceleration setting is too large

125	Excessive run of shaft 6		Press the stop key to clear the alarm. Move again. Cause: 1. The track acceleration setting is too large
126	Shaft 7 moves too fast		Press the stop key to clear the alarm. Move again. Cause: 1. The track acceleration setting is too large
127	Excessive movement of shaft 8		Press the stop key to clear the alarm. Move again. Cause: 1. The track acceleration setting is too large
130	Axis 1 positive limit alarm		Press the stop key to clear the alarm. Move again.Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range;2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position.
131	Axis 2 positive limit alarm		Press the stop key to clear the alarm. Move again.Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position.
132	Axis 3 positive limit alarm		Press the stop key to clear the alarm. Move again.Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position.
133	Axis 4 positive limit alarm		Press the stop key to clear the alarm. Move again.Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position.

134	Axis 5 positive limit alarm		Press the stop key to clear the alarm. Move again. Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position.
135	Axis 6 positive limit alarm		Press the stop key to clear the alarm. Move again. Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position.
136	Axis 7 positive limit alarm		Press the stop key to clear the alarm. Move again. Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position.
137	Axis 8 positive limit alarm		Press the stop key to clear the alarm. Move again. Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position.
140	Axis 1 negative limit alarm		Press the stop key to clear the alarm. Move again. Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position
141	Axis 2 negative limit alarm		Press the stop key to clear the alarm. Move again. Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position

142	Axis 3 negative limit alarm		Press the stop key to clear the alarm. Move again. Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position
143	Axis 4 negative limit alarm		Press the stop key to clear the alarm. Move again. Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position
144	Axis 5 negative limit alarm		Press the stop key to clear the alarm. Move again. Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position
145	Axis 6 negative limit alarm		Press the stop key to clear the alarm. Move again. Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position
146	Axis 7 negative limit alarm		Press the stop key to clear the alarm. Move again. Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position
147	Axis 8 negative limit alarm		Press the stop key to clear the alarm. Move again. Reasons: 1. If the movement exceeds the single axis soft limit range, reset the single axis soft limit range; 2. The teaching program position exceeds the single axis soft limit range, modify the teaching program position

150	Excessive deviation of shaft 1		Machine Setting - > operation parameters, increase the tolerance setting, and press the stop key to clear the alarm. Move again.Cause: 1. The servo feedback pulse signal is incorrect. Test the forward and reverse rotation of the motor on the motor page. 2. The tolerance setting is too small. During the movement, there is a certain gap between the feedback pulse and the output pulse. Set the tolerance difference to a reasonable position.
151	Excessive deviation of shaft 2		Machine Setting - > operation parameters, increase the tolerance setting, and press the stop key to clear the alarm. Move again.Cause: 1. The servo feedback pulse signal is incorrect. Test the forward and reverse rotation of the motor on the motor page. 2. The tolerance setting is too small. During the movement, there is a certain gap between the feedback pulse and the output pulse. Set the tolerance difference to a reasonable position.
152	Excessive deviation of shaft 3		Machine Setting - > operation parameters, increase the tolerance setting, and press the stop key to clear the alarm. Move again.Cause: 1. The servo feedback pulse signal is incorrect. Test the forward and reverse rotation of the motor on the motor page. 2. The tolerance setting is too small. During the movement, there is a certain gap between the feedback pulse and the output pulse. Set the tolerance difference to a reasonable position.
153	Excessive deviation of shaft 4		Machine Setting - > operation parameters, increase the tolerance setting, and press the stop key to clear the alarm. Move again.Cause: 1. The servo feedback pulse signal is incorrect. Test the forward and reverse rotation of the motor on the motor page. 2. The tolerance setting is too small. During the movement, there is a certain gap between the feedback pulse and the output pulse. Set the tolerance difference to a reasonable position.
154	Excessive deviation of shaft 5		Machine Setting - > operation parameters, increase the tolerance setting, and press the stop key to clear the alarm. Move again.Cause: 1. The servo feedback pulse signal is incorrect. Test the forward and reverse rotation of the motor on the motor

			page. 2. The tolerance setting is too small. During the movement, there is a certain gap between the feedback pulse and the output pulse. Set the tolerance difference to a reasonable position.
155	Excessive deviation of shaft 6		Machine Setting - > operation parameters, increase the tolerance setting, and press the stop key to clear the alarm. Move again.Cause: 1. The servo feedback pulse signal is incorrect. Test the forward and reverse rotation of the motor on the motor page. 2. The tolerance setting is too small. During the movement, there is a certain gap between the feedback pulse and the output pulse. Set the tolerance difference to a reasonable position.
156	Excessive deviation of shaft 7		Machine Setting - > operation parameters, increase the tolerance setting, and press the stop key to clear the alarm. Move again.Cause: 1. The servo feedback pulse signal is incorrect. Test the forward and reverse rotation of the motor on the motor page. 2. The tolerance setting is too small. During the movement, there is a certain gap between the feedback pulse and the output pulse. Set the tolerance difference to a reasonable position.
157	Excessive deviation of shaft 8		Machine Setting - > operation parameters, increase the tolerance setting, and press the stop key to clear the alarm. Move again.Cause: 1. The servo feedback pulse signal is incorrect. Test the forward and reverse rotation of the motor on the motor page. 2. The tolerance setting is too small. During the movement, there is a certain gap between the feedback pulse and the output pulse. Set the tolerance difference to a reasonable position.
160	Axis 1 acceleration alarm		Press the stop key to clear the alarm. Move again. Cause: 1. The acceleration setting is too large.

161	Axis 2 acceleration alarm		Press the stop key to clear the alarm. Move again. Cause: 1. The acceleration setting is too large.
162	Axis 3 acceleration alarm		Press the stop key to clear the alarm. Move again. Cause: 1. The acceleration setting is too large.
163	Axis 4 acceleration alarm		Press the stop key to clear the alarm. Move again. Cause: 1. The acceleration setting is too large.
164	Axis 5 acceleration alarm		Press the stop key to clear the alarm. Move again. Cause: 1. The acceleration setting is too large.
165	Axis 6 acceleration alarm		Press the stop key to clear the alarm. Move again. Cause: 1. The acceleration setting is too large.
166	Axis 7 acceleration alarm		Press the stop key to clear the alarm. Move again. Cause: 1. The acceleration setting is too large.
167	Axis 8 acceleration alarm		Press the stop key to clear the alarm. Move again. Cause: 1. The acceleration setting is too large.
170	Axis 1 positive limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch; 3. Wrong connection port of limit signal
171	Axis 2 positive limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch; 3. Wrong connection port of limit signal

172	Axis 3 positive limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch; 3. Wrong connection port of limit signal
173	Axis 4 positive limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch; 3. Wrong connection port of limit signal
174	Axis 5 positive limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch; 3. Wrong connection port of limit signal
175	Axis 6 positive limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch; 3. Wrong connection port of limit signal
176	Axis 7 positive limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch; 3. Wrong connection port of limit signal
177	Axis 8 positive limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch; 3. Wrong connection port of limit signal
180	Axis 1 negative limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch;3. Wrong connection port of limit signal

181	Axis 2 negative limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch;3. Wrong connection port of limit signal
182	Axis 3 negative limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch;3. Wrong connection port of limit signal
183	Axis 4 negative limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch;3. Wrong connection port of limit signal
184	Axis 5 negative limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch;3. Wrong connection port of limit signal
185	Axis 6 negative limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch;3. Wrong connection port of limit signal
186	Axis 7 negative limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 2. Limit signal is normally closed or normally open, which is inconsistent with the installed switch; 3. Wrong connection port of limit signal
187	Axis 8 negative limit signal alarm		Press the stop key to clear the alarm. Move again.Cause: 1. Limit signal is off. 3.Limit signal is normally closed or normally open, which is inconsistent with the installed switch; 3. Wrong connection port of limit signal

190	Axis 1 zero point signal not set		Press the stop key to clear the alarm. Reset. Reason: the axis zero point signal is not set in the system parameters. The origin instruction performs a signal with an origin
191	Axis 2 zero point signal not set		Press the stop key to clear the alarm. Reset. Reason: the axis zero point signal is not set in the system parameters. The origin instruction performs a signal with an origin
192	Axis 3 zero point signal not set		Press the stop key to clear the alarm. Reset. Reason: the axis zero point signal is not set in the system parameters. The origin instruction performs a signal with an origin
193	Axis 4 zero point signal not set		Press the stop key to clear the alarm. Reset. Reason: the axis zero point signal is not set in the system parameters. The origin instruction performs a signal with an origin
194	Axis 5 zero point signal not set		Press the stop key to clear the alarm. Reset. Reason: the axis zero point signal is not set in the system parameters. The origin instruction performs a signal with an origin
195	Axis 6 zero point signal not set		Press the stop key to clear the alarm. Reset. Reason: the axis zero point signal is not set in the system parameters. The origin instruction performs a signal with an origin
196	Axis 7 zero point signal not set		Press the stop key to clear the alarm. Reset. Reason: the axis zero point signal is not set in the system parameters. The origin instruction performs a signal with an origin
197	Axis 8 zero point signal not set		Press the stop key to clear the alarm. Reset. Reason: the axis zero point signal is not set in the system parameters. The origin instruction performs a signal with an origin
200	Track motion failed		Press the stop key to clear the alarm. Move again. Reason: there are some singularities in the trajectory motion, which can be bypassed by uniaxial motion.

219	Track motion speed setting failed		Press the stop key to clear the alarm. Move again. Reason: 1. Set the speed to 0; 2. The track is still moving, and the next track is moving. For example, the main program is running one track, and the subroutine starts another track.
220	Trajectory planning failed		Press the stop key to clear the alarm. Slow down and move again. Reason: on orbit there are some singularities in the trace motion, which can be bypassed by uniaxial motion
221	Trajectory re planning failed		Reasons: 1. The track speed is too fast. After correcting the track speed for many times, One joint still moves too fast
222	Timeout waiting for stacked data sources		Reasons: 1. Visual photography was unsuccessful. 2. Visual communication disconnected
223	Stack data source error		Check the setting of the stack counter
260	Remote communication photographing failed		Photo taking failed
300	Counter not defined		Reset counter
301	Timer not defined		Reset timer
310	And or command wait timeout		Check signal
500	Shaft 1 over current alarm		Servo alarm
501	Shaft 2 over current alarm		Servo alarm
502	Shaft 3 over current alarm		Servo alarm
503	Shaft 4 over current alarm		Servo alarm
504	Shaft 5 over current alarm		Servo alarm
505	Shaft 6 over current alarm		Servo alarm
506	Shaft 7 over current alarm		Servo alarm
507	Shaft 8 over current alarm		Servo alarm
510	Axis 1 Z pulse error		Check servo and servo wiring
511	Axis 2 Z pulse error		Check servo and servo wiring

512	Axis 3 Z pulse error		Check servo and servo wiring
513	Axis 4 Z pulse error		Check servo and servo wiring
514	Axis 5 Z pulse error		Check servo and servo wiring
515	Axis 6 Z pulse error		Check servo and servo wiring
516	Axis 7 Z pulse error		Check servo and servo wiring
517	Axis 8 Z pulse error		Check servo and servo wiring
520	Axis 1 no Z pulse		Check servo and servo wiring
521	No Z pulse on axis 2		Check servo and servo wiring
522	No Z pulse on axis 3		Check servo and servo wiring
523	Axis 4 no Z pulse		Check servo and servo wiring
524	No Z pulse on axis 5		Check servo and servo wiring
525	No Z pulse on axis 6		Check servo and servo wiring
526	No Z pulse on axis 7		Check servo and servo wiring
527	No Z pulse on axis 8		Check servo and servo wiring
530	Axis 1 origin offset		The origin has changed. Reset the origin
531	Axis 2 origin offset		The origin has changed. Reset the origin
532	Axis 3 origin offset		The origin has changed. Reset the origin
533	Axis 4 origin offset		The origin has changed. Reset the origin
534	Axis 5 origin offset		The origin has changed. Reset the origin
535	Axis 6 origin offset		The origin has changed. Reset the origin
536	Axis 7 origin offset		The origin has changed. Reset the origin
537	Axis 8 origin offset		The origin has changed. Reset the origin
540	Axis 1 positive and negative limit conflict		Test wiring and signal settings
541	Axis 2 positive and		Test wiring and signal settings

	negative limit conflict		
542	Axis 3 positive and negative limit conflict		Test wiring and signal settings
543	Axis 4 positive and negative limit conflict		Test wiring and signal settings
544	Axis 5 positive and negative limit conflict		Test wiring and signal settings
545	Axis 6 positive and negative limit conflict		Test wiring and signal settings
546	Axis 7 positive and negative limit conflict		Test wiring and signal settings
547	Axis 8 positive and negative limit conflict		Test wiring and signal settings
601	Non safety zone zone 1 alarm		Move the manipulator to a safe area
602	Non safety zone 2 alarm		Move the manipulator to a safe area
603	Non safety zone zone 3 alarm		Move the manipulator to a safe area
604	Non safety zone 4 alarm		Move the manipulator to a safe area
605	Non safety zone zone 5 alarm		Move the manipulator to a safe area
606	Non safety zone 6 alarm		Move the manipulator to a safe area
650	Double arm distance detection alarm		Move the manipulator to a safe area
651	Double arm signal detection alarm		Move the manipulator to a safe area
700	Machine tool safety zone alarm		Move the manipulator to a safe area
800	Axis 1 servo off line		Check wiring and servo
801	Axis 2 servo off line		Check wiring and servo
802	Axis 3 servo off line		Check wiring and servo
803	Axis 4 servo off line		Check wiring and servo

804	Axis 5 servo off line		Check wiring and servo
805	Axis 6 servo off line		Check wiring and servo
806	Axis 7 servo off line		Check wiring and servo
807	Axis 8 servo off line		Check wiring and servo
900	Motor 1 encoder battery failure		Servo alarm, check servo
901	Motor 2 encoder battery failure		Servo alarm, check servo
902	Motor 3 encoder battery failure		Servo alarm, check servo
903	Motor 4 encoder battery failure		Servo alarm, check servo
904	Motor 5 encoder battery failure		Servo alarm, check servo
905	Motor 6 encoder battery failure		Servo alarm, check servo
906	Motor 7 encoder battery failure		Servo alarm, check servo
907	Motor 8 encoder battery failure barrier		Servo alarm, check servo
910	Motor 1 encoder on-off fault barrier		Servo alarm, check servo
911	Motor 2 encoder on-off fault barrier		Servo alarm, check servo
912	Motor 3 encoder on-off fault barrier		Servo alarm, check servo
913	Motor 4 encoder on-off fault barrier		Servo alarm, check servo
914	Motor 5 encoder on-off fault barrier		Servo alarm, check servo
915	Motor 6 encoder on-off fault barrier		Servo alarm, check servo
916	Motor 7 encoder on-off fault barrier		Servo alarm, check servo
917	Motor 8 encoder on-off fault barrier		Servo alarm, check servo

920	Motor 1 is not recognized and needs to be restarted		Power off and restart
921	Motor 2 is not recognized and needs to be restarted		Power off and restart
922	Motor 3 is not recognized and needs to be restarted		Power off and restart
923	Motor 4 is not recognized and needs to be restarted		Power off and restart
924	Motor 5 is not recognized and needs to be restarted		Power off and restart
925	Motor 6 is not recognized and needs to be restarted		Power off and restart
926	Motor 7 is not recognized and needs to be restarted		Power off and restart
927	Motor 8 is not recognized and needs to be restarted		Power off and restart
1000	Servo 1 fault, servo not enable		Servo alarm, check servo
1001	Servo 2 fault, servo not enabled		Servo alarm, check servo
1002	Servo 3 fault, servo not enabled		Servo alarm, check servo
1003	Servo 4 fault, servo not enabled		Servo alarm, check servo
1004	Servo 5 fault, servo not enabled		Servo alarm, check servo
1005	Servo 6 fault, servo not enabled		Servo alarm, check servo
1006	Servo 7 fault, servo not enabled		Servo alarm, check servo
1007	Servo 8 fault, servo not enabled		Servo alarm, check servo

1020	RTEX, drive 1 Failure		Servo alarm, check servo
1021	RTEX, drive 2 fault		Servo alarm, check servo
1022	RTEX, drive 3 fault		Servo alarm, check servo
1023	RTEX, drive 4 fault		Servo alarm, check servo
1024	RTEX, drive 5 failure		Servo alarm, check servo
1025	RTEX, drive 6 failure		Servo alarm, check servo
1026	RTEX, drive 7 failure		Servo alarm, check servo
1027	RTEX, drive 8 failure		Servo alarm, check servo
1497	When the encoder is absolute, please confirm whether to execute the zero point process order		Please confirm
1498	Different manufacturers		Reset motor parameter
1499	Different control modes		Reset motor parameter
1500	Axis 1CAN communication timeout		Check the servo wiring and servo setting
1501	Axis 2CAN communication timeout		Check the servo wiring and servo setting
1502	Axis 3CAN communication timeout		Check the servo wiring and servo setting
1503	Axis 4CAN communication timeout		Check the servo wiring and servo setting
1504	Axis 5CAN communication timeout		Check the servo wiring and servo setting
1505	Axis 6CAN communication timeout		Check the servo wiring and servo setting
1506	Axis 7CAN communication		Check the servo wiring and servo setting

	timeout		
1507	Axis 8CAN communication timeout		Check the servo wiring and servo setting
1508	Axis 1CAN read data error		Check the servo wiring and servo setting
1509	Axis 2Can read data error		Check the servo wiring and servo setting
1510	Error reading data of axis 3Can		Check the servo wiring and servo setting
1511	Error reading data of axis 4Can		Check the servo wiring and servo setting
1512	Axis 5Can data reading error		Check the servo wiring and servo setting
1513	Axis 6can read data error		Check the servo wiring and servo setting
1514	Axis 7can read data error		Check the servo wiring and servo setting
1515	Axis 8can read data error		Check the servo wiring and servo setting
1516	Axis 1Can write data error		Check the servo wiring and servo setting
1517	Axis 2Can write data error		Check the servo wiring and servo setting
1518	Axis 3Can write data error		Check the servo wiring and servo setting
1519	Axis 4Can write data error		Check the servo wiring and servo setting
1520	Axis 5Can write data error		Check the servo wiring and servo setting
1521	Axis 6can write data error		Check the servo wiring and servo setting
1522	Axis 7can write data error		Check the servo wiring and servo setting
1523	Axis 8can write data error		Check the servo wiring and servo setting
1524	Axis 1 servo over current		Servo alarm
1525	Axis 2 servo over current		Servo alarm
1526	Axis 3 servo over current		Servo alarm
1527	Axis 4 servo over current		Servo alarm

1528	Axis 5 servo over current		Servo alarm
1529	Axis 6 servo over current		Servo alarm
1530	Axis 7 servo over current		Servo alarm
1531	Axis 8 servo over current		Servo alarm
1532	Axis 1 Drive main circuit electrical over voltage		Servo alarm
1533	Shaft 2 driver main circuit power over voltage		Servo alarm
1534	Shaft 3 driver main circuit power over voltage		Servo alarm
1535	Shaft 4 driver main circuit power Over voltage		Servo alarm
1536	Shaft 5 driver main circuit power over voltage		Servo alarm
1537	Shaft 6 driver main circuit over voltage		Servo alarm
1538	Shaft 7 driver main circuit power over voltage		Servo alarm
1539	Shaft 8 driver main circuit power over voltage		Servo alarm
1540	Shaft 1 driver main circuit power under voltage		Servo alarm
1541	Shaft 2 driver main circuit power under voltage		Servo alarm
1542	Shaft 3 driver main circuit power under voltage		Servo alarm
1543	Shaft 4 driver main circuit power under voltage		Servo alarm
1543	Shaft 4 driver main circuit power under voltage		Servo alarm

1545	Electrical under voltage of main circuit of shaft 6 driver		Servo alarm
1546	Shaft 7 driver main circuit power under voltage		Servo alarm
1547	Shaft 8 driver main circuit power under voltage		Servo alarm
1548	Axis 1 servo control electric under voltage		Servo alarm
1549	Axis 2 servo control electric under voltage		Servo alarm
1550	Axis 3 servo control electric under voltage		Servo alarm
1551	Axis 4 servo control electric under voltage		Servo alarm
1552	Axis 5 servo control electric under voltage		Servo alarm
1553	Axis 6 servo control electric under voltage		Servo alarm
1554	Axis 7 servo control electric under voltage		Servo alarm
1555	Axis 8 servo control electric under voltage		Servo alarm
1556	Axis 1 servo output short to ground road		Servo alarm
1557	Axis 2 servo output short circuit to ground		Servo alarm
1558	Axis 3 servo output short to ground road		Servo alarm
1559	Axis 4 servo output short to ground road		Servo alarm
1560	Axis 5 servo output short to ground road		Servo alarm
1561	Axis 6 servo output short to ground road		Servo alarm
1562	Axis 7 servo output short to ground road		Servo alarm
1563	Axis 8 servo output short to ground road		Servo alarm
1564	Axis 1 power line phase loss warning		Servo alarm
1565	Shaft 2 power line phase loss warning		Servo alarm

1566	Shaft 3 power line phase loss warning		Servo alarm
1567	Shaft 4 power line phase loss warning		Servo alarm
1568	Axis 5 power line phase loss warning		Servo alarm
1569	Axis 6 power line phase loss warning		Servo alarm
1570	Axis 7 power line phase loss warning		Servo alarm
1571	Shaft 8 power line phase loss warning		Servo alarm
1572	Axis 1 servo braking resistance is too high load		Servo alarm
1573	Axis 2 servo braking resistance is too high load		Servo alarm
1574	Axis 3 servo braking resistance is too high load		Servo alarm
1575	Axis 4 servo braking resistance is too high load		Servo alarm
1576	Axis 5 servo braking resistance is too high load		Servo alarm
1577	Axis 6 servo braking resistance overload		Servo alarm
1578	Axis 7 servo braking resistance is too high load		Servo alarm
1579	Axis 8 servo braking resistance is too high load		Servo alarm
1580	Shaft 1 driver overload warning		Servo alarm
1581	Shaft 2 driver overload warning		Servo alarm
1582	Shaft 3 driver overload warning		Servo alarm

1583	Shaft 4 driver overload warning		Servo alarm
1584	Shaft 5 driver overload warning		Servo alarm
1585	Shaft 6 driver overload warning		Servo alarm
1586	Shaft 7 driver overload warning		Servo alarm
1587	Shaft 8 driver overload warning		Servo alarm
1588	Shaft 1 motor power line broken		Servo alarm
1589	Shaft 2 motor power line broken		Servo alarm
1590	Broken power line of shaft 3 Motor		Servo alarm
1591	Broken power line of shaft 4 motor		Servo alarm
1592	Shaft 5 motor power line broken		Servo alarm
1593	Broken power line of shaft 6 motor		Servo alarm
1594	Shaft 7 motor power line broken		Servo alarm
1595	Broken power line of shaft 8 motor		Servo alarm
1596	Shaft 1 drive radiator overheating		Servo alarm
1597	Shaft 2 drive radiator overheat		Servo alarm
1598	Shaft 3 drive radiator overheat		Servo alarm
1599	Shaft 4 drive radiator overheat		Servo alarm
1600	Shaft 5 drive radiator overheat		Servo alarm
1601	Shaft 6 drive radiator overheat		Servo alarm
1602	Shaft 7 drive radiator overheat		Servo alarm
1603	Shaft 8 drive radiator overheat		Servo alarm
1604	Axis 1 drive parameter storage fault		Servo alarm
1605	Axis 2 driver parameter storage fault		Servo alarm

1606	Axis 3 driver parameter storage fault		Servo alarm
1607	Axis 4 driver parameter storage fault		Servo alarm
1608	Axis 5 driver parameter storage failure		Servo alarm
1609	Axis 6 driver parameter storage fault		Servo alarm
1610	Axis 7 driver parameter storage fault		Servo alarm
1611	Axis 8 driver parameter storage failure		Servo alarm
1612	Axis 1 driver setup parameter abnormal		Servo alarm
1613	Axis 2 driver setup parameter abnormal		Servo alarm
1614	Axis 3 driver setup parameter abnormal		Servo alarm
1615	Axis 4 driver setup parameter abnormal		Servo alarm
1616	Axis 5 driver setup parameter abnormal		Servo alarm
1617	Axis 6 driver setup parameter abnormal		Servo alarm
1618	Abnormal setting parameters of axis 7 driver		Servo alarm
1619	Axis 8 driver setup parameter abnormal		Servo alarm
1620	Axis 1 servo motor locked		Servo alarm
1621	Axis 2 servo motor locked		Servo alarm
1622	Locked rotor of axis 3 servo motor		Servo alarm
1623	Axis 4 servo motor locked		Servo alarm
1624	Axis 5 servo motor locked rotor		Servo alarm
1625	Axis 6 servo motor locked		Servo alarm
1626	Axis 7 servo motor locked		Servo alarm
1627	Shaft 8 servo motor locked		Servo alarm
1628	Shaft 1 encoder internal fault		Servo alarm
1629	Shaft 2 encoder internal fault		Servo alarm
1630	Shaft 3 encoder internal fault		Servo alarm

1631	Shaft 4 encoder internal fault		Servo alarm
1632	Shaft 5 encoder internal fault		Servo alarm
1633	Shaft 6 encoder internal fault		Servo alarm
1634	Shaft 7 encoder internal fault		Servo alarm
1635	Shaft 8 encoder internal fault		Servo alarm
1636	Axis 1 servo motor over speed		Servo alarm
1637	Axis 2 servo motor over speed		Servo alarm
1638	Axis 3 servo motor over speed		Servo alarm
1639	Axis 4 servo motor over speed		Servo alarm
1640	Axis 5 servo motor over speed		Servo alarm
1641	Axis 6 servo motor over speed		Servo alarm
1642	Axis 7 servo motor over speed		Servo alarm
1643	Axis 8 servo motor over speed		Servo alarm
1644	Axis 1 driver position deviation too large		Servo alarm
1645	Axis 2 driver position deviation too large		Servo alarm
1646	The position deviation of shaft 3 driver is too large		Servo alarm
1647	Axis 4 driver position deviation too large		Servo alarm
1648	Axis 5 driver position deviation too large		Servo alarm
1649	The position deviation of shaft 6 driver is too large		Servo alarm
1650	Shaft 7 driver position deviation too large		Servo alarm
1651	Shaft 8 driver position deviation too large		Servo alarm
1652	Abnormal pulse of shaft 1 driver		Servo alarm

1653	Abnormal pulse of shaft 2 driver		Servo alarm
1654	Abnormal pulse of shaft 3 driver		Servo alarm
1655	Abnormal pulse of axis 4 driver		Servo alarm
1656	Abnormal pulse of axis 5 driver		Servo alarm
1657	Abnormal pulse of shaft 6 driver		Servo alarm
1658	Abnormal pulse of shaft 7 driver		Servo alarm
1659	Abnormal pulse of shaft 8 driver		Servo alarm
1660	Axis 1canopen node protection or heartbeat timeout		Check parameter setting and servo wiring
1661	Axis 2canopen node protection or heartbeat timeout		Check parameter setting and servo wiring
1662	Axis 3canopen node protection or heartbeat timeout		Check parameter setting and servo wiring
1663	Axis 4canopen node protection o r heartbeat timeout		Check parameter setting and servo wiring
1664	Axis 5canopen node protection or heartbeat timeout		Check parameter setting and servo wiring
1665	Axis 6canopen node protection or heartbeat timeout		Check parameter setting and servo wiring
1666	Axis 7canopen node protection or heartbeat timeout		Check parameter setting and servo wiring
1667	Axis 8canopen node protection or heartbeat timeout		Check parameter setting and servo wiring
1668	Axis 1canopen PDO transmission length error		Check parameter setting and servo wiring
1669	Axis 2canopen PDO transmission length error		Check parameter setting and servo wiring
1670	Axis 3canopen PDO transmission length error		Check parameter setting and servo wiring

1671	Axis 4canopen PDO transmission length error		Check parameter setting and servo wiring
1672	Axis 5canopen PDO transmission length error		Check parameter setting and servo wiring
1673	Axis 6canopen PDO transmission length error		Check parameter setting and servo wiring
1674	Axis 7canopen PDO transmission length error		Check parameter setting and servo wiring
1675	Axis 8canopen PDO transmission length error		Check parameter setting and servo wiring
1676	Axis 1 servo alarm, reaching reverse directional switch		Check servo parameter settings
1677	Axis 2 servo alarm, reaching reverse directional switch		Check servo parameter settings
1678	Axis 3 servo alarm, reaching reverse directional switch		Check servo parameter settings
1679	Axis 4 servo alarm, reaching reverse directional switch		Check servo parameter settings
1680	Axis 5 servo alarm, reaching reverse directional switch		Check servo parameter settings
1681	Axis 6 servo alarm, reaching the reverse switch		Check servo parameter settings
1682	Axis 7 servo alarm, reaching reverse directional switch		Check servo parameter settings
1683	Axis 8 servo alarm, reaching reverse directional switch		Check servo parameter settings
1684	Axis 1 servo alarm		Servo alarm
1685	Axis 2 servo alarm		Servo alarm
1686	Axis 3 servo alarm		Servo alarm
1687	Axis 4 servo alarm		Servo alarm
1688	Axis 5 servo alarm		Servo alarm
1689	Axis 6 servo alarm		Servo alarm
1690	Axis 7 servo alarm		Servo alarm
1691	Axis 8 servo alarm//1691		Servo alarm
1692	//< Axis 1 servo stroke limit alarm		Servo alarm

1693	//< Axis 2 servo travel limit call the police		Servo alarm
1694	//< Axis 3 servo stroke limit call the police		Servo alarm
1695	//< Axis 4 servo stroke limit alarm		Servo alarm
1696	//< Axis 5 servo travel limit call the police		Servo alarm
1697	//< Axis 6 servo stroke limit call the police		Servo alarm
1698	//< Axis 7 servo travel limit call the police		Servo alarm
1699	//< Axis 8 servo stroke limit alarm		Servo alarm
1700	//< Axis 1eeprom read / write error		Servo alarm
1701	//< Axis 2eeprom read / write error		Servo alarm
1702	//< Axis 3eeprom read / write error		Servo alarm
1703	//< Axis 4eeprom read / write error		Servo alarm
1704	//< Axis 5eeprom read / write error		Servo alarm
1705	//< Axis 6eeprom read / write error		Servo alarm
1706	//< Axis 7eeprom read / write error		Servo alarm
1707	//< Axis 8eeprom read / write error		Servo alarm
1708	//< Axis 1canopen communication abnormal		Servo alarm
1709	//< Axis 2canopen communication abnormal		Servo alarm
1710	//< Axis 3canopen communication abnormal		Servo alarm
1711	//< Axis 4canopen communication abnormal		Servo alarm
1712	//< Axis 5canopen communication abnormal		Servo alarm
1713	//< Axis 6canopen communication abnormal		Servo alarm
1714	//< Axis 7canopen communication abnormal		Servo alarm
1715	//< Axis 8canopen communication abnormal		Servo alarm
1716	//< Axis 1 servo overload		Servo alarm

1717	//< Axis 2 servo overload		Servo alarm
1718	//< Axis 3 servo overload		Servo alarm
1719	//< Axis 4 servo overload		Servo alarm
1720	//< Axis 5 servo overload		Servo alarm
1721	//< Axis 6 servo overload		Servo alarm
1722	//< Axis 7 servo overload		Servo alarm
1723	//< Axis 8 servo overload		Servo alarm
1724	//< Axis 1 servo can synchronization abnormal		Servo alarm
1725	//< Axis 2 servo can synchronization abnormal		Servo alarm
1726	//< Axis 3 servo can synchronization abnormal		Servo alarm
1727	//< Axis 4 servo can synchronization abnormal		Servo alarm
1728	//< axis 5 servo can synchronization abnormality		Servo alarm
1729	//< Axis 6 servo can synchronization abnormal		Servo alarm
1730	//< Axis 7 servo can synchronization abnormal		Servo alarm
1731	//< Axis 8 servo can synchronization abnormal		Servo alarm
1732	Servo 1 fault, IGBT overheat		Servo alarm
1733	Servo 2 fault, IGBT overheat		Servo alarm
1734	Servo 3 fault, IGBT overheat		Servo alarm
1735	Servo 4 fault, IGBT overheating		Servo alarm
1736	Servo 5 fault, IGBT overheat		Servo alarm
1737	Servo 6 fault, IGBT overheat		Servo alarm
1738	Servo 7 fault, IGBT overheat		Servo alarm

1739	Servo 8 fault, IGBT overheat		Servo alarm
1740	None or more were detected online first machine		Check can online parameter settings
1741	On line manipulator 1 communication timeout		Unable to communicate with manipulator 1
1742	Online manipulator 2 communication timeout		Unable to communicate with manipulator 2
1743	On line manipulator 3 communication timeout		Unable to communicate with manipulator 3
1744	On line manipulator 4 communication timeout		Unable to communicate with manipulator 4
1745	Online manipulator 5 communication timeout		Unable to communicate with manipulator 5
1746	On line manipulator 6 communication timeout		Unable to communicate with manipulator 6
1747	On line manipulator 7 communication timeout		Unable to communicate with manipulator 7
1748	On line manipulator 8 communication timeout		Unable to communicate with manipulator 8
1749	On line manipulator 9 communication timeout		Unable to communicate with manipulator 9
1750	On line manipulator 10 communication timeout		Unable to communicate with manipulator 10
1751	On line manipulator 11 communication timeout		Unable to communicate with manipulator 11
1752	On line manipulator 12 communication timeout		Unable to communicate with manipulator 12
1753	Online manipulator 13 communication timeout		Unable to communicate with manipulator 13
1754	On line manipulator 14 communication timeout		Unable to communicate with manipulator 14
1755	On line manipulator 15 communication timeout		Unable to communicate with manipulator 15
1756	Online manipulator 16 communication timeout		Unable to communicate with manipulator 16
1757	Online manipulator ID No. 1 conflict		Reset can online ID
1758	Online manipulator ID No. 2 conflict		Reset can online ID
1759	Online manipulator ID No. 3 conflict		Reset can online ID
1760	Online manipulator ID No. 4 conflict		Reset can online ID
1761	Online manipulator ID No. 5 conflict		Reset can online ID
1762	Online manipulator ID No. 6 conflict		Reset can online ID

1763	Online manipulator ID No. 7 conflict		Reset can online ID
1764	Online manipulator ID No. 8 conflict		Reset can online ID
1765	Online manipulator ID No. 9 conflict		Reset can online ID
1766	Online manipulator ID No. 10 conflict		Reset can online ID
1767	Online manipulator ID No. 11 conflict		Reset can online ID
1768	Online manipulator ID No. 12 conflict		Reset can online ID
1769	Online manipulator ID No. 13 conflict		Reset can online ID
1770	Online manipulator ID No. 14 conflict		Reset can online ID
1771	Online manipulator ID No. 15 conflict		Reset can online ID
1772	Online manipulator ID No. 16 conflict		Reset can online ID
1773	Online manipulator 1 is not in automatic state		Switch manipulator 1 to automatic state
1774	Online manipulator 2 is not in automatic state		Switch manipulator 2 to automatic state
1775	Online manipulator 3 is not in automatic state		Switch manipulator 3 to automatic state
1776	Online manipulator 4 is not in self Dynamic state		Switch manipulator 4 to automatic state
1777	Online manipulator 5 is not in automatic state		Switch manipulator 5 to automatic state
1778	Online manipulator 6 is not in automatic state		Switch manipulator 6 to automatic state
1779	Online manipulator 7 is not in automatic state		Switch manipulator 7 to automatic state
1780	Online manipulator 8 is not in automatic state		Switch manipulator 8 to automatic state
1781	Online manipulator 9 is not in automatic state		Switch manipulator 9 to automatic state

1782	Online manipulator 10 is not in automatic state		Switch the manipulator 10 to the automatic state
1783	Online manipulator 11 is not in automatic state		Switch manipulator 11 to automatic state
1784	Online manipulator 12 is not in automatic state		Switch the manipulator 12 to the automatic state
1785	Online manipulator 13 is not in automatic state		Switch the manipulator 13 to the automatic state
1786	The on-line manipulator 14 is not in the automatic state		Switch the manipulator 14 to the automatic state
1787	Online manipulator 15 is not in automatic state		Switch the manipulator 15 to the automatic state
1788	Online manipulator 16 is not in automatic state		Switch the manipulator 16 to the automatic state
1800	Remote emergency stop		On line manipulator emergency stop
1850	Can encoder reading failed		Detect can encoder settings
1851	Can encoder setting failed		Detect can encoder settings
5000	Custom alarm start		Custom alarm
10000	Custom alarm end		Custom alarm
10001	X emergency stop alarm	Servo with emergency stop signal input	1. Screw out the manual controller emergency stop2. Short circuit the emergency stop signal of the main engine
10002	X axis over current	IPM module over current protection	1. Whether the motor is locked2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems
10003	X axis over current	IPM module over current protection	1. Whether the motor is locked2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems
10004	X external bus disconnection	Bus normal not received signal	1. The top 3pin white terminal is loose2. Host failure

10005	X axis overload	Exceed maximum load	1. Check the load2. Whether the motor is locked
10006	X axis overload	Maximum load exceeded	1. Check the load2. Whether the motor is locked and whether the holding brake is released3. Check whether parameter 1 is the corresponding power
10007	X axis motor initialization	On drive Power initialization is not over	1. Press the stop key to clear2. If it cannot be cleared, power on again3. Host failure, replace
10008	X axis motor initialization	Drive power on initialization It's not over	1. Press the stop key to clear2. If it cannot be cleared, power on again3. Host failure, replace
10009	X axis three-phase error	Current exceeds alarm value	1. Line sequence error2. Lack of phase3. The motor code does not correspond to the motor
10010	X axis three-phase error	Current exceeds alarm value	1. Line sequence error2. Lack of phase3. The motor code does not correspond to the motor
10011	XVDC under voltage	Voltage detected below195v	1. The load is too heavy and the acceleration is too high, resulting in too much voltage drop2. The external incoming voltage is too low3. Host failure, replace
10012	XVDC over voltage	Voltage detected above405v	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise2. Brake resistance failure or non conduction3. Host failure, replace

Alarm number	Alarm information	Alarm reason	Processing method
10013	X axis over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded2. Parameter No. 50 is set incorrectly
10014	X axis over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded2. Parameter No. 50 is set incorrectly
10015	Drive overheat	The internal temperature exceeds 75 degrees	1. Check whether the fan is normal2. Host failure, replace
10016	X failed to write EEPROM	Abnormal memory chip	Replace the host
10017	X failed to read EEPROM	Abnormal memory chip	Replace the host
10018	The position deviation of X axis is too large	The deviation between the command value and the actual encoder value exceeds the set value of parameter 49	1. Set No. 49 servo parameter and increase the deviation range2. Acceleration and deceleration settings are too small3. System exception
10019	The position deviation of X axis is too large	The deviation between the command value and the actual encoder value exceeds the set value of parameter 49	1. Set No. 49 servo parameter and increase the deviation range2. Acceleration and deceleration settings are too small3. System exception
10020	X axis encoder error	Encoder communication failure	1. There is a problem with the encoder line2. Poor contact of encoder connector3. Abnormal motor encoder
10021	Abnormal X axis velocity measurement	Abnormal rotation of motor	1. Wrong motor code setting2. Unreasonable gain parameters3. Random rotation caused by motor failure

10022	Initialization of X axis encoder	Encoder initialization	1. There is a problem with the encoder line 2. Poor contact of encoder connector3. Abnormal motor encoder
10023	VDC hardware over voltage	Internal hardware over voltage protection	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction3. Host failure, replace
10024	X external bus err	No bus normal signal received	1. The top 3pin white terminal is loose 2. Host failure
10025	X axis position buffer full	System exception	
10026	X axis position buffer full	System exception	
10027	XEEPROM parameter test abnormality	Abnormal memory chip	Replace the host
10028	X axis encoder error	Encoder communication failure	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
10029	Abnormal X axis velocity measurement	Encoder feedback value is abnormal	1. Wrong motor code setting 2. Unreasonable gain parameters 3. Random rotation caused by motor failure
10030	Initialization of X axis encoder	Encoder initialization	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder

Alarm number	Alarm information	Alarm reason	Processing method
10031	X clear alarm too fast	Clearing alarm frequency too fast	
10032	XEEPROM needs to be restored	Stored parameter verification error	You can write 8051 through parameter 0 and wait for 10s before restarting power on to clear
10033	XEthercat communication timeout	Bus communication timeout	Replace the host
10034	X axis encoder battery power down	Encoder battery power down identification bit	Ensure that the battery is well connected and clear by setting parameter 13 to 0
10035	X axis encoder battery power down	Encoder battery power down identification bit	Ensure that the battery is well connected and clear by setting parameter 13 to 0
10036	Low battery voltage of X axis encoder	The encoder has battery voltage low flag bit	Encoder voltage too low
10037	Low battery voltage of X axis encoder	The encoder has battery voltage low flag bit	Encoder voltage too low
10038	Inconsistent X axis motor code	The motor code read from the encoder is inconsistent with the setting	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting2. If it is incorrect, set parameter 4 to 1 and then set parameter 2 manually parameter number is the correct motor code
10039	Inconsistent X axis motor code	The motor code read from the encoder is inconsistent with the setting	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting2. If it is incorrect, set parameter 4 to 1 and then set parameter 2 manually parameter number is the correct motor code
10040	X axis illegal motor code	Motor code non system support holding code	Set parameter 4 as 1, and then manually set parameter 2 as correct motor code for
10041	X axis illegal motor code	Motor code non system support holding code	Set parameter 4 as 1, and then manually set parameter 2 as correct motor code for
10042	X axis encoder data	The encoder value has not changed	Abnormal motor encoder

	is not updated		
10043	X axis encoder data is not updated	The encoder value has not changed	Abnormal motor encoder
10044	Multi turn value error of X axis encoder		Power off, unplug the battery and reset the encoder / parameter 13Set 0
10045	Multi turn value error of X axis encoder		Power off, unplug the battery and reset the encoder / parameter 13Set 0
10046	X axis power mismatch		Check parameter 2 and confirm whether the motor code is the same as parameter 1Digital power matching
10047	X axis power mismatch		Check parameter 2 and confirm whether the motor code is the same as parameter 1Digital power matching
10048	X axis parameter setting error	Unreasonable parameter setting	Check whether the parameters are within the range: 5 (1, 6000),6(1,300),7(1~300), 11(10,5000),15(10,100), 21(1, 1000),22(0,300), 23(1, 20),31(20000),32(2000/20000),69(4096),71(0), 72(0), 73(0)

Alarm number	Alarm information	Alarm reason	Processing method
10049	X axis parameter setting error	Unreasonable parameter setting	Check whether the parameters are within the range: 5 (1, 6000),6(1,300),7(1~300), 11(10,5000),15(10,100), 21(1, 1000),22(0,300), 23(1, 20),31(20000),32(2000/20000),69(4096),71(0), 72(0), 73(0)
11001	Y emergency stop alarm	Servo has emergency stop signal input	1. Screw out the manual controller emergency stop2. Short circuit the emergency stop signal of the main engine
11002	Y axis over current	IPM module over current protection	1. Whether the motor is locked2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems
11003	Y axis over current	IPM module over current protection	1. Whether the motor is locked2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems
11004	Y external bus disconnected	No bus normal signal received	1. The top 3pin white terminal is loose2. Host failure
11005	Y axis overload	Maximum load exceeded	1. Check the load2. Whether the motor is locked
11006	Y axis overload	Maximum load exceeded	1. Check the load2. Whether the motor is locked and whether the holding brake is released3. Check whether parameter 1 is the corresponding power
11007	Y axis motor initialization	Drive power on initialization is not over	1. Press the stop key to clear2. If it cannot be cleared, power on again3. Host failure, replace
11008	Y axis motor initialization	Drive power on initialization is not over	1. Press the stop key to clear2. If it cannot be cleared, power on again3. Host failure, replace
11009	Y axis three-phase error	Current exceeds alarm value	1. Line sequence error2. Lack of phase3. The motor code does not correspond to the motor
11010	Y axis three-phase error	Current exceeds alarm value	1. Line sequence error2. Lack of phase3. The motor code does not correspond to the motor

11011	YVDC under voltage	Voltage detected below 195v	1. The load is too heavy and the acceleration is too high, resulting in too much voltage drop2. The external incoming voltage is too low3. Host failure, replace
11012	YVDC over voltage	Voltage detected above 405v	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise2. Brake resistance failure or non conduction3. Host failure, replace
11013	Y axis over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded2. Parameter No. 50 is set incorrectly

Alarm number	Alarm information	Alarm reason	Processing method
11014	Y axis over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded2. Parameter No. 50 is set incorrectly
11015	Y drive overheating	The internal temperature exceeds 75 degrees	1. Check whether the fan is normal2. Host failure, replace
11016	Y failed to write EEPROM	Abnormal memory chip	Replace the host
11017	Y failed to read EEPROM	Abnormal memory chip	Replace the host
11018	The position deviation of Y axis is too large	Command value and actual encoder The value deviation exceeds the set value of parameter 49	1. Set No. 49 servo parameter and increase the deviation range2. Acceleration and deceleration settings are too small3. System exception
11019	The position deviation of Y axis is too large	The deviation between the command value and the actual encoder value exceeds reference 49Number setting	1. Set No. 49 servo parameter and increase the deviation range2. Acceleration and deceleration settings are too small3. System exception
11020	Y axis encoder error	Encoder communication failure	1. There is a problem with the encoder line2. Poor contact of encoder connector3. Abnormal motor encoder
11021	Abnormal Y axis speed measurement	Abnormal rotation of motor	1. Wrong motor code setting2. Unreasonable gain parameters3. Random rotation caused by motor failure
11022	Y axis encoder initializing	Encoder initialization	1. There is a problem with the encoder line2. Poor contact of encoder connector3. Abnormal motor encoder
11023	YVDC hardware over voltage	Internal hardware over voltage protection	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise2. Brake resistance failure or non conduction3. Host failure, replace
11024	Y external bus err	No bus normal signal received number	1. The top 3pin white terminal is loose2. Host failure
11025	Y axis position buffer full	System exception	

11026	Y axis position buffer full	System exception	
11027	YEEPROM parameter verification exception	Abnormal memory chip	Replace the host
11028	Y axis encoder error	Encoder communication failure	1. There is a problem with the encoder line2. Poor contact of encoder connector3. Abnormal motor encoder
11029	Abnormal Y axis speed measurement	Encoder feedback value is abnormal	1. Wrong motor code setting2. Unreasonable gain parameters3. Random rotation caused by motor failure
11030	Y axis encoder initializing	Encoder initialization	1. There is a problem with the encoder line2. Poor contact of encoder connector3. Abnormal motor encoder
11031	Y clear alarm too fast	Clearing alarm frequency too fast	
11032	YEEPROM needs to be restored	The stored parameters are verified incorrectly	You can write 8051 through parameter 0 and wait for 10s before restarting new power on to clear

Alarm number	Alarm information	Alarm reason	Processing method
11033	YEthercat communication timeout	Bus communication timeout	Replace the host
11034	Power failure of Y axis encoder battery	The encoder has a battery power down sign position	Ensure that the battery is well connected and set 0 through parameter 13eliminate
11035	Power failure of Y axis encoder battery	The encoder has a battery power down sign position	Ensure that the battery is well connected and set 0 through parameter 13eliminate
11036	Low battery voltage of Y axis encoder	The encoder has a low battery voltage scale recognition position	Encoder voltage too low
11037	Low battery voltage of Y axis encoder	The encoder has a low battery voltage scale recognition position	Encoder voltage too low
11038	Inconsistent Y axis motor code	The motor code read from the encoder is inconsistent with the setting	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting2. If it is incorrect, set parameter 4 to 1 and then set it manually set parameter 2 as the correct motor code
11039	Inconsistent Y axis motor code	The motor code read from the encoder is inconsistent with the setting	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting2. If it is incorrect, set parameter 4 to 1 and then set it manually set parameter 2 as the correct motor code
11040	Y axis illegal motor code	Motor code not supported by the system code	Set parameter 4 to 1, and then manually set parameter 2 to 1Correct motor code
11041	Y axis illegal motor code	Motor code not supported by the system code	Set parameter 4 to 1, and then manually set parameter 2 to 1Correct motor code
11042	Y axis encoder data is not updated	The encoder value has not changed	Abnormal motor encoder
11043	Y axis encoder data is	The encoder value has	Abnormal motor encoder

	not updated	not changed	
11044	Multi turn value error of Y axis encoder		Power off, unplug the battery and reset the encoder / reference 13Set the number to 0
11045	Multi turn value error of Y axis encoder		Power off, unplug the battery and reset the encoder / reference 13Set the number to 0
11046	Y axis power mismatch		Check parameter 2 and confirm whether the motor code is the same as 1No. parameter power matching
11047	Y axis power mismatch		Check parameter 2 and confirm whether the motor code is the same as 1No. parameter power matching
11048	Y axis parameter setting error	Unreasonable parameter setting	Check whether the parameters are within the range: 5 (1, 6000), 6 (1300), 7 (1 ~ 300), 11 (10,5000),15(10,100), 21(1, 1000),22(0,300), 23(1, 20),31(20000),32(2000/20000),69(4096),71(0), 72(0), 73(0)
11049	Y axis parameter setting error	Unreasonable parameter setting	Check whether the parameters are within the range: 5 (1, 6000), 6 (1300), 7 (1 ~ 300), 11 (10,5000),15(10,100), 21(1, 1000),22(0,300), 23(1, 20),31(20000),32(2000/20000),69(4096),71(0), 72(0), 73(0)

Alarm number	Alarm information	Alarm reason	Processing method
12001	Z emergency stop alarm	Servo has emergency stop signal input	1. Screw out the manual controller emergency stop2. Short circuit the emergency stop signal of the main engine
12002	Z axis over current	IPM module over current protection	1. Whether the motor is locked2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems
12003	Z axis over current	IPM module over current protection	1. Whether the motor is locked2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems
12004	Z external bus disconnection	No bus normal signal received	1. The top 3pin white terminal is loose2. Host failure
12005	Z axis overload	Maximum load exceeded	1. Check the load2. Whether the motor is locked
12006	Z axis overload	Maximum load exceeded	1. Check the load2. Whether the motor is locked and whether the holding brake is released3. Check whether parameter 1 is the corresponding power
12007	Z axis motor initialization	Drive power on initialization is not over	1. Press the stop key to clear2. If it cannot be cleared, power on again3. Host failure, replace
12008	Z axis motor initialization	Drive power on initialization is not over	1. Press the stop key to clear2. If it cannot be cleared, power on again3. Host failure, replace
12009	Z axis three-phase error	Current exceeds alarm value	1. Line sequence error2. Lack of phase3. The motor code does not correspond to the motor
12010	Z axis three-phase error	Current exceeds alarm value	1. Line sequence error2. Lack of phase3. The motor code does not correspond to the motor
12011	ZVDC under voltage	Voltage detected below 195v	1. The load is too heavy and the acceleration is too high, resulting in too much voltage drop2. The external incoming

			voltage is too low3. Host failure, replace
12012	ZVDC over voltage	Voltage detected above 405v	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise2. Brake resistance failure or non conduction3. Host failure, replace
12013	Z axis over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded2. Parameter No. 50 is set incorrectly
12014	Z axis over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded2. Parameter No. 50 is set incorrectly
12015	Z drive overheating	The internal temperature exceeds 75 degrees	1. Check whether the fan is normal2. Host failure, replace
12016	Z failed to write EEPROM	Abnormal memory chip	Replace the host
12017	Z failed to read EEPROM	Abnormal memory chip	Replace the host

Alarm number	Alarm information	Alarm reason	Processing method
12018	The Z axis position deviation is too large	The deviation between the command value and the actual encoder value exceeds the parameter setting of No. 49value	1. Set No. 49 servo parameter and increase the deviation range2. Acceleration and deceleration settings are too small3. System exception
12019	The Z axis position deviation is too large	Command value and actual encoder value the deviation exceeds the setting value of parameter 49	1. Set No. 49 servo parameter and increase the deviation range2. Acceleration and deceleration settings are too small3. System exception
12020	Z axis encoder error	Encoder communication failure	1. There is a problem with the encoder line2. Poor contact of encoder connector3. Abnormal motor encoder
12021	Abnormal Z axis velocity measurement	Abnormal rotation of motor	1. Wrong motor code setting2. Unreasonable gain parameters3. Random rotation caused by motor failure
12022	Z axis encoder initialization	Encoder initialization	1. There is a problem with the encoder line2. Poor contact of encoder connector3. Abnormal motor encoder
12023	ZVDC hardware over voltage	Internal hardware over voltage protection	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise2. Brake resistance failure or non conduction3. Host failure, replace
12024	Z external bus err	No bus normal signal received	1. The top 3pin white terminal is loose2. Host failure
12025	Z axis position buffer full	System exception	
12026	Z axis position buffer full	System exception	
12027	ZEEPROM parameter verification abnormal	Abnormal memory chip	Replace the host
12028	Z axis encoder error	Encoder communication failure	1. There is a problem with the encoder line2. Poor contact of encoder connector3. Abnormal motor encoder
12029	Abnormal Z axis velocity measurement	Encoder feedback value is abnormal	1. Wrong motor code setting2. Unreasonable gain parameters3. Random rotation caused by motor failure

12030	Z axis encoder initialization	Encoder initialization	1. There is a problem with the encoder line2. Poor contact of encoder connector3. Abnormal motor encoder
12031	Z clear alarm too fast	Clearing alarm frequency too fast	
12032	ZEEPROM needs to be restored	The stored parameters are verified incorrectly	You can write 8051 through parameter 0 and wait for 10s to restart electricity to clear
12033	ZEthercat communication timeout	Bus communication timeout	Replace the host
12034	Z axis encoder battery is drop power	The encoder has a battery power down sign position	Ensure that the battery is well connected and clear by setting parameter 13 to 0
12035	Z axis encoder battery is drop power	The encoder has a battery power down sign position	Ensure that the battery is well connected and clear by setting parameter 13 to 0
12036	Z axis encoder battery power low voltage	The encoder has a low battery voltage scale recognition position	Encoder voltage too low

Alarm number	Alarm information	Alarm reason	Processing method
12037	Z axis encoder battery power Low voltage	The encoder has a low battery voltage scale recognition position	Encoder voltage too low
12038	Inconsistent Z axis motor code	The motor code read from the encoder is inconsistent with the setting	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting2. If it is incorrect, set parameter 4 to 1 and then set parameter 2 manually parameter number is the correct motor code
12039	Inconsistent Z axis motor code	The motor code read from the encoder is inconsistent with the setting	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting 2. If it is incorrect, set parameter 4 to 1 and then set parameter 2 manually parameter number is the correct motor code
12040	Z axis illegal motor code	Motor code not supported by the system code	Set parameter 4 as 1, and then manually set parameter 2 as correct motor code for
12041	Z axis illegal motor generation code	Motor code not supported by the system code	Set parameter 4 as 1, and then manually set parameter 2 as correct motor code for
12042	Z axis encoder data is in not update	The encoder value has not changed	Abnormal motor encoder
12043	Z axis encoder data is in not update	The encoder value has not changed	Abnormal motor encoder
12044	Z axis encoder multi turn value error		Power off, unplug the battery and reset the encoder / parameter 130
12045	Multi turn value of Z axis encoder error		Power off, unplug the battery and reset the encoder / parameter 130
12046	Z axis power mismatch		Check parameter 2 and confirm whether the motor code is the same as parameter 1Digital power matching
12047	Z axis power mismatch		Check parameter 2 and confirm whether the motor code is the same as parameter 1Digital power matching

12048	Z axis parameter setting error	Unreasonable parameter setting	Check whether the parameters are within the range: 5(1,6000),6(1,300),7(1~300),11(10,5000),15(10,100),21(1,1000),22(0,300),23(1,20),31(20000),32(2000/20000),69(4096),71(0), 72(0), 73(0)
12049	Z axis parameter setting error	Unreasonable parameter setting	Check whether the parameters are within the range: 5(1,6000),6(1,300),7(1~300),11(10,5000),15(10,100),21(1,1000),22(0,300),23(1,20),31(20000),32(2000/20000),69(4096),71(0), 72(0), 73(0)
13001	U emergency stop alarm	Servo has emergency stop signal input	1. Screw out the manual controller emergency stop 2. Short circuit the emergency stop signal of the main engine
13002	U axis over current	IPM module over current protection	1. Whether the motor is locked 2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems
13003	U axis over current	IPM module over current protection	1. Whether the motor is locked 2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems

Alarm number	Alarm information	Alarm reason	Processing method
13004	U external bus disconnection	No bus normal signal received	1. The top 3pin white terminal is loose2. Host failure
13005	U-axis overload	Maximum load exceeded	1. Check the load2. Whether the motor is locked
13006	U-axis overload	Maximum load exceeded	1. Check the load 2. Whether the motor is locked and whether the holding brake is released 3. Check whether parameter 1 is the corresponding power
13007	Initialization of U-axis motor	Drive power on initialization is not over	1. Press the stop key to clear 2. If it cannot be cleared, power on again 3. Host failure, replace
13008	Initialization of U-axis motor	Drive power on initialization is not over	1. Press the stop key to clear 2. If it cannot be cleared, power on again 3. Host failure, replace
13009	U-axis three-phase error	Current exceeds alarm value	1. Line sequence error 2. Lack of phase 3. The motor code does not correspond to the motor
13010	U-axis three-phase error	Current exceeds alarm value	1. Line sequence error 2. Lack of phase 3. The motor code does not correspond to the motor
13011	UVDC under voltage	Voltage detected below 195v	1. The load is too heavy and the acceleration is too high, resulting in too much voltage drop 2. The external incoming voltage is too low 3. Host failure, replace
13012	UVDC over voltage	Voltage detected above 405v	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction 3. Host failure, replace
13013	U-axis over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded 2. Parameter No. 50 is set incorrectly
13014	U-axis over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded 2. Parameter No. 50 is set incorrectly
13015	U drive overheating	The internal temperature exceeds 75 degrees	1. Check whether the fan is normal 2. Host failure, replace
13016	U failed to	Abnormal memory chip	Replace the host

	write EEPROM		
13017	U failed to read EEPROM	Abnormal memory chip	Replace the host
13018	The position deviation of U axis is too large	Command value and actual encoder value The deviation exceeds the setting value of parameter 49	1. Set No. 49 servo parameter and increase the deviation range 2. Acceleration and deceleration settings are too small 3. System exception
13019	The position deviation of U- axis is too large	The deviation between the command value and the actual encoder value exceeds the parameter setting of No. 49value	1. Set No. 49 servo parameter and increase the deviation range 2. Acceleration and deceleration settings are too small 3. System exception
13020	U axis encoder error	Encoder communication failure	1. There is a problem with the encoder line 2. Poor contact of encoder connector3. Abnormal motor encoder

Alarm number	Alarm information	Alarm reason	Processing method
13021	Abnormal U axis speed measurement	Abnormal rotation of motor	1. Wrong motor code setting 2. Unreasonable gain parameters 3. Random rotation caused by motor failure
13022	Axis u encoder initializing	Encoder initialization	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
13023	UVDC hardware over voltage	Internal hardware over voltage protection	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction3. Host failure, replace
13024	U external bus err	No bus normal signal received	1. The top 3pin white terminal is loose 2. Host failure
13025	U axis position buffer full	System exception	
13026	U axis position buffer full	System exception	
13027	UEEPROM parameter verification abnormal	Abnormal memory chip	Replace the host
13028	U axis encoder error	Encoder communication failure	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
13029	Abnormal U axis speed measurement	Encoder feedback value is abnormal	1. Wrong motor code setting 2.Unreasonable gain parameters 3. Random rotation caused by motor failure
13030	Axis u encoder initializing	Encoder initialization	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
13031	U clearing alarm too fast	Clearing alarm frequency too fast	
13032	UEEPROM needs to be restored	The stored parameters are verified incorrectly	You can write 8051 through parameter 0 and wait for 10s to restart electricity to clear
13033	UEthercat communication timeout	Bus communication timeout	Replace the host
13034	U axis encoder battery power failure	The encoder has a battery power down sign position	Ensure that the battery is well connected and clear by setting parameter 13 to 0
13035	U axis encoder battery power	The encoder has a battery power down	Ensure that the battery is well connected and clear by setting

	failure	sign position	parameter 13 to 0
13036	U axis encoder battery low voltage	The encoder has a low battery voltage scale recognition position	Encoder voltage too low
13037	U axis encoder battery low voltage	The encoder has a low battery voltage scale recognition position	Encoder voltage too low
13038	Inconsistent code of U axis motor	The motor code read from the encoder is inconsistent with the setting	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting 2. If it is incorrect, set parameter 4 to 1 and then set parameter 2 manually parameter number is the correct motor code
13039	Inconsistent code of U axis motor	The motor code read from the encoder is inconsistent with the setting	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting 2. If it is incorrect, set parameter 4 to 1 and then set parameter 2 manually parameter number is the correct motor code
13036	U axis encoder battery low voltage	The encoder has a low battery voltage scale recognition position	Encoder voltage too low
13037	U axis encoder battery low voltage	The encoder has a low battery voltage scale recognition position	Encoder voltage too low
13038	Inconsistent code of U axis motor	The motor code read from the encoder is inconsistent with the setting	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting 2. If it is incorrect, set parameter 4 to 1 and then set parameter 2 manually parameter number is the correct motor code
13039	Inconsistent code of U axis motor	The motor code read from the encoder is inconsistent with the setting	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting 2. If it is incorrect, set parameter 4 to 1 and then set parameter 2 manually parameter number is the correct motor code

Alarm number	Alarm information	Alarm reason	Processing method
13040	U axis illegal motor code	Motor code is not a system supported code	Set parameter 4 to 1, and then manually set parameter 2 to the correct motor code
13041	U axis illegal motor code	Motor code is not a system supported code	Set parameter 4 as 1, and then manually set parameter 2 as correct motor code for
13042	The data of U axis encoder is not updated	The encoder value has not changed	Abnormal motor encoder
13043	The data of U axis encoder is not update	The encoder value has not changed	Abnormal motor encoder
13044	Multi turn value of U axis encoder error		Power off, unplug the battery and reset the encoder / parameter 13Set 0
13045	Multi turn value of U axis encoder error		Power off, unplug the battery and reset the encoder / parameter 13Set 0
13046	U axis power mismatch		Check parameter 2 and confirm whether the motor code is the same as parameter 1Digital power matching
13047	U axis power mismatch		Check parameter 2 and confirm whether the motor code is the same as parameter 1Digital power matching
13048	Error in parameter setting of U axis	Unreasonable parameter setting	Check whether the parameters are within the range:5(1,6000),6(1,300),7(1~300),11(10,5000),15(10,100),21(1,1000),22(0,300),23(1,20),31(20000),32(2000/20000),69(4096),71(0), 72(0), 73(0)
13049	Error in parameter setting of U axis	Unreasonable parameter setting	Check whether the parameters are within the range: 5(1,6000),6(1,300),7(1~300),11(10,5000),15(10,100),21(1,1000),22(0,300),23(1,20),31(20000),32(2000/20000),69(4096),71(0), 72(0), 73(0)
14001	V emergency stop alarm	The encoder has battery power down identification bit	Ensure that the battery is well connected and clear by setting parameter 13 to 0
14002	V < shaft over current	The encoder has battery power down identification bit	Ensure that the battery is well connected and clear by setting parameter 13 to 0
14003	Axis V over current	The encoder has a low battery voltage flag bit	Encoder voltage too low
14004	V external bus disconnection	The encoder has a low battery voltage flag bit	Encoder voltage too low
14005	V axis overload	The motor code read from	1. Check whether parameter 2 is the correct motor code. If it is correct,

		the encoder is inconsistent with the setting	it can be eliminated by restarting 2. If it is incorrect, set parameter 4 to 1 and then set parameter 2 manually parameter number is the correct motor code
14006	V axis overload	The motor code read from the encoder is inconsistent with the setting	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting 2. If it is incorrect, set parameter 4 to 1 and then set parameter 2 manually parameter number is the correct motor code
14007	V axis motor initialization	Motor code is not a system supported code	Set parameter 4 as 1, and then manually set parameter 2 as correct motor code for
14008	V axis motor initialization	Motor code is not a system supported code	Set parameter 4 as 1, and then manually set parameter 2 as correct motor code for
14009	Three phase error of V axis	The encoder value has not changed	Abnormal motor encoder
14010	Three phase error of V axis	The encoder value has not changed	Abnormal motor encoder
14011	VVDC under voltage		Power off, unplug the battery and reset the encoder / parameter 13Set 0

Alarm number	Alarm information	Alarm reason	Processing method
14012	VVDC over voltage		Power off, unplug the battery and reset the encoder / parameter 13Set 0
14013	V axis over speed		Check parameter 2 and confirm whether the motor code is the same as parameter 1Digital power matching
14014	V axis over speed		Check parameter 2 and confirm whether the motor code is the same as parameter 1Digital power matching
14015	V drive overheating	Unreasonable parameter setting	Check whether the parameters are within the range: 5(1,6000),6(1,300),7(1~300), 11(10,5000),15(10,100),21(1,1000),22(0, 300),23(1,20),31(20000),32(2000/20000), 69(4096),71(0), 72(0), 73(0)
14016	V failed to write EEPROM	Unreasonable parameter setting	Check whether the parameters are within the range: 5(1,6000),6(1,300),7(1~300), 11(10,5000),15(10,100),21(1,1000),22(0, 300),23(1,20),31(20000),32(2000/20000), 69(4096),71(0), 72(0), 73(0)
14017	V failed to read EEPROM	Abnormal memory chip	Replace the host
14018	The position deviation of axis V is too large	The deviation between the command value and the actual encoder value exceeds the set value of parameter 49	1. Set No. 49 servo parameter and increase the deviation range 2. Acceleration and deceleration settings are too small 3. System exception
14019	The position deviation of axis V is too large	The deviation between the command value and the actual encoder value exceeds the set value of parameter 49	1. Set No. 49 servo parameter and increase the deviation range 2. Acceleration and deceleration settings are too small 3. System exception
14020	Axis V encoder error	Encoder communication failure	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
14021	Abnormal V axis speed measurement	Abnormal rotation of motor	1. Wrong motor code setting 2. Unreasonable gain parameters 3. Random rotation caused by motor failure

14022	Axis V encoder initializing	Encoder initialization	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
14023	VVDC hardware over voltage	Internal hardware over voltage protection	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction3. Host failure, replace
14024	V external bus err	No bus normal signal received	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction3. Host failure, replace
14025	V axis position buffer full	System exception	1. The top 3pin white terminal is loose 2. Host failure
14026	V axis position buffer full	System exception	
14027	VEEPROM parameter verification abnormal	Abnormal memory chip	
14028	Axis V encoder error	Encoder communication failure	Replace the host
14029	Abnormal V axis speed measurement	Encoder feedback value is abnormal	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
14030	Axis V encoder initializing	Encoder initialization	1. Wrong motor code setting 2. Unreasonable gain parameters 3. Random rotation caused by motor failure
14031	V clear alarm too fast	Clearing alarm frequency too fast	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
14032	VEEPROM needs to be restored	The stored parameters are verified incorrectly	
14033	VEthercat communication timeout	Bus communication timeout	1. You can write 8051 through parameter 0 and wait for 10s before restarting new power on to clear
14034	Power failure of V axis encoder battery	The encoder has a battery power down sign position	Replace the host

14035	Power failure of V axis encoder battery	The encoder has battery power down identification bit	1. Ensure that the battery is well connected and clear by setting parameter 13 to 0
14036	V axis encoder battery voltage	The encoder has a low battery voltage scale recognition position	1. Ensure that the battery is well connected and set 0 through parameter 13eliminate
14037	V axis encoder battery voltage	The encoder has a low battery voltage scale recognition position	1. Encoder voltage too low
14038	Inconsistent V axis motor code	Electricity read from the encoder The machine code is inconsistent with the setting	1. Encoder voltage too low
14039	Inconsistent V axis motor code	The motor code read from the encoder is inconsistent with the setting	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting 2. If it is incorrect, set parameter 4 to 1 and then set parameter 2 manually parameter number is the correct motor code
14040	V axis illegal motor code	Motor code is not a system supported code	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting 2. If it is incorrect, set parameter 4 to 1 and then set parameter 2 manually parameter number is the correct motor code
14041	V axis illegal motor code	Motor code not supported by the system code	1. Set parameter 4 to 1, and then manually set parameter 2 to 1Correct motor code
14042	The data of axis V encoder is not updated	The encoder value has not changed	1. Abnormal motor encoder
14043	The data of axis V encoder is not updated	The encoder value has not changed	1. Abnormal motor encoder
14044	Multi turn value error of axis V encoder error		1. Power off, unplug the battery and reset the encoder / reference 13Set the number to 0
14045	Multi turn value error of axis V encoder		1. Power off, unplug the battery and reset the encoder / reference 13Set the number to 0
14046	V axis power mismatch		1. Check parameter 2 and confirm whether the motor code is the same as 1No. parameter power matching

14047	V axis power mismatch		1. Check parameter 2 and confirm whether the motor code is the same as 1No. parameter power matching
14048	Wrong setting of axis V parameters	Unreasonable parameter setting	1. Check whether the parameters are within the range: 5(1,6000),6(1,300),7(1~300), 11(10,5000),15(10,100),21(1,1000),22(0,300),23(1,20),31(20000),32(2000/20000),69(4096),71(0), 72(0), 73(0)
14049	Wrong setting of axis V parameters	Unreasonable parameter setting	1. Check whether the parameters are within the range: 5(16000),6(1,300),7(1~300), 11(10,5000),15(10,100),21(1,1000),22(0,300),23(1,20),31(20000),32(2000/20000),69(4096),71(0), 72(0), 73(0)
15001	W emergency stop alarm	Servo has emergency stop signal input	1. Screw out the manual controller emergency stop 2. Short circuit the emergency stop signal of the main engine
15002	W axis over current	IPM module over current protection	1. Whether the motor is locked2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems
15003	W axis over current	IPM module over current protection	1. Whether the motor is locked 2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems
15004	W external bus disconnection	No bus normal signal received	1. The top 3pin white terminal is loose2. Host failure
15005	W axis overload	Maximum load exceeded	1. Check the load 2. Whether the motor is locked
15006	W axis overload	Maximum load exceeded	1. Check the load 2. Whether the motor is locked and whether the holding brake is released3. Check whether parameter 1 is the corresponding power
15007	W axis motor initializatio n	Drive power on initialization is not over	1. Press the stop key to clear 2. If it cannot be cleared, power on again 3. Host failure, replace
15008	W axis motor initialization	Drive power on initialization is not over	1. Press the stop key to clear 2. If it cannot be cleared, power on again 3. Host failure, replace

15009	W axis three-phase error	Current exceeds alarm value	1. Line sequence error 2. Lack of phase 3. The motor code does not correspond to the motor
15010	W axis three-phase error	Current exceeds alarm value	1. Line sequence error 2. Lack of phase 3. The motor code does not correspond to the motor
15011	WVDC under voltage	Voltage detected below 195v	1. The load is too heavy and the acceleration is too high, resulting in too much voltage drop 2. The external incoming voltage is too low 3. Host failure, replace
15012	WVDC over voltage	Voltage detected above 405v	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction3. Host failure, replace
15013	W axis over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded 2. Parameter No. 50 is set incorrectly
15014	W axis over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded 2. Parameter No. 50 is set incorrectly
15015	W Drive overheating	The internal temperature exceeds 75 degrees	1. Check whether the fan is normal 2. Host failure, replace
15016	W failed to write EEPROM	Abnormal memory chip	Replace the host
15017	W failed to read EEPROM	Abnormal memory chip	Replace the host
15018	The position deviation of W axis is too large	The deviation between the command value and the actual encoder value exceeds the parameter setting of No. 49Fixed value	1. Set No. 49 servo parameter and increase the deviation range 2. Acceleration and deceleration settings are too small 3. System exception
15019	The position deviation of W axis is too large	Command value and actual encoder value the deviation exceeds the setting value of parameter 49	1. Set No. 49 servo parameter and increase the deviation range 2. Acceleration and deceleration settings are too small 3. System exception

15020	W axis encoder error	Encoder communication failure	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
15021	Abnormal W axis speed measurement	Abnormal rotation of motor	1. Wrong motor code setting 2. Unreasonable gain parameters 3. Random rotation caused by motor failure
15022	W axis encoder initialization	Encoder initialization	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
15023	WVDC hardware over voltage	Internal hardware over voltage protection	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction3. Host failure, replace
15024	W external bus err	No bus normal signal received	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction3. Host failure, replace
15025	W axis position buffer full	System exception	1. The top 3pin white terminal is loose 2. Host failure
15026	W axis position buffer full	System exception	
15027	WEEPROM parameter verification exception	Abnormal memory chip	
15028	W axis encoder error	Encoder communication failure	Replace the host
15029	Abnormal W axis speed measurement	Encoder feedback value is abnormal	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
15030	W axis encoder initialization	Encoder initialization	1. Wrong motor code setting 2. Unreasonable gain parameters 3. Random rotation caused by motor failure
15031	W clear alarm too fast	Clearing alarm frequency too fast	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
15032	WEEPROM needs to be restored	The stored parameters are verified incorrectly	
15033	WEthercat communication timeout	Bus communication timeout	You can write 8051 through parameter 0 and wait for 10sPower on again to clear

Alarm number	Alarm information	Alarm reason	Processing method
15034	Power failure of W axis encoder battery	The encoder has a battery power down indicator recognition position	Replace the host
15035	Power failure of W axis encoder battery	The encoder has a battery power down indicator recognition position	Ensure that the battery is well connected and set 0 through parameter 13eliminate
15036	Low battery voltage of W axis encoder	The encoder has low battery voltage identification	Ensure that the battery is well connected and set 0 through parameter 13eliminate
15037	Low battery voltage of W axis encoder	The encoder has low battery voltage identification bit	Encoder voltage too low
15040	W axis illegal motor code	Motor code is not a system supported code	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting2. If it is incorrect, set parameter 4 to 1 and then set it manually set parameter 2 as the correct motor code
15041	W axis illegal motor code	Motor code not supported by the system code	1. Set parameter 4 to 1, and then set parameter 2 manually is the correct motor code
15042	W axis encoder data is not updated	The encoder value has not changed	1. Abnormal motor encoder
15043	W axis encoder data is not updated	The encoder value has not changed	1. Abnormal motor encoder
15044	W axis encoder multi turn value error		1. Power off, unplug the battery and reset the encoder / 13Parameter No. is set to 0
15045	W axis encoder multi turn value error		1. Power off, unplug the battery and reset the encoder / 13Parameter No. is set to 0
15046	W axis power mismatch		1. Check parameter 2 and confirm whether the motor code is consistent with parameter 1 power matching
15047	W axis power mismatch		1. Check parameter 2 and confirm whether the motor code is consistent with parameter 1 power matching

15048	W axis parameter setting error	Unreasonable parameter setting	1. Check whether the parameter is within the range: 5 (1,6000), 6(1,300),7(1~300),11(10,5000),15(10,100), 21(1, 1000),22(0,300), 23(1,20),31(20000),32(2000/20000),69(4096),71(0), 72(0), 73(0)
15049	W axis parameter setting error	Unreasonable parameter setting	1. Check whether the parameter is within the range: 5 (1,6000), 6(1,300),7(1~300),11(10,5000),15(10,100), 21(1, 1000),22(0,300), 23(1,20),31(20000),32(2000/20000),69(4096),71(0), 72(0), 73(0)
16001	M7 emergency stop alarm	nothing	Check servo failure
16002	M7 shaft over current	IPM module over current protection	1. Whether the motor is locked 2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems

Alarm number	Alarm information	Alarm reason	Processing method
16003	M7 shaft over current	IPM module over current protection	1. Whether the motor is locked 2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems
16004	M7 external bus break	No bus normal signal received	1. The top 3pin white terminal is loose 2. Host failure
16005	M7 shaft overload	Maximum load exceeded	1. Check the load 2. Whether the motor is locked
16006	M7 shaft overload	Maximum load exceeded	1. Check the load 2. Whether the motor is locked and whether the holding brake is released 3. Check whether parameter 1 is the corresponding power
16007	M7 axis motor initialization	Drive power on initialization is not over	1. Press the stop key to clear 2. If it cannot be cleared, power on again 3. Host failure, replace
16008	M7 axis motor initialization	Drive power on initialization is not over	1. Press the stop key to clear 2. If it cannot be cleared, power on again 3. Host failure, replace
16009	M7 axis three-phase error	Current exceeds alarm value	1. Line sequence error 2. Lack of phase 3. The motor code does not correspond to the motor
16010	M7 axis three-phase error	Current exceeds alarm value	1. Line sequence error 2. Lack of phase 3. The motor code does not correspond to the motor
16011	M7vdc under voltage	Voltage detected below 195v	1. The load is too heavy and the acceleration is too high, resulting in too much voltage drop 2. The external incoming voltage is too low 3. Host failure, replace
16012	M7vdc over voltage	Voltage detected above 405v	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction 3. Host failure, replace

16013	M7 shaft over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded 2. Parameter No. 50 is set incorrectly
16014	M7 shaft over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded 2. Parameter No. 50 is set incorrectly
16016	M7 drive overheat	The internal temperature exceeds 75 degrees	1. Check whether the fan is normal 2. Host failure, replace
16016	M7 write EEPROM fail	Abnormal memory chip	Replace the host
16017	M7 read EEPROM fail	Abnormal memory chip	Replace the host
16018	M7 axis position deviation is too large	Command value and actual encoder value the deviation exceeds the setting value of parameter 49	1. Set No. 49 servo parameter and increase the deviation range 2. Acceleration and deceleration settings are too small 3. System exception
16019	M7 axis position deviation is too large	The deviation between the command value and the actual encoder value exceeds the parameter setting of No. 49value	1. Set No. 49 servo parameter and increase the deviation range 2. Acceleration and deceleration settings are too small 3. System exception

Alarm number	Alarm information	Alarm reason	Processing method
16020	M7 axis encoder error	Encoder communication failure	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
16021	Abnormal speed measurement of M7 axis	Abnormal rotation of motor	1. Wrong motor code setting 2. Unreasonable gain parameters 3. Random rotation caused by motor failure
16022	M7 axis encoder initialization	Encoder initialization	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
16023	M7vdc hardware over voltage	Internal hardware over voltage protection	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction 3. Host failure, replace
16024	M7 external bus err	No bus normal signal received	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction 3. Host failure, replace
16025	M7 axis position buffer full	System exception	1. The top 3pin white terminal is loose 2. Host failure
16026	M7 axis position buffer full	System exception	
16027	M7eeprom parameter test	Abnormal memory chip	
16028	M7 axis encoder error	Encoder communication failure	Replace the host
16029	Abnormal speed measurement of M7 axis	Encoder feedback value is abnormal	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
16030	M7 axis encoder initialization	Encoder initialization	1. Wrong motor code setting 2. Unreasonable gain parameters 3. Random rotation caused by motor failure
16031	M7 clearing alarm too fast	Clearing alarm frequency too fast	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
16032	M7eeprom needs to be restored	The stored parameters are verified incorrectly	

16033	M7ethernet communication timeout	Bus communication timeout	You can write 8051 through parameter 0 and wait for 10sPower on again to clear
16034	M7 shaft encoder battery power down	The encoder has a battery power down sign position	Replace the host
16035	M7 shaft encoder battery power down	The encoder has a battery power down sign position	Ensure that the battery is well connected and set 0 through parameter 13eliminate
16036	M7 axis encoder battery low	The encoder has a low battery voltage scale recognition position	Ensure that the battery is well connected and set 0 through parameter 13eliminate
16037	M7 axis encoder battery voltage	The encoder has a low battery voltage scale recognition position	Encoder voltage too low
			1. Check whether parameter 2 is the correct motor generation
16040	M7 axis illegal motor code	Motor code not supported by the system code	If the code is correct, it can be eliminated by restarting 2. If it is incorrect, set parameter 4 to 1 and then set it manually
			Set parameter 2 as the correct motor code

Alarm number	Alarm information	Alarm reason	Processing method
16041	M7 axis illegal motor code	Motor code not supported by the system code	1. Set parameter 4 to 1, and then set parameter 2 manually the number is the correct motor code
16042	M7 axis encoder data is not update	The encoder value has not changed	1. Abnormal motor encoder
16043	M7 axis encoder data is not update	The encoder value has not changed	1. Abnormal motor encoder
16044	M7 shaft encoder multi turn value error		1. Power off, unplug the battery and reset the encoder / 13Parameter No. is set to 0
16045	M7 shaft encoder multi turn value error		1. Power off, unplug the battery and reset the encoder / 13Parameter No. is set to 0
16046	M7 shaft power mismatch		1. Check parameter 2 and confirm whether the motor code is correct match with parameter 1 power
16047	M7 shaft power mismatch		1. Check parameter 2 and confirm whether the motor code is correct match with parameter 1 power
16048	M7 axis parameter setting error	Unreasonable parameter setting	1. Check whether the parameter is within the range: 5 (1,6000), 6(1,300),7(1~300),11(10,5000),15(10,100),21(1,1000),22(0,300),23(1,20),31(20000),32(2000/20000),69(4096), 71(0), 72(0), 73(0)
16049	M7 axis parameter setting error	Unreasonable parameter setting	1. Check whether the parameter is within the range: 5 (1,6000), 6(1,300),7(1~300),11(10,5000),15(10,100), 21(1, 1000),22(0,300), 23(1,20),31(20000),32(2000/20000), 69(4096), 71(0), 72(0), 73(0)
17001	M8 emergency stop alarm	nothing	Check servo failure
17002	M8 shaft over current	IPM module over current protection	1. Whether the motor is locked 2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems

17003	M8 shaft over current	IPM module over current protection	1. Whether the motor is locked 2. Power on again after pulling out the power line and holding brake line. If the above telegram alarm is the main engine fault, replace it. Otherwise, check the motor and circuit problems
17004	M8 external bus disconnected	No bus normal signal received	1. The top 3pin white terminal is loose 2. Host failure
17005	M8 shaft overload	Maximum load exceeded	1. Check the load 2. Whether the motor is locked
17006	M8 shaft overload	Maximum load exceeded	1. Check the load 2. Whether the motor is locked and whether the holding brake is released 3. Check whether parameter 1 is the corresponding power

Alarm number	Alarm information	Alarm reason	Processing method
17007	M8 axis motor initialization	Drive power on initialization is not over	1. Press the stop key to clear 2. If it cannot be cleared, power on again3. Host failure, replace
17008	M8 axis motor initialization	Drive power on initialization is not over	1. Press the stop key to clear 2. If it cannot be cleared, power on again3. Host failure, replace
17009	M8 axis three-phase error	Current exceeds alarm value	1. Line sequence error 2. Lack of phase 3. The motor code does not correspond to the motor
17010	M8 axis three-phase error	Current exceeds alarm value	1. Line sequence error 2. Lack of phase 3. The motor code does not correspond to the motor
17011	M8vdc under voltage	Voltage detected below 195v	1. The load is too heavy and the acceleration is too high, resulting in too much voltage drop 2. The external incoming voltage is too low 3. Host failure, replace
17012	M8vdc over voltage	Voltage detected above 405v	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction3. Host failure, replace
17013	M8 shaft over speed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded 2. Parameter No. 50 is set incorrectly
17014	M8 shaft overspeed	Maximum speed exceeded	1. If the internal communication is disconnected, check whether it is well grounded 2. Parameter No. 50 is set incorrectly
17017	M8 drive overheating	The internal temperature exceeds 75 degrees	1. Check whether the fan is normal 2. Host failure, replace
17017	M8 failed to write EEPROM	Abnormal memory chip	Replace the host
17017	M8 failed to read EEPROM	Abnormal memory chip	Replace the host
17018	M8 axis position deviation is too	The deviation between the command value and	1. Set No. 49 servo parameter and increase the deviation range 2. Acceleration and

	large	the actual encoder value exceeds the set value of parameter 49	deceleration settings are too small 3. System exception
17019	M8 axis position deviation is too large	The deviation between the command value and the actual encoder value exceeds the set value of parameter 49	1. Set No. 49 servo parameter and increase the deviation range 2. Acceleration and deceleration settings are too small 3. System exception
17020	M8 axis encoder error	Encoder communication failure	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
17021	M8 axis speed measurement abnormal	Abnormal rotation of motor	1. Wrong motor code setting 2. Unreasonable gain parameters 3. Random rotation caused by motor failure
17022	M8 axis encoder initialization	Encoder initialization	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
17023	M8vdc hardware over voltage	Internal hardware over voltage protection	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction3. Host failure, replace

Alarm number	Alarm information	Alarm reason	Processing method
17024	M8 external bus err	No bus normal signal received	1. The load is too heavy and the deceleration is too high, resulting in too much voltage rise 2. Brake resistance failure or non conduction3. Host failure, replace
17025	M8 axis position buffer full	System exception	1. The top 3pin white terminal is loose 2. Host failure
17026	M8 axis position buffer full	System exception	
17027	M8eeprom parameter inspection exception	Abnormal memory chip	
17028	M8 axis encoder error	Encoder communication failure	Replace the host
17029	M8 axis speed measurement abnormal	Encoder feedback value is abnormal	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
17030	M8 axis encoder initializati on	Encoder initialization	1. Wrong motor code setting 2. Unreasonable gain parameters 3. Random rotation caused by motor failure
17031	M8 clearing alarm too fast	Clearing alarm frequency too fast	1. There is a problem with the encoder line 2. Poor contact of encoder connector 3. Abnormal motor encoder
17032	M8eeprom needs to be restored	The stored parameters are verified incorrectly	
17033	M8ethernet communicatio n timeout	Bus communication timeout	You can write 8051 through parameter 0, wait for 10s and power on again to clear
17034	Power failure of M8 shaft encoder battery	The encoder has battery power down identification bit	Replace the host
17035	Power failure of M8 shaft	The encoder has battery power down identification bit	Ensure that the battery is well connected and set through parameter 130 clear

	encoder battery		
17036	Low battery voltage of M8 shaft encoder	The encoder is marked with low battery voltage position	Ensure that the battery is well connected and set through parameter 130 clear
17037	Low battery voltage of M8 shaft encoder	The encoder is marked with low battery voltage position	Encoder voltage too low
17040	M8 axis illegal motor code	Motor code is not a system supported code	1. Check whether parameter 2 is the correct motor code. If it is correct, it can be eliminated by restarting 2. If it is incorrect, set parameter 4 to 1 and then manually set parameter 2 as the correct motor code
17041	M8 axis illegal motor code	Generation of motor code not supported by the system code	1. Set parameter 4 to 1, and then set parameter 2 manually the number is the correct motor code
17042	M8 axis encoder data is not update	The encoder value has not changed	1. Abnormal motor encoder
17043	M8 axis encoder data is not update	The encoder value has not changed	1. Abnormal motor encoder
17044	Multi turn value error of M8 shaft encoder error		1. Power off, unplug the battery and reset the encoder / 13Parameter No. is set to 0
17045	Multi turn value error of M8 shaft encoder error		1. Power off, unplug the battery and reset the encoder / 13Parameter No. is set to 0

17046	M8 shaft power mismatch		1. Check parameter 2 and confirm whether the motor code is correct match with parameter 1 power
17047	M8 shaft power mismatch		1. Check parameter 2 and confirm whether the motor code is correct match with parameter 1 power
17048	Error in parameter setting of M8 axis	Unreasonable parameter setting	1. Check whether the parameter is within the range: 5 (1,6000), 6(1,300),7(1~300),11(10,5000),15(10,100), 21(1, 1000),22(0,300), 23(1,20),31(20000),32(2000/20000),69(4096), 71(0), 72(0), 73(0)
17049	Error in parameter setting of M8 axis	Unreasonable parameter setting	1. Check whether the parameter is within the range: 5 (1,6000), 6(1,300),7(1~300),11(10,5000),15(10,100), 21(1, 1000),22(0,300), 23(1,20),31(20000),32(2000/20000),69(4096), 71(0), 72(0), 73(0)

HUACHENG

Core supplier in the field of industrial control

深圳市华成工业控制股份有限公司

Shenzhen Huacheng Industrial Control Co.,LTD.

0755-26417678/27470348

Fax：(86)075526416578

Official website：http://www.hc-system.com

Address:8/F,Zhengqilong Building No. 108,Gushu 1 st Road,Bao'an,Shenzhen.

WeChat Official