# **ESTUN Robotics**

# Operation Manual of ESTUN Editor V2.2 Software

## Thank you for purchasing ESTUN robots.

Before using the robot, be sure to read the SAFETY PRECAUTION and understand the contents.

ESTUN endeavor to improve the products. All specifications and designs are subject to change without notice.

All statements, information and advice provided in this manual have been carefully processed, but no guarantee is given for their completely accuracy. We shall not be held liable for any direct or indirect losses arising from the use of this manual.

User are solely responsible for the application of any product and should exercise caution when using this manual and the associated product.

The interpretation of all content in this manual belongs to Nanjing ESTUN Robotics Engineering Co., Ltd.

No part of this manual may be reproduced in any form. ESTUN Robotics. All Rights Reserved Copyright. Service Hotline: 400-025-3336 Address: No.1888, Jiying Avenue, Jiangning Economic Development Zone, Nanjing, China Postcode: 211102 Telephone: 025-81031813 Website: www.ESTUN.com Email: robot@ESTUN.com

# SAFETY

This Chapter describes the precautions which must be followed to ensure the safe use of the robot. Before using the robot, be sure to read this chapter thoroughly.

ESTUN robots must be transported, mounted and operated in accordance with national laws,

regulations and standards. Appropriate safeguards must be correctly performed to protect the users. Before using (mounting, operating, maintaining, repairing) the robot, be sure to read and understand this manual and its relevant manuals. Be sure to have familiarization with the knowledge of robot system and the safety precaution. Even if all instructions are followed, this is not a guarantee that the robot will not cause injuries or damage.

## DEFINITION OF USER

The personnel can be defined as follows.

- Operators
   Turns the robot power ON/OFF.
   Start the robot program from the panel.
- Programmers
   Operates the robot;
   Teaches the robot inside the safety area;
- Maintenance engineer
  - Operate the robot;

Teaches the robot inside the safety area;

Maintenance (repair, adjustment, replacement).

Operators must not awork in the safety area.

Programmer and maintenance engineer can work in the safety area.

During operation, programming and maintenance of the robot, the operator, programmer, and maintenance engineer should take precautions to ensure the safety by wearing the following safety items.:

- Clothes for operation
- Safety shoes
- A helmet

### SPECIAL TRAINING

Tasks in the safe area including transportation, setting, teaching, adjustment, maintenance, etc. Training course must be performed before operating the robot. For more information about training course, contact ESTUN.

## DEFINITION OF SAFETY NOTATIONS

Precautions and information are defined as follows.

	,
Symbol	Definition
$\land$	Danger
/ <b>!</b> \	Death or serious injury will be expected to occur if the user fails to follow the
WARNING	approved procedure.
$\land$	Caution
/ <b>!</b> \	Minor or moderate injury of the user or equipment damage will be expected to
CAUTION	occur if the user fails to follow the approved procedure.
IN FO	Information
	A supplementary explanation helps users operating the robot more efficiently.

## Safety OF THE USER

- (1) The robot should be transported and installed as procedures recommended by ESTUN. Wrong procedures may cause severe injuries or damage due to the robot fall.
- (2) Draw an area clearly indicates the safety area. Install a fence or hang a warning board to ensure the safety operation of the robot, and keep unauthorized personnel outside the safety area.
- (3) Never hang any tools above the robot. Falling of these tools may cause damage to equipment.
- (4) Never lean on the cabinet. Never touch any buttons without permission. Unexpected movement of the robot may cause personnel injuries and equipment damage.
- (5) Take precautions for falling parts to avoid injuries when disassemble the robot.
- (6) Turn off the power when adjusting peripheral equipment.
- (7) Peripheral equipment must be grounded.
- (8) The robot should be operated in a low speed in the first operation. The speed should be added gradually to check if there is any abnormal situation.
- (9) Do not wear gloves when using the teach pendant. Operate with gloves may cause an operation error.
- (10) Programs, system variables, and other information can be saved on the memory card or USB memories. Be sure to save the data periodically in case that the data is lost.
- (11) Never forcibly move any axis of the robot. Move the axes forcibly may cause injuries or damage.
- (12) Take precautions when wiring and piping between the robot, the cabinet, and peripheral equipment. Put the pipes, wires or cables through a pit or covered with a protective lid, to avoid stepped by personnel or run over by a forklift.
- (13) Unexpected movement may occur on any operating robot, which will cause severe injuries or damages in the working area. Test (safe door, brake, safe indicators, etc.) must be performed on each safety measures before using the robot. Before turn on the system, make sure that no one is in the working space.
- (14) Never set motion range or load condition exceeds the rated range. Incorrect setting may cause personnel injury and equipment damage.
- (15) Observe the following precautions when teaching inside the working space of the robot
  - Do not enable the system unless the mode is switched to manual, and make sure that all auto-control is cut off.
  - Speed must be limited under 250mm/s at manual mode. Only authorized person with fully understand of the risks can adjust the robot to rated speed manually.
  - Be careful about rotating joints to prevent hair and clothes involved. Take precautions of injury or damage caused by the manipulator or other auxiliary devices.

- · Check the motor brake to avoid personnel injuries caused by unexpected situation.
- Always have an escape plan in mind in case the robot comes towards you unexpectedly.
- Ensure that there is a place to retreat to in case of emergency.



Never stand beneath the in case of unexpected movement or the system be turned on inadvertently.



Make sure there is a CO<sub>2</sub> fire extinguisher at hand.

#### SAFETY OF OPERATORS:

- (1) Before operating the robot, check that the SERVO ON indicator goes out when the EMERGENCY STOP button on the right of the front door of the controller and the pendant are pressed. And confirm that the power is turned off.
- (2) Never allow unauthorized personnel to touch the controller during operation. This may result in unexpected movement of the robot, severe injuries and material damage.
- (3) When attaching tools to the robot, be sure to turn off the power of the controller and the peripheral equipment, and display a warning sign. Turning the power on during equipment installation may cause electric shock or injury due to unexpected movement of the robot.
- (4) E-stop

Emergency stop is an external button of the controller that can stop the robot operation.

When emergency button is pressed, the power of the robot (except the power of the servo) is cut off. The system will not run unless the pressed emergency button being released and the system being turned on.



There are several emergency stop buttons in a robot system to stop the robot in case of emergencies. The red button, as shown in the left figure, can be mounted on the teach pendant and the controller. Certainly, the emergency buttons can be mounted by special requirement.

Emergency stop button should be mounted where is easy to reach, so that the buttons can be pressed down immediately in case of emergencies.



Emergency button is used in case of emergency only. Do not use it to stop the robot for normal operation.



Operators must take precautions to avoid high voltage from cables of servo motors, grippers and other devices.

#### SAFETY OF PROGRAMMERS:

While teaching the robot, the programmer must enter the robot operation area. The programmer must ensure the safety especially.



Turn on or off the system by press or release Mot button on the teach pendant. When pressing this button, the servomotor is enabled, and disabled when releasing it.

To ensure the safe use of the teach pendant, the following precautions should be taken:

- Be sure that the enable switch is effective at any time.
- Turn off the enable switch when pausing, programming or testing the system.
- Teach pendant must be taken with the programmer when teaching in the work space, to avoid inadvertent operation by unauthorized person.
- Teach pendant must not be left within the working space of the robot, as injury or damage can occur if the robot comes in the contact with the teach pendant.

#### SAFETY OF MAINTENANCE ENGINEERS:

#### (1) Heated parts

Some parts of the robot are heated when robot is operating, especially the servo motor and reducer. If a maintenance engineer needs to touch such a part, the user should wear heat-resistant gloves or use other protective tools.



Try to feel the temperature of heated parts before touching them, to avoid burn injuries.

After turning off the power supply, wait until the heated parts cool down before performing any maintenance.

#### (2) Disassembly parts

Open the cover or shell only after interior parts such as gears are not moving any more. Never open the cover or shell when the gear or bearing is moving. Use auxiliary device to keep interior part to its position.

Observe the following precaution when performing the first test after installation, inspection or maintenance:

- a) Clear tools to proper locations outside of the working space of the robot.
- b) Make sure that all precaution measures are available.
- c) Make sure that there is no one in the working space of the robot.
- d) Pay special attention to working condition of the maintenance parts when performing test.

Never use the manipulator as a ladder when performing maintenance. Never climb on the manipulator to avoid falling down.

(3) Pneumatic / hydraulic pressure

There may be air/liquid residue in the system when the air pump or hydraulic pump is turned off. Before checking the pneumatic or hydraulic parts, release remaining pressure from the system to avoid personnel injury or equipment damage.



Install a safety valve in case of accident.

- (4) Although the power supply need to be turned on during fault diagnosis, it must be turned off when perform maintenance.
- (5) Brake inspection

Brake may be wearing in daily operation. So brake inspection should be performed by the following procedure

- a) Move each joint to the position where the joint bears maximum load.
- b) Turn off the robot. The brake works.
- c) Mark each joint.
- d) Check if the joint moves over a period of time.
- (6) Greasing

Personnel injury or equipment damage may occur during greasing. Observe the following precautions before greasing.

- Take additional care of safety by wearing safety items (such as gloves) to avoid injury from heated oil or reducer.
- Open the oil chamber with caution and keep away from the opening. Oil may spray due to oil
  pressure.
- Feed the oil according to required quantity and never fill up the oil chamber. Check the oil indicator when finished.
- Never mix different types of oil into one reducer. Clean the oil chamber thoroughly before changing oil type.
- Oil draining must be performed thoroughly. Check the oil indicator when finished.

IN FO

Operate the robot for a short period of time before oil draining to heat the oil.

## SAFETY OF THE TOOLS AND PERIPHERAL EQUIPMENT

Peripheral device may still be running even after the system has been turned off. Personnel injury may occur due to damaged power lines.

## SAFETY OF THE ROBOT MECHANICAL UNIT

For abnormal or emergency situations, e.g. persons trapped in or pinched by the robot, the robot axes should be moved. (Contact ESTUN for more details about dismantling).

Small arms can be moved by hand. Lager arms should be moved by crane or other handling equipment.

Fasten the robot firmly before releasing the brake to avoid secondary injury caused by falling arms.

### STOP TYPE OF ROBOT

There are three types of robot stop.

#### Power-Off Stop

Servo power is turned off and the robot stops immediately. Servo power is turned off when the robot is moving, and the motion path of the deceleration is uncontrolled.

The following processing is performed at Power-Off stop:

• An alarm is generated and servo power is turned off, and the robot operation is stopped

immediately.

• Execution of the program is paused.

Frequent Power-off stop of the robot during operation can cause failures of the robot. Avoid system designs that require routine or frequent Power-off stop conditions.

#### Alarm Stop

The robot system sends alarm (not include power-off alarm), and the robot is decelerated until it stops by control instructions.

The following processing is performed at Alarm stop:

- An alarm (not include power-off alarm) is generated due to overload, system faulty, etc.
- Control instruction is send from servo system. The robot operation is decelerated until it stops. Execution of the program is paused.
- Servo power is off.

#### Hold

The robot is decelerated until it stops, and servo power remains on.

The following processing is performed at Hold:

• The robot operation is decelerated until it stops. Execution of the program is paused.

#### LABELS (1) Electric shock Warning

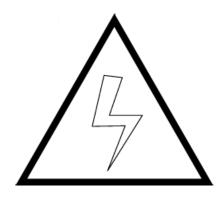


Figure 0.1 Electric shock warning sign

This label indicates hazardous voltage or electric shock.

(2) High-temperature Warning

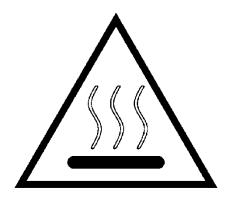


Figure 0.2 High temperature warning sign

Be cautious about a section where this label is affixed, as the section generates heat. If you have to inevitably touch such a section when it is hot, use a protective provision such as heat-resistant gloves.

(3) No Step-on Warning



Figure 0.3 Step-on prohibitive Warning

Never step on or climb the robot or controller as it may adversely affect the robot or controller and may get hurt if you lose your footing as well.

#### (4) Personal Injury Warning

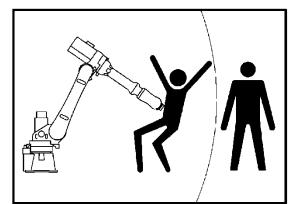


Figure 0.4 Personal Injury Warning

Never enter the operation area while the Manipulator is moving. This is extremely hazardous and may result in serious safety problems.

(5) No Disassembly Warning



Figure 0.5 No Disassembly Warning

Never perform disassembly arbitrarily where the warning is affixed. Contact ESTUN for disassembly.

# PREFACE

This document provides a breakdown of the software functions of EditorP programming software and provides a brief explanation of each functional module. It is intended to assist operators in understanding the software.



## CONTENTS

SAF	=ETY	′		1
PRI	EFAC	CE		1
со	NTEI	NTS		1
1.	Use	er Manag	gement System	1
	1.1.	Log	zin Interface	1
	1.2.	Sw	itch User	1
	1.3.	Use	er Management	1
2.	Cor	ntroller N	1odule	2
	2.1.	Со	ntroller Connection	2
		2.1.1.	Virtual Controller	3
		2.1.2.	Actual Controller	4
	2.2.	Co	ntroller Disconnection	5
	2.3.	Rol	bot Control Module	6
	2.4.	Со	nnect the Teach Pendant	7
	2.5.	Int	roduction to the Main UI Functions of the Editor Software	8
3.	Fun	ctions o	f Project Management	9
	3.1.	Dif	ferentiate Icons in Project Management	14
	3.2.	Glo	bal Project	14
	3.3.	Cre	eate a New Workspace	15
		3.3.1.	Create a New Text Workspace	15
		3.3.2.	Create Text and Graphical Workspaces Based on Templates	16
	3.4.	Rig	ht-Click Menu on the Project Tree	17
		3.4.1.	Workspace	17
		3.4.2.	Project	
		3.4.3.	Program	18
		3.4.4.	Variable File	19
	3.5.	Var	riable Module	20
		3.5.1.	System Variables	20
		3.5.2.	Global Variables	21
		3.5.3.	Project Variables	22
		3.5.4.	Program Variables	23
		3.5.5.	View, Modify and Save Variables	23
		3.5.6.	Create/Delete/Copy Variables	
		3.5.7.	Rename Variables	25
		3.5.8.	Variable Comments	
		3.5.9.	Modify Variable Attribute Values	

	3.6.	Program Editing	27
	3.7.	Command Navigation	31
	3.8.	Display of Running Program	32
	3.9.	Program Saving	32
	3.10.	Workspace, Project and Program Upload/Download	33
	3.1	0.1. Download	33
	3.1	0.2. Upload	33
	3.1	0.3. Upload/Download Error Messages	35
4.	Auxiliar	y Program Functions	36
	4.1.	System Output	36
	4.2.	Error Messages	37
	4.3.	Bookmarks	38
	4.4.	Variable Monitoring	41
	4.5.	Program List	41
	4.6.	Search Results	42
	4.6	.1. Searching within the Workspace	42
	4.6	.2. Searching within a Project	43
	4.6	.3. Searching within Text	43
5.	Graphic	al Programming	45
	5.1.	Create a Graphical Project	45
	5.2.	Introduction to Graphical Blocks	46
	5.2	.1. Command Blocks	46
	5.2	.2. Assignment and Variable Blocks	49
	5.3.	Simple Demo Program Demonstration	51
	5.4.	GUI Interface	58
6.	Settings	5	62
	6.1.	Zero Calibration	62
	6.2.	Communication Verification	64
	6.2	.1. Socket Communication Verification	65
	6.3.	Basic Settings	66
	6.4.	Tool Coordinate System Calibration	66
	6.5.	User Coordinate System Calibration	68
	6.6.	Vibration Suppression	70
7.	Manual	Control	70
	7.1.	Coordinate Display	71
	7.2.	Manual Control	72
	7.3.	One-click Motion	72
	7.4.	Manual Motion Parameter Settings	73
8.	IO Fund	stion	74
	8.1.	Digital	74
	8.2.	Analog	75
	8.3.	Virtual Digital	75
	8.4.	Virtual Analog	76
	8.5.	Custom IO	76
9.	3D Fun	ction	79

9.1.	Оре	n the 3D Simulation Window	79
9.2.	"File	e" Menu	80
	9.2.1.	Create Scene (CTRL+N)	81
	9.2.2.	Import Other Models	82
	9.2.3.	Import End Effector Tool Model	83
	9.2.4.	Save Scene (CTRL+S)	84
	9.2.5.	Open Scene (CTRL+O)	85
	9.2.6.	Save Scene As	86
	9.2.7.	Close Scene	87
9.3.	"Ac	cessibility" Menu	88
	9.3.1.	Capture Screen	88
	9.3.2.	Record Screen	88
	9.3.3.	Stop Recording	89
	9.3.4.	Unit Model Movement (ALT+1,2,3,4,5,6,7)	89
	9.3.5.	Select Slider Axis	94
	9.3.6.	Zoom In Base Coordinates (Page Up)	94
	9.3.7.	Zoom Out Base Coordinates (Page Down)	
	9.3.8.	Options	96
9.4.	Тоо	lbar	. 100
	9.4.1.	Front View	. 100
	9.4.2.	Rear View	. 100
	9.4.3.	Left View	. 101
	9.4.4.	Right View	. 102
	9.4.5.	Top View	. 103
	9.4.6.	Bottom View	. 104
	9.4.7.	Restore View	. 105
	9.4.8.	Path	. 105
	9.4.9.	Always On Top	. 106
	9.4.10.	Modes	. 106
	9.4.11.	Clear	. 107
	9.4.12.	Drag	. 108
	9.4.13.	One-Click Fixing	. 110
	9.4.14.	Model Dragging	. 111
9.5.	Pro	perty Window	. 112
	9.5.1.	Model Name	. 112
	9.5.2.	Set Current Reference Coordinate System	. 112
	9.5.3.	Set Current Robot Tool Coordinate System	. 113
	9.5.4.	Set Model Posture	. 113
	9.5.5.	Set Model Display and Hide	. 113
	9.5.6.	Set Base Coordinate System Display and Hide	. 114
	9.5.7.	Set Model Color	. 114
	9.5.8.	Set Robot Flange Coordinate System Display and Hide	. 115
	9.5.9.	Set Robot Tool Coordinate System Display and Hide	
	9.5.10.	Copy Model Posture	
	9.5.11.	Paste Model Posture	

		9.5.12	. Select Virtual Robot Motion Reference Coordinate System	117
		9.5.13	. Display Current "mode" Value of Virtual Robot	118
		9.5.14	. Single Axis Control of Virtual Robot	118
	9.6.	Sc	ene Tree	119
		9.6.1.	Model List	119
		9.6.2.	Right-Click on "Models" to Open the Current Scene Space Folder	119
		9.6.3.	Right-Click Menu for Scene Tree Model Item	120
	9.7.	Si	mulation Window	121
		9.7.1.	Simulation Window	121
		9.7.2.	Robot Data Window	122
		9.7.3.	Right-Click Menu for Simulation Scene Window	122
		9.7.4.	Right-Click Robot Model Menu	130
		9.7.5.	Right-Click General Model Menu	142
		9.7.6.	Right-click on the Tool Model Menu	146
		9.7.7.	Right-click on the Point Model Menu	147
	9.8.	E>	ternal Axis (Ground Track Axis) Simulation	148
		9.8.1.	Configure the robot's config file	148
		9.8.2.	Build the scene	148
		9.8.3.	Run the program to observe the simulation effect	150
	9.9.	С	reate Simulation Points	150
		9.9.1.	Create Arbitrary Simulation Points for Models	150
		9.9.2.	Create Vertex Simulation Points for Models	150
		9.9.3.	Select Point Window	151
	9.10	). Co	ollision Detection	156
	9.11	. W	/indow Status Bar	156
10.		Log Fi	unctionality	158
	10.1	0	pen Log	158
	10.2	l. Lo	og Path	158
11.		Third-	Party Programs	158
	11.1	. 0	pen Machine Vision	158
	11.2	. O	pen Scripting Tool	159
12.		Softwa	are Settings	160
	12.1	Sy	vstem Settings	161
	12.2	2. Ro	bot Settings	161
	12.3	s. Lo	)g	162
13.		Annex		162
	13.1	Vi	ew Command Manual	162
	13.2	. So	oftware User Manual	162
	13.3	3. Al	oout	163
	13.4	. Те	each Pendant Permission Allocation	163
	13.5	5. M	odbus TCP Control Interface Data Table	165
	13.6	i. D	eployment	169

# 1.User Management System

## 1.1. Login Interface

Upon system startup, there is a login window where users can enter their username/password to log in or choose to cancel the login. Canceling the login will result in logging in with limited guest privileges by default.

遊客ー																		
未连接	• (E83	× 系统	▶ 启:	b    11 智	亭 📄 停止	日保存	<b>†</b> #35	↓ 书签	• 注释	• 清洁								
ALTE	●复位	◎ 单步	-		+	← 后退	→前进	+ 新点	• 断点									
			机器人把	制				编辑器										
本地工作空																		
											登录窗口	×						
									游香	F		~						
									老帝									
												Ma Divertment 7						
	暂无数									动登录	记住密码	修成签销						
控制器工作	空间																	
	暂无数排		系	統輸出	错误信息	断点	书签	变量监控	程序列表	5 <u>1</u>	<b>E找结果</b>							
														1 1 100 120				1177 J. 147 J.
_												IP:	-   机	器人型号:		1	n	ullTool World

- Username/Password: The Root account is provided by ESTUN, while other accounts are created by the administrator. For more details, please refer to Section 1.3.
- Auto Login: When selected, the software will automatically log in with the last used account and password the next time it is opened (remember password must also be selected, otherwise logging in without a password will not be possible).
- Remember Password: To save the currently entered username and password.
- Change Password: To allow users to change their password by providing the username and old password.

## 1.2. Switch User

Clicking the first menu option in the menu bar "Username", you can swich the User, Log Out and User Management (only available for Root users).



- Switch User: To open the user login window to switch to a different user by entering the username/password.
- Log Out: Log out the currently logged-in user and switch to guest privileges.
- User Management: This option is available only for Root users and allows them to manage user accounts, including adding, deleting, and modifying user information.

## 1.3. User Management

This module is exclusive to Root users.

Username: Root Initial Password: 000000

Root 👻	功能	~ i	设置	2	I具 ∨	3D 😔	帮助	~ <b>)</b>	ŧŦ												
未连接	• 使能	× 派统	<ul> <li>)</li> </ul>	助	智停	■.停止	□保存	<b>†</b> 书签	↓ 书签	<ul> <li>注释</li> </ul>	<ul> <li>消注</li> </ul>										
TREER	∪复位	◎ 単步				+	← 后退	→ 前进	<b>*</b> 断点	↓ 断点											
本地工作空间	ต		机器人	<sub>控制</sub> 电户管			/		编辑器												
+ 7			1.00										 								-
·			-			户名			密码				又限等级								(+)
					es	tun			123				管理员								
	600 TT 124-14																				
	暂无数的	苦																			
	MC 3 Cr																				
控制器工作图																					
			C																		
	der and all the			彩统输出		误信息	85.45	出際	变量监控	程序列表	- 25	找結果									
	暂无数排	B	-	COND-RESEL	14		MAN/UN	49775	X.Maimit	6£/37234	. =	1404DAK									
														10	471 1989 1				-		
															机器人	<b>坚守</b> ;			nul	Tool W	rond

- Add User: To create a new user account. Usernames must be unique.
- Edit User: To allow for modifications to user permissions and passwords.
- Delete User: To delete a specific user account.
- Permission Levels: The following permission levels are defined as follow:
  - Guest:
    - Editing or viewing workspace content is not allowed.
    - Operating robot controls is not allowed.
    - Operating simulation models is not allowed.
  - Operator:
    - Same restrictions as the Guest level.
  - Engineer:
    - No user management is allowed, and full access to other features.
  - Administrator:
    - No user management is allowed, and full access to other features.
    - Root users have user management privileges.

# **2.Controller Module**

## 2.1. Controller Connection

游客	功能			工具 🖂		帮助					
		× 系统					<b>†</b> 书签				
T.E.M	复位	◎ 単步	- (	0	- +	←后退	→ 前进	<b>*</b> 断点	♦ 断点		
		1	机器人控制	el				编辑器			
本地工作空间	1.显	示连接	状态							[	٥
+ Ţ≘ ▶ <b>≱</b> fg	2.打	开连接	窗口								
▶ 🇯 fg											
▹											
			_								
控制器工作空间 □-			C								
6			G								
	暂无数据	Ē	系统	輸出 4	普误信息	断点	书签	变量监控	程序列表	表 直线结果	
										IP:   机器人型号:     nullToolWorld	1

Clicking on the red button circled in the above image will open the following connection dialog.

御客 切暇 日本 上具 一		
大生技 ひ 製金   今 単歩   一 〇 一 一 の 単歩   一 〇 一 の 単歩   一 〇 一 の 職人 控制	● 保止	
本地工作空间		
+ ¥ C	连接控制器	
* 🇯 fg	切换控制器类型实际/虚拟	
→ \$>fgs	控制器类型: 实际控制器 V	
	IP地址: 诗娘入IP	
校時間I1空间 C		
智天数据 系统输出 错	<b>连接</b> 取消	
	P.   机器人型导、	nullTool World

## 2.1.1.Virtual Controller

游客 功能 🛛 工具 3D 帮助 关于	
★注理 ・ 使能 × 熟読 → 無助 Ⅱ 監察 ● 停止 ■ 保存 ★ 指筋 ● 注释 ● 開注	
ひ 短位 へ 御歩 - ○ + + + (回道 → 前法 + 新点 羽鹿人比利     御御器	
*#10*20	
+ 事 で  连接控制器	
<ul> <li>* fig</li> </ul>	
+ ▲ fgs 控制器类型: 虚拟控制器 ~	
机器人型导: 通用六轴机器人 scara机器人 码垛机器人 串联机器人	
• ER6-1450 • ER3-400-SR • ER15-1520-PL • ER12-1510-H5	
EXAMPLE         ER6-1600         ER6-500-SR         ER60-2000-PL         ER350-3300-H5	
C         ER8-1450         ER3-500-SR         ER120-2400-PL         ER500-2800-H5	
ER8-2000-HW ER10-500-SR ER180-3100-PL ER10-000-MI/3.	
© ER8-2010-A6 © ER4-550-SRU © ERC10-900-MI/4.	
ER12-1510 ER6-600-SR	
智无数据 橫濱德區 違接 取消	
215 4(-7)	
IP.   1/38/499:	nullTool World

Choose the model according to needs and click the "Select" button to establish a connection. The startup time for the virtual controller is longer compared to an actual controller. This is because it requires launching a virtual controller on the computer, whereas with a physical controller, this step is unnecessary.

Successful connection is indicated as shown in the following image

Root 🗸	功能	· 1	28	工具 〜	3D 🕤	帮助	⊻ ¥	Ŧ													
已连接	• 使能	• 手动	▶ 启动	11 智停	■ 停止	□保存	<b>†</b> 书签	↓ 书签	<ul> <li>注释</li> </ul>	<ul> <li>消注</li> </ul>											
已建安	0 复位	◎ 单步		0	- +	←后退	→前进	<b>†</b> 断点	♦ 断点												
	-		机器人控制	90				编辑器													
本地工作空间	)	─ 连持	战功,	变绿色																	
+ 🌾			C																		
	600 TT 124-H																				
	暂无数的	苦																			
控制器工作图	空间																				
D			C																		
> 🖒 Rese	erveMirror																				
			2013	输出 错	誤信息	断点	书签	变量监控	程序列表	查找	法律										
			300	10	10×10×0	व्या गता	-to III	天華品代	相序列表	重找	NC PR										
											显示当前	ī为虚拟	控制器								
												1 SIZE IN					显示当前	前机器人	、型号		
												1					/				
														<b>-</b> -		-					
													IP:虛拟控制器		机器人型号:EI	R6-1450		209	6   •	nullTo	ol World

After connecting to the virtual controller, it will automatically enable and switch to manual mode, while adjusting the robot's initial posture.

Initialized Axis Coordinates: 0, 0, 0, 0, 90, 0

## 2.1.2. Actual Controller

For an actual controller, modify the IP address of the controller and click "OK".

Root				
未连接	0 复位 4 用步 -		世	
本地工作空间	间	-		
+ 1			连接控制器	
	97.7. 8010		1986日第世: Sate House 輸入连接的控制器IP地址 IP地址: ipinkAP 目版: ①	
	智无数据			
控制器工作目	空间			
E.				
	新无数团	<u>系统输出</u> 错误信号	Jiere Bole	
				1 1

If the IP address is correct, wait a few seconds for the connection to succeeed.

Root																
连接中		◎ 御夢				<ul><li>目保存</li><li>+ 后退</li></ul>		• 鴻注								
本地工作空	间															
+ 🎼								送	生接控制器							
	智无数据				l				(							
控制器工作	空间															
	智无数据		0 <u>8</u> .658	111 <b>1</b> 11	读信号			85	<del>37</del> 1038							
										IP:	机器人型号:		0%	1	1 1	

After a successful connection, the connection button will turn green, and some buttons will become available.

Root 🖂	功能	- -	设置	1月 🗸	3D 😔	帮助													
已连接	• 使能	<ul> <li>手动</li> </ul>	▶ 启动	暫停	■ 停止			↓ 书签	<ul> <li>注释</li> </ul>	<ul> <li>消注</li> </ul>									
己建安	0复位	◎ 单步			+	←后退	→前进		↓ 断点										
地工作空间	-		机器人控	制				编辑器											
+ 7	1	-12-11	184																
	進按	成功,	球巴																
	暂无数期	3																	
制器工作空	间																		
>			C																
Reserved	rveMirror																		
			系统	充输出	错误信息	断点	书签	变量监控	程序列表	ē 查找	吉果								
			=																
										显	下当前连接	<b>妾的IP地</b>	址			日子	当前机器	退人刑与	
												1				ABVIV.		诸八尘马	5
												1		_		1			
													IP:虚拟控制器		机器人型号:	ER6-1450		209	<b>%</b>

Scan Controller: The scan range can be modified.

Root	功能 设置	t - I	具 - 3D -	帮助一	关于								
未连接	• 使甜 • 手助						• 消注						
	0 复位   今 用步		+	+ 后退 4		▲ 新点							
A DA T DATA		器人控制			鸠铜器								
本地工作空							连接	短制器					
				控制器类型:									
			扫描:	开始家段					扫描结束字段 /	Ż			
	暂无数据			扫描IP范围:			127.	0.0.255	扫描		显示扫描结果		
				扫描结果:	序号			IP地址		/			
								暂无数据					
控制器工作	空间												
Del													
					0	选择扫描	的结果	进行连接					
	暂无数据	系统输出	错误信号				连接	取消					
									IP;	机器人型号:	0%	1 1 1	Ĩ.

## 2.2. Controller Disconnection

After establishing a connection with the controller, you can click the "Connected" button to disconnect from the controller. If it is a virtual controller, the background virtual controller will also be closed.

Root	功能	~ 1	6里	工具 🗸	3D 😔	帮助	<ul> <li>关:</li> </ul>	F		
	and the second				- 停止				<ul> <li>注释</li> </ul>	<ul> <li>消注</li> </ul>
已连接		◎ 単步	-	-0	- +			<b>†</b> 断点		
A DET BARA	-	-	机器人控	制				编辑器		
本地工作空间 + 下				开连接						
1 4-										
	暂无数期	25								
控制器工作空	间									
			C							
Reserved	rveMirror									
			系	苑輸出	错误信息	断点	书签	变量监控	程序列表	查找結果
			-							

After disconnecting, the status is as follows:

Root ~	功能	୍ iହ	置 😒	工具 〜		帮助		F								
未连接		<ul> <li>● 手助</li> <li>● 単歩</li> </ul>		)			<ul> <li>† 书签</li> <li>→ 前进</li> </ul>	+ = ( + <del>                                     </del>	<ul> <li>新开服务器/</li> <li>• 新点</li> </ul>	成功	 					
本地工作空			-													
+ 🖓	E.	开连接	6 2D	紅巴												
											提示断	īĦ				
	暂无数排	居														
控制器工作																
			C													
	Are		系统	téri i	错误信息	断点	书签	变量监控	程序列表	查找结果						
	暂无数排	居		-		ayinta		Xmmit	(E) 773424	Шиник						
											IP:	机器人型号		0%	1	1
												VIBINES		0.10		

## 2.3. Robot Control Module

After establishing a connection with the controller, the robot control module allows you to operate the robot. The robot control module, along with the software's bottom status bar, displays the current status of the controller.

The controller operation module includes the following buttons:

"Enable": To enable or disable the controller.

"Reset": To reset any errors in the controller.

"System": To switch between manual and automatic mode.

"Single Step/Cycle": To specify whether to run in single step mode or cycle mode.

"Start": To start the program execution.

"Pause": To pause the program execution.

"Stop": To stop the execution and unloads the program.

🤊 使能	A 自动	▶ 启动	┃ 暫停	■ 停止
▶ 复位	○ 循环		)	- +
		机器人控制		

The status bar displays the following information:

1 Controller error messages. The "Reset" button above is used to reset any errors in the controller.

2 Controller IP address. (Shows "Virtual Controller" when connected to a virtual controller or the current connected IP address for an actual controller.)

3 Controller model.

4 Controller speed.

5 Controller running status, which can be divided as "Run", "Pause" or "Stop". The "Start", "Pause", and "Stop" buttons are associated with this running status.

6 Controller tool coordinate system, which can be set manually or within the program.

7 Controller user coordinate system, which can be set manually or within the program.



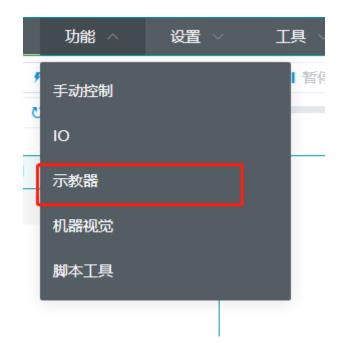
## 2.4. Connect the Teach Pendant

Ensure that the controller is already connected.

1. Ensure that the controller is already connected.



2. Start the Teach Pendant.



3. Open the Teach Pendant.

			B O T	IC S	WERGE WERGE		
		2 📕 🙋 🔀 🖻	<u>ŝ</u> j	V:20% nullTool	World 🍰	2nd	Start Stop
		P	/			A1	
	用户登录	工程管理	程序编辑	程序数据	IO检测	A2	
( <b>x</b> )						A3	-+
	点动管理	日志管理	通用设置	高级设置	用户应用	A4	
						A5	-+
	EST ROBC		主页 南京埃開 ESTUN	新顿机器人工程有限 ROBOTICS CO.	2022-10-24 17:06:22 公司 , LTD	AG	•+
	Rob	Mot Jog	F/B	Step	- (+		

# 2.5. Introduction to the Main UI Functions of the Editor Software

The following image shows the main UI interface of the software:

tor							 	
功能 🗸 设置	✓ I具 ✓	3D ~ 8	帮助 🗸 🕺 关于	F				
使能 🗙 系统 🕕				↓ 书签 0 泊				
) 复位 「ヘ 単步」・	- 0			◆ 断点 <mark>7</mark> → 単	信			
- TI	器人控制			编辑器				
C								
	11							
2								
						6		
1								
c								
	-							
3								
雪无数据								
		a man and a man	-					
			V 19725		27.24A E1X88*			
		and the second						
	<u></u>							
					4			
	. <u>359/08)LL</u> 58				4			

- 1. Tab 1: Controller Connection, including physical controllers and virtual controllers.
- 2. Tab 2: Local Programs, including text-based programs and graphical programs.
- 3. Tab 3: Programs on the controller.
- 4. Tab 4: Used primarily for debugging information, displaying error messages, breakpoints during program execution, bookmarks for code search, variable monitoring during program execution, program lists, and search results for specific keywords, distributed across each tab.
- 5. Tab 5: Status Bar Functions, primarily displaying warning messages, IP address, robot model, speed, program execution status, and coordinate parameters.
- 6. Tab 6: Used primarily for text editing, graphical editing of IO, 3D simulation display, and manual control.
- 7. Tab 7: Contains various operation buttons for robot control, editor, and 3D simulation functions.
- 8. Tab 8: Primarily consists of drop-down menus, which display corresponding function lists based on the selected item in the menu. It includes functions such as manual control, IO, 3D display, starting the Teach Pendant, and other 3D operations.

# **3. Functions of Project Management**

When opening the EditorP software, all locally existing programs will be listed.

The function pages are shown in the following image:



After connecting to the controller, the programs on the controller will also be listed, as shown in the image below:



1. Workspace expansion

本地工作空间
+ V= C
▶ liwenjun
♪test2 工作空间名称
<b>x</b> 系统变量
2 全局变量
▶ GlobalProg
✓ NewProject 工程名称
NewProgram
> test1
✓
<b>x</b> test4

2. Right-click menu functions of the Workspace, as shown below:



3. Right-click menu functions of the Project, as shown below:



4. Right-click menu functions of the Program, as shown below:



5. Double-clicking on a node (global variable, system variable, project variable, program, program variable, other nodes not supported) will display it in a tab, as shown in the image below:

利用	諸人控制	編輯器	
<b>地工作空间</b>	工程变量× NewProgram	m × 全局变量 ×	
+ T= C	✓ 变量名	值	注释
▶ liwenjun	- → 基本		
🔻 🏠 test2			
<b>X</b> 系统变量	整型	+	
2 全局变量	整型数组	+	
<ul> <li>GlobalProg</li> <li>NewProject</li> </ul>	浮点型	+	
x 工程变量	浮点型数组	+	
NewProgram	布尔型	+	
X NewProgram	布尔型数组	+	
> test1	字符串	+	
x test4	~ 位置		
™ text	轴坐标	+	
2 系统变量	笛卡尔坐标	+	
<u> ア 今日本母</u> 空制器工作空间	相对轴坐标	+	
C	相对笛卡尔坐标	+	
<ul> <li>ReserveMirror</li> </ul>	~ I/O		
x 系统变量 x 全局变量	DI	+	
▲ 主向安単 ▶ GlobalProg	虚拟DI	+	

If it is a graphical function, the program will display a graphical interface.

- 単歩		+ ← 后退 → 前进 + 断点 + 断点
	人控制	编辑器
本地工作空间	工程变量 ×	NewProgram × 全局变量 ×
+ 🕅	运动	开始
▶ liweniun ■ ① text2 图形化工作	六搭制	负载信息进行辨识计算选择类型为 "TypePayload" ▼ g:PAYLOAD0 ▼ 并设置数据间隔长度为 1 "ENABLE" ▼
	「二日」 等待	
<b>X</b> 系统变量	10	设置当前轨迹的姿态模式 "CirMidPassClose" ▼
* 全局变量	函数	获取当前机器人运动状态 g:BOOL0 ▼
GlobalProg	设置	设置碰撞检测参数自调整参数 "Calculate" ▼ "Default" ▼ "Highest" ▼ g:COLLIPARAM0 ▼ 展开
<ul> <li>NewProject</li> </ul>	位置运算	
<b>X</b> 工程变量	位运算	设置碰撞检测参数的 "DEFAULT" ▼ 展开
VewProgram	时钟	负载在线辨识数据采集结束指令
X NewProgram	区域	中断绑定 s:INTERRUPT0 ▼ 并调用中断处理程序 "test1" ▼
► > test1	视觉	
✓ > test4	码垛	中断解除绑定 g:INTERRUPT0 ▼
x test4	中断	将定时器中断 g:INTERRUPT0 ▼ 的触发时间设置为 100
▼ text	降列	
* 系统变量	Socket	将虚拟输入中断 g:INTERRUPT0 ▼ 的检测方式设为 g:SimDI0 ▼ 边沿信号检测的方式 "riseEdge" ▼
Ŷ 今月杰母	软浮动	结束
控制器工作空间	传送带跟随	• • • • • • • • • • • • • • • • • • • •
G	字符串	
<ul> <li>ReserveMirror</li> </ul>	数学运算	
* 系统变量	ModBusTcp	
<b>X</b> 全局变量	负载在线识别	
GlobalProg	赋值和变量	
NewProject	GUI	
NewFloject		
1		

For the right-click menu of global variables, system variables, project variables and program files, it will be opened using the Windows self-contained program, as shown in the image below:



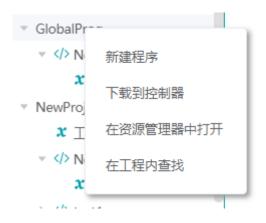
## 3.1. Differentiate Icons in Project Management

1. Text files and graphical labels are distinguished by an icon.



## 3.2. Global Project

Each workspace has a unique global project named "GlobalProg". It cannot be deleted, renamed, or copied. It does not have project variables and supports the following operations. These operations are the same as regular projects, and all other projects within the workspace can use its programs.



## 3.3. Create a New Workspace

Click the "+" button to create a new graphical workspace by default. After removing the checkmark, you can choose to create a text project or a graphical project using templates. The default creation for programs is a "graphical workspace".



3.3.1.Create a New Text Workspace

新建工作空间		×
* 工作空间名称	请输入工作空间名称	
工作空间类型	○ 文本 • 图形化	
工作空间模板	请选择模板 ~	
	取消	确定

## 3.3.2. Create Text and Graphical Workspaces Based on Templates



新建工作空间		× (F
* 工作空间名称 工作空间类型	<ul><li>请输入工作空间名称</li><li>○ 文本 ● 图形化</li></ul>	• • • •
工作空间模板	请选择模板	· · ·
	ii	
	tt ui5	确定

#### Create the text, as shown below

新建工作空间			×
* 工作空间名称			)
工作空间类型			
工作空间模板	请选择模板	^	)
	ii		
	tt		确定
	ui5		
RUPT0 <b>▼</b> 的检测方	weewr		号检测的方

## 3.4. Right-Click Menu on the Project Tree

## 3.4.1.Workspace

Local workspace supports the following operations:



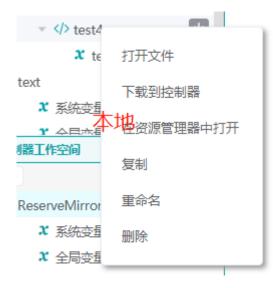
Server workspace supports the following operations:

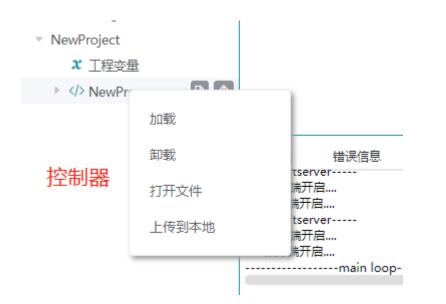
Ð	C	字符串
<ul> <li>ReserveMirror</li> </ul>	ᄂᇆᆋ	ter.
<b>X</b> 系统变量	上传到本地	
<b>X</b> 全局变量	删除	211
GlobalProg		唐
NewProject		GUI

## 3.4.2.Project



## 3.4.3.Program





## 3.4.4. Variable File





## 3.5. Variable Module

The variable module includes system variables, global variables, project variables, and program variables. These system variables cannot be edited, and each variable type has its own set of permissible variable creations.

### 3.5.1.System Variables

System variables cannot be edited, but can only be viewed. Double-clicking on the system variable node in any workspace opens it. Programs throughout the workspace can use these variables, as shown in figure below:

系统变量×		
	Seeger., 5	Provide a
/ 变量名	值	注释
√ 基本		
整型		
整型数组		
浮点型		
浮点型数组		
布尔型		
布尔型数组		
字符串		
~ 位置		
轴坐标		
笛卡尔坐标		
相对轴坐标		
相对笛卡尔坐标		
轴坐标数组		
笛卡尔坐标数组		
~ I/O		
DI		
虚拟DI		
DO		

### 3.5.2. Global Variables

Global variables encompass all variable types, support adding, modifying, copying, and deleting functions. Programs throughout the workspace can use these variables.

系统变量×  全局变量×			
变量名	值	注释	属性
/ 基本			1
~ 整型 -	ta -		
INTO	0		
SYSTEM_INNER_COUNT	0	用于赋值过程中循环计数	
SYSTEM_INNER_ITEM_STRING_LEN	0	已处理的字符串长度	
SYSTEM_INNER_RUN_RESULT	0	指令执行结果	
SYSTEM_INNER_SOCKET_READ_INTO	0	socket客户端接收字符串数据成功与否的标记	
SYSTEM_INNER_SOCKET_STRING_LEI	N 0	整个字符串长度	
✓ 整型数组 -	F7		哲无数据
IntOneArray0	0		E /LXUE
IntOneArray1	0		
IntOneArray1	0		
浮点型	Ho .		
→ 浮点型数组	Ð		
SYSTEM_INNER_SPEED	0	用于给速度变量赋值的中间变量	
~ 布尔型 -	₽°		
BOOLO	false		
SYSTEM_INNER_SWITCH_PARAMS	false	用于切换产品参数	
布尔型数组	e.		e

## 3.5.3.Project Variables

Some variables can be added, but only programs within the current project can use them.

空制	编辑器		
系统变量× 全局变量×	工程变量×		
· 变量名	值	注释	
√ 基本			
整型	+		
整型数组	+		
浮点型	( <del>)</del>		
浮点型数组	+		
布尔型	+		
布尔型数组	+		
字符串	+		
~ 位置			
轴坐标	+		
笛卡尔坐标	+		
相对轴坐标	+		
相对笛卡尔坐标	+		
~ I/O			
DI	+		
虚拟DI	+		
DO	+		
虚拟DO	+		
AI	+		

### 3.5.4. Program Variables

Only the current program can use these variables.

系统变量 × 全局变量 ×	工程变量>	NewProgram ×	
✓ 变量名		值	注释
~ 基本			
整型	+		
整型数组	+		
浮点型	+		
浮点型数组	+		
布尔型	+		
布尔型数组	+		
字符串	+		
~ 位置			
轴坐标	+		
笛卡尔坐标	+		
相对轴坐标	+		
相对笛卡尔坐标	+		
~ I/O			
DI	+		
虚拟DI	+		
DO	+		
虚拟DO	+		
AI	+		

### 3.5.5.View, Modify and Save Variables

After opening or creating a workspace, double click on the corresponding variable node icon in the resource tree to open the UI page for that variable file on the right side.

系统变量 × 全局变量 >	× 工程变量 ×	NewProgram ×			[
变量名		值	注释	属性	
基本				变量名	INTO
~ 整型	+			变量值	- 0
INTO		0		掉电保存	
整型数组	+				请输入内容
浮点型	+			注释	
浮点型数组	+				
布尔型	+				
布尔型数组	+				
字符串	+				
位置					
轴坐标	+				
笛卡尔坐标	+				
相对轴坐标	+				
	+				
相对笛卡尔坐标	Ŧ				
I/O					
DI	+				
虚拟DI	+				
DO	+				
虚拟DO	+				保

## 3.5.6.Create/Delete/Copy Variables

Variable Creation, Copying and Deletion

人控制			编辑器		
系统变量×	全局变量 ×	工程变量 ×	NewProgram ×		
✓ 变量名			值		闰
~ 基本		_		4171246	
~ 整型		+	,	新增	
INTO		1	0		
整型数组					
浮点型		+	复制		
浮点型数约	删	除 +			
布尔型		+			
布尔型数组	E	+			
字符串		+			

Rename variables

### 3.5.7.Rename Variables

To rename a variable, select the variable in the table, edit its name, and click "Save".

NAME TARE		them togram			-
✓ 变量名		值	注释	属性	-
~ 基本				愛銘 重命名 ←	INT0
~ 整型	+			变量值	- 0 +
INTO		0		掉电保存	
整型数组	+				请输入内容
浮点型	+			注释	
浮点型数组	+				
布尔型	+				
布尔型数组	+				
字符串	+				
~ 位置					
轴坐标	+				
笛卡尔坐标	+				
相对轴坐标	+				
相对笛卡尔坐标	+				
~ I/O					
DI	+				
虚拟DI	+				
DO	+				
虚拟DO	+				保存

#### 3.5.8. Variable Comments

属性		
变量名	INT0	
变量值	- 0	+
掉电保存		
	请输入内容	
注释		
	_	
		保存
	<ul> <li>         ・ 受量名         ・</li> <li>         ・</li></ul>	· 变量名             · 变量值             · 少量值             · 少量值             · 少量值             · 少量值             · 少量值             · · · · · · · · · · · · · · ·

To add comments to a variable, select the variable in the table and enter the comments in the "Variable Comment" section on the right. Click "Save" to save the comments. The comments will be visible when the project is opened.

#### 3.5.9. Modify Variable Attribute Values

Click on a variable row in the table, and its current attribute values will be displayed on the

right-hand side. Modify the desired attributes in the "Attribute" page. After making the modifications, click the "Save" button to update the variable table with the new attribute values, as shown in figure below. Please note that clicking the "Save" button is necessary for the changes to take effect.

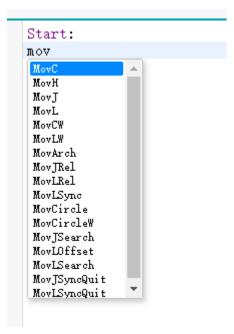
	属性			
_	变量名	INT0		
Ш	变量值	-	0	+
	掉电保存			
	注释	请输入	内容	1
				保存
			L	

# 3.6. Program Editing

Users can conveniently edit and modify programs using this software. The program editing UI is displayed as follows:

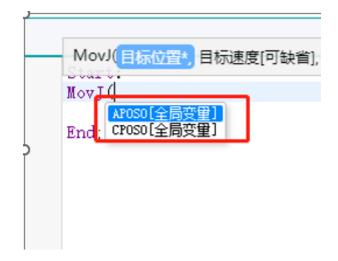
	机器人控制	编辑器
本地工作空间	A_12_Tiao_dui ×	
+ 🕅	C ▶ 运动指令	1 Start:
<ul> <li>liwenjun</li> </ul>	▶ 控制指令	2 /* 初始复位*/
* 系统变量	▶ 等待指令	3 CALL <u>demotest</u>
<b>X</b> 全局变量	▶ IO指令	4 /**/ 5 Stop()
<ul> <li>Tengsheng_baoyaji_1</li> </ul>	<ul> <li>→ 设置指令</li> </ul>	6 SetSimDO(p:SDO9 Jiajing,1)
<b>X</b> T程变量	<ul> <li>○</li> <li>○</li></ul>	7 SetSimDO(p:SDO10_Songkai,0)
A 12 Tiao duiwei	▶ 位运算指令	8 //WaitSimDI(p:SDI9_Jiajing_OK,1,0,0,p:fankui)
X A 12 Tiao duiwei		9 //WaitSimDl(p:SDI10_Songkai_OK,0,0,0,p;fankui) 10 /*开始初始化赋值*/
A 12 Tiao Juzheng	- HITTER &	10 771xht/yxht/2mb/le
A 1 12 Run xunhua	▶ 区域指令	12 chushi:
	- DEDECH R	13 /* 赋值,从哪列哪行开始(1-2列的位只能设置:1-6)(3-12列的位只能设置:1-14)*/
A_Suan_1_7_Dianwei	· *34/38 *	14 p:A_fang_Lie.value = 8
A_Suan_8_12_Dianwe	ei ▶ 阵列指令	<sup>15</sup> p:A_fang_wei.value = 1 16 projectory Liesbu value = 12
A_Tiao_1_7_Dianwei	▶ Socket指令	16         p:yidong_Lieshu.value = 12           17         /*判断位置数据设置是否错误*/
A_Tiao_8_12_Dianwe	i ▶ 软浮动指令	<sup>18</sup> V IF (( p:A fang Lie.value <= 2 ) and ( p:A fang Lie.value >= 1 )) THEN
B_17_Tiao_duiwei	▶ 传送带跟随指令	<sup>19</sup>
► () R 17 Tipo Juzhong	▶ 字符串指令	20 GOTO xunhuan
控制器工作空间	▶ ModbusTcp指令	21 ENDIF 22 ENDIE
D (	C )数学指令	ENDIF Final Structure (p:A fang Lie.value <= 12) and (p:A fang Lie.value >= 3)) THEN
ReserveMirror		<sup>24</sup> IF ((p:A fang wei.value >= 1) and (p:A fang wei.value <= p:A 3 Lie geshu.value )) THEN
<b>X</b> 系统变量	▶ 中断指令	25 GOTO xunhuan
<b>x</b> 全局变量	▶ 负载在线辨识指令	<sup>26</sup> ENDIF
<ul> <li>GlobalProg</li> </ul>		27 ENDIF
0		28 SetRToErr("数据设置错误",90011) 29 GOTO chushi
<ul> <li>NewProject</li> </ul>		29 GOTO chushi 30 /*循环*/
* 工程变量		31 xunhuan:
VewProgram		32 /*
X NewProgram		<sup>33</sup> × IF (( p:A_fang_Lie.value >= 1 ) and ( p:A_fang_Lie.value <= 2 ) and ( p:A_fang_wei.value == 1 )) THEN

- 1. Double-clicking on a program node in the project tree opens the corresponding program for editing.
- 2. The program editing area provides flexible and convenient text programming editing operations. Common text shortcuts are supported, such as Ctrl+C for copy, Ctrl+X for cut, Ctrl+V for paste, Ctrl+Z for undo, and Ctrl+Y for redo. Users can also use the toolbar in the program editing UI to perform corresponding operations.
- 3. Program commands and keywords are highlighted for easy visibility.
- 4. Auto-suggestion functionality is available for code input (variables, commands, etc.) within the project scope. Tips are displayed to guide users in selecting the desired input options.



5. When entering parameters for command functions and typing a left parenthesis, a parameter input

prompt will appear along with an automatically filtered selection list for the current input. Each time a comma is entered for parameter input, the prompt list for the current command parameters is updated, and the corresponding parameter in the function prompt box is highlighted to assist users in inputting the correct values.



6. For commands with multiple parameter combinations, such as movJ, movL, etc., various optional and mandatory parameters are included (although optional, the order of parameters for each parameter type is dependent). After entering each parameter, the editor updates the input prompt list for the available parameters and highlights all currently available parameters in the function prompt window. This approach efficiently guides users in editing commands with such parameter combinations.

编辑器	I	3D			
MovJ(目标位置*,目标速度	度[可缺省], 过渡类型[可缺省	[], 过渡值[可缺省], 工具参数[可备	快省], 坐标系参数[可缺省],	工件负载[可缺省])	
MovJ(					
End;					

On the PC software interface, there is a difference in how variables are displayed compared to the teach pendant programming UI. For example, when selecting a variable from the input prompt box and entering it in the editor, it should be displayed in the form of s:, p:, g:, or I: as a prefix. s: represents system variables, p: represents project variables, g: represents global variables, and I: represents program variables. To facilitate the filtering of variables from different domains, users can manually input s:, p:, g:, or I: to automatically update the input prompt box and display variables from the corresponding domain for selection.

MOWLEANDER, 日标速度[可缺省 Start: NovJ(	
APOSO[全局变里] End; APOSO[全局变里] APOSO[工程变里] CPOSO[工程变里] APOSO[程序变里] CPOSO[程序变里]	MovJ(p: End; AFOSO[工程变量] DAPOSO[工程变量] DAPOSO[工程变量] DCPOSO[工程变量]

7. The program editor can provide real-time error detection and display basic error messages while the user is typing. Error information is displayed in the compilation and debugging area below or highlighted in red on the error line for easy identification.

				_	
	Start:				
	MovJ(p:)	) _			
L	End				
			变量监控	程序列	表 查找結果
周试信息	错误信息 断	点 书签	34.mm/1	12/3/25	
	错误信息 断, xt1/Project/NewProject				(xiaokai/Desktop/Release_10.21/Release/Workspaces/demotxt1/NewProject/NewProgram)Line2 :no viable alternative at injut 'MovJ(p:

8. Once the editing is complete, clicking the

icon allows for the compilation and saving of

the currently edited program. At this point, syntax errors are also checked. If any errors are displayed, the save operation will not be successful, and the user needs to make the necessary program modifications as prompted. After verifying that there are no errors, the program can be successfully compiled and saved.

💾 保存

9. Code comments can be added in the editing area using either "// " or "/\* \*/".

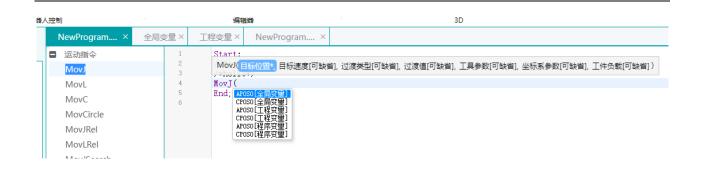
レエ共た	<b>ү тр</b> .	则大	.т						
↑ 书签	♦ 书签	◎ 注释	0 消注	<b></b>					
→ 前进	↑ 断点	🖡 断点		<b>*</b> §					
编辑器									
工程变	量× N	ewProgra	m ×						
//1									

## 3.7. Command Navigation

By clicking the button as shown in the following image, the command navigation window is opened.

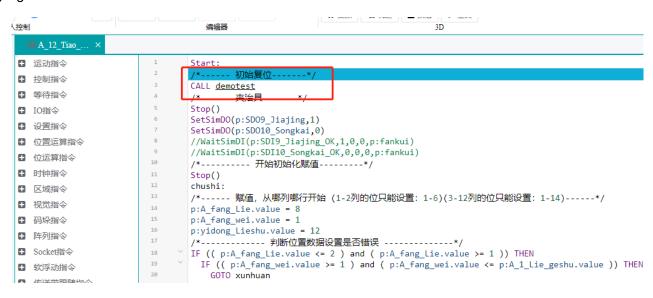


Double-clicking on the nodes in the expanded command list will display the corresponding commands. Moving the cursor to the desired position in the editing area and double-clicking on the command will quickly add it to the program.



## 3.8. Display of Running Program

During single-step or continuous program execution, the currently running program line is highlighted.



The virtual teach pendant can be opened during program execution to synchronize and compare the displayed pointer line for any differences.

## 3.9. Program Saving

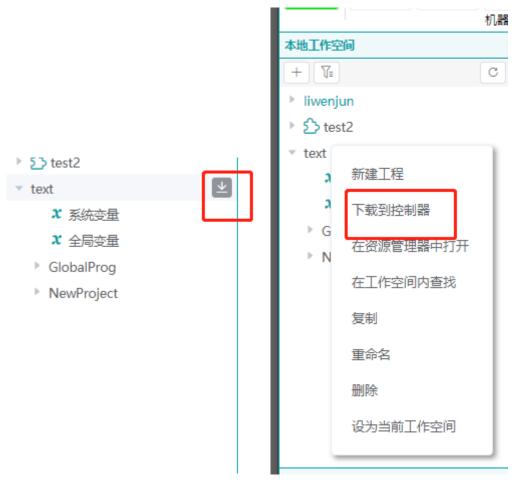
1. Click the icon in the toolbar to save the modified program locally.



# 3.10. Workspace, Project and Program Upload/Download

This functionality requires a connection to the controller. Local programs can be downloaded to the controller, and controller programs can be uploaded to the local environment. It is also possible to selectively upload or download a node from the workspace tree. When clicking on a node in an independent workspace, it is important to ensure that the workspace exists either locally or on the controller; otherwise, an error will occur.

### 3.10.1. Download



Select the local "text" -> click the "Download" button.

### 3.10.2. Upload

Select the "GlobalProg" on the server -> Upload.



If there are differences between the local and controller versions, a prompt will appear, allowing the user to decide whether to overwrite the controllers file.

				文件对比的详细操作	×
-	全选	文件名	操作	对比类型	
		C:/Users/xiaokai/Desk top/Release_10.21/Rel ease/Workspaces/test1 024/Project/_global.er d	覆盖	文件不同	
				取消 确定	

### 3.10.3. Upload/Download Error Messages

If an independent unit under the workspace is selected for upload/download and the workspace does not exist locally or on the controller, the following error will be reported.

1. Download: If the workspace where the project resides does not exist on the server, the following error will be reported.

ł	0	控制器上不存在对应的工程或者工作空间
ų.		

2. Upload: If a project is selected from any workspace on the server, right-clicked, and then uploaded, and the corresponding workspace does not exist locally, the upload will fail, as shown in the following image.





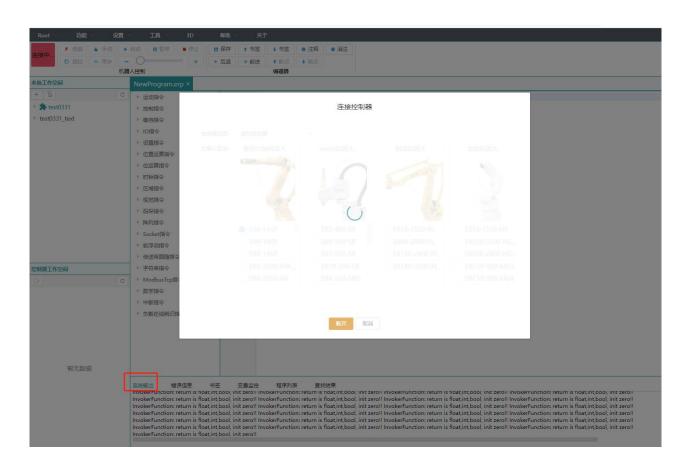
# **4. Auxiliary Program Functions**

Each tab represents a specific function and includes the following functionalities:



## 4.1. System Output

It primarily displays controller information and outputs user operations, such as connecting to the controller.

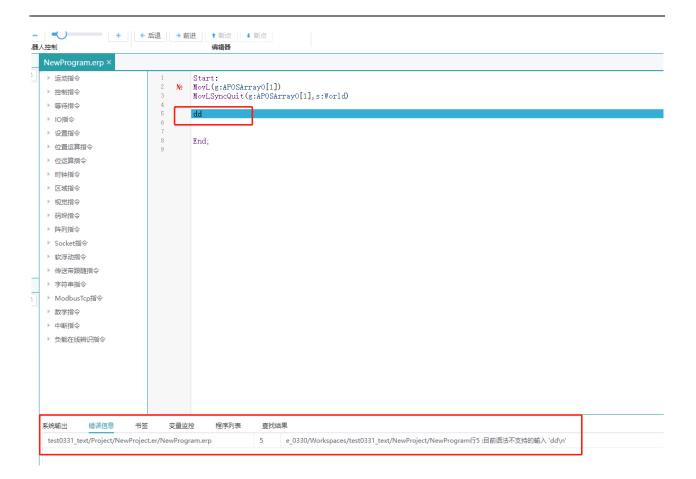


# 4.2. Error Messages

This feature provides error notifications during program development.

机器	人控制	编辑器	
	NewProgram.erp $\times$		
С	▶ 运动指令	1 Start:	
	▶ 控制指令	2 № MovL(g:APOSAr 3 NovLSvic©uit(	Array0[1]) t(g:APOSArray0[1],s:World)
	▶ 等待指令	4	· · · · · · · · · · · · · · · · · · ·
	▶ IO指令	5 <b>dd</b>	
	▶ 设置指令	7 8 End;	
	▶ 位置运算指令	9	
	▶ 位运算指令		
	▶ 时钟指令		
	▶ 区域指令		
	▶ 视觉指令		
	▶ 码垛指令		
	▶ 阵列指令		
	▶ Socket指令		
	<ul> <li>传送带跟随指令</li> <li>字符串指令</li> </ul>		
C	<ul> <li>予付申損令</li> <li>ModbusTcp指令</li> </ul>		
6	<ul> <li>Modulusicpal⇒</li> <li>数学指令</li> </ul>		
	▶ 中断指令		
	▶ 负载在线辨识指令		
	系統輸出 错误信息 书	签 变量监控 程序列表	查找结果
	test0331_text/Project/NewProje	ect.er/NewProgram.erp	5 e_0330/Workspaces/test0331_text/NewProject/NewProgram行5:目前语法不支持的输入 'dd\n'
l			

Double-clicking on an error will navigate to the corresponding error line in the text. For example, double-clicking on a specific line in the "Error Messages" will jump to the corresponding error line.



## 4.3. Bookmarks

Used to add bookmarks in the program for easy reference and navigation. When a line in the program is double-clicked at its beginning position, a bookmark indicator will appear as shown below, indicating the successful addition of a bookmark.

人控制		编損器			
NewProgram.erp ×					
▶ 运动指令	1	Start:			
<ul> <li>控制指令</li> </ul>	2 <b>N</b> 9 3	MovL (g:APOSArray0[1] MovLSyncQuit(g:APOSA	) vrrav0[1] s∙Worl	4)	
▶ 等待指令	4	and a substantial and a substantia		~	
▶ IO指令	5				
▶ 设置指令	8	End;			
▶ 位置运算指令	8				
<ul> <li>位运算指令</li> </ul>					
▶ 时钟指令					
<ul> <li>区域指令</li> </ul>					
▶ 视觉指令					
▶ 码垛指令					
▶ 阵列指令					
▶ Socket指令					
▶ 软浮动指令					
▶ 传送带跟随指令					
▶ 字符串指令					
▶ ModbusTcp指令					
▶ 数学指令					
▶ 中断指令					
▶ 负载在线辨识指令					
-					
_					
系统输出 错误信息	书签 变量	监控 程序列表 查找线	结果		
书签	test0331_text	t/Project/NewProject.er/NewPro	ogram.erp		

Double-clicking on a line in the bookmark bar can also jump to the specified line in the text.

1器	人控制		编辑器		
	NewProgram.erp ×				
	NewProgram.erp ×	1 2 <b>Ve</b> 3 6 7 8 9	Start: HovL(g:APOSArray0[1]) MovLSyncQuit(g:APOSArray0[1],s dd End;	S张转 ∷∀orld)	
	系統輸出 错误信息 书盔 书签 te		空 程序列表 査找結果 roject/NewProject.er/NewProgram.erp	双击	2

To remove a bookmark, simply double-click on the small tag associated with it.

机器	人控制	← 后退	→前	进 新点 新点 新点	
	NewProgram.erp ×				
С	▶ 运动指令	:		Start:	
	▶ 控制指令			MovL(g:APOSArray0[1]) MovLSyncQuit(g:APOSArray0[1]	s•Vor]d)
	▶ 等待指令		1		, 0 = = 0 = 2 = 0
	▶ IO指令	Ę		dd	
	▶ 设置指令		7		
	▶ 位置运算指令	1		End;	
	▶ 位运算指令				
	▶ 时钟指令				
	<ul> <li>区域指令</li> </ul>				
	▶ 视觉指令				
	▶ 码垛指令				
	▶ 阵列指令				
	▶ Socket指令				
	▶ 软浮动指令				
	▶ 传送带跟随指令				
	▶ 字符串指令				
С	▶ ModbusTcp指令				
	▶ 数学指令				
	▶ 中断指令				
	▶ 负载在线辨识指令				
	系统输出 错误信息	书签	变量监	空 程序列表 查找结果	
	书签	test03	31_text/P	roject/NewProject.er/NewProgram.erp	1

## 4.4. Variable Monitoring

In a text program, selecting a variable and right-clicking on it allows the user to choose "Add Monitoring" to add the variable to the monitoring list.

 	编辑器
1 <u>№</u>	Start:
2	MovL(g:APOSArrav0[1])
3	MovLSyncQuit 添加到监控 tay0[1],s:World)
4	跳转到定义
5	dd
6	
7	
8	End;
9	
4 5 6 7 8	跳转到定义

Successful addition is displayed as follows:

1 - 1	-	+	←后	退	→ 前)	世 ● 断点 编辑器	↓ 断点		
		gram.erp ×				алларны			
C	<ul> <li>字符串</li> <li>Modb</li> <li>数学指</li> <li>中断指</li> </ul>	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )		1 2 3 4 5 6 7 8 9		Start MovL 42: APOSA MovLSyncQuit dd End;	ray0(1)) g: AFOSArray0	[1],s:World)	
8	系统输出	错误信息	书签	变	量监持	程序列表	查找结果		
	$\checkmark$	I:APOS0							88/Project/NewProject.er/NewProgram.erp
	<ul> <li>Image: A start of the start of</li></ul>	I:APOS3							88/Project/NewProject.er/NewProgram.erp
		g:APOSArray0							test0331_text/Project/NewProject.er/NewProgram.erp
	<b>V</b>	I:APOS0							tttt/Project/NewProject.er/NewProgram.erp

# 4.5. Program List

This feature displays the programs being called in real-time during program execution.

## 4.6. Search Results

This feature is primarily used for searching within the workspace and projects in the project management tree. It supports case-sensitive and whole-word matching, but does not support regular expressions.

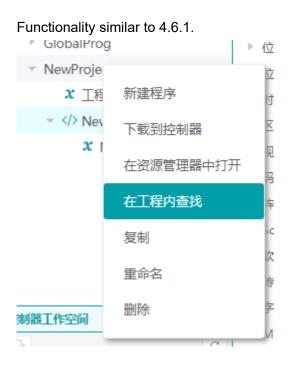
### 4.6.1. Searching within the Workspace



Search results

《统输出	错误信息 书签 变量监控 程序列表	查找结果	
1	test0331_text/Project/NewProject.e	r/NewProgram.erp 2	2 MovL(g:APOSArray0[1])
2	test0331_text/Project/NewProject.e	r/NewProgram.erp 3	MovLSyncQuit(g:APOSArray0[1],s:World)

### 4.6.2. Searching within a Project



## 4.6.3.Searching within Text

Opening a text editor and using the shortcut Ctrl+F brings up the search box as shown below.

lewP	rogram ×			
rt: vL(g vLSy	搜索		×	I
	* 搜索字符			
;	搜索位置	当前文档	$\sim$	
		区分大小写	全字匹配	
			取消 确定	

Search location options include: current document, project of the document, and workspace of the document.

搜索位置	当前文档	^
	当前文档	
	工程	
	工作空间	

Search results are displayed under the "Search Results" tab.

		-
搜索	×	
* 搜索字符	APOSArray0	
搜索位置	当前文档 🗸 🗸	
	区分大小写 全字匹配	
	取消通定	
N器人控制 NewProgram.erp ×	编辑器	
C         > 运动指令           > 控制指令           > 控制指令           > 设置指令           > 设置指令           > 位置运算指令           > 位置运算指令           > 位置运算指令           > 位置运算指令           > 位置运算指令           > 回時相指令           > 同時相指令           > 四級指令           > 時利指令           > 公式指令           > 你得時用指令           > 外向動加速令           > 外面的busTcp描令           > 如斯指令           > 如載手指令           > 负載在线辨识指令	<pre>1 Ne Start: HovL(s: APOSArray0[1]) MovL(s:APOSArray0[1], s:World) 4 6 7 8 End; 9 </pre>	
	test0331_text/Project/NewProject.er/NewProgram.erp test0331_text/Project/NewProject.er/NewProgram.erp	2 MovL(g:APOSArray0[1]) 3 MovLSyncQuit(g:APOSArray0[1],s:World)

# **5.Graphical Programming**

## 5.1. Create a Graphical Project

Refer to Section 3.3 for creating a graphical workspace.

# 5.2. Introduction to Graphical Blocks

### 5.2.1.Command Blocks

Each command is represented by a graphical block that can be dragged out to implement its functionality independently.



When a block is dragged out, only the required parameters are displayed, and non-required parameters are collapsed by default. Users can expand to select the required parameters, as shown in

the example.

INC	swriogiaii		uem	oneih	^	 <u>_</u> 16_	i lau		1	== ^ <u>`</u>	_14_1	iau_		-	土/9/3	CHL 1	1	New	riog	Jiann	··· ^																								
运	动	开始																																											
控	之制		运动	倒日	标位	 做官	TÁLÍA	动	并便	用以	下參考	χĒ	标速	ero	「作中学	े बा 💌	1	18 H	лла	TRPE	i 👻	ा	渡信	ानक	<u>କ</u> ୍ଷୀ 🔹	-		可缺省		시사	示医病	 THE	1 👻	T	生俗麦	erane	中省1	¥.	谏河	. жл	्रान	¢≊i	T I	收拢	
等	詩				1004020								THU WEE	soct.		-u -					u -						 		u ·		00005	 	1 - 1												
IC	o l	目标	位置是	必慎顶	5																																								
iQ	置																																												
位	2置运算																																												
(1)	い天首																																												

Each input is filtered based on the variable type required.



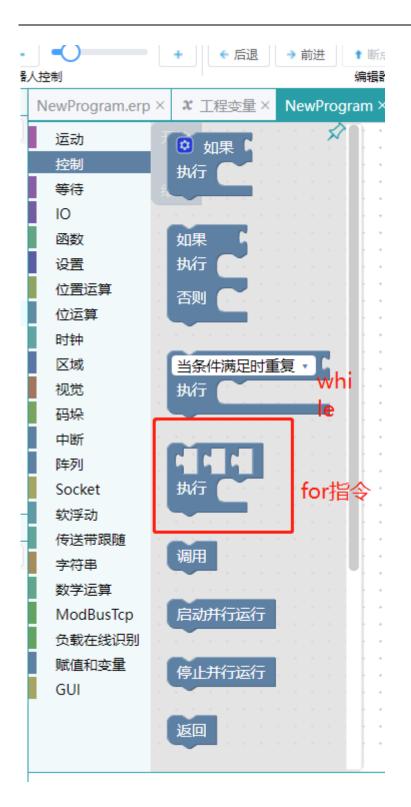
If the desired parameters are not available, users can click the "+" button to add variables. By selecting the desired variable type, they will be directed to the corresponding file to add the required type.



Special blocks for certain commands are displayed as shown below:

	$\sim$			_		-	_	_	_							•	+													• •	+	*	+	*			+	+	+	-
	▲	-		A-2-1			+		1.1	+-		-	n+	12	_		Ner	<b>T</b> 19			<b>TT</b> 6	•		+77		I.IN			-77n-	+ with	N/TC/	± .	_			-	+	+	+	4
		条	14	寺侍	7	٦ì	聇	4		Æ	ΕIJ	刵	<u>цл</u> .	71	•	FF (	亅	"Ci	直フ	J	ガル	=	۰.	趙	时	FIJØ	カフ	9 P		J₹J	Ф/Т1	且	•	片	受力	E I	+		+	4
								_	_																															
结	谏	÷	÷	* *	+	+	+	*	+	÷	÷	÷	* 1	*	*	+	+	*	+	+	÷	*	÷	÷	÷	÷	÷	÷	* 1	*	+	*	+	+	+	÷	÷	÷	÷	4

The following is an example of a block that can be concatenated:





### 5.2.2.Assignment and Variable Blocks

1. Variable Block

-	-0	+ ←后退	→前进 1 断点	↓ 断点	
机器	人控制		编辑器		
	NewProgram.erp	)× <b>X</b> 工程变量×	NewProgram $\times$		
С	运动		1000000		<del>-</del> ×
	控制	请选择变量▼			
	等待	结束 1111			
	10	设置			
	函数				
	设置	设置			
	位置运算	. <mark></mark>			
	位运算	真,			
	时钟				
	区域				
	视觉	123			
	码垛				
	中断	整型			
	阵列		• • • • • • •		
	Socket	在数组中	□表 ▼ 设置 ▼ #	🔹 🛌 – 値	訪 🖣
	传送带跟随				
С	字符串	在数组中	则表▼ 取得▼ #	<b>≠ • •</b> •	
	数学运算				
	ModBusTcp				
	负载在线识别				
	赋值和变量				
	GUI				
	001				

The Set/Assignment Block is primarily used to assign values to variables.



In the Assignment Block, you can select one variable to assign its value to another variable.

. (	~								-										-	+	+
	赋值(	p:A_LieFang	iizh	uw	ei	•		为	C	D	A	03	0	1	sh	an	a 1			+	+
										1			-"				9	•		+	+
	跳转到:	LieOK 🔻		+	+	*	*	*	*	+	+	+	+	*	+	+	+	*	*	+	*

There are three concatenation blocks for String, Boolean, and Numeric types.

									4
▶								+	4
и <u>е</u> и и изирети								+	4
								*	4
真 bool 类型								*	4
								•	4
								•	4
123 数字								*	4
· · · · · · · · · · · · · · · · · · ·								*	4

## 5.3. Simple Demo Program Demonstration

1. Create a new graphical workspace.

Please refer to Section 3.4 for the steps to create a new graphical workspace. Below is an example of a newly created demo.

	机器	人控制	_		- I '								\$	编辑										
本地工作空间		NewProgram.erp	) ×	я	: 1	程	交重	±×	١	Ve	wP	ro	gra	am	×									
+ 🖓	C	运动	Ţ	Ŧ始		•	+	+	•	+	•	•	÷	+	+	÷	•	÷	÷	÷	÷	•	÷	•
🔹 🇯 test0331		控制						•		•	:	•	•	•	•	•		•		•	•	:	•	•
<b>X</b> 系统变量		等待	套	吉束	i i	+	+	+	*	+	+	+	+	+	+	+	*	+	*	*	+	•	+	+
X 全局变量		IO					•	•		•	•	•	•	•	•	•	•	•		•	•	•	•	•
GlobalProg		函数	•	*	•	•	*	+	*	•	•	•	÷	+	•	+	•	•	*	÷	+	•	+	•
<ul> <li>NewProject</li> </ul>		设置		•	•		•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>x</b> 工程变量		位置运算	•	*	*	+	+	+	*	+	*	+	*	+	+	+	•	+	*	*	*	•	+	+
NewProgram	<u>+</u>	位运算		•	•		•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	*	•
test0331_text		时钟	•	+	*	+	+	+	*	+	+	+	+	+	+	+	*	+	*	*	+	*	+	+
		区域		•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		视觉	•	+	+	+	+	+	*	+	+	+	+	+	+	+	+	+	+	+	+	+	+	*
		码垛		•	• •	•••	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		中断		+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

2. Double-click to open "NewProgram"

By default, it has a "Start" and an "End" block.

<b>-</b> 1器			+		<b>€</b> ቩ	退		<b>→</b> ī	前进	Ē		▮ ■				E	后点										
	NewProgram.erp	×	x	工利	呈变	'量 >	<	Ne	wP	Pro	gra	am	×														
2	运动	Я	始	÷	*	• •	+	*	*	*	*	•	•	*	*	*	*	*	*	*	*	•	•	•	*	*	•
	控制				*		+				+		+	+	*	+	+	+	+	+	+	+	+	+	*	*	+
	等待	结	涑	1	+	• •	+	+	+	*	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	ю				•	• •	+				•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	函数		• •	+	+	• •	+	+	+	*	÷	+	+	÷	+	+	+	÷	+	+	+	+	+	+	+	+	+
	设置	*	• •	*	*	• •	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	◎ 位置运算	*		+	+	• •	+	+	*	+	+	+	*	+	*	*	+	+	+	+	+	+	+	+	+	+	+
	位运算	÷	• •	+	+	• •	+	+	+	+	+	+	+	+	+	+	+	÷	+	+	+	÷	÷	÷	+	+	+
		•	• •		•	• •	•				•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	时钟			+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+
	区域	•	• •	+	+	• •	+	+	+	*	+	+	+	+	+	+	+	+	+	*	+	+	+	+	+	+	+
	视觉	•	• •		•	• •	•					•	•		•	•	•		•	•	•	•	•	•	•	•	•
	码垛	•	• •	+	+	• •	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	中断	+	• •	*	*	• •	+	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	阵列	•		•	•	• •	+					•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Socket	•	• •	+	+	• •	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	÷	+
	软浮动	•	• •	•	•	• •	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	传送带跟随			+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
3	字符串	+	• •	+	+	• •	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
- i	数学运算	•	• •		•	• •	*				•	•	*	•	•	•	•	•	*	•	•	•	•	•	•	•	•
	ModBusTcp		• •	+	+	• •	+	+	+	+	+	+	+	+	+	+	+	+	+	+	÷	+	÷	+	+	÷	+
	负载在线识别	+	• •	+	*	* *	+	+	*	*	*	+	*	*	*	+	+	+	*	+	+	+	+	+	+	+	+
		•		•	*	• •	*	•		+	+	+	•	+	*	•	+	+	+	+	+	+	+	*	*	*	+
	赋值和变量	÷	• •	+	+	• •	+	+	+	+	+	+	+	+	+	+	+	÷	+	+	+	+	÷	+	+	÷	÷
	GUI	•	• •	*	•	• •	+	*	*	•	•	•	:	•	*	*	*	•	•	*	*	•	•	•	•	•	•
		+		+	+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		•	• •	*	+	• •	+	*	*	*	+	+	*	+	+	+	+	+	+	+	+	+	+	+	+	+	+

3. Click on the command tree on the left side and select any command. For example, lets choose the "Motion" command. Drag and drop a graphical block between "Start" and "End".

	人控制		编辑器	
	NewProgram.erp	× <b>X</b> 工程变量 ×	NewProgram ×	
1	NewProgram.erp > 运动 控制 等待 IO 函数 设置 位置运算 位置运算 位置运算 时钟 区域 视觉 码垛 中断 阵列 Socket 软浮动	<ul> <li>× 工程支量 ×</li> <li>直线运动</li> <li>点到点运动</li> <li>圆弧运动</li> <li>整圆运动</li> <li>MovJ插补相对</li> <li>直线相对运动</li> <li>寻位/运动</li> </ul>		
1	<ul> <li>(大)子切</li> <li>(方送帯跟随</li> <li>字符串</li> <li>数学运算</li> <li>ModBusTcp</li> <li>负载在线识别</li> <li>赋值和变量</li> <li>GUI</li> </ul>	寻位L运动 关节空间偏移排 直线偏移运动 直线摆胍运动	<ul> <li>No. No. No. No. No. No. No. No. No. No.</li></ul>	

Select a block for linear motion, as shown in the image.



4. For the "Target Position" dropdown in the block above, select a parameter variable.

	◆ 后退 → 前进	<u>き</u> 新損器
ogram.	erp × X 工程变量 × NewF	Program ×
1	开始	· · · · · · · · · · · · · · · · · · ·
I	运动到 g:CPOS0 🔻	做直线运动展开
	g:CPOS0	∧ ⊗ +
[ [		· · · · · · · · · · · · · · · · · · ·
· 运算	g:CPOS0	· · · · · · · · · · · · · · · · · · ·
算		
1		• • • • • • • • • • • • • • •
1		· · · · · · · · · · · · · · · · · ·
;		
:		
i		· · · · · · · · · · · · · · · · · · ·
ket		

If there are no variables in the dropdown, you need to add a new variable.

5. Click the "+" button to add a new variable.



For example, if you select "Program Variable", it will take you to the program variables file where you can add a new "Target Position" variable.

			编	辑器				
m.erp ×	<b>X</b> 工程变量	× NewP	rogran	n×				
Ŧ	F始	• • • •	• • •	• •	•••	:	•	•
	运动到 g:C	POS0 🔻	做直线	运动	展开	Ŧ	•	•
	0.000	·/ · · ·		+		•	•	•
g.c	POS0	r + + +				•	•	•
0	g:CPOS0		程序	变量	1	•	•	•
0	g:CPOS1		工程	該量	•	•	•	•
0	p:CPOS0		全居	迹量	•	•	•	•
						•	•	•
_				• •	• •	+	+	÷
				• •	•••	•	•	•
				•••	•••	•	•	•

Once you add the variable, it will appear in the dropdown list when you click on the "Target Position", as shown in the figure below.



After selecting a variable, it will be displayed as shown in the figure.



If you select the wrong variable, you can click the "x" clear button in the dropdown to remove the selection and choose another variable.

待								1.		•	•	•	•
)	g:CPOS0	~		×		+			+	+	+	+	+
置				+				Ľ	•	•	•	•	•
置运算			+	+	+	÷	+	+	÷	+	+	+	÷
运算	g:APOS0	*	+	+	+	+	+	+	+	+	+	+	+
钟	g:CPOS0		•	•	•	•	•	•	•	•	•	•	•
域	0 1:APOS0	•	+	+	+	+	+	+	+	*	+	+	+
觉				•	•	•		•	•	•	•	•	•
垛	1:CPOS0		+	+	+	+	+	*	+	+	+	+	+
洌	p:APOS0	1	•	•	•	•	•	•	•	•	•	•	•
ocket			+	+	+	+	+	+	+	+	+	+	+

After making the new selection, it will be displayed as shown in the figure.

					-	·							_	-					
9	肝始	ì	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
																		+	+
	Ĵ,	<u>4</u> 7	岃	IJ	I:C	PC	DS	0 ,		做	直	线	AA		展	Я		+	+
																		+	+
Į į	吉束	Ī	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

6. Click "Save" to save the graphical program.

In this manner, he graphical project is edited and completed. Similar steps can be followed for other commands as well.

置~	工具 ~	3D 🖂	帮助 ~	-	关于			
▶ 启	动 【 暫停	■ 停上 🔡	保存 🕇	书签	↓书签	0 注释	0 消注	
-		- + +	「后退」→	前进	↑ 断点	↓ 断点		
机器人	空制				编辑器			1
	NewProgram.x	ml × Newł	Program.erd	×	工程变量 ×	全局变	運×	
新	运动	开始	* * * *		* * * *			
	控制	运动到	I:CPOS0	▼ 做	直线运动	展开)。	• • • •	
	等待	结束						
	IO							

<ul> <li>第二日本</li> <li>第二日本</li></ul>	<ul> <li>● ##至</li> <li>● 保存图形块文件成功</li> <li>● 前点</li> <li>● 影点</li> <li>● 保存指令文件成功</li> <li>■ med × 14</li> <li>● 第四位</li> <li>● 保存指令文件成功</li> <li>■ 第四位</li> <li>● 保存指令文件成功</li> <li>● 第四位</li> <li>● 保存指令文件成功</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 如果</li> <li>● 第四</li> <li>● 如果</li> <li>● 第四</li> <li>● 如果</li> <li>● 第回</li> <li>● 如果</li> <li>● 第回</li> <li>● 第回<th></th><th></th></li></ul>		
<ul> <li>◆ H弦</li> <li>◆ 保存图形块文件成功</li> <li>◆ 前提</li> <li>● 保存指令文件成功</li> <li>30</li> <li>A simple Demo graphical program</li> <li>Graphical Program Implementation:</li> <li>● 保存指令文件成功</li> <li>● 保有</li> <li>● 公式</li> <li>● 保有</li> <li>● 公式</li> <li>● 公式<th><ul> <li>● ##至</li> <li>● 保存图形块文件成功</li> <li>● 前点</li> <li>● 影点</li> <li>● 保存指令文件成功</li> <li>■ med × 14</li> <li>● 第四位</li> <li>● 保存指令文件成功</li> <li>■ 第四位</li> <li>● 保存指令文件成功</li> <li>● 第四位</li> <li>● 保存指令文件成功</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 如果</li> <li>● 第四</li> <li>● 如果</li> <li>● 第四</li> <li>● 如果</li> <li>● 第回</li> <li>● 如果</li> <li>● 第回</li> <li>● 第回<th>助 ∨   关于</th><th></th></li></ul></th></li></ul>	<ul> <li>● ##至</li> <li>● 保存图形块文件成功</li> <li>● 前点</li> <li>● 影点</li> <li>● 保存指令文件成功</li> <li>■ med × 14</li> <li>● 第四位</li> <li>● 保存指令文件成功</li> <li>■ 第四位</li> <li>● 保存指令文件成功</li> <li>● 第四位</li> <li>● 保存指令文件成功</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 第四位</li> <li>● 如果</li> <li>● 第四</li> <li>● 如果</li> <li>● 第四</li> <li>● 如果</li> <li>● 第回</li> <li>● 如果</li> <li>● 第回</li> <li>● 第回<th>助 ∨   关于</th><th></th></li></ul>	助 ∨   关于	
● 前进       斯点       ● 复原       2 轨迹       2 面         ● 前进       斯点       ● 重点       ● 重点       2 面         A simple Demo graphical program       Graphical Program Implementation:       ● ■ □       ● □       ●	● 前进       断点       断点       ● 复原       ** 轨迹       ▲ 雪顶         3D       am.erd ×       ●       保存指令文件成功       3D         A simple Demo graphical program       Graphical Program Implementation:       ●		
am.erd ×       If       ●       保存指令文件成功       3D         am.erd ×       If       ● <t< th=""><th>amerd × If amerd × If A simple Demo graphical program Graphical Program Implementation: **********************************</th><th></th><th>保持图形状文件成功</th></t<>	amerd × If amerd × If A simple Demo graphical program Graphical Program Implementation: **********************************		保持图形状文件成功
am.erd ×       I         A simple Demo graphical program         Graphical Program Implementation:         Image: Constraint of the state of the	am.erd ×       If         A simple Demo graphical program         Graphical Program Implementation:         第445         WewProgram xml ×         运动       开始         运动       开始         运动       开始         运动       Gata         穿行       运动部         G       CPOS0 ▼         修書待       Gata         IO       Gata         设置       Gata         安待       Gata         G       Gata         G       Gata         G       Gata         Gata       Gata	↓ → 前进 ● 断点	↓ 断点 含 复原 2 轨迹 1 置顶
A simple Demo graphical program Graphical Program Implementation:	A simple Demo graphical program Graphical Program Implementation: ■ Call Content of the second s	Ø -	保存指令文件成功 3D
Graphical Program Implementation:       第445       第445       第456         諸人控制       第458       第458       10	Graphical Program Implementation:       ////////////////////////////////////	am.erd ×₹	
Graphical Program Implementation:       第445       第445       第456         選人控制       第458       第458       第458         运动       开始       运动剤 g:APOS0 ♥ 做直线运动 展开       第57       运动剤 g:CPOS0 ♥ 做点到点运动 展开         IO       运动角 g:CPOS0 ♥ 做点到点运动 展开       10       运动角 g:CPOS0 ♥ 做点到点运动 展开         IO       运动角 g:CPOS0 ♥ 做点到点运动 展开       10         设置       方結多边体区域是 g:POLYHEDRON0 ♥       11         均定       方結多边体区域是 g:POLYHEDRON0 ♥       11         日井       9 如果       sin ▼ 45 = ▼ 123         机行       运动到 g:APOS0 ♥ 做直线运动 展开       11         日井       「运动到 g:APOS0 ♥ 做直线运动 原开         日井       「运动到 g:APOS0 ♥ 做点到点运动 原开         日井       「运动到 g:APOS0 ♥ 做点到点运动 原开         50Cket       井/行       运动到 g:APOS0 ♥ 做点到点运动 原开         57日       数学函数       57日         数学函数       ModBusTcp       50000	Graphical Program Implementation:       ////////////////////////////////////	A simple Demo graphic	
諸人控制       第編器         NewProgram.xml ×       运动         运动       开始         运动       一方約到         資子       运动剤         資子       运动剤         空动剤       g:APOS0 ▼         修行       运动剤         「この」       ごの剤         「ごの」       ごの剤         「ごの」       「ごの剤」         「ごの剤」       g:CPOS0 ▼         協会       「日         「ごの」       「ごの剤」         「ごの」       「ごの剤」         「ごの」       「ごの剤」         「ごの」       「ごの剤」         「「」の置ご算       「方括多边体区域是:         「「」のしつ」       「自为<高电平 ▼	諸人控制       第編器         NewProgram.xml ×         运动       开始         运动       开始         运动       原子         等待       运动到 g:APOS0 ▼ 做点到点运动 展开         IO       运动等待 的百分比为 11         设置       运动等待 的百分比为 11         设置       送試等待 的百分比为 11         设置       近动到 g:APOS0 ▼ 做点到点运动 展开         位置运算       赤结多边体区域是: g:POLYHEDRON0 ▼         时种       ④ 如果       sin ▼ 45 = ▼ 123         视觉       执行       运动到 g:APOS0 ▼ 做直线运动 展开         码垛       戶列       g:APOS0 ▼ 做直线运动 展开         百炒如果       g:APOS0 ▼ 做点到点运动 展开         新行       运动到 g:APOS0 ▼ 做点到点运动 展开         新行       运动到 g:APOS0 ▼ 做点到点运动 展开         教行       运动到 g:APOS0 ▼ 做点到点运动 展开         教行       运动到 g:APOS0 ▼ 做点到点运动 展开         方行串       数学函数         ModBusTcp		
込动       开始         控制       运动到 g:APOS0 ▼ 做直线运动 展开         等待       运动到 g:CPOS0 ▼ 做点到点运动 展开         IO       运动等待 的百分比为 11         设置       设置数字输出端口 p:DO0 ▼ 值为 高电平▼         位运算       冻结多边体区域是: g:POLYHEDRON0 ▼         时种       • 如果       sin ▼ 45 = ▼ 123         规党       小行       运动到 g:APOS0 ▼ 做直线运动 展开         码垛       • 如果       sin ▼ 45 = ▼ 123         规党       小方       运动到 g:APOS0 ▼ 做直线运动 展开         局垛       ● 如果       g:Area0.StartPointY ▼ ≤ ▼ 1         防防       市方       运动到 g:APOS0 ▼ 做点到点运动 展开         方行串       数学函数       折         ModBusTcp	NewProgram.xml ×         运动       开始         控制       运动剤 g:APOS0 ▼ 做直线运动 展开         等待       运动剤 g:CPOS0 ▼ 做点到点运动 展开         IO       运动等待 的百分比为 11         设置       设置数字输出端口 p:DO0 ▼ 值为 高电平 ▼         位置运算       游结多边体区域是: g:POLYHEDRON0 ▼         时种       ② 如果       sin ▼ 45 = ▼ 123         规党       执行       运动到 g:APOS0 ▼ 做直线运动 展开         码垛       9:APOS0 ▼ 做直线运动 展开         日報       ③ 如果       sin ▼ 45 = ▼ 123         规党       执行       运动到 g:APOS0 ▼ 做直线运动 展开         百%       万// 运动到 g:APOS0 ▼ 做点到点运动 展开         方行事       数学函数         ModBusTcp	$\sim$	
运动       开始         控制       运动到 g.APOS0 ▼ 做自线运动 原开         等待       运动到 g.CPOS0 ▼ 做点到点运动 原开         IO       运动等待 的百分比为 11         设置数字输出端口 p.DO0 ▼ 值为 高电平 ▼       运动等待 的百分比为 11         设置数字输出端口 p.DO0 ▼ 值为 高电平 ▼       依結多边体区域是 g.POLYHEDRON0 ▼         时种       ③ 如果       sin ▼ 45 = ▼ 123         规党       执行       运动到 g.APOS0 ▼ 做自线运动 原开         码垛       否则如果       g.APOS0 ▼ 做自线运动 原开         路       否则如果       g.APOS0 ▼ 做自线运动 原开         日       五       五         公成       执行       运动到 g.APOS0 ▼ 做点到点运动 原开         新行       运动到 g.APOS0 ▼ 做点到点运动 原开         资符串       数学函数         ModBusTcp	运动       开始         控制       运动到 g:APOS0 ▼ 做直线运动 原开         等待       运动到 g:CPOS0 ▼ 做点到点运动 原开         IO       运动等待 的百分比为 11         设置       运动等待 的百分比为 11         设置数字输出端口 p:DO0 ▼ 值为 高电平 ▼         位运算       冻结多边体区域是 g:POLYHEDRON0 ▼         时种       ④ 如果 ( sin ▼ 45 = ▼ 123)         规觉       执行 运动到 g:APOS0 ▼ 做直线运动 展开         码垛       雪则如果 ( g:Area0.StartPointY ▼ ≤ ▼ 1)         场行       运动到 g:APOS0 ▼ 做点到点运动 展开         有床       新行 运动到 g:APOS0 ▼ 做点到点运动 展开         新行 运动到 g:APOS0 ▼ 做点到点运动 展开       重束         结束       结束         数学函数       ModBusTcp	器人控制	编辑器
控制       运动到 g:APOS0 ▼ 做直线运动 展开         培취       运动到 g:CPOS0 ▼ 做点到点运动 展开         IO       运动等待 的百分比为 11         设置数字输出端口 p:DO0 ▼ 值为 高电平 ▼         位运算       冻结多边体区域是: g:POLYHEDRON0 ▼         时种       9 如果 sin ▼ 45 = ▼ 123         视觉       执行 运动到 g:APOS0 ▼ 做直线运动 展开         码垛       9 如果 sin ▼ 45 = ▼ 123         规觉       执行 运动到 g:APOS0 ▼ 做直线运动 展开         百分       原开         方物如果       g:Area0.StartPointY ▼ ≤ ▼ 1         数学函数       齿刺到 g:APOS0 ▼ 做点到点运动 展开         数学函数       奶奶         ModBusTcp	控制       运动到 g:APOS0 ▼ 做直线运动 展开         等待       运动到 g:CPOS0 ▼ 做点到点运动 展开         iO       运动等待 的百分比为 11         位置运算       设置数字输出端口 p:DO0 ▼ 值为 高电平 ▼         位应算       冻结多边体区域是: g:POLYHEDRON0 ▼         时种       • 如果       sin ▼ 45 = ▼ 123         视觉       执行       运动到 g:APOS0 ▼ 做直线运动 展开         码垛       • 如果       sin ▼ 45 = ▼ 123         视觉       执行       运动到 g:APOS0 ▼ 做直线运动 展开         局垛       否则如果       g:APOS0 ▼ 做直线运动 展开         方尔串       预行       运动到 g:APOS0 ▼ 做点到点运动 展开         贫穷动       街方       运动到 g:APOS0 ▼ 做点到点运动 展开         资好串       数方       运动到 g:APOS0 ▼ 做点到点运动 展开         教学函数       ModBusTcp	NewProgram.xml	×
等待 iC 设置 位置运算 位运算 市特 区域 和灯 一分照 百分 一方 一方 一方 一方 一方 一方 一方 一方 一方 一方	<ul> <li>等待</li> <li>运动到 g:CPOS0 ▼ 做点到点运动 展开</li> <li>问</li> <li>设置</li> <li>位置运算</li> <li>位置算</li> <li>位置算</li> <li>位置算</li> <li>方结多边体区域是: g:POLYHEDRON0 ▼</li> <li>时种</li> <li>① 如果 ( sin ▼ 45 = ▼ 123)</li> <li>执行 运动到 g:APOS0 ▼ 做直线运动 展开</li> <li>奇/45 = ▼ 123</li> <li>执行 运动到 g:APOS0 ▼ 做直线运动 展开</li> <li>す/1</li> <li>执行 运动到 g:APOS0 ▼ 做点到点运动 展开</li> <li>黄/市</li> <li>支/市串</li> <li>数学函数</li> <li>ModBusTcp</li> </ul>	运动	
<ul> <li>等待</li> <li>运动到 g:CPOS0 ▼ 做点到点运动 展开</li> <li>设置</li> <li>设置</li> <li>运动等待的百分比为 11</li> <li>设置数字输出端口 p:DO0 ▼ 值为 高电平 ▼</li> <li>位运算</li> <li>冻结多边体区域是 g:POLYHEDRON0 ▼</li> <li>时种</li> <li>0 如果 sin ▼ 45 = ▼ 123</li> <li>视觉</li> <li>执行 运动到 g:APOS0 ▼ 做直线运动 展开</li> <li>1</li> <li>新行 运动到 g:APOS0 ▼ 做点到点运动 展开</li> <li>5</li> <li>方行</li> <li>方到 g:APOS0 ▼ 做点到点运动 展开</li> <li>5</li> <li>新行 运动到 g:APOS0 ▼ 做点到点运动 展开</li> <li>新行 运动到 g:APOS0 ▼ 做点到点运动 展开</li> </ul>	<ul> <li>等待</li> <li>运动到 g:CPOS0 ▼ 做点到点运动 展开</li> <li>设置</li> <li>设置</li> <li>运动等待 的百分比为 11</li> <li>设置数字输出端口 p:DO0 ▼ 值为 高电平 ▼</li> <li>位运算</li> <li>冻结多边体区域是: g:POLYHEDRON0 ▼</li> <li>时种</li> <li>① 如果 sin ▼ 45 = ▼ 123</li> <li>执行 运动到 g:APOS0 ▼ 做直线运动 展开</li> <li>奇/印</li> <li>方符串</li> <li>数学函数</li> <li>ModBusTcp</li> </ul>	控制	运动到 g:APOS0 ▼ 做直线运动 展开
IO       读, Growt         设置       运动等待的百分比为11         位置运算       设置数字输出端□ p.DO0 ↓ 值为高电平 ▼         位运算       冻结多边体区域是:g.POLYHEDRON0 ▼         时种       ④ 如果         区域       执行         规定       执行         场到       g.APOS0 ▼         防御果       g.APOS0 ▼         应对等动       资则如果         原力       五力到         资公       做自线运动 展开         有垛       g.APOS0 ▼         方行串       执行         支行串       结束         数学函数       ModBusTcp	IO       运动等待的百分比为11         位置运算       运动等待的百分比为11         位置运算       第月         位运算       冻结多边体区域是:g:POLYHEDRON0▼         时种       ジ如果       sin ▼ 45 = ▼ 123         视觉       如果       sin ▼ 45 = ▼ 123         视觉       均斤       运动到 g:APOS0 ▼ 做直线运动 展开         码垛       雪川如果       g:Area0.StartPointY ▼ ≤ ▼ 1         Socket       執行       运动到 g:APOS0 ▼ 做点到点运动 展开         执行       运动到 g:APOS0 ▼ 做点到点运动 原开         均行       运动到 g:APOS0 ▼ 做点到点运动 原开	等待	
位置运算 位运算 位运算设置数字输出端□ p:DO0 ▼ 值为 高电平 ▼ (查) 高电平 ▼ (方法多边体区域是: g:POLYHEDRON0 ▼ (可) 如果 (如果) sin ▼ 45 = ▼ 123 (功定) 功分 g:APOS0 ▼ 做直线运动 展开 (可) 如果 (方运动到 g:APOS0 ▼ 做直线运动 展开 (○) 如果 (○)	岐音岐音位置运算设置数字输出端□ p:DO0 ▼ 值为 高电平 ▼位运算冻结多边体区域是: g:POLYHEDRON0 ▼时种• 如果区域• 如果NC• 如果NC• 如果「方」· · · · · · · · · · · · · · · · · · ·	10	g.o. cos t
位运算       冻结多边体区域是: g;POLYHEDRON0▼         时钟       ② 如果 ( sin ▼ 45 = ▼ 123)         视觉       执行 运动到 g:APOS0▼ 做直线运动 展开         码垛       否则如果 ( g:Area0.StartPointY ▼ ≤ ▼ 1)         Socket       执行 运动到 g:APOS0▼ 做点到点运动 展开         软浮动       传送带跟随         字符串       数学函数         ModBusTcp	山田屋井       広       p.boot         位运算       冻结多边体区域是: g:POLYHEDRON0▼         时种       ③ 如果       sin ▼ 45 = ▼ 123         视觉       丸行       运动到 g:APOS0 ▼ 做直线运动 展开         码垛       百则如果       g:Area0.StartPointY ▼ ≤ ▼ 1         Socket       丸行       运动到 g:APOS0 ▼ 做点到点运动 展开         软浮动       方法市 运动到 g:APOS0 ▼ 做点到点运动 展开         安符串       数学函数         ModBusTcp	设置	
时神 区域 视觉 和/式 協介 医力型 (法法法法法法法法法法法法法法法法法法法法法法法法法法法法法法法法法法法法	<ul> <li>时神</li> <li>区域</li> <li>如果</li> <li>第1000000</li> <li>9</li> <li>如果</li> <li>第1000000</li> <li>第100000</li> <li>第</li></ul>	位置运算	设置数字输出端口 p:DO0 ▼ 值为 高电平 ▼
时钟 区域 视觉 和觉 码垛 阵列 Socket 软浮动 传送带跟随 字符串 数学函数 ModBusTcp	时钟 区域 视觉 和觉 码垛 阵列 Socket 软浮动 传送带跟随 字符串 数学函数 ModBusTcp	位运算	冻结多边体区域是: g·POLYHEDRON0 ▼
区域       执行       运动到       g:APOS0 ▼       做直线运动       展开         码垛       否则如果       g:Area0.StartPointY ▼       ≤ 1         Socket       执行       运动到       g:APOS0 ▼       做点到点运动       展开         软浮动       传送带跟随       字符串             数学函数       ModBusTcp	<ul> <li>×域</li> <li>·规觉</li> <li>·执行</li> <li>·运动到</li> <li>·G···································</li></ul>	时钟	g.i demesitorio v
<ul> <li>码垛</li> <li>百列</li> <li>Socket</li> <li>软浮动</li> <li>传送带跟随</li> <li>字符串</li> <li>数学函数</li> <li>ModBusTcp</li> </ul>	码垛     阵列     Socket     软浮动     传送带跟随     字符串     数学函数     ModBusTcp     ModBusTcp     GAR (1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	区域	
<ul> <li>码垛</li> <li>阵列</li> <li>Socket</li> <li>救浮动</li> <li>传送带跟随</li> <li>字符串</li> <li>数学函数</li> <li>ModBusTcp</li> </ul>	<ul> <li>码垛</li> <li>阵列</li> <li>Socket</li> <li>执行 运动到 g:APOS0 ▼ 做点到点运动 展开</li> <li>按浮动</li> <li>传送带跟随</li> <li>字符串</li> <li>数学函数</li> <li>ModBusTcp</li> </ul>	视觉	执行 运动到 g:APOS0 ▼ 做直线运动 展开
降列 Socket 软浮动 传送带跟随 字符串 数学函数 ModBusTcp	峰列 Socket 软浮动 传送带跟随 字符串 数学函数 ModBusTcp	码垛	
软浮动 传送带跟随 字符串 数学函数 ModBusTcp	软浮动 传送带跟随 字符串 数学函数 ModBusTcp	阵列	宫则如来 g:Area0.StartPointY ▼ ≤ ▼ 1
传送带跟随 字符串 数学函数 ModBusTcp	传送带跟随 字符串       结束       ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	Socket	
字符串     结束       数学函数     ····································	字符串     结束       数学函数     ····································	软浮动	
子行車 数学函数 ModBusTcp	学行年 数学函数 ModBusTcp	传送带跟随	<b>*</b>
ModBusTcp	ModBusTcp	字符串	
		数学函数	
「「「」「「」」「「」」「」」「」」「」」「」」「」」「」」「」」「」」「」」		ModBusTcp	
		赋值和变量	

Text Program Implementation:

控制	编辑器	3D
NewProgram.erp $\times$		
<ul> <li>运动指令</li> <li>控制指令</li> <li>控制指令</li> <li>等待指令</li> <li>IO指令</li> <li>U置指令</li> <li>位置运算指令</li> <li>位置算指令</li> <li>位置算指令</li> <li>位置算指令</li> <li>如前指令</li> <li>四城指令</li> <li>网垛指令</li> <li>网垛指令</li> <li>高cket指令</li> <li>\$cocket指令</li> <li>\$cocketha</li> <li>\$cocketha<th><pre>1 Start: 2 MovL(g:APOS0,s:V100) 3 MovJ(g:CPOS0) 4 WaitFinish(11) 5 SetDO(p:DO0,1) 6 PolyhedronAreaDeactivate(g:POLYHEDRON0) 7 V IF (sin(45) == 123) THEN 8 MovL(g:APOS0) 9 V ELSIF (g:Area0.StartPointY &lt;= 1) THEN 10 MovJ(g:APOS0) 11 ENDIF 12 End; 13</pre></th><th></th></li></ul>	<pre>1 Start: 2 MovL(g:APOS0,s:V100) 3 MovJ(g:CPOS0) 4 WaitFinish(11) 5 SetDO(p:DO0,1) 6 PolyhedronAreaDeactivate(g:POLYHEDRON0) 7 V IF (sin(45) == 123) THEN 8 MovL(g:APOS0) 9 V ELSIF (g:Area0.StartPointY &lt;= 1) THEN 10 MovJ(g:APOS0) 11 ENDIF 12 End; 13</pre>	

### 5.4. GUI Interface

The GUI interface is a tool provided to users for designing a customized interface according to their needs. It helps users display the programs status, control the robots start /stop operations, and switch program runtime parameters efficiently.

1. Create a graphical project using the "demo\_gui" template:

新建工作空间			×
* 工作空间名称	a_test	0	
工作空间类型	〇 文本 🔹	) 图形化	
工作空间模板	demo_gui	~	
		取消 确定	Ē

2. Open the newly created graphical program and click on "Design GUI Interface".

- 3. In the opened GUI interface, click on "Initialize Parameters". Initializing parameters involves extracting the basic variables used in the program and placing them within this GUI module.
- 4. Drag and drop the corresponding components onto the canvas based on your requirements. Lets take the " Stateful Component" as an example. Drag and drop a stateful component onto the canvas.

►		
nt器人控制	▶ 启动 ■ 暫停 ■ 停止	
	请选择产品: 请选择 🗸 🖉	+ 应用
	状态标题名称666 ●    ● 开始    抓	× ● 放

5. Clicking on the stateful component on the canvas will open a properties panel, as shown in the figure.

#### 配置

组件ld: dinrrya30h

宽度	400	
高度	130	
组件标题	状态标题名称666	
状态标题1	myStart ~	
状态描述1	开始	Ē
状态标题2	Pick ~	<b>A</b>
状态描述2	抓	Ē
状态标题3	Place ~	Ē
状态描述3	放	
	添加状态	
组件大小	请选择	~

When you need to highlight a specific status, drag the "Send Data to GUI Component" block into the program, as shown in the figure.



Here, "dinrrya30h" is the GUI components ID selected from the dropdown, and "Place" is the string sent to this component.

- 6. Click the "Save" button in the top left corner to save the designed GUI interface.
- 7. Launch the program and open the GUI interface to observe the changes in the stateful component.

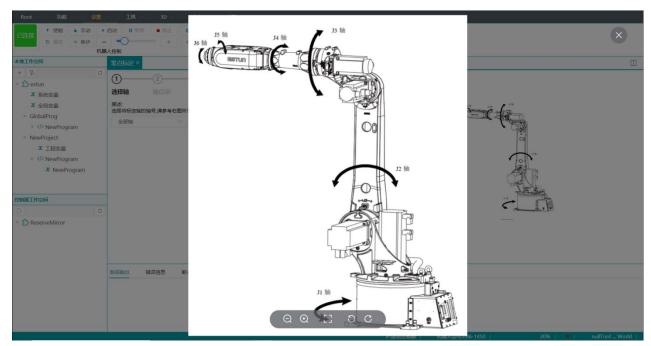
# 6.Settings

### 6.1. Zero Calibration

If the robot loses its zero point and cannot return to the correct position, you can perform zero calibration to obtain the zero point.

Open the calibr	ration p	age								
Root > 功能 > 设置	~ 1具 ~	3D 😔	帮助	关于						
・         ・         基本参数           ・         夏位         ●         夏点         ●<		9£	□保存 t = ← 后退 → 前		<ul> <li>● 注释</li> <li>↓ 断点</li> </ul>	• 消注				
本地工作空间	R.			打开零点	示定					
+ 〒 ▼ 全 estun		භ		——④ 零点校验						
X 全局变量 ▼ GlobalProg ▶ 〈♪ NewProgram	t	考右國	国所示标号选择轴					i i i i i i i i i i i i i i i i i i i		
<ul> <li>NewProject</li> </ul>									0	
* 工程变量										
✓       ✓ NewProgram     X NewProgram     X	_									
控制器工作空间 									5	
► S ReserveMirror										
							上一步 下一步			
	系统输出	<b>昔误信息</b>	断点 书签	变量监控	程序列表	查找结果				
							10-49/01/20028	和架人型号·ER6-1450	2004 1	nullTool World

Root 🗸 功能 🖓 🕯	設置	工具 🗸	3D 😔	帮助	× ¥	Ŧ							
<ul> <li>使能 • 手动</li> </ul>	▶ 启动	暫停	● 停止	₿保存	<b>†</b> 书签	↓ 书签		<ul> <li>消注</li> </ul>					
0 复位 の 単歩	- 机器人控		+	←后退	→ 前进	+ 断点           網細器	+ 断点						
本地工作空间		点标定 ×				Meg ecilitit							
+ 🖓	C												
∞ 🖒 estun	0	-	-2			-4							
x 系统变量		择轴	轴点动	设置		零点校验							
X 全局变量	描述		拙号,请参考右	国所示协与发	择轴						in the second	- free	
<ul> <li>GlobalProg</li> <li></li> <li>NewProgram</li> </ul>		全部轴		^							110 min C	- Car	
▼ NewProject 業 工程交量		全部轴			选择	标定轴						Č0	
NewProgram		轴号1			1							Tor	
X NewProgram		轴号2											
		轴号3											
控制器工作空间		轴号4											
Ð	C	轴号5										5	
ReserveMirror		轴号6								·			
				_						点击图片可放大	显示		
										上			
	系统	碗出	描误信息	断点	书签	变量监控	程序列表	医 查找	吉果				
	-												
										IP:虚拟控制器	机器人型号:ER6-1450	20%   💻	nullTool World



Axis jogging



Set the zero point

Root > 功能 > 设置	~ I具 ~	3D 😔	帮助	关于							
● 复位 ◎ 単歩 -	启动 Ⅱ 哲停 	● 停止 +	<ul> <li>■ 保存</li> <li>← 后退</li> </ul>	1 书签 → 前进	<ul> <li>∔ 书签</li> <li>† 断点</li> <li>綱綱器</li> </ul>	<ul> <li>● 注释</li> <li>↓ 断点</li> </ul>	• 消注				
本地工作空间	零点标定 ×										
+ 〒 C * ① estun X 系统定量 X 系统定量 * GlobalProg > ◇ NewProgram * NewProgram X NewProgram X NewProgram X NewProgram C ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	<ul> <li>送述指 構法: 印度空运印刷, 设置零点</li> </ul>		3 设置零 序后, 点由确认 村准后,	<b>雾点</b>							
	系统输出 種	誤信意	新点	书签 3	定量监控	程序列表	查找结果	上一步	新羅人的B-F86-145① 1	20%   •	

#### Zero calibration

Root > 功能 > 设置 >	◇ 工具 ◇ 30 ◇ 稗助 ◇ 关于	
已连接	· 启动 Ⅱ 暂停 ■ 停止 □ 保存 1 书签 ● 注释 ● 消注	
🖸 复位 💿 単步 🗕		
	人 (支利) 約3時間	
本地工作空间	- 零島版定×	
	$\bigcirc \bigcirc \bigcirc $	
✓ ♪ estun X 系統变量	· · · · · · · · · · · · · · · · · · ·	
* 糸筑受量 * 全局变量		
▼ GlobalProg	<u>移动离开要点,但市场回要点,例试机器人是否能</u> 回到要点位置	
NewProgram	J1+ J1- 巡迴電航 ————————————————————————————————————	
<ul> <li>NewProject</li> </ul>		
<b>X</b> 工程变量	□ 22+ □ 22- □ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	
v  NewProgram	J3+ J3-	
X NewProgram		
控制器工作空间	J5+	
D C	J6+ J6- <b>移动轴当前位置,离开零点</b>	
ReserveMirror		
	<b>上一步</b> 下一步	
	P#虚拟控制器   机器人型号:R6-1450   20%   ●   nullTool	World

Complete the zero calibration process.

### 6.2. Communication Verification

This feature is used to verify the hardware environment of the communication channel. You can access the communication verification page as shown in the image:



#### 6.2.1. Socket Communication Verification

Select the socket communication type and fill in the IP address, port number, and the content to be sent. Clicking "Send" will send the data to the server, and if the receiving window receives the data, it indicates that the communication is working correctly and can be used for sending and receiving communication with the remote end.



## 6.3. Basic Settings

Root · 功能 · 设置 ·		帮助 父 关于	
◆ 使脂 × 系统 ◆		□ 保存 + 书签 + 书签	
	+	← 后退 → 前进 ↑ 断点 编辑器	
本地工作空间	基本参数 ×		
+ 1/2 C	机器人类型		重启机器人生效
🕨 🇯 estun			
▶ estun1	机器人安装方式	地面	
	工件负载重量	9	Kg
	工具负载重量		Kg
	远程速度		%
	默认工具		
	默认负载惯量	noTool 🗸 🗸	
		保存	
	_		保存生效
控制器工作空间			
0			
暂无数据	系统输出错误信息	断点 书签 变量监控	程序列表 查找结果
			IP:   机器人型号:   I   nullToolWorld

Set default parameters for the robot.

## 6.4. Tool Coordinate System Calibration

Root 🗸 功能 🖓 设置	· 工具 · · · 3D · · · 帮助 · · · 关于 · · · · · · · · · · · · · · ·	
★连接      ◆ 使端 × 系统 →		
● 复位 ◎ 単歩 -	- · · · · · · · · · · · · · · · · · · ·	
	超人控制 编编器	_
本地工作空间		D
+ 🗄 C	0	
🕨 🇯 estun	▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶	
▶ estun1		
	描述。 这样坐所系际边方案,根据博希要求选择 标定方法选择	
	一点标定法	
	点击查看详细图片	
控制器工作空间 ひ  の の		
D O		
	上一步 下一步	
暂无数据		
EI /U\$XIIA		
	IP: 机器人型号: nullTool World	1

Root > 功能 > 设置	· 工具 → 3D → 標助 → 关于	
· (Figs × 35.64		
未连接 ひ 复位 の 単歩 -		
	人 拉利 《编辑	
本地工作空间	基本參数× <mark>工具坐标×</mark>	
+ ¥ C	Ø34	
<ul> <li>stun</li> <li>estun1</li> </ul>	方案选择 标定点1 结果 保存	
USURT .	X+ X. 移动轴,到面示位置,点由示教班日	
	X: 0Y: 0Z: 0	
	Y+         Y-         A:         O B:         O C:         O         点击示教获取点位         TY         Y	
	B+ B-	
	C+ C-	
<u>控制器工作空间</u> C- C		
	移动轴至标定点	
	上一步下一步	
暂无数据	系统助出 错误信息 新点 书签 支星监控 程序列表 查找结果	
H / GRANH		
	IP:   和諸人型号:     nullTool	World
 Root > 功能 > 设置		World
· 伊紹 · 末編 ·		World
・         ・         ・         ・           未连接         ・         ・         ・         ・           む         复位         ●         ・         ・	III     3D      #mb     £F       III     III     III     III     IIII       +     c     c     i       +     +     c     c       +     +     f     i	World
・         ・	ILL、3D     3D     容動     关于       EE動     II 新停     停止     曽保存     1 书弦     ● 注释     ● 滴注       +     +     <	
・     ・     (6) 部 × 系统     ・       ・     (1) 夏位     ●     ●       ・     0     夏位     ●     ●       ・     1     0     1     ●       ・     1     1     ●     ●       ・     1     1     ●     ●       ・     1     ●     ●     ●	III     3D < #mb	World
・         ・	I具、3D、容勒、关于       II 暂停 ●停止     B保存 1 书签 4 书签 ● 注释 ● 所注       人民物	
・ 供照         × 系統           > 复位         ○ 复位           本地工作空间	III     3D < #mb	
<ul> <li>・ 供照 X 系統 →</li> <li>・ 供照 X 系統 →</li> <li>● 気位 命 申 →</li> <li>● 現位</li> <li>本地工作公明</li> <li>+ 資 C</li> <li>&gt; 含etun</li> </ul>	I具     30 < 存動 > 关于       II 1000     中月止       II 1000     日元<	
<ul> <li>・ 供照 X 系統 →</li> <li>・ 供照 X 系統 →</li> <li>● 気位 命 申 →</li> <li>● 現位</li> <li>本地工作公明</li> <li>+ 資 C</li> <li>&gt; 含etun</li> </ul>	I具     30 < 存動 > 关于       II 1000     中月止       II 1000     日元<	
<ul> <li>・ 供照 X 系統 →</li> <li>・ 供照 X 系統 →</li> <li>● 気位 命 申 →</li> <li>● 現位</li> <li>本地工作公明</li> <li>+ 資 C</li> <li>&gt; 含etun</li> </ul>	III       30 × 帮助 × 关F         IIII       IIII       IIIII       IIIIIII       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	
<ul> <li>・ 供照 X 系統 →</li> <li>・ 供照 X 系統 →</li> <li>● 気位 命 申 →</li> <li>● 現位</li> <li>本地工作公明</li> <li>+ 資 C</li> <li>&gt; 含etun</li> </ul>	III       3D       容動       ×F         III 1959       中止       日 保存       1 1155       ● 所注         人民動	
<ul> <li>・ 供照 X 系統 →</li> <li>・ 供照 X 系統 →</li> <li>● 気位 命 申歩 可提</li> <li>本地工作公明</li> <li>+ 資 C</li> <li>&gt; 含etun</li> </ul>	III · 30 · 760 · 27         III · 167 · 172	
<ul> <li>・ 供照 X 系統 →</li> <li>・ 供照 X 系統 →</li> <li>● 気位 命 申歩 可提</li> <li>本地工作公明</li> <li>+ 資 C</li> <li>&gt; 含etun</li> </ul>	III       3D       容動       XF         III       III       III       IIII       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	
<ul> <li>・ 供照 X 系統 →</li> <li>・ 供照 X 系統 →</li> <li>● 気位 命 申歩 可提</li> <li>本地工作公明</li> <li>+ 資 C</li> <li>&gt; 含etun</li> </ul>	III · 30 · 760 · 27         III · 167 · 172	
<ul> <li>・ 供照 X 系統 →</li> <li>・ 供照 X 系統 →</li> <li>● 気位 命 申歩 可提</li> <li>本地工作公明</li> <li>+ 資 C</li> <li>&gt; 含etun</li> </ul>	III       3D       容動       XF         III       III       III       IIII       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	
+     ₩      X     XM	III       3D       容動       XF         III       III       III       IIII       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	
(部)     X     3(4)     ()       ○     (1)     ()     ()     ()     ()       水地工作250     ()     ()     ()     ()     ()       +     ()     ()     ()     ()     ()       +     ()     ()     ()     ()     ()       >     *     estun     ()     ()       >     *     estun     ()	III       3D       容動       XF         III       III       III       IIII       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	
(部)     X     3(4)     ()       ○     (1)     ()     ()     ()     ()       水地工作250     ()     ()     ()     ()     ()       +     ()     ()     ()     ()     ()       +     ()     ()     ()     ()     ()       >     *     estun     ()     ()       >     *     estun     ()	III       3D       容動       XF         III       III       III       IIII       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	
(部)     X     3(4)     ()       ○     (1)     ()     ()     ()     ()       水地工作250     ()     ()     ()     ()     ()       +     ()     ()     ()     ()     ()       +     ()     ()     ()     ()     ()       >     *     estun     ()     ()       >     *     estun     ()	III       30       死助       ×F         IIII       FP       ● FL	
(部)     X     3(4)     ()       ○     (1)     ()     ()     ()     ()       水地工作250     ()     ()     ()     ()     ()       +     ()     ()     ()     ()     ()       +     ()     ()     ()     ()     ()       >     *     estun     ()     ()       >     *     estun     ()	III       3D       容動       XF         III       III       III       IIII       IIII         Abbit       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	
(部)     X     3(4)     ()       ○     (1)     ()     ()     ()     ()       水地工作250     ()     ()     ()     ()     ()       +     ()     ()     ()     ()     ()       +     ()     ()     ()     ()     ()       >     *     estun     ()     ()       >     *     estun     ()	III       30       死助       ×F         IIII       FP       ● FL	
★12122     ● (2000)     × 3.56, ●       ● (2000)     ● (2000)     ● (2000)       ★40(1+256)     ●       + %     ●       • \$\$ estun1	IK       30       死助       ×F         IFF       ● 伊止       ● 日本       ● 日本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 000       ● 田本       ● 田本       ● 田本         JAB       ● 000       ● 日本       ● 田本       ● 田本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000 <td></td>	
★12122     ● (2000)     × 3.56, ●       ● (2000)     ● (2000)     ● (2000)       ★40(1+256)     ●       + %     ●       • \$\$ estun1	IK       30       死助       ×F         IFF       ● 伊止       ● 日本       ● 日本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 000       ● 田本       ● 田本       ● 田本         JAB       ● 000       ● 日本       ● 田本       ● 田本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000 <td></td>	
★12122     ● (2000)     × 3.56, ●       ● (2000)     ● (2000)     ● (2000)       ★40(1+256)     ●       + %     ●       • \$\$ estun1	IK       30       死助       ×F         IFF       ● 伊止       ● 日本       ● 日本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 000       ● 田本       ● 田本       ● 田本         JAB       ● 000       ● 日本       ● 田本       ● 田本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000 <td></td>	
★12122     ● (2000)     × 3.56, ●       ● (2000)     ● (2000)     ● (2000)       ★40(1+256)     ●       + %     ●       • \$\$ estun1	IK       30       死助       ×F         IFF       ● 伊止       ● 日本       ● 日本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 田本       ● 田本       ● 田本       ● 田本         JAB       ● 000       ● 田本       ● 田本       ● 田本         JAB       ● 000       ● 日本       ● 田本       ● 田本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000       ● 日本       ● 日本       ● 日本         JAB       ● 000 <td></td>	

Pool       UMB       USB       LR       30       KAN       XFF         #232       * USB			
USE       0 SEQ       0 SEQ	Root · 功能 · 设置 ·	─ _ 工具 ◇ 3D ◇ 「機物 ◇ 关于	
・       ************************************	未连接 ひ 复位 ○ 単歩 -	- ○ + < 伝退 → 前进 + 断点 + 断点	
* estun1	本地工作空间	基本参数× I具w标×	]
ESMAILTYSON C C ESMAILTYSON C C E-# T#	🕨 🇯 estun	方案选择 标定点1 结果 保存 选择工作空间的变量将得到的工具坐标存储下来 选择工作空间的变量将得到的工具坐标存储下来	
		estun > estun1 >	
智无数据		<b>上───</b> ─────────────────────────────────	
	智无数据	<u>新統治</u> 错误信息 新点 书签 支量监控 程序列表 查找起果	

## 6.5. User Coordinate System Calibration

Root - 功能 - 设置 -	◇ 工具 ◇ 3D ◇ 幣助 ◇ 关于
チ 使喘 × 系统 ▶	
	- · · · · · · · · · · · · · · · · · · ·
本地工作空间	IP-st⊼ ×
+ ¥ C	0
<ul> <li>stun</li> <li>estun1</li> </ul>	方案选择 标定点1 标定点2 标定点3 结果 保存
	▲監 進程級務局定方案,根据構度要求选择 三年時定法 送择标定方法 点击可查看详细图片
智无数据	上一步 下一步 <u>苏庆她出</u> 摄识信息 新点 书签 安量监控 程序列表 查找起果
	IP:   利認人提号:     nullToolWorkd

Root - 功能 - 设置	Ⅰ ✓ 工具 ✓ 3D ✓ 帮助			
● 使能 × 系统			<ul> <li></li></ul>	
未连接 ひ 复位 の 単歩			• Julia	
	1.器人控制	编辑器		
本地工作空间	用户坐标 ×			
+ 🖓	3	)(5)(5)	6	
<ul> <li>stun</li> <li>estun1</li> </ul>		官点2 标定点3 结果	保存	
esturi	X+ X- 移动轴,到图示位	看,点击示教按钮		
	X: 0			
	Y+ Y- A: 0		步骤2-4获取3个标定点	
	Z+ Z-	示赦	8	
	A+ A-	UNIX		
	B+ B-		1.	
控制器工作空间	C+ C-			
B	移动	力 年田		
			上—步 下—步	
暂无数据	系统输出 错误信息 断点	书签 变量监控 程序列表	查找結果	
			IP:   机器人型号:       null	Tool World
Root ~ 功能 ~ 设置	└── 工具 ── 3D ── 帮助	✓ 关于		
于连接	▶ 启动 Ⅱ 暂停 ● 停止 ● 保存		<ul> <li>))))注</li> </ul>	
1000 2位 ● 単步	- ○ + ← 后退	→前进 1 断点 4 断点		
本地工作空间	1醋人控制	編編體		Π
本地工作空间 + Ţ₂ (	1日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日	编辑器		
+ Ţ= () ▶ ★ estun	開ノ控制 用户坐标× 2	/编辑器 		
+ 1	編人控制 用户坐标× 2 ② ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	编辑器	⑥ 照存	
+ Ţ= ( ▶ ★ estun	<ul> <li>         IBA 地域         ID 学校家 ×         2         一         一         万案选择 标定点1 标双         标定编集:如下所示可微调         1         1         新定编集:如下所示可微调         </li> </ul>	編編器 →	保存	
+ Ţ= ( ▶ ★ estun	IB人控制       用户坐标×       7       万案选择       标注结果:       4	· · · · · · · · · · · · · · · · · · ·		
+ Ţ= ( ▶ ★ estun	(職人控制 用户业标× 2 万案选择 标定点1 标次 标定档果:如下所示可微调 X: 0000 ↓ A:	(編編器) ○ ○ ⑤ 定点2 标定点3 結果 0.000 ↓ 0.000 ↓	保存	
+ Ţ= ( ▶ ★ estun	BB人控制 月白松标× う 方案选择 标定点1 标次 标注瞄果:如下所示可微调 X: 0.000 ↓ A: Y: 0.000 ↓ B:	(編編器) ○ ○ ⑤ 定点2 标定点3 結果 0.000 ↓ 0.000 ↓	保存	
+ Ţ= ( ▶ ★ estun	IBA/控制           III-2455 ×           ブ斎楽选择         √           方案选择         标定结果:           が定結果:         約定結果:           X:         0.000           Y:         0.000           Z:         0.000	· (編編語 · ○ ③ 注点2 标定点3 結果 0.000 ↓ 0.000 ↓	保存	
+ Ţ= ( ▶ ★ estun	BB人控制 月白松标× う 方案选择 标定点1 标次 标注瞄果:如下所示可微调 X: 0.000 ↓ A: Y: 0.000 ↓ B:	(編編器) ○ ○ ⑤ 定点2 标定点3 結果 0.000 ↓ 0.000 ↓	保存	
+ T6 of the setun > estun1	IBA/控制           III-2455 ×           ブ斎楽选择         √           方案选择         标定结果:           が定結果:         約定結果:           X:         0.000           Y:         0.000           Z:         0.000	(編編器) ○ ○ ⑤ 定点2 标定点3 結果 0.000 ↓ 0.000 ↓	保存	
+ To o	IBA人控制       用户处标×       方案选择       所定信用:       板定信用:       如下所示可微调       X:     0.000       Y:     0.000       Z:     0.000       G:       计算	(編編器) ○ ○ ⑤ 定点2 标定点3 結果 0.000 ↓ 0.000 ↓	保存	
+ T6 of the setun > estun1	IBA人控制       用户处标×       方案选择       所定信用:       板定信用:       如下所示可微调       X:     0.000       Y:     0.000       Z:     0.000       G:       计算	(編編器) ○ ○ ⑤ 定点2 标定点3 結果 0.000 ↓ 0.000 ↓	保存	
+ To o	IBA人控制       用户处标×       方案选择       所定信用:       板定信用:       如下所示可微调       X:     0.000       Y:     0.000       Z:     0.000       G:       计算	(編編器) ○ ○ ⑤ 定点2 标定点3 結果 0.000 ↓ 0.000 ↓	保存	
+ To o	IBA人控制       用户处标×       方案选择       所定信用:       板定信用:       如下所示可微调       X:     0.000       Y:     0.000       Z:     0.000       G:       计算	(編編器) ○ ○ ⑤ 定点2 标定点3 結果 0.000 ↓ 0.000 ↓	(¥f) 计算得到结果显示,并可进行微调操作	
+ To o	IBA人控制       用户处标×       方案选择       所定信用:       板定信用:       如下所示可微调       X:     0.000       Y:     0.000       Z:     0.000       G:       计算	(編編器) ○ ○ ⑤ 定点2 标定点3 結果 0.000 ↓ 0.000 ↓	保存	
+ 1% () > setun > estun1 EXMINITIFEEE □ ()	BB人控制 月戸坐标× 方案选择 标定点1 标次 标注辑集:如下所示可微调 X: 0.000 ☆ A: Y: 0.000 ☆ B: Z: 0.000 ☆ C: i+算 2	4) (明明語)       ○     ⑤       定点2     板定点3       0.000     ○       0.000     ○       0.000     ○	፼፹ 计算得到结果显示,并可进行微调操作 	
+ To o	IBA人控制       用户处标×       方案选择       所定信用:       板定信用:       如下所示可微调       X:     0.000       Y:     0.000       Z:     0.000       G:       计算	(編編器) ○ ○ ⑤ 定点2 标定点3 結果 0.000 ↓ 0.000 ↓	፼፹ 计算得到结果显示,并可进行微调操作 	
+ 16 ( ) > setun > estun1 120481[1:209 □ ( )	BB人控制 月戸坐标× 方案选择 标定点1 标次 标注辑集:如下所示可微调 X: 0.000 ☆ A: Y: 0.000 ☆ B: Z: 0.000 ☆ C: i+算 2	4) (明明語)       ○     ⑤       定点2     板定点3       0.000     ○       0.000     ○       0.000     ○	፼፹ 计算得到结果显示,并可进行微调操作 	
+ 16 ( ) > setun > estun1 120481[1:209 □ ( )	BB人控制 月戸坐标× 方案选择 标定点1 标次 标注辑集:如下所示可微调 X: 0.000 ☆ A: Y: 0.000 ☆ B: Z: 0.000 ☆ C: i+算 2	4) (明明語)       ○     ⑤       定点2     板定点3       0.000     ○       0.000     ○       0.000     ○	፼፹ 计算得到结果显示,并可进行微调操作 	
+ 1% () > setun > estun1 EXMINITIFEEE □ ()	BB人控制 月戸坐标× 方案选择 标定点1 标次 标注辑集:如下所示可微调 X: 0.000 ☆ A: Y: 0.000 ☆ B: Z: 0.000 ☆ C: i+算 2	4) (明明語)       ○     ⑤       定点2     板定点3       0.000     ○       0.000     ○       0.000     ○	፼፹ 计算得到结果显示,并可进行微调操作 	

Root > 功能 > 设置	工具 > 3D > 帮助 > 关于	
	<ul> <li>&gt; 启动</li> <li>Ⅱ 皆停</li> <li>● 住</li> <li>● 住</li> <li>● 作</li> <li>● 市</li> <li>● 市<!--</td--><td></td></li></ul>	
本地工作空间	用户 <del>业标</del> ×	
+ % 0	◇       ◇       ◇       ◇       (5)         方案送择       板定点1       板定点2       板定点3       結果       保存         请选择       保存             estun       >              estun1       >	
暂无数据	上一歩 下一歩     系統範囲	

### 6.6. Vibration Suppression

Root > 功能 > 设置 ·	工具 × 3D × 帮助 × 关于	
・         ・         ・           ・         ●         ●         ●           ●         复位         ●         ●           机開         ●         ●         ●		
本地工作空间	用户坐标× 振动的财×	
+ ¥. C		_
🕨 🇯 estun		
▶ estun1	hai     标准     ◇     hai     标准     ◇     bit     设置轴相关振动抑制情况,保存生效,需连接控制器操作	
	注意:在使用成功能时,必须设置了正确的负载参数,负载参数影响控制器对振动抑制的调节。关于负载参数的设置,请参看设置负载参数的基本设置界面	
	9.79 -	
控制器工作空间		
C		
暂无数据	系统输出 错误信息 断术 书签 交量监控 程序列表 查找结果	
H7080H		
	IP:   机器人提号:     nullToolWorld	

## **7.Manual Control**

To enter the Manual Control page, follow the steps: Menu bar - Function - Manual Control. This will take you to the Manual Control page.

Note: The Manual Control page is only available for robot models with suffixes -SR, -MI, -MI/. Other models cannot access this page.

Refer to the following figure:

Root $\vee$	功能へ	设置~	,	I具 ~
已连接	手动控制			暂停
	ю			
本地工作空间	示教器			手动控制
+ 🖓	机器视觉			标(mm)
ddd	脚本工具			974.50
<ul> <li>liwenjun</li> <li>1 test2</li> </ul>	脚中工具			0.00
▼ text			Z:	1142.00
<b>x</b> 系统	夜量		A:	0.00

## 7.1. Coordinate Display

The left side displays the robots world coordinates, and the right side displays the robots joint coordinates.

ניידבי					가바라드 파티
IO × 月	≅动控制 ×				
世界坐椅	示(mm)	轴坐标(°)			
X:	974.500	A1:	0.000	A1-	A1+
Y:	0.000	A2:	0.000	A2-	A2+
Z:	1142.000	A3:	0.000	A3-	A3+
A:	0.000	A4:	0.000	A4-	A4+
B:	90.000	A5:	0.000	A5-	A5+
C:	0.000	A6:	0.000	A6-	A6+
位姿:	0				
设备:	本体	~	坐标系:	轴坐标	~
工具坐根	ज्ञः nullToo	v k	用户坐标:	World	~
点动模式	式: 连续	~			

### 7.2. Manual Control

The two columns of buttons control the positive and negative movements of each axis.

A1-	A1+
A2-	A2+
A3-	A3+
A4-	A4+
A5-	A5+
A6-	A6+

### 7.3. One-click Motion

- 1. Select a waypoint from a variable file.
- 2. Adjust the waypoint data if necessary.
- 3. Choose the motion mode: Linear or Joint.

4. Choose the motion direction: Forward Upward Tilt, Forward Downward Tilt, Backward Upward Tilt, Backward Downward Tilt, etc.

5. Save the modified data back to the selected waypoint.

6. Click on One-click Motion to move the robot to the specified waypoint using the configured settings.

APOS0	~	保存
A1:	0.000	°
A2:	0.000	•
A3:	0.000	•
A4:	0.000	•
A5:	0.000	•
A6:	0.000	•
运动模式:	● 直线	) XT
位姿:	当前姿态	$\sim$
启动		停止

### 7.4. Manual Motion Parameter Settings

1. Select the object to be configured: Local or External Axes.

2. Set the tool coordinate system, which is the tool coordinate system of the currently loaded project in the controller.

3. Set the user coordinate system, which is the user coordinate system of the currently loaded project in the controller.

4. Set the jog mode: Jogging or Continuous.

5. Set the motion mode: Axis Coordinates (Joint Motion) or World Coordinates (Path Motion).

位姿:	0				
设备:	本体	~	坐标系:	轴坐标	~
工具坐标:	nullTool	~	用户坐标:	World	~
点动模式:	连续	~			

## **8.IO Function**

Click on "Function" in the menu bar and select "IO" to enter the IO Detection page.

	名称	状态	功能									
朝们O	DI1			DI17			DO1			DO17		
副以数字IO	DI2			DI18			DO2			DO18		
拟模拟IO	DI3			DI19			DO3			DO19		
定义IO	DI4			D120			DO4			DO20		
	DI5			DI21			DO5			DO21		
	DI6			D122			DO6			DO22		
	DI7			D123			D07			DO23		
	DI8			D124			DO8			D024		
	D19			DI25			DO9			D025		
	DI10			D126			DO10			DO26		
	DI11			DI27			D011			D027		
	DI12			D128			DO12			DO28		
	DI13			D129			DO13			DO29		
	DI14			D130			DO14			DO30		
	DI15			DI31			DO15			DO31		
	DI16			D132			DO16			DO32		

Refer to the following figure. The IO-related data is transmitted from the main interface.

### 8.1. Digital

Upon entering the IO Detection page, the default view is the "Digital IO" list, where you can check the status of the IOs.

Users can view the IO status on the control module: Green indicates a signal, and gray indicates no signal.

好了10	名称	状态	功能									
İ以IO	DI1			DI17			DO1			D017		
图拟数字IO	DI2			DI18			DO2			D018		
图拟模拟IO	DI3			DI19			DO3			DO19		
]定义IO	DI4			D120			DO4			DO20		
	DI5			DI21			DO5			DO21		
	D16			D122			DO6			DO22		
	DI7			D123			DO7			DO23		
	DI8			DI24			DO8		]]	DO24		
	D19			DI25			DO9			DO25		
	DI10			D126			DO10			DO26		
	DI11			D127			D011			D027		
	DI12			D128			DO12			DO28		
	DI13			D129			DO13			DO29		
	DI14			D130			DO14			DO30		
	DI15			DI31			DO15			DO31		
	DI16			D132			DO16			DO32		

~ 1具 ~	3D	老 帮助	) > 关于				_					
启动 🛛 暫停	• 停止	日 保存		1-8輸出端口	]不允许输出	i -						
	+	← 后退	L → 前进 + 断: 编辑:									
			200424	ia -								
数字10	名称	状态	功能	名称	状态	功能	名称	状态	功能	名称	状态	功
模拟IO	DI1			DI17			DO1			D017		
虚拟数字IO	DI2			DI18			DO2			DO18		
虚拟模拟IO	DI3			DI19			DO3			DO19		
自定义IO	DI4			DI20			DO4			DO20		
	DI5			DI21			DO5			DO21		
	DI6			DI22			DO6			DO22		
	DI7			DI23			DO7			DO23		
	DI8			DI24			DO8			DO24		
	DI9			DI25			DO9			DO25		
	DI10			DI26			DO10			DO26		
	DI11			DI27			DO11			DO27		

D1-D8: Not allowed for output. Double-clicking on D1-D8 will display the following:

Users can check the actual IO status on this page.

### 8.2. Analog

Users can check the actual analog status on this page.

数字IO	名称	值	功能									
模拟IO	AI1			AI17			AO1	0		A017	0	
虚拟数字IO	AI2			AI18			AO2	0		A018	0	
盡拟模拟IO	AI3			AI19			AO3	0		AO19	0	
自定义IO	Al4			A120			AO4	0		AO20	0	
	A15			AI21			AO5	0		A021	0	
	AI6			A122			AO6	0		AO22	0	
	AI7			AI23			A07	0		AO23	0	2.6
	AI8			AI24			AO8	0		AO24	0	
	AI9			AI25			AO9	0		AO25	0	
	AI10			AI26			AO10	0		AO26	0	
	AI11			A127			AO11	0		AO27	0	
	AI12			A128			AO12	0		AO28	0	
	AI13			A129			AO13	0		A029	0	
	AI14			AI30			A014	0		AO30	0	
	AI15			AI31			A015	0		AO31	0	
	AI16			A132			AO16	0		A032	0	

#### 8.3. Virtual Digital

Users can check the status of virtual IOs on this page.

数字10	名称	状态	功能									
莫拟IO	SDI1			SDI17			SDO1			SDO17		
E拟数字IO	SDI2			SDI18			SDO2			SDO18		
<b>監拟模拟IO</b>	SD13			SDI19			SDO3			SDO19		
1定义10	SDI4			SD120			SDO4			SDO20		
	SD15			SDI21			SDO5			SDO21		
	SD16			SDI22			SDO6			SDO22		
	SDI7			SDI23			SD07			SDO23		
	SD18			SDI24			SD08			SDO24		
	SDI9			SDI25			SDO9			SDO25		
	SDI10			SDI26			SDO10			SDO26		
	SDI11			SD127			SDO11			SDO27		
	SDI12			SDI28			SDO12			SDO28		
	SDI13			SDI29			SDO13			SDO29		
	SDI14			SDI30			SDO14			SDO30		
	SDI15			SDI31			SDO15			SDO31		
	SDI16			SD132			SDO16			SDO32		

### 8.4. Virtual Analog

Users can check the status of virtual analog IOs on this page.

做字IO	名称	值	功能									
莫拟IO	SAI1			SAI17			SAO1	0		SA017	0	
虚拟数字IO	SAI2			SAI18			SAO2	0		SAO18	0	
	SA13			SAI19			SAO3	0		SAO19	0	
1定义10	SAI4			SAI20			SAO4	0		SAO20	0	
	SAI5			SAI21			SAO5	0		SAO21	0	
	SAI6			SAI22			SAO6	0		SAO22	0	
	SAI7			SAI23			SAO7	0		SAO23	0	
	SAI8			SAI24			SA08	0		SAO24	0	
	SAI9			SAI25			SAO9	0		SAO25	0	
	SAI10			SAI26			SAO10	0		SAO26	0	
	SAI11			SAI27			SAO11	0		SAO27	0	
	SAI12			SAI28			SAO12	0		SAO28	0	
	SAI13			SAI29			SAO13	0		SAO29	0	
	SAI14			SAI30			SAO14	0		SAO30	0	
	SAI15			SAI31			SAO15	0		SAO31	0	
	SAI16			SAI32			SAO16	0		SAO32	0	

### 8.5. Custom IO

All signals can be assigned labels. Users can select Digital IO, Analog IO, Virtual Digital IO, or Virtual Analog IO and add them to Custom IO.

」控制			编辑音									
IO ×												[
数字IO	名称	状态	功能	名称	值	功能	名称	状态	功能	名称	值	功能
模拟IO	DI26			AO4	0		SDO12			SAO5	0	
虚拟数字IO	DO12											
虚拟模拟IO												

Implementing Custom IO: Select an IO, right-click, and choose "Add to Custom".

字10	名称	状态	功能	名称	状态	功能	名称	状态	功能	名称	状态
拟IO	DI1			DI17			DO1			D017	
拟数字IO	DI2			DI18			DO2			DO18	
拟模拟IO	添加到	I自定义		DI19			DO3			DO19	
定义IO	D14			DI20			DO4			DO20	
	DI5			DI21			DO5			DO21	
	D16			D122			DO6			DO22	
	DI7			DI23			DO7			DO23	
	DI8			DI24			DO8			DO24	
	D19			DI25			DO9			DO25	
	DI10			DI26			DO10			DO26	
	DI11			DI27			DO11			DO27	
	DI12			D128			DO12			DO28	
	DI13			D129	•		DO13			DO29	
	DI14			D130			DO14			DO30	
	DI15			DI31			DO15			DO31	
	DI16			D132			DO16			DO32	

The added IO can be seen in the definition.

数字IO	名称	状态	功能	名称	值	功能	名称
模拟IO	DI26			AO4	0		SDO12
虚拟数字IO	DO12						
虚拟模拟IO	DI3						
自定义IO							

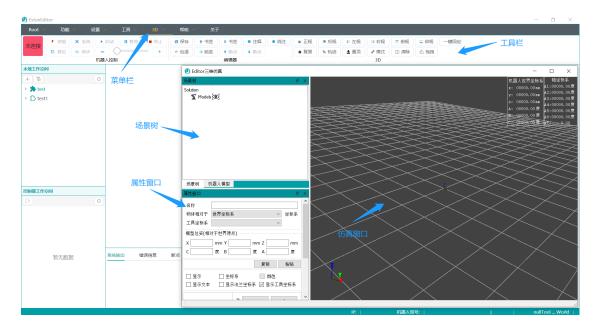
In Custom IO, you can also delete individual IOs or remove all added IOs.

数字IO	名称	状态	功能	名称	值	功能	名称	状态	功能	名称	值	功能
模拟IO	DI26			AO4	0		SDO12			SAO5	0	
虚拟数字IO	DO12											
虚拟模拟IO	DI3		自定义IO 新有自定义IO									
自定义IO		_										

# 9.3D Function

The 3D simulation includes the 3D menu, toolbar, property window, scene tree, and simulation window.

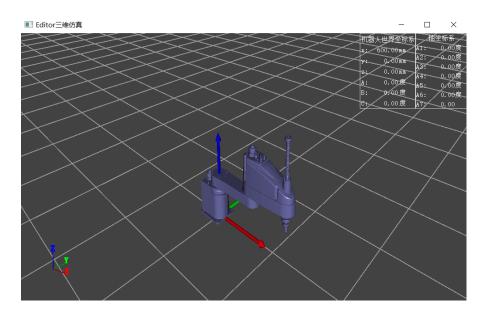
Left-click to rotate the scene, middle-click to pan the scene, and scroll the mouse wheel to zoom in or out.



### 9.1. Open the 3D Simulation Window

Click on "Open 3D Window" to load the 3D simulation window.





Note: The window data in the top right corner shows the robots world coordinate system, which is the data relative to the center point of the robots base surface.

Click on "Collision Detection" to open the collision detection point list window. Further details on the collision detection module will be explained later.

3D へ 帮	助 🗸 🛛 关于	1	
打开3D窗口		↓书签	• 注释
碰撞检测		↑ 断点	↓ 断点
		幼园中国古古	
又件	>		
辅助功能	>		
	打开3D窗口 碰撞检测 文件	打开3D窗口 碰撞检测 文件 >	打开3D窗口     → 书签       碰撞检测     编辑器       文件     >

#### 9.2. "File" Menu

Click on the "File" option in the 3D menu to display the "File" menu.

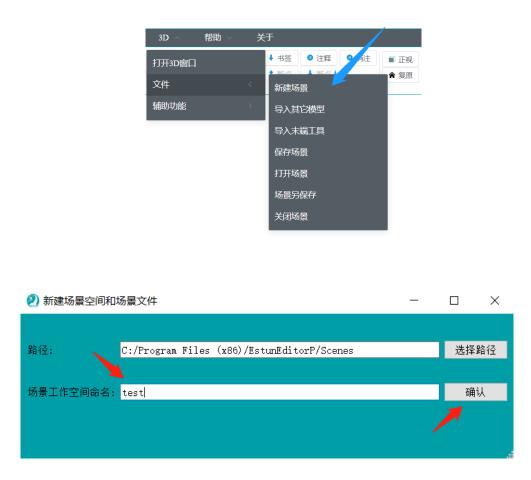


#### 9.2.1.Create Scene (CTRL+N)

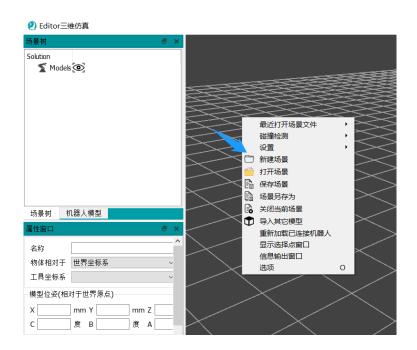
Prerequisite: If you only want to view the motion of a single robot without any scene, there is no need to create a new scene. However, if you want to include other models, you need to create a new scene.

Shortcut key (CTRL+O).

Click on the 3D menu -> Click on File -> Click on Create Scene to create a new scene, which includes creating a scene space and a scene file.



Alternatively, right-click on an empty space in the 3D simulation page and choose "Create Scene".

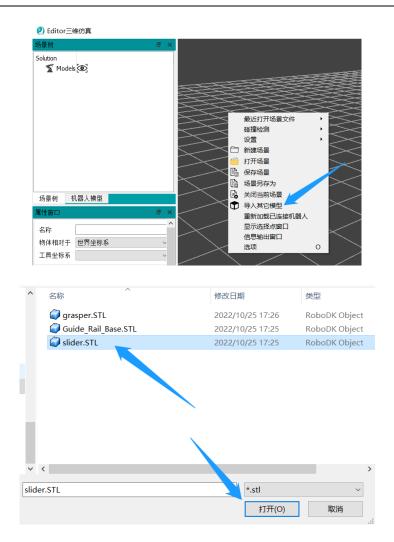


#### 9.2.2.Import Other Models

Click on the 3D menu -> Click on File -> Click on Import Other Models to import models other than the robot model and robot tool model.



Alternatively, right-click on an empty space in the 3D simulation page and choose "Import Other Models".



Note: Currently, the supported model format is .stl format. Please ensure that the size does not exceed 150MB. If the size exceeds 150MB, it may affect the smoothness of the display.

#### 9.2.3.Import End Effector Tool Model

Click on the 3D menu -> Click on File -> Click on End Effector Tool Model to import the model of the robots tool.



^	名称 ^	修改日期	类型
	🥥 grasper.STL	2022/10/25 17:26	RoboDK Object
	Guide_Rail_Base.STL	2022/10/25 17:25	RoboDK Object
	🥥 slider.STL	2022/10/25 17:25	RoboDK Object
~	<		>
gras	per.STL	*.stl	~
	•		TONK (
		打开(O)	取消

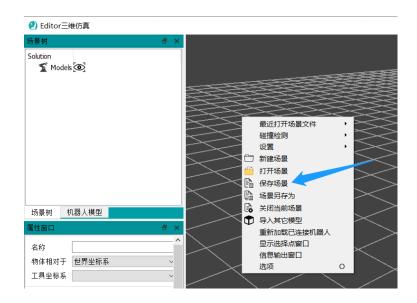
Note: Currently, the supported model format is .stl format. Please ensure that the size does not exceed 150MB. If the size exceeds 150MB, it may affect the smoothness of the display.

#### 9.2.4.Save Scene (CTRL+S)

Click on the 3D menu -> Click on File -> Click on Save Scene to save the current scene.

Shortcut key (CTRL+S).





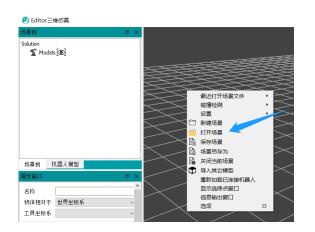
#### 9.2.5.Open Scene (CTRL+O)

Click on the 3D menu -> Click on File -> Click on Open Scene to open a 3D scene file.

Shortcut key (CTRL+O).



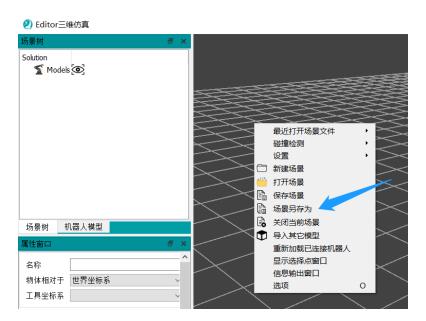
Alternatively, right-click on an empty space in the 3D simulation page and choose "Open Scene".



#### 9.2.6.Save Scene As

Click on the 3D menu -> Click on File -> Click on Save Scene As to save the scene workspace files to a different folder.



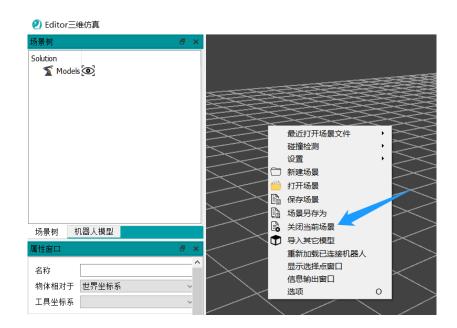




#### 9.2.7.Close Scene

Click on the 3D menu -> Click on File -> Click on Close Scene to close the currently opened scene.





### 9.3. "Accessibility" Menu

#### 9.3.1.Capture Screen

Click on the 3D menu -> Click on Accessibility -> Click on Capture Screen to save a screenshot of the current simulation page.



#### 9.3.2.Record Screen

Click on the 3D menu -> Click on Accessibility -> Click on Record Screen to record a video of the current simulation page.



#### 9.3.3.Stop Recording

Click on the 3D menu -> Click on Accessibility -> Click on Stop Recording to stop the current screen recording of the simulation page.

3D ~ 帮助 ~ 关于	F
打开3D窗口	<ul> <li>→ 計签</li> <li>● 注释</li> <li>● 消注</li> <li>● 正視</li> <li>◆ 复原</li> <li>編編器</li> <li>截図</li> <li></li></ul>
	停止录屏 单位移动模型 >> 选择滑轨滑动轴 >> 放大基座标 缩小基座标
	选项

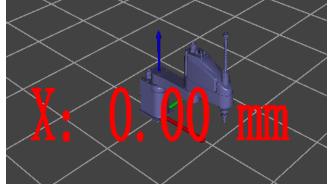
#### 9.3.4.Unit Model Movement (ALT+1,2,3,4,5,6,7)

Click on the 3D menu -> Click on Accessibility -> Click on Unit Model Movement -> Choose XYZABC axis to move the model.

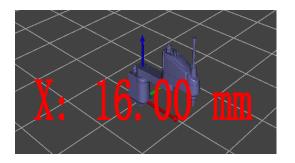
1. Select X-axis: Corresponds to the translation axis X of the model. After selection, there will be text prompts in the scene. Press the UP arrow key on the keyboard to increase the value of the X-axis, and press the DOWN arrow key to decrease the value of the X-axis.

Shortcut key (ALT+1)



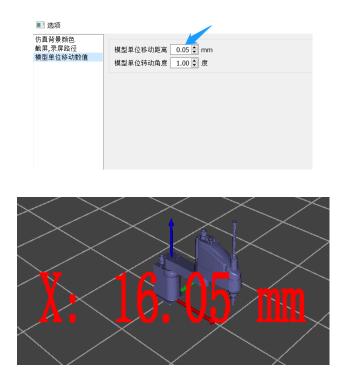


Esc	~ `	1	@2	# 3	\$ 4	<sup>%</sup> 5	<sup>^</sup> 6	& 7	* 8 (	9 )	0	+ =	$\langle X \rangle$
Tab	c	1	w	e	r	t	у	u	i o	р	{ [ ]	1   1	Del
Cap	IS	а	s	d	f	g	h	j	k	1	; " '		der
s	hift		z	x	с	v	b	n r	m <,	>.	? /	~ 7	a



The default unit value added is 1, and you can set the unit movement length in the options.





2. Select Y-axis: Corresponds to the translation axis Y of the model. After selection, there will be text prompts in the scene. Press the UP arrow key on the keyboard to increase the value of the Y-axis, and press the DOWN arrow key to decrease the value of the Y-axis.

Shortcut key (ALT+2)



3. Select Z-axis: Corresponds to the translation axis Z of the model. After selection, there will be text prompts in the scene. Press the UP arrow key on the keyboard to increase the value of the Z-axis, and press the DOWN arrow key to decrease the value of the Z-axis.

Shortcut key (ALT+3)



4. Select A-axis: Corresponds to the rotation axis A of the model. After selection, there will be text prompts in the scene. Press the UP arrow key on the keyboard to increase the value of the A-axis, and press the DOWN arrow key to decrease the value of the A-axis.

Shortcut key (ALT+4)



5. Select B-axis: Corresponds to the rotation axis B of the model. After selection, there will be text prompts in the scene. Press the UP arrow key on the keyboard to increase the value of the B-axis, and press the DOWN arrow key to decrease the value of the B-axis.

Shortcut key (ALT+5)



6. Select C-axis: Corresponds to the rotation axis C of the model. After selection, there will be text prompts in the scene. Press the UP arrow key on the keyboard to increase the value of the C-axis, and press the DOWN arrow key to decrease the value of the C-axis.

Shortcut key (ALT+6)



7. Select "No Movement" axis: Cancel the movement axis of the model.

Shortcut key (ALT+7)



8. Click on "Increase Text Size": Enlarges the text of the models movement axis.

Shortcut key (ALT+E)



 Select "Decrease Text Size": Reduces the text size of the models movement axis. Shortcut key (ALT+R)



#### 9.3.5.Select Slider Axis

Click on the 3D menu -> Click on Accessibility -> Click on Slider Axis.

Selecting the X-axis means that both the slider and the slider robot will move in the X-axis direction of the simulation world coordinate system.



Selecting the Y-axis means that both the slider and the slider robot will move in the Y-axis direction of the simulation world coordinate system.



## 9.3.6. Zoom In Base Coordinates (Page Up)

Click on the 3D menu -> Click on Accessibility -> Click on Zoom In Base Coordinates to zoom in on the base coordinates of the current model.

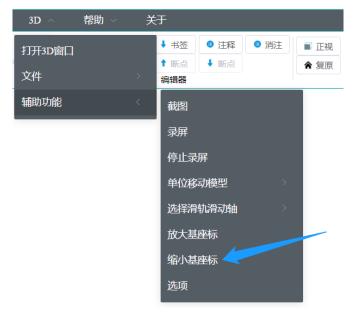
Shortcut key (Page Up)



#### 9.3.7.Zoom Out Base Coordinates (Page Down)

Click on the 3D menu -> Click on Accessibility -> Click on Zoom Out Base Coordinates to zoom out of the base coordinates of the current model.

Shortcut key (Page Down)



#### 9.3.8.Options



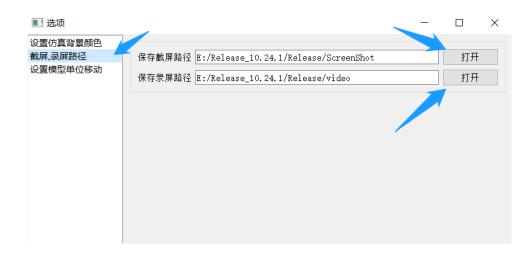
Click on the 3D menu -> Click on Accessibility -> Click on Options to open the options settings window.

■ 选项		-	$\times$
设置仿真背景颜色 截屏,录屏路径 设置模型单位移动	设置仿真背景颜色 使复默认颜色 设置世界坐标关节数据文字颜色		

First item: Set simulation background color and text color in the data window.

■ 选项		_	×
设置仿真背景颜色 截屏,录屏路径 设置模型单位移动	设置仿真背景颜色 / 恢复默认颜色 设置世界坐标关节数据文字颜色 /	初始化颜	

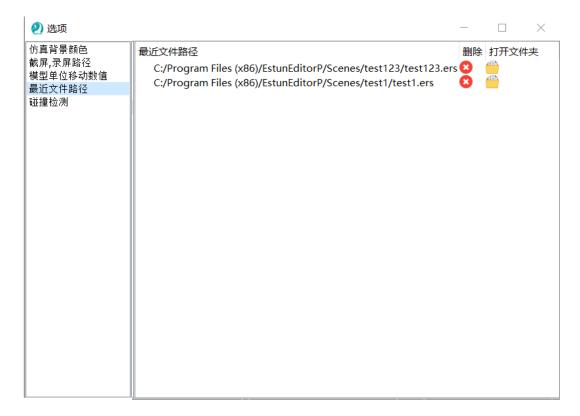
Second item: Open the folder for saving screenshots and recorded screens.



Third item: Set the value for unit movement of the model.

■ 选项		-	×
设置仿真背景颜色 截屏,录屏路径 设置模型单位移动	设置模型单位移动距离 1.00 ♀ 设置模型单位转动角度 1.00 ♀		

Fourth item: Recent file paths.



删除 🙁

to delete a file path record,

打开文件夹

and click 📋

to open the folder of this path.

Manage the recently opened file paths. Click

Fifth item: Collision Detection

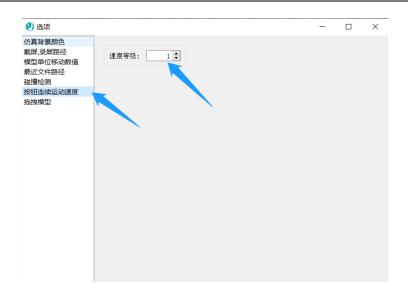
Set this parameter to adjust the time interval for collecting collision points in collision detection.



Sixth item: Button Continuous Movement Speed

Set the speed of robot movement controlled by buttons. The greater the number, the faster the speed.





Seventh item: Dragging Model

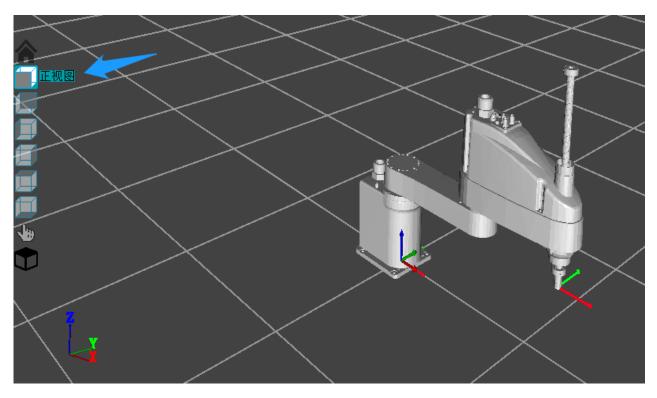
Set the speed of dragging the model and the size of the coordinate system for dragging the model.

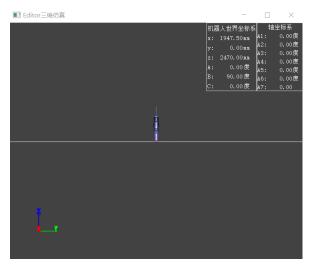
2) 选项		_	×
仿真背景颜色 截屏,录屏路径 模型单位移动数值 最近文件路径 碰撞检测 按钮连续运动速度	<ul> <li>拖拽平移旋转速度等级</li> <li>1.00 €</li> <li>拖拽模型大小(数值不保存)</li> <li>2.60 €</li> </ul>		
拖拽模型			

# 9.4. Toolbar

## 9.4.1.Front View

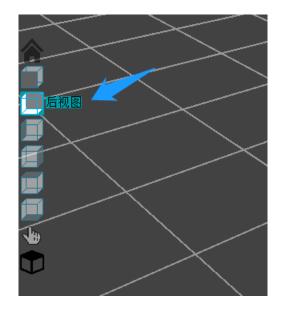
To set the front view of simulation window.

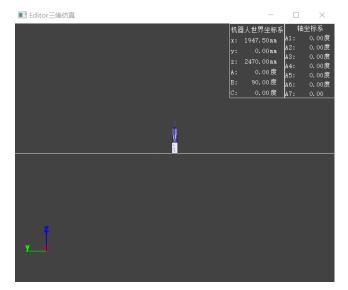




#### 9.4.2.Rear View

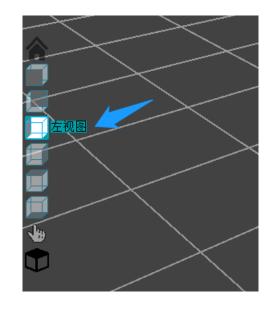
To set the rear view of simulation window.

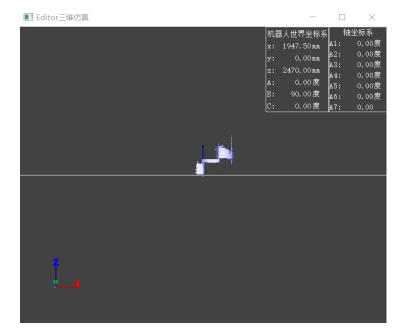




#### 9.4.3.Left View

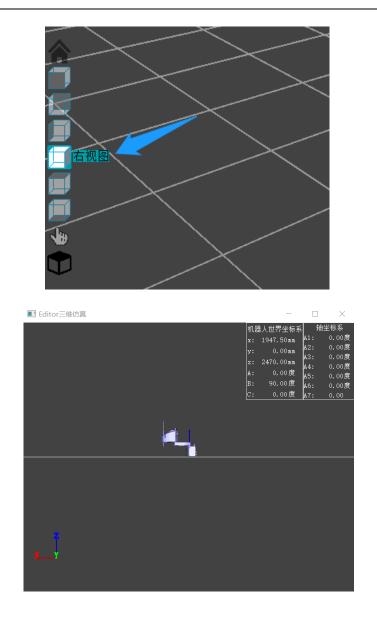
To set the left view of simulation window.





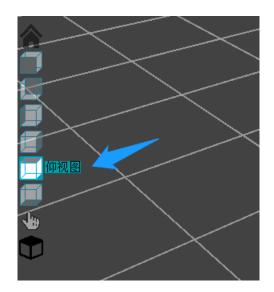
# 9.4.4.Right View

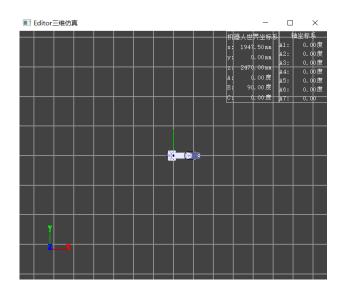
To set the right view of simulation window.



# 9.4.5.Top View

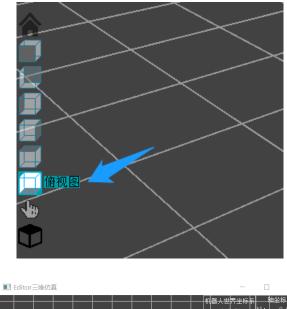
To set the top view of simulation window.





#### 9.4.6.Bottom View

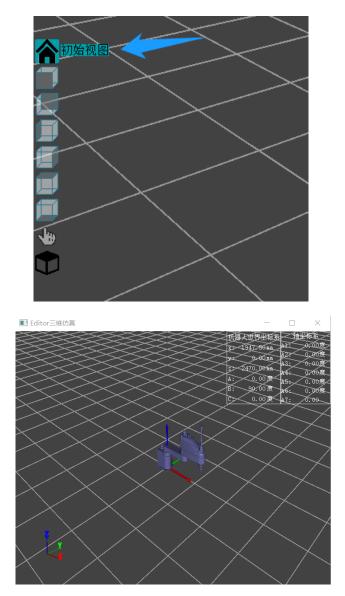
To set the bottom view of simulation window.





#### 9.4.7.Restore View

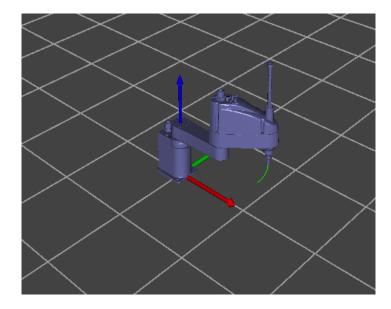
To set the restore view of simulation window.



#### 9.4.8.Path

To set the path of simulation window.





Note: This path is relative to the center point of the robot base. Therefore, in the case of a 7th-axis slider simulation, the displayed path is only for the robot and does not include the path of the slider.

#### 9.4.9. Always On Top

To set the simulation window to be always on top.



#### 9.4.10. Modes

Opens or closes the scene tree and property window in the simulation window.



❷ Editor三维仿真		- 🗆 ×
场景树		几器人世界坐标系 轴坐标系 <u>- 600,00,mm</u> ▲1: 0.00度
Solution V 🐒 Models S ER6-600-SR		: 0.00度
🚿 ER6-600-SR 🔕		: 152.00 mm A4: 0.00 度 : 0.00 度 A5: 0.00 度
		÷ 0.00度 46: 0.00度
		: 0.00度 47; 0.00
		$\sim$
		$\times$
		$\searrow \frown$
		$\prec \frown \prec$
场景树 机器人模型		$\sim$
属性窗口 🔗 🗙		$\sim$
名称 ER6-600-SR ^	属性窗口	$\nearrow$
物体相对于 机器人坐标系 🗸 坐标系		$\langle \rangle$
模型位姿(相对于世界原点)     ////////////////////////////////////		$\sim$
C _ 0 度 B _ 0 度 A _ 0 度		
复制粘贴		$\checkmark$
☑ 显示		$\frown$
□     □ </td <td></td> <td></td>		
洪扬松振系· 11 - + Y		

## 9.4.11. Clear

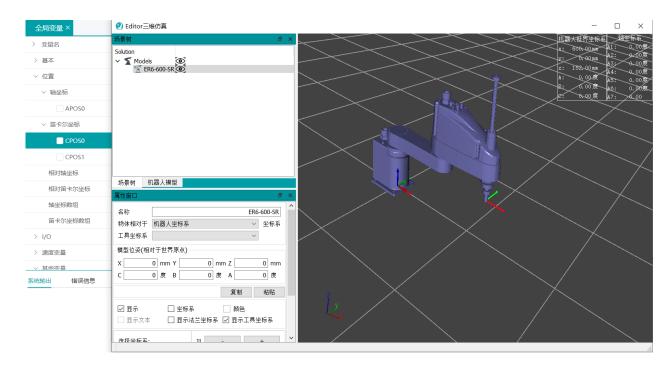
Clears the display of all selected variables in the 3D simulation of the current project. Currently, the variables that can be displayed in 3D include position variables: axis coordinates (APOS) and Cartesian coordinates (CPOS), area variables (AEAR), user coordinates (USERCOOR), and tool center point coordinates (TOOL).



Example: After selecting variables in the project, they are displayed in the 3D simulation.

全局变量 ×	<ul> <li>❷ Editor三维仿真 - □ ×</li> </ul>
〉 变量名	
> 基本	
~ 位置	
~ 轴坐标	
APOS0	
有卡尔坐标	
CPOS0	
CPOS1	
相对轴坐标	
相对笛卡尔坐标	
轴坐标数组	A[1回] 0 0 A 名称 ER6-600-5R ▲
笛卡尔坐标数组	A()         EXC400-3K           物体相对于         机器人坐标系
> I/O	
> 速度变量	模型位姿(相对于世界原点)
∨ 其仲夺易	X 0 mm Y 0 mm Z 0 mm C 0 皮 B 0 皮 A 0 皮
系统输出错误信息	
	図 显示         当 柴标系         5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
	→提坐振至: 1

Clicking the Clear button will remove all variables that are currently displayed in the 3D simulation.



#### 9.4.12. Drag

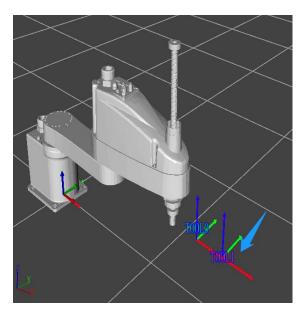
The dragging mode is displayed at the end current robots tool coordinate system, allowing you to perform virtual robot axis dragging movements.

First, set the project as the current project: Right-click on the project name and select "Set as Current Project Space".

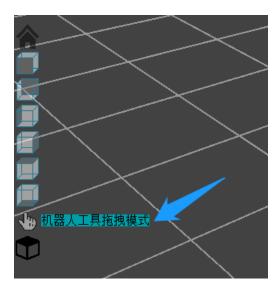
本地工作空间		全局变量×	
+ 7	鼠标右击		
🔻 🏞 test 🍈		USERCOUR3	
<b>x</b> 系約	新建工程	动坐标	+
<b>X</b> 全居	在资源管理器中打开	外部工具坐标	+
<ul> <li>Global</li> <li>NewPr</li> </ul>	在工作空间内查找	◇ 工具中心点坐标	+
► Stest1	复制	TOOL0	
	重命名	TOOL1	
		TOOL2	
	删除	TOOL3	
	设为当前工作空间 🦰	低速段增速比例	+

In the Property Window, select the current tool coordinate system.

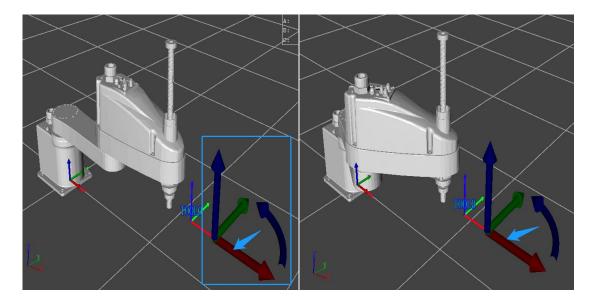
属性窗口			8	×
				^
名称		ER6-	600-SR	
物体相对于	世界坐标系	$\sim$	坐标系	
工具坐标系	TOOL1	~		



Click on "Drag".



A dragging model will appear at the end of the robots tool. Place the mouse over the corresponding axis and drag it along the axis.



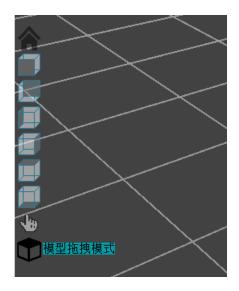
# 9.4.13. One-Click Fixing

Fixes the 3D simulation window in the split-screen position. After opening the 3D window, click on "Always On Top" first, and then click on "One-Click Fixing."

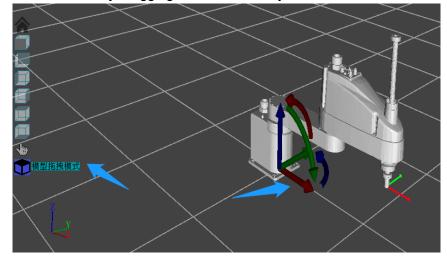
■ 正视	■ 后视	🖻 左视	🗊 右视	🗖 俯视	💷 仰视	一键固定
♠ 复原	*2 轨迹	▲ 置顶	✔ 模式	≥ 清除	の 拖拽	
		/	3D			

~ 1具	✓ 3D ✓	帮助	~ ¥3										
• 启动 11 1	音停 ■ 停止	🗎 保存	<b>1</b> 书签	↓ 书签	<ul> <li>注释</li> </ul>	<ul> <li>消注</li> </ul>	■ 正视	■ 后视	□ 左视	□ 右视	📼 俯视	💷 仰视	取消固定
- 0	+	← 后退	→ 前进	↑ 断点	↓ 断点		★ 复原	* 轨迹	≛ 置顶	✔ 模式	☑ 清除	心 拖拽	
器人控制				编辑器						3D			
									3D仿真	Ţ.			×
									🕘 Editor	三维仿真			- 🗆 X
]										that c.p.	And the second se	(x80)/Estuni	Image: Het # 24 mage         Het Mer A           Image: Het # 24 mage         Image: Het # 24 mage           Image: Het # 24 mage         I

# 9.4.14. Model Dragging



After selecting a model, click on the "Drag Model" button. A coordinate system will appear, and you can manually move the model by dragging the coordinate system.



# 9.5. Property Window

#### 9.5.1.Model Name

To display current models name.

属性窗口 西	×
名称 ER6-600-SR	^
物体相对于 世界坐标系 🗸 坐标系	
工具坐标系 TOOL1 ~	
─模型位姿(相对于世界原点)	
X 0 mm Y 0 mm Z 0 mm	
C 0 度 B 0 度 A 0 度	
复制 粘贴	
☑ 显示 □ 坐标系 □ 颜色	
🗌 🗔 显示文本 🔲 显示法兰坐标系 🗹 显示工具坐标系	
选择坐标系· 11 - +	~

#### 9.5.2.Set Current Reference Coordinate System

When in the selection point mode, the coordinate data of the simulation points will change according to the data of the reference coordinate system. Here, you can set the reference coordinate system.

属性窗口					đ	×
名称			E	ER6	-600-SR	^
物体相对于	世界坐标系			$\sim$	坐标系	
工具坐标系	世界坐标系 机器人坐标系					
-模型位姿(相对	USERCOOR0 USERCOOR1					
X 0	USERCOOR2 USERCOOR3				0 mm	
C 0	度 B	0 度	Α	_	0度	
			复制		粘贴	

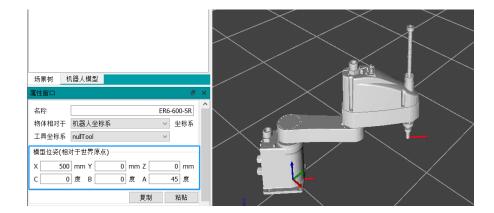
# 9.5.3.Set Current Robot Tool Coordinate System

To select the current virtual robots end -of-arm tool coordinate system.

属性窗口				8	×
名称			ER6-6	00-SR	^
物体相对于	世界坐标系		$\sim$	坐标系	
工具坐标系	TOOL1		~		
模型位姿 <b>(</b> 相对	TOOL0 TOOL1				
X 0	TOOL2 TOOL3			0 mm	
C 0	nullTool			) 度	
		复	制	粘贴	

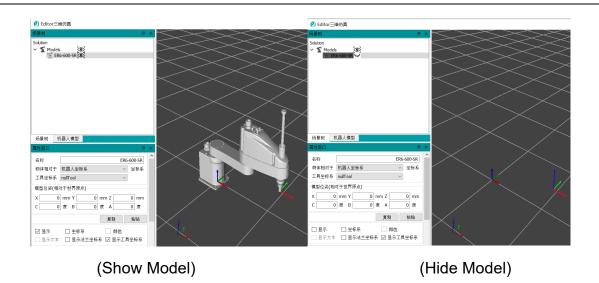
#### 9.5.4.Set Model Posture

To set the current models pos ture in the current simulation scene.

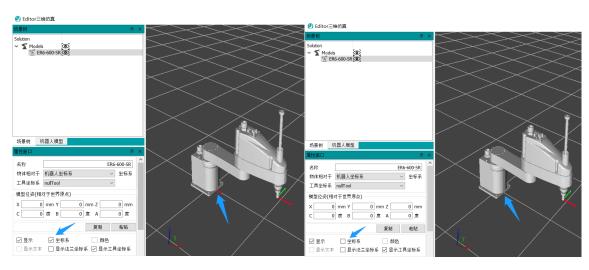


#### 9.5.5.Set Model Display and Hide

To set the visibility of the model in the simulation page.



#### 9.5.6.Set Base Coordinate System Display and Hide



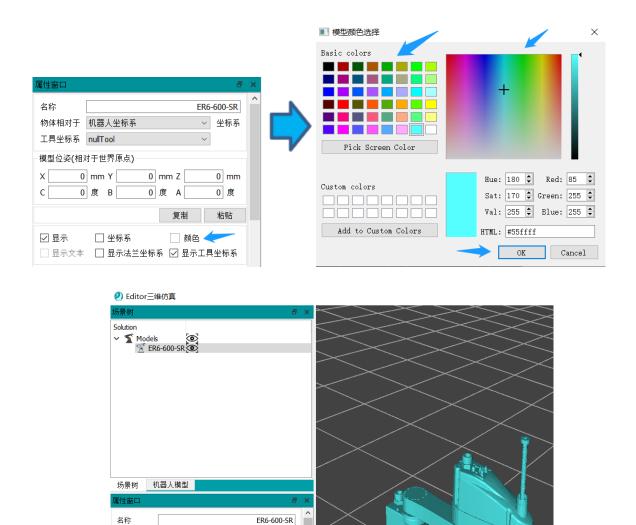
To set the visibility of the models base coordinate system in the simulation page.

(Show Base Coordinate System)

(Hide Base Coordinate System)

#### 9.5.7.Set Model Color

To set the models color. Click on the Color button and select a color.



## 9.5.8.Set Robot Flange Coordinate System Display and Hide

To set the visibility of the robots flange coordinate system in the simulation page.

~ 坐标系

0 mm

0度

粘贴

0 mm Z

0 度 A

复制

🚺 颜色 🚽

 物体相对于
 机器人坐标系

 工具坐标系
 nullTool

 模型位姿(相对于世界原点)

0 mm Y

0 度 B

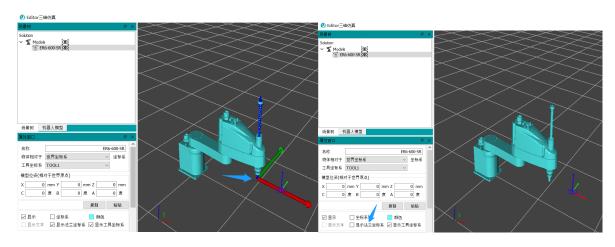
🗌 坐标系

🗌 显示文本 🔲 显示法兰坐标系 🗹 显示工具坐标系

Х

С

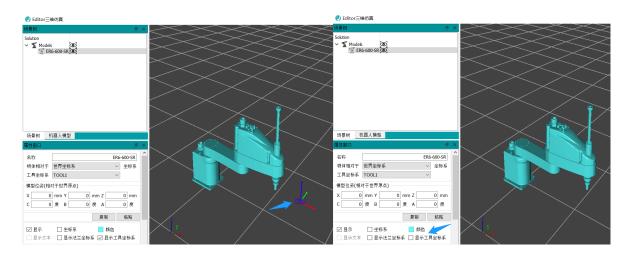
☑ 显示



(Show Current Tool Coordinate System) System) (Hide Current Tool Coordinate

## 9.5.9.Set Robot Tool Coordinate System Display and Hide

To set the visibility of the robots tool coordinate system in the simulation page.



(Show Current Tool Coordinate System)

(Hide Current Tool Coordinate System)

## 9.5.10. Copy Model Posture

To copy the posture data of the current model.

属性窗口		8	×
名称		ER6-1450	^
物体相对于	机器人坐标系	~ 坐标系	
工具坐标系	TOOL1	$\sim$	
- 模型位姿 <mark>(</mark> 相)	对于世界原点)		
X 0	mm Y 0 mm Z	0 mm	
C 0	〕度 B 0 度 A	0 度	
	复制	粘贴	

### 9.5.11. Paste Model Posture

To paste the copied pose data to the current model.

属性窗口				Ð	×
名称			ER	R6-1450	^
物体相对于	机器人坐标系		$\sim$	坐标系	
工具坐标系	TOOL1		$\sim$		
-模型位姿 <mark>(</mark> 相)	对于世界原点 <mark>)</mark> 一				
X 0	mm Y	0 mm Z		0 mm	
C 0	度 B	0 度 A		0度	1
		复制		粘贴	

# 9.5.12. Select Virtual Robot Motion Reference Coordinate System

To specify the coordinate system that the virtual robot uses as a reference for motion. The default initialization is the axis coordinate system.

属性窗口			₽×
C 0度 B			····· へ
	J0J&		2
		复制 粘则	占
☑ 显示 □ 坐椅	示系	颜色	
🗌 🗆 显示文本 🗌 显想	示法兰坐标系	 □ 显示工具坐标	系
选择坐标系:	J1 -	+	
	J2 -	+	
轴坐标系 ~	J3 -	+	
+ 抽坐标系   世界坐标系	J4 -	+	
工具坐标系 用户坐标系	J5 -	+	
707 王孙丞	J6 -	+	
		T	
物体属性 🖾			~

## 9.5.13. Display Current "mode" Value of Virtual Robot

属性窗口 C 0 度 B				×
		复制	粘贴	
✓ 显示     □ 坐橋       □ 显示文本     □ 显示	<b>示系</b> 示法兰坐标系	<ul> <li>颜色</li> <li>显示工</li> </ul>	具坐标系	
选择坐标系:	J1 -		+	
轴坐标系 ~	J2 - J3 -		+ +	
mode: 0	J4 -		+	
	J5 - J6 -		+ +	
物体属性 🖾				~

### 9.5.14. Single Axis Control of Virtual Robot

Depending on the selected coordinate system, the axis control buttons will switch to control different axes. The initial setting is the axis coordinate system, and the axis control allows continuous movement.

属性窗口			ð	×
			25.01 11111	^
C 0 度 B	<b>90</b> 质	度 A	0 度	
		复制	粘贴	
☑ 显示	示系	📃 颜色		
🗌 🗆 显示文本 🗌 显想	⊼法兰坐标系	- 显示]	具坐标系	
	J1 -	-	+	
选择坐标系:	J2 -		+	
轴坐标系 ~	J3 -		+	
mode: 0	J4 -		+	
induci e	J5 -		+	
	J6 -		+	
物体属性 🗵				~

# 9.6. Scene Tree

#### 9.6.1.Model List

To list the models in the scene. The model name is on the left, and the control for showing or hiding the model is on the right.

场景树 Solution	
Wodels Korowski (Korowski) Korowski (Korowski) K	10101010
griff-fue-m8-mutter_2	

The first row of "Models" controls the visibility of all models in the current scene.

场景树		ð ×
Solution		
✓ 🔨 Models	<b>@</b>	
✓ ∑ ER6-1450	0	
rg350h-31	0	
griff-fue-m8-mutter		
griff-fue-m8-mutter_	20	
<b>•</b> ••	L-J	

#### 9.6.2. Right-Click on "Models" to Open the Current Scene Space

#### Folder

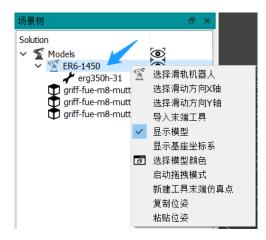
Right-click on "Models" to open the current scene space folder.



"Options" Menu: Clicking on "Options" opens the settings window for the 3D simulation. The tools in this menu are the same as the ones in the other menu bars and the "File" menu in Section 8.2. Right-clicking here is for convenience.

#### 9.6.3.Right-Click Menu for Scene Tree Model Item

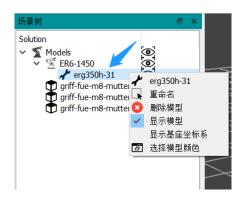
Right-clicking on a model item in the scene tree opens a menu. If the model is a robot, the menu options are the same as those in "8.7.4. Right-Click Robot Model Menu". For specific details, refer to "8.7.4. Right-Click Robot Model Menu".



If the model is a regular model, a menu will pop up with options. The functionality of the menu options with the same names as in "8.7.5. Right-Click Model Menu" is the same. For specific details, refer to "8.7.5. Right-Click Model Menu".

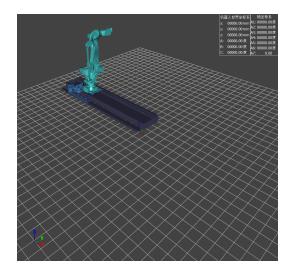


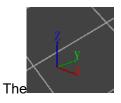
If the model is a robot end-of-arm tool model, a menu will pop up with options. The functionality of the menu options with the same names as in "8.7.6. Right-Click Tool Model Menu" is the same. For specific details, refer to "8.7.6. Right-Click Tool Model Menu".



# 9.7. Simulation Window

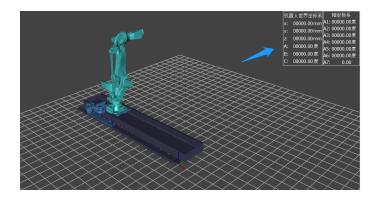
#### 9.7.1. Simulation Window





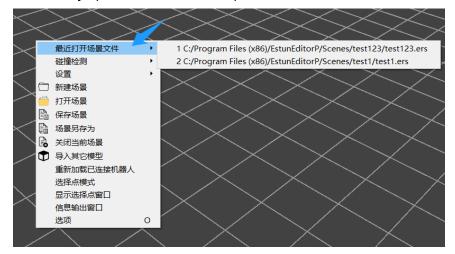
at bottom-left corner represents the pose of the world coordinate system.

### 9.7.2. Robot Data Window



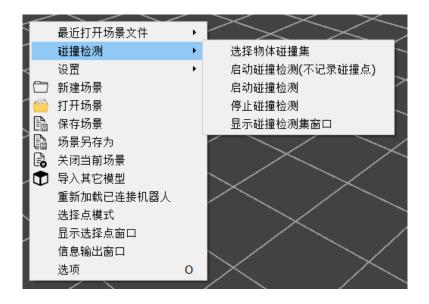
## 9.7.3. Right-Click Menu for Simulation Scene Window

9.7.3.1 Recently Opened Scene Files Menu



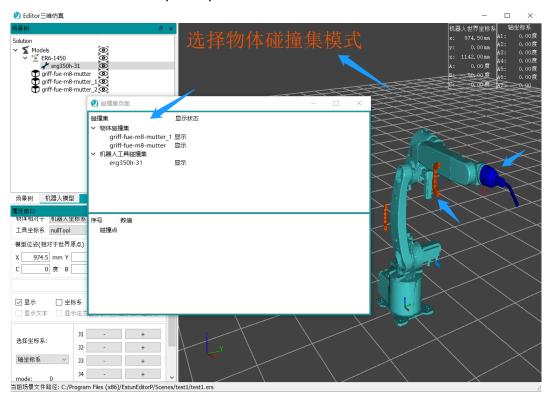
Records the recently opened scene files for quick selection.

#### 9.7.3.2 Collision Detection



#### 9.7.3.2.1 Select Object Collision Sets

To select the object collision sets, which are the models to be included in the collision detection. When clicking this option, a collision set page will appear as shown in the figure. The collision sets are divided into object collision sets and robot tool collision sets. The object collision sets include regular models that need to participate in collision detection, excluding the models related to the robot. The robot tool collision sets include the tool models that the robot needs to participate in collision detection.



To select models for collision detection, simply click on them. When selecting regular

models, they will appear in orange-red color, and when selecting tool models, they will appear in dark blue.

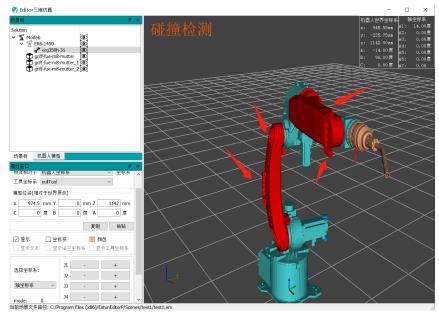
Additionally, joint models on the robot (such as pallet models or other balance bar models, which are not currently included in collision detection) are automatically included in the collision detection.

The top half of the collision set page displays the names of the currently selected models for collision detection and their display status.

The bottom half is used for collecting collision points after activating the "Start Collision Detection" function, enabling the collection of collision points at regular intervals. By clicking on the collected collision points, it is possible to quickly navigate the virtual robot and examine the collision situation.

9.7.3.2.2 Start Collision Detection (Without Recording Collision Points)

Clicking this function starts the collision detection thread, which performs collision detection on the models in the collision set. During the movement of the virtual robot, if there is a collision with any model in the collision set, the model will turn red as shown in the figure. To activate the "Start Collision Detection" function, you need to click on the "Stop Collision Detection" function.



9.7.3.2.3 Start Collision Detection

Clicking this function starts the collision detection thread, which performs collision detection on the models in the collision set. During the movement of the virtual robot, if there is a collision with any model in the collision set, the model will turn red. Additionally, while moving the robot, the system will periodically check and record collision points at the locations of collisions, as shown in the figure.

product     dog       1     x945.55, y-235.75, z1142, a-14, b-90, c0     0       2     x926.8, y-301.14, z1142, a-18, b-90, c0     0       3     x902.55, y-396.36, z1142, a-24, b-90, c0     0       4     x915.73, y-335.33, z1142, a-24, b-90, c0     0       5     x926.8, y-301.14, z1142, a-18, b-90, c0     0       6     x903.55, y-396.36, z1142, a-24, b-90, c0     0       7     x990.25, y-396.36, z1142, a-24, b-90, c0     0       8     x848.34, y-x47.25, z1142, a-30, b-90, c0     0       9     x826.42, y-516.41, z1142, a-34, b-90, c0     0       11     x746.51, y-c264, z1142, a-30, b-90, c0     0       12     x676.94, y-701, z1142, a-46, b-90, c0     13       13     x652.07, y-724.19, z1142, a-46, b-90, c0     13       14     x948.54     y-714, z1142, a-46, b-90, c0       15     x52.67, y-724.19, z1142, a-46, b-90, c0     13       16     x50.07, y-724.19, z1142, a-46, b-90, c0     13       12     x676.94, y-701, z1142, a-46, b-90, c0     14       14     x94.55     y-14       15     y-14       16     x77       17     y-14       18     18       19     -       14     -       15     -       <	全周	疫量 ×   磁撞检测 ×	
2       x926.8, y-301.14, z1142, a-:18, b-90, c0         3       x890.25, y-396.36, z1142, a-:24, b-90, c0         5       x926.8, y201.14, z1142, a-:18, b-90, c0         6       x903.54, y365.05, z1142, a-:22, b-90, c0         7       x890.25, y-396.36, z1142, a-:24, b-90, c0         8       x843.34, y-487.25, z1142, a-:24, b-90, c0         9       x826.42, y-516.41, z1142, a-:24, b-90, c0         10       x746.51, y-626.4, z1142, a-:24, b-90, c0         11       x746.51, y-626.4, z1142, a-:46, b-90, c0         12       x652.07, y-724.19, z1142, a-:48, b-90, c0         13       x652.07, y-724.19, z1142, a-:48, b-90, c0         14       x652.07, y-724.19, z1142, a-:48, b-90, c0         15       x652.07, y-724.19, z1142, a-:48, b-90, c0         16       x679.4 y-701, z1142, a-:48, b-90, c0         17       x652.07, y-724.19, z1142, a-:48, b-90, c0         18       WERE         19       IIII = IIII = IIII = IIIII = IIIIII = IIIIII	序号	点位	位姿
3       x900.25, y:-396.36, z1142, a:-24, b:90, c0         4       x915.73, y:-333.3, z1142, a:-24, b:90, c0         5       x926.8, y:-301.14, z1142, a:-18, b:90, c0         6       x903.54, y:-365.05, z1142, a:-24, b:90, c0         7       x890.25, y:-396.36, z1142, a:-24, b:90, c0         8       x843.94, y:-487.25, z1142, a:-30, b:90, c0         9       x826.42, y:-516.41, z1142, a:-30, b:90, c0         10       x767.92, y:-599.95, z1142, a:-34, b:90, c0         11       x746.51, y:-626, x1142, a:-46, b:90, c0         12       x676.94, y:-701, z1142, a:-46, b:90, c0         13       x652.07, y:-724.19, z1142, a:-48, b:90, c0         14       #R#@         15       g:ff:fixe:m8:mutter_2         8       g:ff:fixe:m8:mutter_2         8       g:ff:fixe:m8:mutter_2         14       x746.51, y:-626, x1142, a:-48, b:90, c0         15       x552.07, y:-724.19, z1142, a:-48, b:90, c0         16       g:ff:fixe:m8:mutter_2         8       #R#@         8       #R#@         16       g:ff:fixe:m8:mutter_2         17       x652.07, y:-724.19, z1142, a:-48, b:90, c0         18       #R#@         19       +         19       +         1	1	x:945.55, y:-235.75, z:1142, a:-14, b:90, c:0	0
4       x915.73, y:-333.3, z1142, a:-20, b:90, c.0         5       x926.8, y:-301.14, z1142, a:-18, b:90, c.0         6       x903.54, y:-365.05, z1142, a:-24, b:90, c.0         7       x890.25, y:-396.36, z1142, a:-24, b:90, c.0         8       x843.94, y:-487.25, z1142, a:-30, b:90, c.0         9       x826.42, y:-516.41, z1142, a:-42, b:90, c.0         10       x767.92, y:-599.96, z1142, a:-40, b:90, c.0         11       x746.51, y:-626.4, z1142, a:-46, b:90, c.0         12       x676.94, y:-701, z1142, a:-48, b:90, c.0         13       x652.07, y:-724.19, z1142, a:-48, b:90, c.0         14       x746.51, y:-626.4, z1142, a:-48, b:90, c.0         15       x692.07, y:-724.19, z1142, a:-48, b:90, c.0         16       x692.07, y:-724.19, z1142, a:-48, b:90, c.0         17       x692.07, y:-724.19, z1142, a:-48, b:90, c.0         18       Wirefield         19       10         10       27, x2         12       x676.94, y:-701, z1142, a:-48, b:90, c.0         13       x652.07, y:-724.19, z1142, a:-48, b:90, c.0         14       14         15       14         16       14         17       2         18       14         19       +	2	x:926.8, y:-301.14, z:1142, a:-18, b:90, c:0	<ul><li>2 Editor三维仿真</li></ul>
5       x926.8, y-301.14, z1142, a-18, b-90, c0         6       x903.54, y-365.05, z1142, a-24, b-90, c0         7       x890.25, y-396.36, z1142, a-24, b-90, c0         8       x843.94, y-487.25, z1142, a-30, b-90, c0         9       x826.42, y-516.41, z1142, a-32, b-90, c0         10       x767.92, y-599.96, z1142, a-40, b-90, c0         11       x746.51, y-626.4, z1142, a-40, b-90, c0         12       x676.94, y-701, z1142, a-46, b-90, c0         13       x652.07, y-724.19, z1142, a-46, b-90, c0         14       x746.51, y-626.4, z1142, a-46, b-90, c0         15       x652.07, y-724.19, z1142, a-48, b-90, c0         16       x676.94, y-701, z1142, a-46, b-90, c0         17       x690.11         x652.07, y-724.19, z1142, a-48, b-90, c0         14       x652.07, y-724.19, z1142, a-48, b-90, c0         15       x697.1         16       y         17       x692.1         18       wfield         19       +         19       +         11       y         11       y         12       x614.1         13       y         14       +         15       +         16       <	3	x:890.25, y:-396.36, z:1142, a:-24, b:90, c:0	场景树
8       x843.94, y:-487.25, z1142, a:-30, b:90, c0         9       x826.42, y:-516.41, z1142, a:-32, b:90, c0         10       x767.52, y:-599.96, z1142, a:-40, b:90, c0         11       x746.51, y:-626.4, z1142, a:-40, b:90, c0         12       x676.94, y:-701, z1142, a:-46, b:90, c0         13       x652.07, y:-724.19, z1142, a:-48, b:90, c0         14       x652.07, y:-724.19, z1142, a:-48, b:90, c0         15       bit	4	x:915.73, y:-333.3, z:1142, a:-20, b:90, c:0	
8       x843.94, y:-487.25, z1142, a:-30, b:90, c0         9       x826.42, y:-516.41, z1142, a:-32, b:90, c0         10       x767.52, y:-599.96, z1142, a:-40, b:90, c0         11       x746.51, y:-626.4, z1142, a:-40, b:90, c0         12       x676.94, y:-701, z1142, a:-46, b:90, c0         13       x652.07, y:-724.19, z1142, a:-48, b:90, c0         14       x652.07, y:-724.19, z1142, a:-48, b:90, c0         15       bgH       fli@L@W         WEWERS:       BD:-12         17       bgH       fli@L@W         18       wfa@le       mfa       +tă< geadat	5	x:926.8, y:-301.14, z:1142, a:-18, b:90, c:0	✓ \$ Models ✓ \$ ER6-1450
<ul> <li>8 x843.94, y:-467.25, z1142, a:-30, b:90, c0</li> <li>9 x252.42, y:-516.41, z1142, a:-42, b:90, c0</li> <li>10 x767.92, y:-599.95, z1142, a:-40, b:90, c0</li> <li>11 x74.651, y:-626.4, z1142, a:-40, b:90, c0</li> <li>12 x676.94, y:-701, z1142, a:-46, b:90, c0</li> <li>13 x652.07, y:-724.19, z1142, a:-48, b:90, c0</li> <li>14 x652.17, y:-724.19, z1142, a:-48, b:90, c0</li> <li>15 Bell 1182.422</li> <li>16 207, y:-724.19, z1142, a:-48, b:90, c0</li> <li>17 x652.17, y:-724.19, z1142, a:-48, b:90, c0</li> <li>18 x652.07, y:-724.19, z1142, a:-48, b:90, c0</li> <li>19 12 1</li> <li>10 207, 12 207,</li></ul>	6	x:903.54, y:-365.05, z:1142, a:-22, b:90, c:0	
<ul> <li>8 x843.94, y:-467.25, z1142, a:-30, b:90, c0</li> <li>9 x252.42, y:-516.41, z1142, a:-42, b:90, c0</li> <li>10 x767.92, y:-599.95, z1142, a:-40, b:90, c0</li> <li>11 x74.651, y:-626.4, z1142, a:-40, b:90, c0</li> <li>12 x676.94, y:-701, z1142, a:-46, b:90, c0</li> <li>13 x652.07, y:-724.19, z1142, a:-48, b:90, c0</li> <li>14 x652.17, y:-724.19, z1142, a:-48, b:90, c0</li> <li>15 Bell 1182.422</li> <li>16 207, y:-724.19, z1142, a:-48, b:90, c0</li> <li>17 x652.17, y:-724.19, z1142, a:-48, b:90, c0</li> <li>18 x652.07, y:-724.19, z1142, a:-48, b:90, c0</li> <li>19 12 1</li> <li>10 207, 12 207,</li></ul>	7	x:890.25, y:-396.36, z:1142, a:-24, b:90, c:0	griff-fue-m8-mutter_1
10 x767 92, y-599 96, z1142, a-48, b50, c0 11 x746, 51, y-626, z1142, a-46, b50, c0 12 x676, 94, y-701, z1142, a-48, b50, c0 13 x652, 07, y-724, 19, z1142, a-48, b50, c0 14 x678, 94, y-701, z1142, a-48, b50, c0 15 尿树 机器人模型 広子は空水香 旦示 工具坐板系 □ 示 法 空坐板系 □ 显示法 三型板系 □ 型板 □ 0 15 尿村 11 部 ↓ 1 1 0 + + 1 0	8	x:843.94, y:-487.25, z:1142, a:-30, b:90, c:0	T griff-fue-m8-mutter_2 (2)
11       x74651, y-c264, z1142, a:-40, b:90, c0         12       x676.94, y:-701, z1142, a:-48, b:90, c0         13       x652.07, y:-724.19, z1142, a:-48, b:90, c0 <i>K</i> (新始) <i>K</i> (新台) <i>K</i> ( <i>K</i> ) <i>K</i> ( <i>K</i> ) <i>K</i> ( <i>K</i> ) <i>K</i> ( <i>K</i> ) <i>L</i> ( <i>K</i> ) <i>L</i> ( <i>K</i> ) <i>L</i> ( <i>K</i> ) <i>K</i> ( <i>K</i> ) <i>L</i> ( <i>K</i> ) <i>K</i> ( <i>K</i> ) <i>L</i> ( <i>K</i> )       <	9	x:826.42, y:-516.41, z:1142, a:-32, b:90, c:0	
12       x676.94, y:-701, z:1142, a:-46, b:90, c:0         13       x652.07, y:-724.19, z:1142, a:-48, b:90, c:0	10	x:767.92, y:-599.96, z:1142, a:-38, b:90, c:0	
13     x652.07, y:-724.19, z:1142, a:-48, b:90, c:0          ・場所 143人模型         ・日本            ・価値回         ・日本          ・日本          ・日本	11	x:746.51, y:-626.4, z:1142, a:-40, b:90, c:0	
13       x65207, y-724.19, z1142, a-48, b-90, c3            届性質□         「工業の          日示文本         日示文         日示文本         日示文本         日示         日示         日示	12	x:676.94, y:-701, z:1142, a:-46, b:90, c:0	
系统输出 错误信息 断点 书签 变量监控       10       -       +         加de:       0       2       -       +         3       -       +       -       +         3       -       +       -       +         3       -       +       -       +         3       -       +       -       +         3       -       +       -       +         3       -       +       -       +         3       -       +       -       +         3       -       +       -       +         3       -       +       -       +         3       -       +       -       +         3       -       +       -       +         3       -       +       -       +         3       -       +       -       +       -         5       -       +       -       +       -       +         3       -       +       -       +       -       +       +         3       -       +       -       +       +       +       +       +<	13	x:652.07, y:-724.19, z:1142, a:-48, b:90, c:0	
茶碗輸出     補保信息     断点     书签     安量监控       加型标系     12     -     +       13     -     +       mode:     0     3     -       15     -     +       16     -     +			
ha业标系 ↓ J3 - + mode: 0 J4 - + J5 - + J6 - +	S KATAL		选择坐标系: 12 - +
mode: 0 J5 - + J6 - +	359/6489L		
			mode: 0 14 - +
物体属性 2			J6 · +
			物体属性 🛛

By clicking on the recorded collision points on the collision detection page, it is possible to quickly move the robot to the collision points and examine the collision detection situation.

全局	変量 × 磁撞检测 ×		
序号	点位	位姿	
1	x:945.55, y:-235.75, z:1142, a:-14, b:90, c:0	0	
2	x:926.8, y:-301.14, z:1142, a:-18, b:90, c:0	🕗 Editor三维仿真	
3	x:890.25, y:-396.36, z:1142, a:-24, b:90, c:0	场景树	0 x
4	x:915.73, y:-333.3, z:1142, a:-20, b:90, c:0	Solution	AF
5	x:926.8, y:-301.14, z:1142, a:-18, b:90, c:0	✓	
6	x:903.54, y:-365.05, z:1142, a:-22, b:90, c:0	rg350h-31	++++++
7	x:890.25, y:-396.36, z:1142, a:-24, b:90, c:0	griff-fue-m8-mutter_1 💿	
8	x:843.94, y:-487.25, z:1142, a:-30, b:90, c:0	griff-fue-m8-mutter_2	
9	x:826.42, y:-516.41, z:1142, a:-32, b:90, c:0		
10	x:767.92, y:-599.96, z:1142, a:-38, b:90, c:0		
11	x:746.51, y:-626.4, z:1142, a:-40, b:90, c:0		
12	x:676.94, y:-701, z:1142, a:-46, b:90, c:0		
13	x:652.07, y:-724.19, z:1142, a:-48, b:90, c:0	场景树 机器人模型	
14	x:926.8, y:-301.14, z:1142, a:-18, b:90, c:0	属性窗口 □ 並示 □ 王你系 ■ QB	
		□ 显示文本 □ 显示法兰坐标系 □ 显示工具坐标	
		选择坐标系: 11 - +	
<b>系统输</b> 出	出 错误信息 断点 书签 变量的		
		· 抽坐标系 / J3 - +	
		mode: 0 <sup>34</sup> - +	
		35 - +	
		J6 - +	
		物体属性 🛛	
		当前场景文件路径: C:/Program Files (x86)/EstunEditorP	/Scenes/test1/test1.ers

#### 9.7.3.2.4 Stop Collision Detection

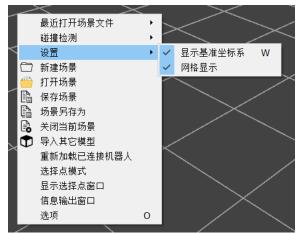
Stops the collision detection thread.

#### 9.7.3.2.5 Display Collision Detection Set Window

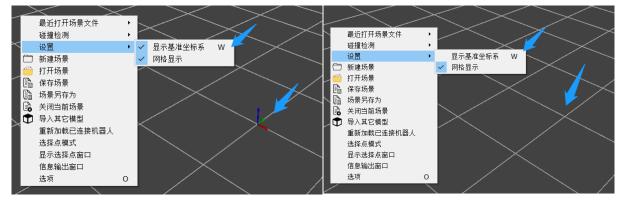
If the collision detection set window is closed, clicking this function will reopen the selected model collision set.

碰撞集	显示状态		
~ 物体	び 撞隼		
。 g ~ 机器	yriff-fue-m8-mutter_1 显示 priff-fue-m8-mutter 显示 人工具碰撞集 rg350h-31 显示		
序号	数值		
序号 > 碰撞		 	
	点 一		ľ
ン 碰撞	点 点 (X:945.55,Y:-235.75,Z:1142.00,A:-14.00,B:90.00,C:0.00,mode: 0)	 	
ン ン 碰撞 1		 	ľ
∨碰撞 1 2	A           (X:945.55,Y:-235.75,Z:1142.00,A:-14.00,B:90.00,C:0.00,mode: 0)           ?         (X:926.80,Y:-301.14,Z:1142.00,A:-18.00,B:90.00,C:0.00,mode: 0)           \$         (X:890.25,Y:-396.36,Z:1142.00,A:-24.00,B:90.00,C:0.00,mode: 0)	 	
ン び び び 値 1 2 3	K           (X:945.55,Y:-235.75,Z:1142.00,A:-14.00,B:90.00,C:0.00,mode: 0)           (X:926.80,Y:-301.14,Z:1142.00,A:-18.00,B:90.00,C:0.00,mode: 0)           (X:890.25,Y:-396.36,Z:1142.00,A:-24.00,B:90.00,C:0.00,mode: 0)           (X:915.73,Y:-333.30,Z:1142.00,A:-20.00,B:90.00,C:0.00,mode: 0)	 	
~碰撞 1 2 3 4	x:           x:		
✓ 碰撞 1 2 3 4 5	K:945.55,Y:-235.75,Z:1142.00,A:-14.00,B:90.00,C:0.00,mode: 0)           (X:945.55,Y:-235.75,Z:1142.00,A:-18.00,B:90.00,C:0.00,mode: 0)           (X:890.25,Y:-396.36,Z:1142.00,A:-18.00,B:90.00,C:0.00,mode: 0)           (X:915.73,Y:-396.36,Z:1142.00,A:-24.00,B:90.00,C:0.00,mode: 0)           (X:903.54,Y:-333.30,Z:1142.00,A:-24.00,B:90.00,C:0.00,mode: 0)           (X:903.54,Y:-301.14,Z:1142.00,A:-18.00,B:90.00,C:0.00,mode: 0)           (X:903.54,Y:-301.14,Z:1142.00,A:-24.00,B:90.00,C:0.00,mode: 0)	 	
✓ 碰撞 1 2 3 4 5 6	K:945.55,Y:-235.75,Z:1142.00,A:-14.00,B:90.00,C:0.00,mode: 0)           V:926.80,Y:-301.14,Z:1142.00,A:-18.00,B:90.00,C:0.00,mode: 0)           V:890.25,Y:-396.36,Z:1142.00,A:-24.00,B:90.00,C:0.00,mode: 0)           V:915.73,Y:-333.30,Z:1142.00,A:-24.00,B:90.00,C:0.00,mode: 0)           V:926.80,Y:-301.14,Z:1142.00,A:-24.00,B:90.00,C:0.00,mode: 0)           V:905.54,V:-305.30,Z:1142.00,A:-20.00,B:90.00,C:0.00,mode: 0)           V:905.54,Y:-305.14,Z:1142.00,A:-20.00,B:90.00,C:0.00,mode: 0)           V:903.54,Y:-365.05,Z:1142.00,A:-22.00,B:90.00,C:0.00,mode: 0)           V:890.25,Y:-396.36,Z:1142.00,A:-24.00,B:90.00,C:0.00,mode: 0)	 	

9.7.3.3 Settings



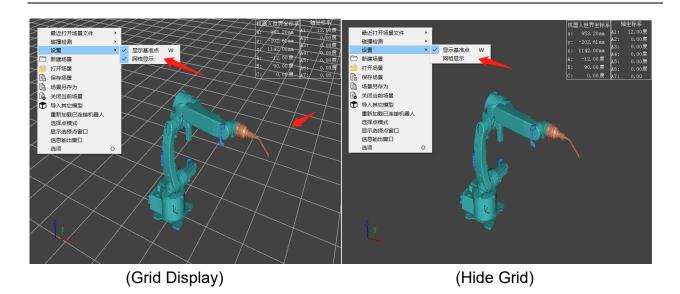
Display Reference Coordinate System: Clicking this function will show or hide the reference coordinate system model.



(Show Reference Coordinate System)

(Hide Reference Coordinate System)

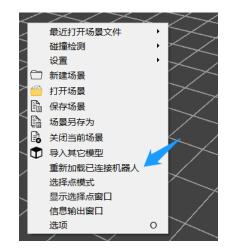
Grid Display: Clicking this function will show or hide the grid.



The functionality of opening and closing scenes is the same as the corresponding tools in the "File" menu in section 8.2. Please refer to the functionality of the corresponding tools in the "File" menu in section 8.2. This is provided for ease of use.

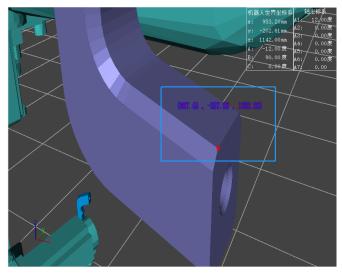
#### 9.7.3.4 Reload Connected Robot

This function is used when, in the connected state, clicking on close scene will also close the robot model. If you want to display the current robot model again without switching to another robot model, you can click this function.

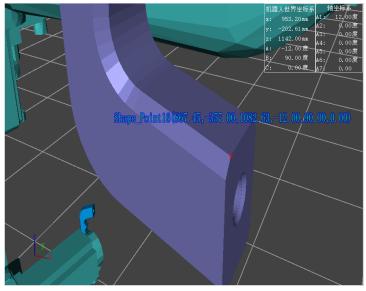


#### 9.7.3.5 Select Point Mode

Enables the selection of model vertices to quickly create vertices on the model, making it convenient to move the robot end-of-arm tool to that vertex for adjustment of point data. When selecting point mode, you need to click on the model to be selected, then right-click on the model and select the "Reset Center Point" function. Then zoom in on the model and select the vertices of the model. When the color of the mouses sphere turns red, it means that the point is a vertex of the model. Use CTRL + left-click to create a simulation point for the model vertex.



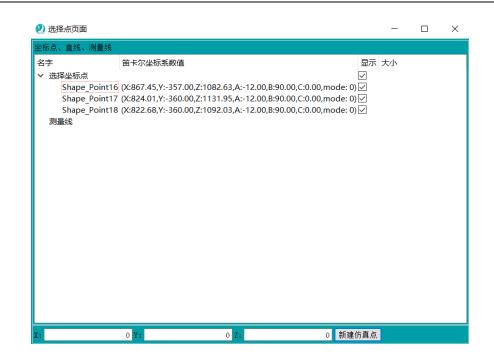
(Select Model Vertex)



(Create Simulation Point for Model Vertex)

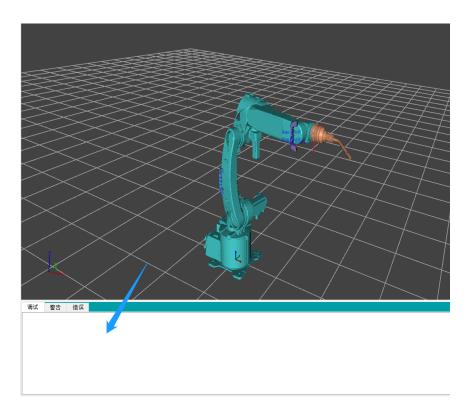
9.7.3.6 Display Select Point Window

Clicking this function opens the select point page, which records the selected simulation points or the midpoints and centers created based on simulation points. Please refer to section 8.9 for information on how to create simulation points.



9.7.3.7 Information Output Window

Clicking this function opens or closes the information output window. This is used to view debugging, warning, or alarm information in the 3D simulation.



### 9.7.3.8 Options

Clicking this function opens the options window.



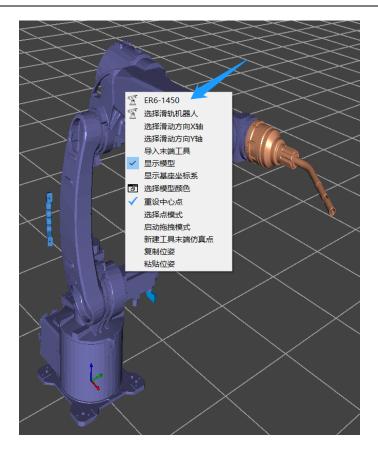
## 9.7.4. Right-Click Robot Model Menu

Right-clicking on the model will bring up a menu that allows you to set the models properties.



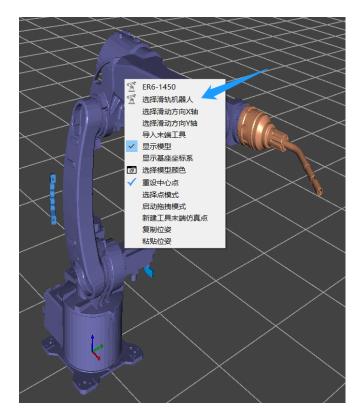
9.7.4.1 Robot Model Name

Displays only the name, no effect if clicking.

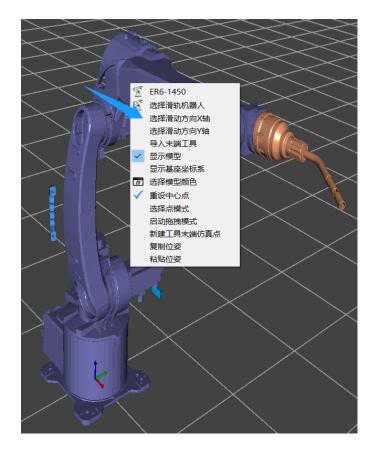


9.7.4.2 Select Robot Model on Slider

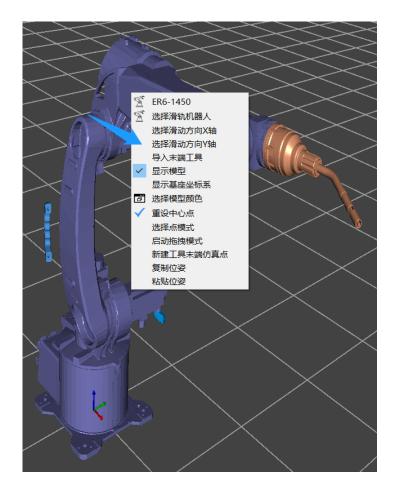
Clicking this option allows you to select the robot model on the slider.



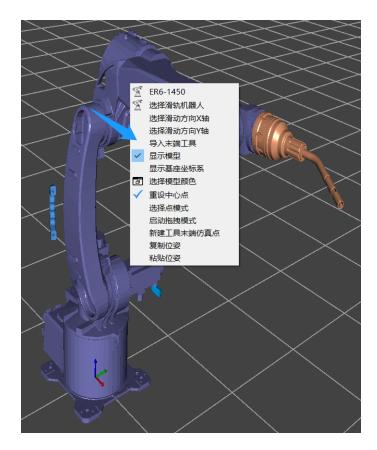
9.7.4.3 Select X-axis Movement on Slider for the Robot



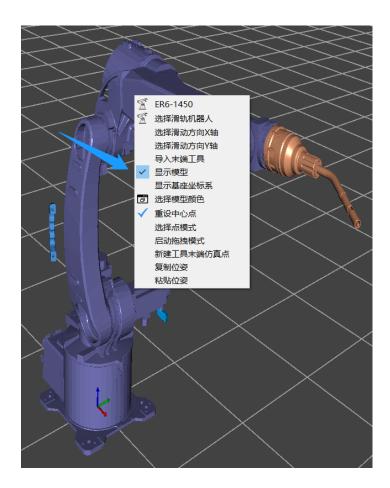
9.7.4.4 Select Y-axis Movement on Slider for the Robot



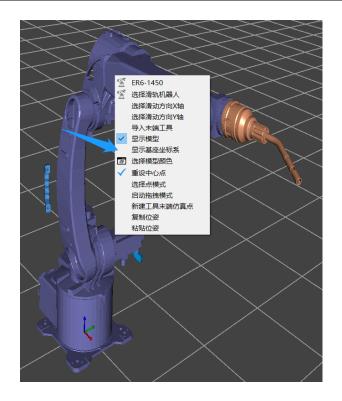
## 9.7.4.5 Import Robot End-of-Arm Tool Model



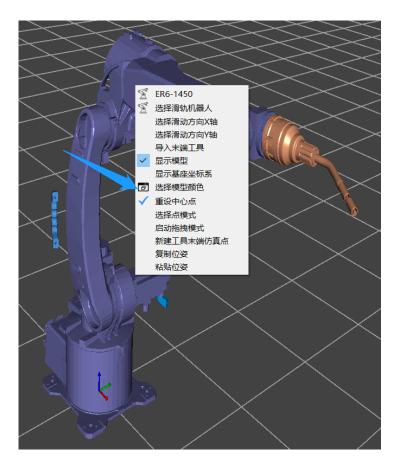
#### 9.7.4.6 Show Robot Model



9.7.4.7 Select Robot Base Coordinate System



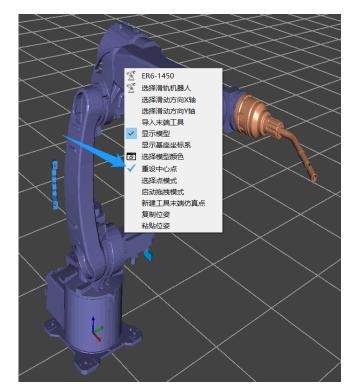
9.7.4.8 Select Robot Model Color



9.7.4.9 Reset Center Point

To set the rotation and zoom center position of the scene to the location clicked by

the mouse. This position is initially set to the center position (0,0,0) of the world coordinate system.



#### 9.7.4.10 Select Point Mode

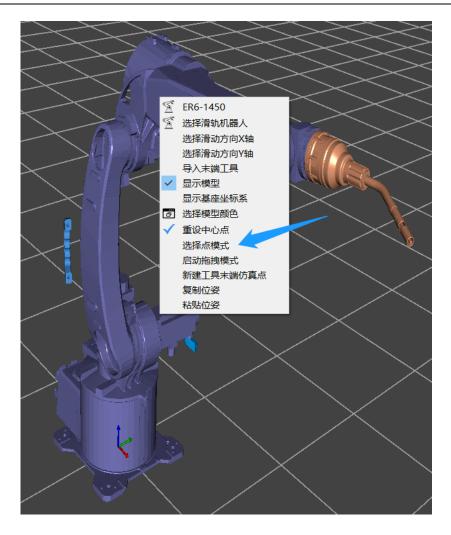
Enabling this mode allows you to select vertices on models other than the robot model. When the mouse moves over the vertices of a model, the color of the current mouse sphere turns red. Use CTRL + left-click to create a simulation point relative to the reference coordinate system at the vertex position on the model. The default reference coordinate system is the world coordinate system.

属性窗口			Ð	×
名称		ER	R6-1450	^
物体相对于	机器人坐标系	$\sim$	坐标系	
工具坐标系		$\sim$		

The reference coordinate system can be set to the world coordinate system, robot coordinate system, or other user-defined coordinate systems.

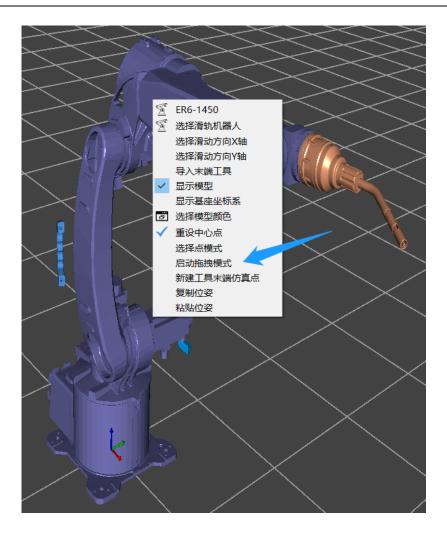
Creating simulation points allows you to quickly move the robot end tool to that simulation point or create CPOS variable points.

Note: The robot will move to the simulation point with the current posture. Similarly, when creating a CPOS variable point, it is based on the XYZ values of that simulation point and the robots current posture values. If there is a requirement for posture, the robot needs to be moved to that point, and then the robots posture values should be adjusted for teaching.



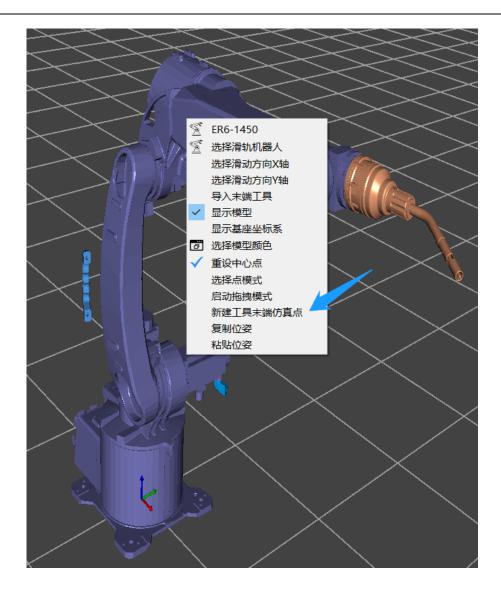
9.7.4.11 Select Drag Mode

Enabling this mode will display the drag model under the current tool coordinate system variable of the robot. It includes XYZABC six-axis models. When you click and drag this model on the robot, it represents single-axis movement of the robot based on the tool coordinate system as the reference coordinate system.



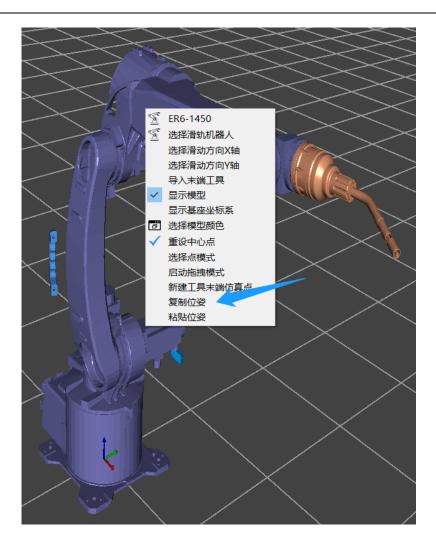
9.7.4.12 Create Tool End Simulation Point

Using the robot coordinate system as the reference coordinate system and under the current tool variable of the robot, you can create simulation points for the robots end-of-arm tool variable. This is used to record points that may be needed or to quickly move the robot between such points.



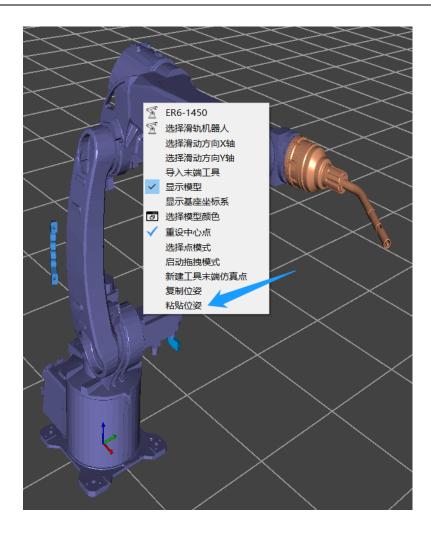
## 9.7.4.13 Copy Posture

The copy posture and paste posture functions are used together. Clicking this function will copy the posture data of the current model.

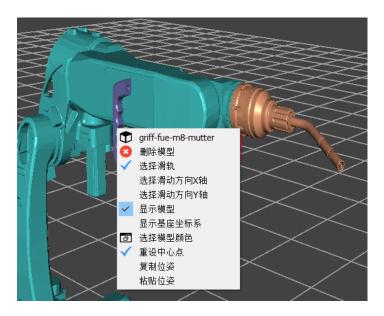


### 9.7.4.14 Paste Posture

Pasting the posture copies the saved pose data of another model and pastes it into the target model to apply it, allowing for quick placement of models and scene setup.



## 9.7.5.Right-Click General Model Menu

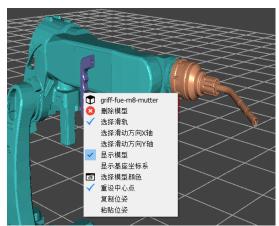


### **9**.7.5.1 Model Name

The first column in the menu displays the model name.

#### 9.7.5.2 Delete Model

Clicking this function will delete the model.



### 9.7.5.3 Select Slider

Click this function to set the model as a slider model. It is used for setting up the seventh-axis ground track model.



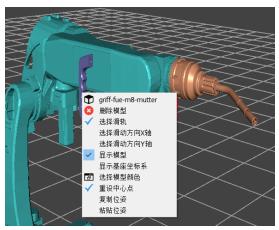
#### 9.7.5.4 Select X-axis Slide Direction

By clicking on this function, the motion direction of the rail model, which has already been configured, can be set to either the X-axis or the Y-axis.

grif-fue-m8-mutter
gmi-rue-mo-muter 删除模型
选择洞机 选择滑动方向X轴
选择滑动方向X轴 选择滑动方向Y轴
选择消初方问Y抽 显示模型
显示模型 显示基座坐标系
重设中心点
复制位姿
粘贴位姿

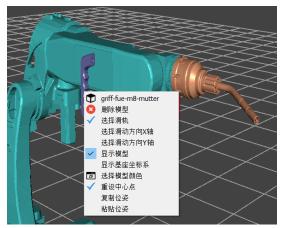
#### 9.7.5.5 Select Y-axis Slide Direction

By clicking on this function, the motion direction of the rail model, which has already been configured, can be set to either the X-axis or the Y-axis.



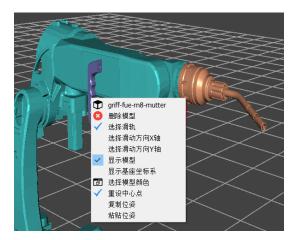
9.7.5.6 Show Model

Clicking this function will show or hide the model.



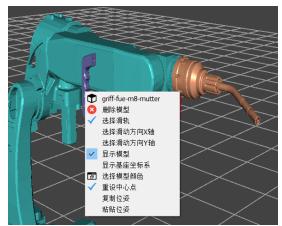
9.7.5.7 Show Base Coordinate System

Clicking this function will show or hide the base coordinate system of the model.



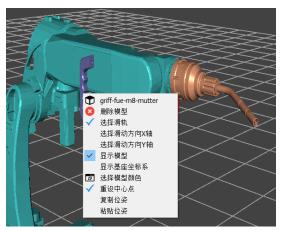
9.7.5.8 Select Model Color

Clicking this function allows you to set the color of the model.



#### 9.7.5.9 Reset Center Point

Clicking this function allows you to set the current mouse position as the center point for rotation and zooming.



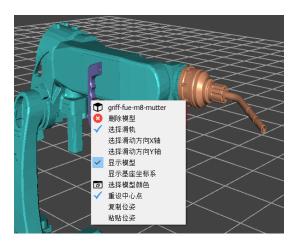
### 9.7.5.10 Copy Posture

Clicking on this function allows the current posture data of the model to be copied.

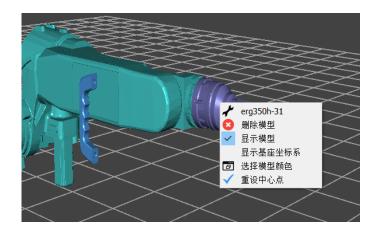


9.7.5.11 Paste Posture

Clicking on this function allows the current posture data to be pasted onto the current model, enabling quick placement of the model.



9.7.6. Right-click on the Tool Model Menu



### 9.7.6.1 Model Name

The first column of the menu displays the model name.

9.7.6.2 Delete Model

Clicking on this function deletes the model.

9.7.6.3 Show Model

Clicking on this function shows or hides the model.

9.7.6.4 Show Base Coordinate System

Clicking on this function shows or hides the base coordinate system of the model.

9.7.6.5 Select Model Color

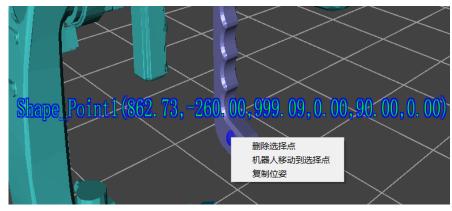
Clicking on this function allows setting the model color.

9.7.6.6 Reset Center Point

Clicking on this function sets the current mouse position as the center point for rotation, zooming in, and zooming out.

## 9.7.7. Right-click on the Point Model Menu

When right-clicking on the point model, a menu will pop up.



**9**.7.7.1 Delete Selected Point

Clicking on this function deletes the current simulation point.

9.7.7.2 Move Robot to Selected Point

Clicking on this function quickly moves the robots current tool coordinate system end position to that point. The posture data is the current robots posture data. The robot may not be able to move to any position, depending on whether the points data is within the robots inverse solution range.

9.7.7.3 Copy Posture

Clicking on this function copies the posture data of this point.

## 9.8. External Axis (Ground Track Axis) Simulation

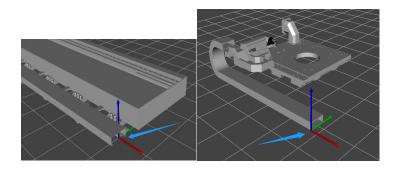
## 9.8.1. Configure the robots config file

步骤 3: 添加附加	加轴参数	(参数以地轨	轴为例)
路径: runtime-> <u>configFiles</u> 这里讲述添加一个附加轴的配 1、复制原来机型对应的文件列		站至 configFiles 文件夹中,	如下图;
Contig_EK3U_Ab	2015/2/28 /:12	又忤失	
config_ER50_A6	2015/2/28 7:12	文件夹	
config_ERC6_A6	2015/2/28 7:12	文件夹	
🍌 config_ERC6_A6 - 副本	2019/6/5 10:23	文件夹	
config_ERC10_A3	2015/2/28 8:15	文件夹	
2、将粘贴的文件夹命名为"c 新增机型,如下图。	onfig_***E1",注意,	这里可以将名字分为两部	分" <u>config_</u> "加"***E1",可以看出,"***E1"即为步骤 2 中
🎍 config_ER50_A6	2015/2/28 7:12	文件夹	
퉬 config_ERC6_A6	2015/2/28 7:12	文件夹	
config_ERC6_A6E1	2019/6/5 10:23	文件夹	
b config_ERC10_A3	2015/2/28 8:15	文件夹	
config_ERC10_A4	2015/2/28 7:12	文件夹	

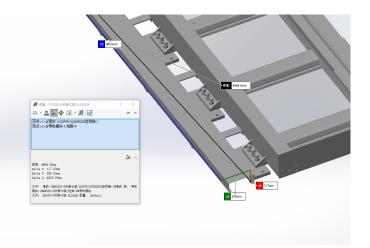
## 9.8.2. Build the scene

- 1. Create a new scene.
- 2. Select the robot model.
- 3. Import the slider and rail base models.

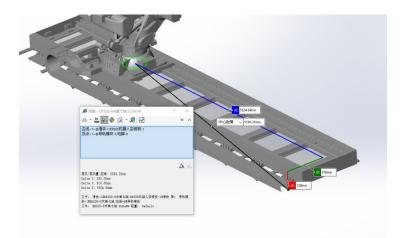
Note: The world origin coordinate system for the SolidWorks base and slider models should be set to the bottom-left corner.



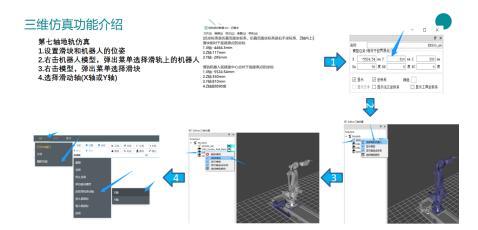
4. Obtain the coordinates of the slider relative to the base origin using SolidWorks.



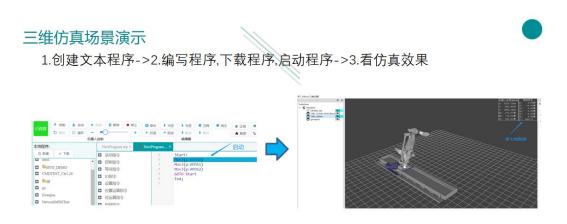
5. Obtain the coordinates of the center point of the robot base surface relative to the slider base origin using SolidWorks.



6. Manually record the data in a text file and input the data into the corresponding models po sture. Set the translation direction for the slider and rail robot.



## 9.8.3.Run the program to observe the simulation effect

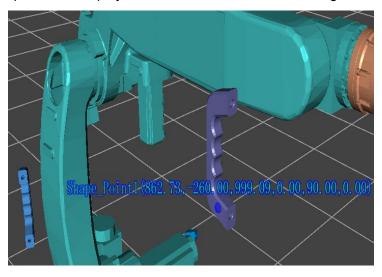


## 9.9. Create Simulation Points

## 9.9.1.Create Arbitrary Simulation Points for Models

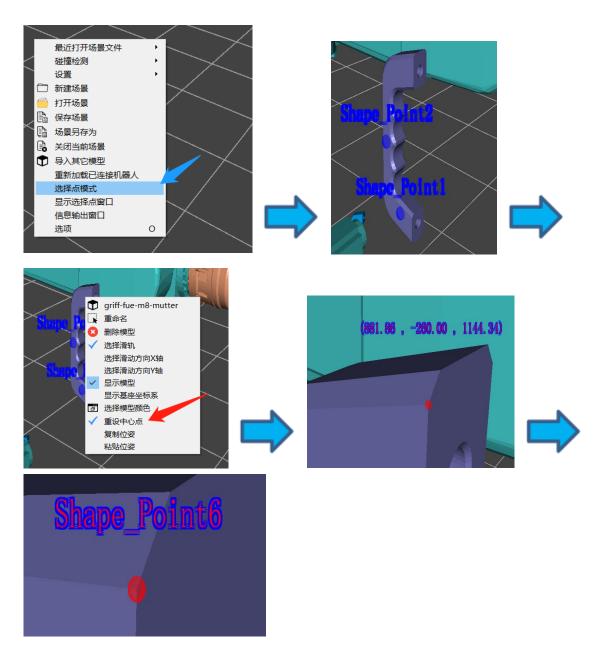
Move the mouse over the model to the desired position for creating a new simulation point, then press CTRL + left-click to create an arbitrary simulation point.

Arbitrary simulation points are displayed in blue color as shown in the figure.



## 9.9.2. Create Vertex Simulation Points for Models

Tight-click on the blank area of the simulation window to open the menu, select "Select Point Mode", and enable it. Click on the desired model, then right-click on the model to open the menu and select "Reset Center Point". The mouse pointer and the text will turn red, indicating the models vertex. Press CTRL + left-click to create a vertex simulation point. After using the point selection mode, click on "Select Point Mode" again to disable it for smooth 3D simulation operation.



## 9.9.3. Select Point Window

In the blank area of the simulation window, right-click and select "Show Selected Point Window" to open the point selection window.

2)选择点页面			_	$\times$
坐标点、直线、测量线				
Shape_Point2	(X:838.43,Y:-260.00,Z:1060.	9,A:0.00,B:90.00,C:0.00,mode: ( 52,A:0.00,B:90.00,C:0.00,mode: 34,A:0.00,B:90.00,C:0.00,mode:	: 0) 🗹	
(:	Ο Υ:	0 Z: 0	新建仿真点	

In this window, you can manage the created simulation points.

The Name column displays the name of the simulation point, which is currently not editable.



The Cartesian Coordinate System Value column displays the values of the simulation point, which are currently not editable.

笛卡尔坐标系数值

(X:862.73,Y:-260.00,Z:999.09,A:0.00,B:90.00,C:0.00,mode: 0)

The Display column controls the visibility of the simulation point.

显示	
$\checkmark$	

Right-clicking on a simulation point opens a context menu.

🕗 选择点页面				_	×
坐标点、直线、测量线					
名字 > 洗择坐标点	笛卡尔坐标系数值		显示プ	大小	
Shape_Point1 Shape_Point2	(X:862.73,Y:-260.00,Z:900 (X:838.43,Y:-260.00,Z:1 (X:881.86,Y:-260.00,Z:1	2000 A 00 00 8:00 00 0:0 00 删除 机器人移动到选择点 复制位姿	0.mode: 0)		

The functionality is consistent with the features described in section 9.7.7.

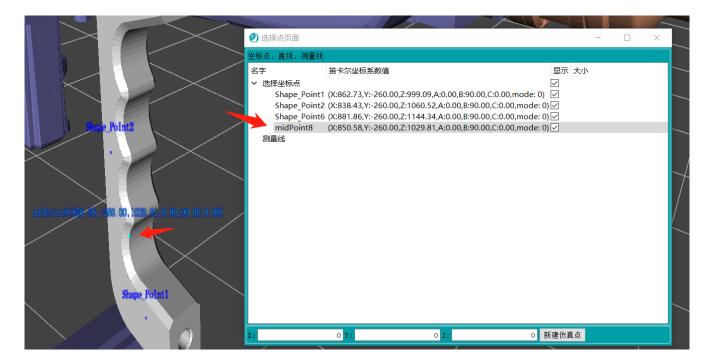
Press CTRL + left-click to select multiple data points.

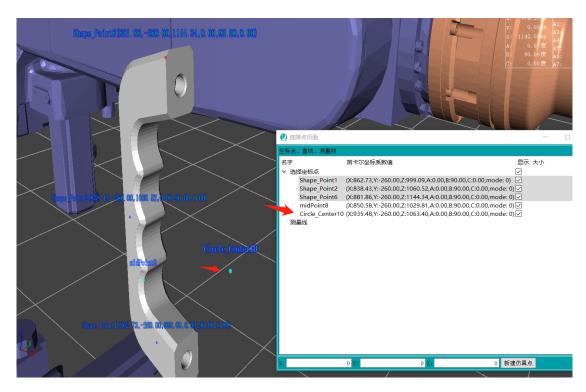
When there are two selected points, a right-click context menu will appear.



You can create a midpoint, a straight line, a linear measurement line (distance between two points), or delete the selected simulation points between the two points.

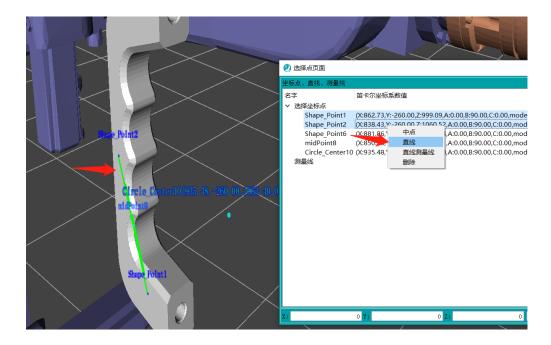
The midpoint between simulation point 1 and simulation point 2.



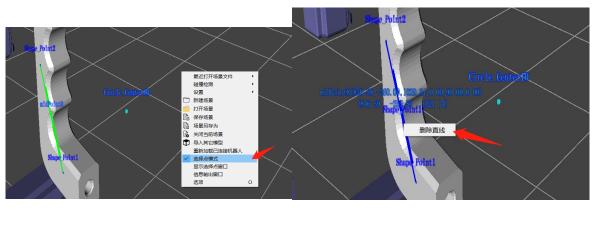


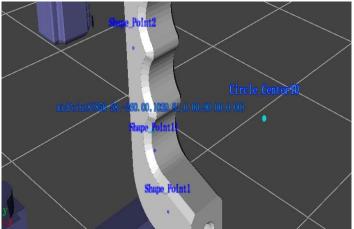
The center point of simulation points 1, 2, and 6.

The straight line between simulation points 1 and 2.

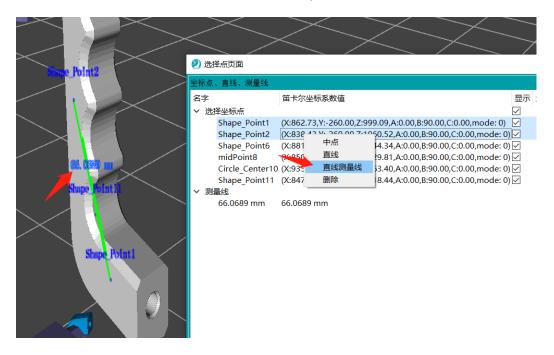


In the "Select Point Mode," right-clicking on a line allows you to delete the line.





The linear measurement line between simulation points 1 and 2.



Right-clicking on the measurement line allows you to delete the line.

2) 选	择点页面						-	$\times$
坐标点	〔、直线、测量线							
名字		笛卡尔坐标系数值	Ī			显示	大小	
▶ 选	Shape_Point2 Shape_Point6 midPoint8 Circle_Center10	(X:838.43,Y:-260 (X:881.86,Y:-260 (X:850.58,Y:-260 (X:935.48,Y:-260	.00,Z:999.09,A:0.0 .00,Z:1060.52,A:0 .00,Z:1144.34,A:0 .00,Z:1029.81,A:0 .00,Z:1063.40,A:0	.00,B:90.00,C:0. .00,B:90.00,C:0. .00,B:90.00,C:0. .00,B:90.00,C:0.	00,mode: 0) 00,mode: 0) 00,mode: 0) 00,mode: 0)			
∨ 测	Shape_Point11 I量线	(X:847.41,Y:-255	.97,Z:1018.44,A:0	.00,B:90.00,C:0.	00,mode: 0)	$\checkmark$		
	66.0689 mm	66.0689 mm	删除测量线					

When there are 3 selected points, a right-click context menu will appear.

名字	笛卡尔坐标系数值	显示 大小
✔ 选择坐标点		$\checkmark$
	(X:862.73,Y:-260.00,Z:999.09,A:0.00,B:90.00,C:0.00,mod	
Shape_Point2	(X:838.43,Y:-260.00,Z:1060.52,A:0.00,B:90.00,C:0.00,mc	ode: 0) 🗹
Shape_Point6	(X:881.86,Y:-260.00,Z:1144.34,A:0.00,B:90.00.C:0.00.mc	de: 0) 🔽
测量线	直线	
	圆心点	
	删除	
		_

You can connect the 3 selected points in the order of selection with a straight line, create a center point, or delete the selected point models as a whole.

# 9.10. Collision Detection

For detailed usage of this feature, please refer to section 9.7.3.2.

## 9.11. Window Status Bar

Displays the current path of the scene file.

<li>2 Editor三维仿真</li>	- 🗆 X
场景树 <i>き</i> ×	机器人世界坐标系 轴坐标系
Solution V Models V Effect1450 V erg350h-11 griff-fue-m8-matter_1 griff-fue-m8-matter_2 griff-fue-m8-matter_2 Solution	1 974.50 at 41 ± 0.008 2 0.008 3 0.008 3 - 0.008 3
场景树 机器人模型	
属性窗口	
初体相对す         机器人坐标系         坐标系            工具坐振系         TOOL1	
工具坐示系 TOOL1 ~ ( 模型位姿(相对于世界原点)	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$
模型过程(相对于世介原息) X 0 mm Y 0 mm Z 0 mm	
C 0 度 B 0 度 A 0 度	$\times$ $\times$ $\times$ $\times$ $\times$ $\times$
复制 粘貼	
	$\land$ $\checkmark$ $\checkmark$ $\land$ $\land$
団 显示         □ 坐标系         颜色           □ 显示文本         □ 显示法兰坐标系         □ 显示工具坐标系	$/ \times \times \times \times \times$
选择坐标系: 11 - + 12 - +	$\swarrow \times \times \times$
轴坐标系 ~ 」3 - +	$   \  \  \  \  \  \  \  \  \  \  \  \  \$
mode: 0 34 - +	
当前场景文件路径: C:/Program Files (x86)/EstunEditorP/Scenes/	testi/testi.ets

158

# **10. Log Functionality**

The log module records user actions and anomalies, providing relevant prompts to assist users in using the software. It also allows users to provide window prompts for troubleshooting purposes and seek assistance from professionals to resolve issues.

## 10.1. Open Log

Click on "Tools" -> "Log" to open the log window, where detailed controller messages and local operation messages can be viewed.

Root ~ 功能 ~ 设置 ~	✓ 工具 ^ 3D ~	帮助 > 关	Ŧ	
★ 连接	系统日志	< 打开日志		打开日志页面
0 复位 ● 単步	人控制软件设置	日志路径		打开日志文件路径
本地工作空间	系统日志×			
上 ™ 选择日志日期 →	2023-04-03	保存日志	请选择	
<ul> <li>stun</li> <li>estun1</li> </ul>	日期	来源 🔶 类	<sup>全型</sup> 报警码	
- csturri	[2023-04-03 08:53:32]	*** <sup>」</sup> 振行 保存 筛选		欢迎开启新的一次运行!
	[2023-04-03 08:53:32]		¥作 0	EnableLUA 0 报警号筛选
	[2023-04-03 08:53:35]	本地 损	新	源筛选ogin:Root
	[2023-04-03 09:29:24]	本地 撰	e/F O	退出运行,关闭程序!
	[2023-04-03 09:29:43]	本地 损	附 0	欢迎开启新的一次运行!
	[2023-04-03 09:29:43]	本地 损	附 0	EnableLUA 0
控制器工作空间	[2023-04-03 09:29:46]	本地 損	€l/F 3	UserLogin:Root
D 0	[2023-04-03 09:32:47]	本地 撰	ere o	退出运行,关闭程序!
	[2023-04-03 09:32:49]	本地 損	€//F 0	欢迎开启新的一次运行!
	[2023-04-03 09:32:49]	本地 损	N/F 0	EnableLUA 0
暂无数据	系统输出 错误信息	断点 书签	变量监控 程序列表	直接结果
				IP:   机器人型号:     nullTool World

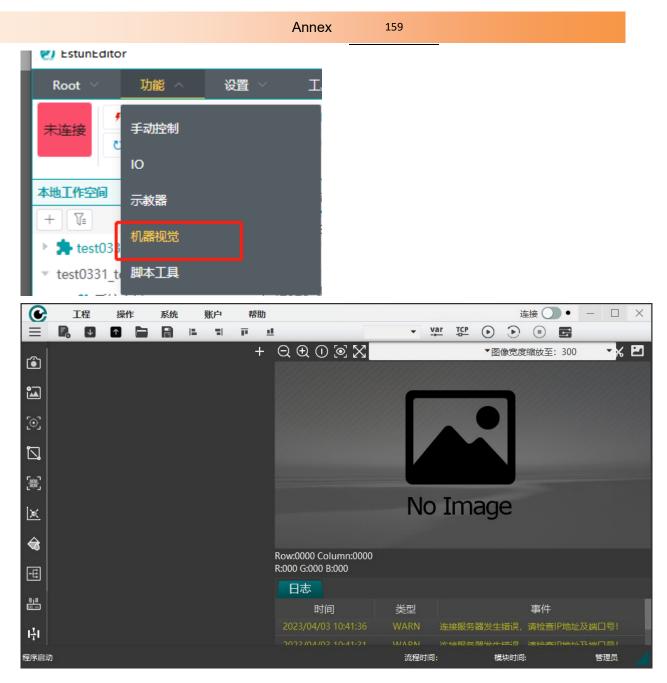
## 10.2. Log Path

The log path can be used to open the local folder and view log messages.

# **11. Third-Party Programs**

## 11.1. Open Machine Vision

Select "Functions" -> "Machine Vision" to open.



# 11.2. Open Scripting Tool

Select "Functions" -> "Scripting Tool" to open.

		Annex 16	0		
Editor					
小り能へ	设置~				
「手动控制 で IO					
<mark>涧</mark> 示教器 机器视觉					
t033					
31_te 脚本工具					
系统变量					~
<ul> <li>PythonEasy</li> <li>主菜单 传输 编辑 运行 系统 帮助</li> </ul>					×
	+ + + + +		. und 🕨 🕨 🔳 🔇	(9)	
	Fins	Мс	jes		
	ModBusClient	ModBusServer	TCPIPClient		
	RobotFaceTest	TCPIPServer			

# **12. Software Settings**

This section primarily deals with basic switches and configurations for various functional operations.

Annex	161
· · · · · · · · · · · · · · · · · · ·	

# 12.1. System Settings

Root · 功能 · 设置 ·	1具 ^	3D - 帮助	助 关于					
・     ・     ・       ・     使能     ・     ・       ・     夏位     ○     単步     ー       ・     初調     ・     ・	系统日志	*	* * *********************************	<sup>────────────────────────────────────</sup>				
本地工作空间	软件设置×							
+ ¥.	系统设置	语言:						+ý ×
> 🗯 cc	机器人设置							
		14+17 7 10	· <b>八</b> 里					1
* 系统变量	日志	、选择系统	设直					/
X 全局变量								语言修改 重白生效
<ul> <li>GlobalProg</li> <li>NewProject</li> </ul>								语言修改,重启生效
x 工程变量								
NewProgram								
X NewProgram								
≻ \$ qwe								
控制器工作空间								
0								
▶ 当前运行								
▹ \$> qwe								
	系统输出	错误信息 断点	书签 变量监	控 程序列表	查找结果			
						IP:虚拟控制器	机器人型号:ER6-1450	20%   💻   nullTool World

# 12.2. Robot Settings

Root 🗸 功能 🖓 设置	· 【具 ·	3D 😔	帮助 🚽 🗧	¢Ŧ						
日注接	启动    暫停		<b>保存</b> + 书签		• 注释	0 消注				
●复位の単歩ー	- <b>-</b>	+ +	「后退 → 前进	1 紙点 编辑器	↓ 断点					
本地工作空间	软件设置×			VH-KTER						
+ V= C							 			
> 🗯 cc	系统设置	外部轴数量:							0	-
∞ estun1	机器人设置	Ļ							1	
X 系统变量	日志									
X 全局变量		24+2+05	器人设置						外部轴的数量	
GlobalProg		迈井小居	語入以且						在变量表中显	
<ul> <li>NewProject</li> </ul>									机器人本体轴	
業 工程変量 ▼  NewProgram									+多少个外部转	H
X NewProgram										
▶ 🖒 qwe										
控制器工作空间										
0										
<ul> <li>&gt; 当前运行</li> <li>&gt; ♪ qwe</li> </ul>										
* 23 dwe										
	-									
	系统输出	错误信息 断点	新新田	变量监控	程序列表	查找结果				
							IP:虚拟控制器	机器人型号:ER6-1450	20%   🔹   nullTool Wor	d i

Annex	162
-------	-----

# 12.3. Log

Root > 功能 > 设置 >	「具」	3D ∽ #	助 关于			
已连接	启动    暫停	■ 停止 💾 係		<ul> <li>注释</li> </ul>	• 消注	
◎ 复位 ◎ 単歩 -	人控制	+ + 5	退 → 前进 + 断点 编辑器	♦ 断点		
7088	软件设置 ×		943668			
+ 🖓 C	系统设置					
> 🌟 cc		最大文件数量:				10
∞ estun1	机器人设置	单文件最大容量(MB	):			10
X 系统变量	日志	最大文件备份数量:				10
業 全局変量 ▶ GlobalProg	1					
<ul> <li>NewProject</li> </ul>	洗	择日志模块				1
<b>X</b> 工程变量		THUNK				
VewProgram						
X NewProgram						修改生效
▶ \$ qwe						
控制器工作空间						
0						
▶ 当前运行						
▹ ဢ qwe						
	系统输出	普误信息 断点	书签 变量监控	程序列表	查找結果	

Max File Count: Specifies the maximum number of cached log files.

Max File Size: To set the maximum memory capacity for a single log file.

Max Backup File Count: Determines the maximum number of backup files.

# 13. Annex

# 13.1. View Command Manual

😢 EstunEo	ditor						
Root $\vee$	功能 ~ :	设置 ~	IĦ ∼	3D 🖂	帮助 \land	关于	
已连接	🦸 使能 🗛 自动	▶启动	■暫停	停止	指令手册	٦	• 注释 • 消
	▶ 复位 💿 単步	] <b>-</b> O	)	+			↓ 断点
		机器人控制			软件使用说明书		
本地工作空间	9	IO ×	手动控制 ×			_	
+ 7		С					I r

# 13.2. Software User Manual

Select "Help" -> "Software User Manual" to open.

						Anne	ex	163	
tunEd	InEditor								
ot $\vee$	功能	<ul> <li>✓ ¥</li> </ul>	置~	I₽ ∨	3D $$	帮助 へ	关于		
接	🗲 使能	× 系统	▶ 启动	■ 暫停	■ 停止	指令手册		<ul> <li>注释</li> <li>消注</li> </ul>	
Ersz	▶ 复位	▫ 单步	- (	)	- +			+ 断点	
			机器人控制			软件使用说明	明书		
「作空」	间		软件	设置×	L L				
¥₽			С	系统设置	语言:				
<mark>&gt;</mark> den	mo0331								
<b>1</b> -	zka		机	器人设置	开发模式:				

# 13.3. About

Provides version information about the controller, UI, PLC, kernel, and underlying software being used.



## 13.4. Teach Pendant Permission Allocation

		√Has F	Permission	× No Pe	rmission		
		★Confirmed by Seconda					
Function		Password					
		Debu	Administ	User	Guest		
		g	rator				
	E-stop Key	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
Danal	Mode Switch	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
Penal	Jog Key	$\checkmark$	$\checkmark$	$\checkmark$	×		
Keys	Interface Switch Key	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
	Function Key	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
	Set Global Speed	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
Main	Clear Alarms	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
Interface	Switch Multi-Axis	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
	Interface Switch Button	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
Project	Create Project	$\checkmark$	$\checkmark$	$\checkmark$	×		
Managem	Copy/Paste Project	$\checkmark$	$\checkmark$	$\checkmark$	×		

	Annex	164			
	-	√Has F	Permission	× No Pe	rmission
		★Confi	rmed b	y Se	econdary
Function		Passwo		5	,
		Debu	Administ	User	Guest
		g	rator		
ent	Delete Project		$\checkmark$		×
	Import/Export Project		$\checkmark$		×
	Load Project	$\checkmark$	$\checkmark$		$\checkmark$
	Logout	$\checkmark$	$\checkmark$		$\checkmark$
	Open Project	$\checkmark$	$\checkmark$		$\checkmark$
	Set Auto Start	$\checkmark$	$\checkmark$		×
	Rename Project	$\checkmark$	$\checkmark$	$\checkmark$	×
	Refresh	$\checkmark$	$\checkmark$		$\checkmark$
	Create Command (Including Quick	.1		.1	
	Commands)	$\checkmark$	$\checkmark$	$\checkmark$	×
	Modify Command (Including Quick	.1	.1	.1	
	Commands)	$\checkmark$	$\checkmark$	$\checkmark$	×
	Set PC Pointer	$\checkmark$	$\checkmark$		×
Dragram	Edit Functions				
Program	(Copy/Paste/Cut/Delete/Comment/F	$\checkmark$	$\checkmark$	$\checkmark$	×
Editing	old)				
	Monitor	$\checkmark$	$\checkmark$		$\checkmark$
	Refresh	$\checkmark$	$\checkmark$		$\checkmark$
	Select Command Line	$\checkmark$	$\checkmark$		
	(Single/Multiple)	N	N	v	v
	Undo	$\checkmark$	$\checkmark$	$\checkmark$	×
	Create Data	$\checkmark$	$\checkmark$	$\checkmark$	×
	Delete Data	$\checkmark$	$\checkmark$	$\checkmark$	×
Program	Modify Data (Including Calibration,	$\checkmark$	$\checkmark$		×
Data	etc.)	· ·	× ·	`	
	Refresh	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
	Rename	$\checkmark$	$\checkmark$	$\checkmark$	×
	View Current Alarms	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
System	View Historical Alarms	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Log	Get Historical Alarms	$\checkmark$	$\checkmark$		$\checkmark$
	Clear Alarms	$\checkmark$	$\checkmark$		$\checkmark$
	View Joint Coordinate System	$\checkmark$	$\checkmark$		$\checkmark$
	View World Coordinate System	$\checkmark$	$\checkmark$		$\checkmark$
Manual	View User Coordinate System	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
	View Motor Torque Values	$\checkmark$	$\checkmark$		$\checkmark$
Inspection	View Single Turn Values	$\checkmark$	$\checkmark$		$\checkmark$
	Set Single Turn Values	$\checkmark$	$\checkmark$	×	×
	Robot Homing	$\sqrt{\star}$	√★	$\sqrt{\star}$	×

	Annex	165			
		√Has P	ermission :	× No Per	mission
		★Confi	rmed b	y Se	condary
Function		Passwo		-	-
		Debu	Administ	User	Guest
		g	rator		
	Tool Switching	$\checkmark$	$\checkmark$	$\checkmark$	×
	Coordinate System Switching	$\checkmark$	$\checkmark$		×
	Jog Mode Switching	$\checkmark$	$\checkmark$		×
	Jog Coordinate System	$\checkmark$	$\checkmark$		×
	Jog Settings	$\checkmark$	$\checkmark$	$\checkmark$	×
	Basic Settings	$\checkmark$	$\checkmark$		×
	Collision Detection	$\checkmark$	$\checkmark$	$\checkmark$	×
	IP Settings	$\checkmark$	$\checkmark$	×	×
	Vision Configuration	$\checkmark$	$\checkmark$		×
	Follow Configuration	$\checkmark$	$\checkmark$		×
System	Vibration Suppression	$\checkmark$	$\checkmark$		×
Settings	Local Settings	$\checkmark$	$\checkmark$	×	×
	Advanced Settings	×	×	×	×
	System Status	×	×	×	×
	Hardware Testing	×	$\checkmark$	×	×
	Maintenance	$\checkmark$	$\checkmark$	×	×
Settings	Debugging Settings	$\checkmark$	×	×	×
	View Physical IO	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
10	Modify Physical Outputs	$\checkmark$	$\checkmark$	$\checkmark$	×
IO Detection	View Virtual IO	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Detection	Modify Virtual Outputs	$\checkmark$	$\checkmark$		×
	View System IO and Trigger Settings	$\sqrt{\bigstar}$	$\sqrt{\bigstar}$	×	×
	Create Group	$\checkmark$	×	×	×
	Delete Group	$\checkmark$	×	×	×
Plugin	Load Plugin	$\checkmark$	×	×	×
Navigation	Unload Plugin	$\checkmark$	×	×	×
	Move	$\checkmark$	×	×	×
	Open	$\checkmark$	×	×	×
	Install	$\checkmark$	×	×	×
Plugin	Export		×	×	×
Managem	Uninstall	$\checkmark$	×	×	×
ent	Permission Management	$\checkmark$	×	×	×

# 13.5. Modbus TCP Control Interface Data Table

	Local Address	Register Address	Definition	Description	Remarks
Send	MBDataBuffer[0]	40001	reserved	Heartbeat detection value	Ranges from 1 to 65535 in

			Annex	166	
I	Local Address	Register Address	Definition	Description	Remarks
					a cyclic pattern
	MBDataBuffer[1]	40002		Global speed	
1	MBDataBuffer[2]	40003		Read/write flag response	
	MBDataBuffer[3]	40004	Rob status information	bit0:ManualOperation Modebit1:AutomaticOperation Modebit2:RemoteOperation Modebit3:Enable Statusbit4:Running Statusbit5:Error Statusbit6:ProgramRunning Statusbit7:bit7:Robot in Motion	
1	MBDataBuffer[4]	40005			For example,
1	MBDataBuffer[5]	40006			if the loaded
	MBDataBuffer[6]	40007			project file
	MBDataBuffer[7]	40008			name is
	MBDataBuffer[8]	40009			"estun.test,"
	MBDataBuffer[9]	40010	Current loaded		the values of
	MBDataBuffer[10]	40011	project name	20 bytes	each register
	MBDataBuffer[11]	40012			are as follows:
	MBDataBuffer[12]	40013			[4]0x6573, [5]0x7475,
	MBDataBuffer[13]	40014			[6]0x6E2E, [7]0x6D61, [8]0x696E,
	MBDataBuffer[14]	40015	SimDout[1-16]	DO 1-16	
	MBDataBuffer[15]	40016	SimDout[17-32]	DO 17-32	
	MBDataBuffer[16]	40017	SimDout[33-48]	DO 33-48	
	MBDataBuffer[17]	40018	SimDout[49-64]	DO 48-64	

		Annex	167	
Local Address	Register Address	Definition	Description	Remarks
MBDataBuffer[18]	40019	Rob Command Execution Status	bit0: Command is 0 bit1: Successful execution of Emergency Stop command bit2: Successful execution of Start command bit3: Successful execution of Stop command bit4: Successful execution of Reset command bit5: Successful execution of Enable Up command bit6: Successful execution of Enable Up command bit6: Successful execution of Load Project command bit7: Successful execution of Load Project command bit8: Successful execution of Set Global Speed command bit9: Successful execution of Set Global Speed command bit10: Waiting for Control bit11: Waiting for Command bit12: Waiting for Command Execution to Complete bit13: Command Execution Error bit14: Reserved	When the command register is 0, bit[0] is 1. When the command register has a command, bit[0] is 0. Upon successful execution of a command, the corresponding success bit is set to 1. When regaining control and the command is 0, the previous success bits are cleared. Therefore, the status code for issuing commands is 0x801.
MBDataBuffer[19]	40020	Use by User	AO 1-32	

			Annex	168	
	Local Address	Register Address	Definition	Description	Remarks
	MBDataBuffer[50]	40051			
Recei	MBDataBuffer[51]	40052	Robotic Operation Commands	bit2 $(0 \rightarrow 0x4)$ : Start robot program bit3 $(0 \rightarrow 0x8)$ : Stop robot program bit4 $(0 \rightarrow 0x10)$ : Reset robot errors bit7 $(0 \rightarrow 0x80)$ : Load project file bit8 $(0 \rightarrow 0x100)$ : Logout current project file bit9 $(0 \rightarrow 0x200)$ : Set global speed bit10 $(0 \rightarrow 0x400)$ : Reset command state machine	read/write flag 0x11. Commands can be sent when the command status bit is 0x801. Note: When encountering a command response failure, it is
	MBDataBuffer[52]	40053	Global Speed Value		
	MBDataBuffer[53]	40054			
	MBDataBuffer[54]	40055			
	MBDataBuffer[55]	40056			
	MBDataBuffer[56]	40057			
	MBDataBuffer[57]	40058	Set Project	20 bytes	
	MBDataBuffer[58]	40059	Name		
	MBDataBuffer[59]	40060			
	MBDataBuffer[60]	40061			
	MBDataBuffer[61]	40062			
	MBDataBuffer[62]	40063			
	MBDataBuffer[63]	40064	SimDI[1-16]	DI 1-16	

			Annex	169	
	Local Address	Register Address	Definition	Description	Remarks
	MBDataBuffer[64]	40065	SimDI[17-32]	DI 17-32	
	MBDataBuffer[65]	40066	SimDI[33-48]	DI 33-48	
	MBDataBuffer[66]	40067	SimDI[49-64]	DI 48-64	
	MBDataBuffer[67]	40068			
			Use by User	AI 1-32	
	MBDataBuffer[98]	40099			
	MBDataBuffer[99]	40100	Read/Write Flag		0x11: Open
					rob Command
					Issuance
					Permission
					(0x11)

# 13.6. Deployment

The software requires a 64-bit operating system.

Install the software in a directory without Chinese characters.

If the 3D plugin is not functioning properly, it is likely that the graphics card driver needs to be updated.