

RS Series Multifunction Integrated I/O EtherCAT User Manual

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Preface

Thank you for purchasing the DECOWELL RS series integrated I/O module!

This document provides a detailed description of the usage of the WELLLINK IO RS series remote I/O modules. It is intended for readers with a certain level of engineering experience. Nanjing DECOWELL assumes no responsibility for any consequences resulting from failure to follow the instructions in this manual. Before attempting to use the device, please read the related safety notes carefully and strictly follow all safety precautions and operating procedures during installation and commissioning. The potential hazards and extent of damage caused by improper use of the device are indicated by the symbols described below.



Tips

This mark indicates "necessary supplement or explanation for the description of the operation".



Notice

This mark indicates "the danger caused by failure to operate as required may result in minor or moderate personal injury and equipment damage."



Warning

This mark indicates "hazards caused by failure to follow the instructions may result in personal injury or death."

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Scope of this document

This document applies to the RS series EtherCAT bus protocol remote I/O modules.

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Safety precautions

■ ⚠ Warning in control system design

01. Safety circuits must be designed to ensure the control system maintains safe operation during external power failures or expansion module malfunctions;
02. When the output circuit is over currented for a long time due to exceeding the rated load current or load short circuit, the module may smoke or catch fire. Safety devices such as fuses or circuit breakers should be installed externally.

■ ⚠ Notice in control system design

01. Emergency stop circuits, protective circuits, interlock circuits for forward/reverse operations, and upper/lower limit interlock switches to prevent equipment damage must be installed in the external circuitry of expansion modules;
02. To ensure the safe operation of the equipment, please design external protection circuits and safety mechanisms for output signals related to major accidents;
03. When the output units such as relays and transistors of the expansion module are damaged, their outputs cannot be controlled to the ON or OFF state;
04. The extension module design is applied to indoor electrical environments with overvoltage level II. Its power system should have lightning protection devices to ensure that lightning-induced overvoltages are not applied to the power input, signal input, control output, or other ports of the extension module, thereby preventing equipment damage.

1. Product Introduction

1.1 Product Features

The RS series integrated modules support multiple industrial fieldbus protocols, such as EtherCAT, PROFINET, EtherNet/IP, and DeviceNet. Each I/O module supports up to 32 digital input/output channels. Users can select different I/O panels based on actual requirements, with base options available in 16-bit and 32-bit configurations. The modules support the following features:

- ① Hot-swapping of modules
- ② Configurable DO output state on bus failure
- ③ USB firmware upgrade support
- ④ Slave loss diagnostics and configuration inconsistency detection
- ⑤ One-click restore to factory settings
- ⑥ DIP switch configuration of node address (effective only when configured with Omron PLC)

1.2 Module naming conventions

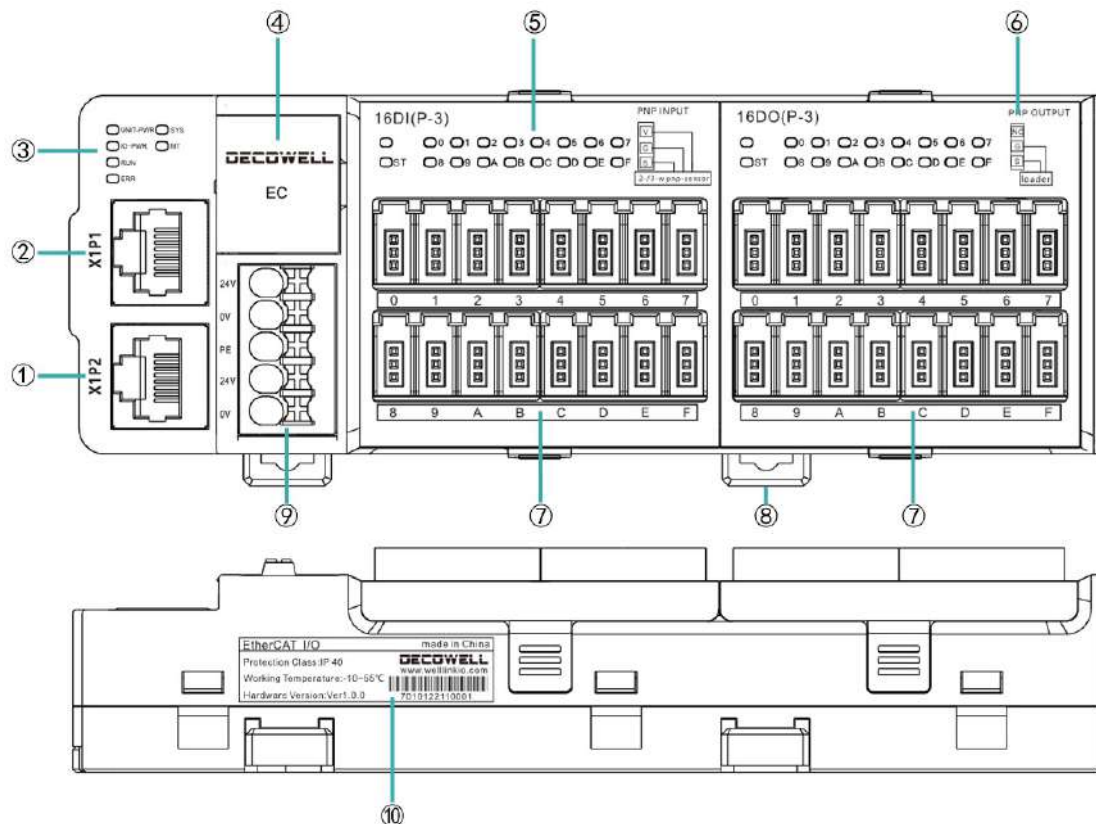
EC2 - 16 DI (N-1)

① ② ③ ④ ⑤

NO.	Name	Meaning
①	Bus protocol	EtherCAT
②	Number of channels	8:8 channels 16:16 channels
③	Channel Type	DI: Digital input DO: Digital output
④	Signal Type	N:NPN P:PNP R:Relay
⑤	Interface Type	1: Single row European terminal 2: Trinity terminal 3. E-CON Connectors

2. Product Overview

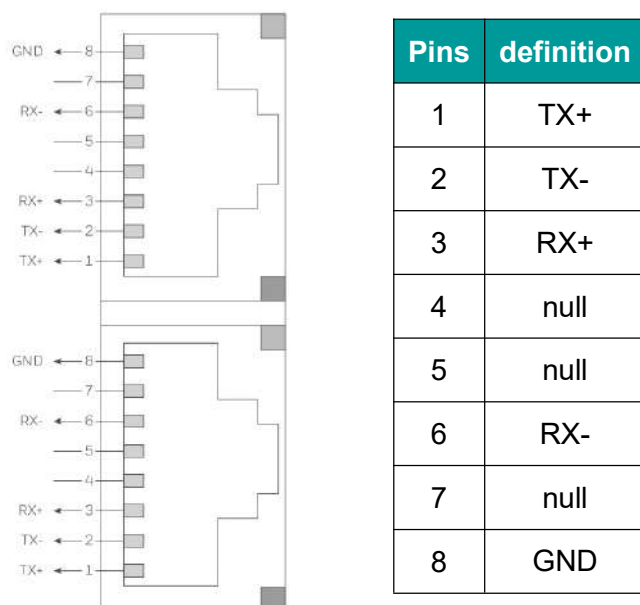
2.1 Hardware Interface Description



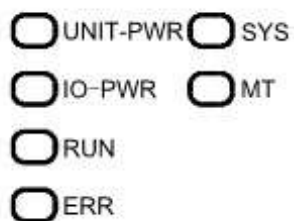
- ① EtherCAT OUT Ethernet port
- ② EtherCAT IN Ethernet port
- ③ Module status/power indicator
- ④ USB Firmware upgrade/factory reset button
- ⑤ IO Channel indicator light
- ⑥ IO Channel Wiring Diagram
- ⑦ IO Channel input/output interface
- ⑧ Module installation buckle
- ⑨ DC24V Power Connectors
- ⑩ Module information (protection level/operating temperature range/hardware version/module serial number)

2.1.1 EtherCAT Network port definition

EtherCAT uses a standard RJ45 interface (8-pin Ethernet port) with the following pinout definition:



2.1.2 Indicator lights and status description



① UNIT-PWR: System power indicator (green)

② IO-PWR: IO Power indicator light (green)

③ RUN: Bus operation indicator light (green)

④ ERR: Bus error indicator (red)

⑤ SYS: System operation indicator light (green)

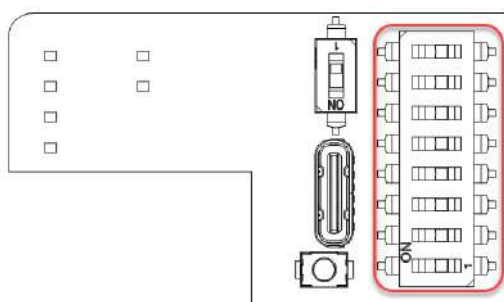
⑥ MT: Maintenance indicator light (blue)

RS-EC	color	Indication status	Slave Status	Flashing meaning
UNIT PWR	green	ON	The power supply on the field side is normal	The device power supply is normal

		OFF	The power supply on the field side is abnormal	Device power supply abnormality
IO PWR	green	ON	The IO side power supply is normal	The device IO power supply is normal
		OFF	The IO side power supply is abnormal	Device IO power supply is abnormal
RUN	green	OFF	INITIALISATION	The device is in initialization state
		Flash	PRE-OPERATIONAL	The device is in pre-operational state
		Single flash	SAFE-OPERATIONAL	The equipment is in safe operation
		ON	OPERATIONAL	The device is in operation
ERR	red	ON	Application controller failure	A serious communication or application controller error has occurred
		Flashes twice	Process data watchdog timeout/EtherCAT Watchdog timeout	Application watchdog timeout
		Flash once	Local Error	Due to a local error, the slave device application automatically changed the EtherCAT state
		Flash	Configuration Error	General configuration errors
		OFF	No Error	EtherCAT of the device communication is working
SYS	green	1Hz flashing	Normal operation	System reminder light, flashes once per second when the system is normal
		5Hz flashing	IO Lost	Slave lost flashing

		Two flashes and one off	Configuration failed	Device diagnostic configuration failed
MT	blue	OFF	Working fine	Non-maintenance status
		ON	Reset End	Reset operation completed
		1Hz flashing	Reset button trigger	Flashes when the reset button is pressed
		5Hzflash	Module Upgrade	Flashing during the upgrade transmission process, always on during the factory reset test

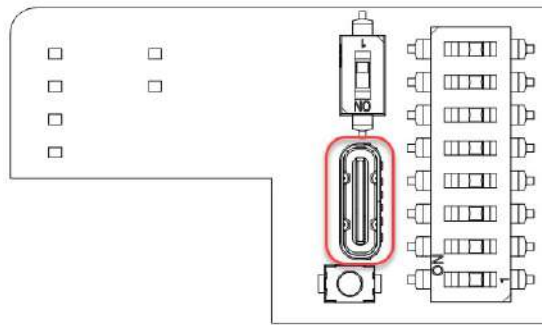
2.1.3Dial Instructions



The node address can be configured via DIP switches (valid only in Omron PLC configurations). Different combinations of DIP switch pins allow the node address to be set within the range of 0–192. Each EtherCAT slave device in the same network must have a unique node address (no duplicates allowed).

DIP switch pin number (NO: 1/OFF:0)								DIP value	Node Address
1	2	3	4	5	6	7	8		
0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	1	1
0	1	0	0	0	0	0	0	2	2
.	.	.	.	.	.	.	.	.	.
0	1	0	1	0	0	0	0	10	10
0	0	0	0	0	0	1	1	192	192

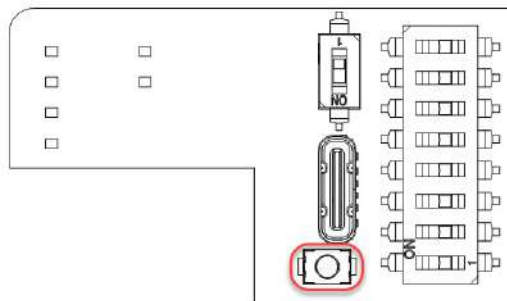
2.1.4 USB illustrate



TYPE-C port, mainly used to view device information and firmware upgrade.

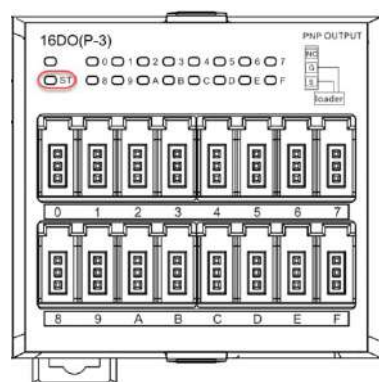
Note: Do not use USB port for other purposes to avoid USB port damaged.

2.1.5 Reset Button Description



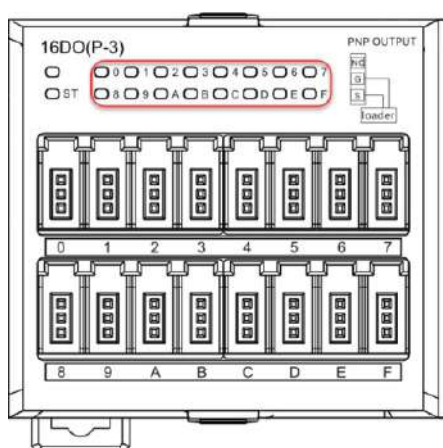
Press and hold the reset button for more than 5 seconds to automatically restore the module to its factory settings. The IO configuration information will revert to the default values. After the reset button is pressed, the MT maintenance indicator will blink at a frequency of 1Hz. Once the reset is complete, the MT indicator will stay on.

2.1.6 IO Module Indicator Light Description



IO module status indicator

Indicator Lights	color	state	illustrate
ST Indicator Lights	green	OFF	IO module is abnormal or not powered on.
		ON	The system recognizes IO modules
		Flash	The system does not recognize the IO module



IO Channel status indicator

Indicator Lights	color	state	illustrate
DI Channel indicator light	green	OFF	Channel input has no signal or is abnormal
		ON	Channel input signal is normal
DO Channel indicator light	green	OFF	The channel does not output or is abnormal
		ON	Channel output is normal

2.2Module combination

For RS series EtherCAT configuration slot modules, a single module type in the configuration can correspond to multiple actual hardware module models. Refer to the following table for specific model mappings:

2.2.1 EtherCATEC2-S1combination

Base Model	Configuration module model	Actual matching module models
EC2-S1	8DI/8DO	8DI8DO(P-1)
		8DI8DO(N-1)
		8DI8DO(P-3)
		8DI8DO(N-3)
	16DI	16DI(P-1)
		16DI(N-1)
		16DI(P-2)
		16DI(N-2)
		16DI(P-3)
		16DI(N-3)
	8DO	8DO(R-1)
	16DO	16DO(P-1)
		16DO(N-1)
		16DO(P-2)
		16DO(N-2)
		16DO(P-3)
		16DO(N-3)

Note: (Each EC2-S1 can only be paired with one model type.)

2.2.2 EtherCATEC2-S2combination

Base Model	Configuration module model	Actual matching module models
EC2-S2	8DI/8DO	8DI8DO(P-1)
		8DI8DO(N-1)
		8DI8DO(P-3)
		8DI8DO(N-3)
	16DI	16DI(P-1)
		16DI(N-1)

		16DI(P-2)
		16DI(N-2)
		16DI(P-3)
		16DI(N-3)
	8DO	8DO(R-1)
	16DO	16DO(P-1)
		16DO(N-1)
		16DO(P-2)
		16DO(N-2)
		16DO(P-3)
		16DO(N-3)

Note: (Each EC2-S2 can be paired with up to two model types at most.)

3.RS-EtherCAT Technical Parameters

3.1 EtherCATBase technical parameters

Communication technical parameters	
Bus protocol	EtherCAT
Communication distance	100m (distance between stations)
Bus communication speed	100Mbps
Communication cycle	Depends on EtherCAT Master station specifications
Refresh method	Free running, DC Run refresh synchronously
Topology	Depends on EtherCAT Master station specifications
Node Address	Configurable 0-192(only valid for OMRON PLC)
Number of input bytes	128
Output Bytes	128
Enter the mailbox size	256
Output mailbox size	256
Power supply technical parameters	
System power input	DC24V (18~30V)
System power supply provides current	2A
IOPower Input	DC24V (18~30V)
IO Power supply current	10A
Overcurrent protection	have
Overvoltage protection	none
Reverse polarity protection	have
Electrical isolation on the system side	have
Environmental technical parameters	
Operating temperature	-10℃-55℃
Working environment humidity	10%-95% no condensation
Working environment height	<2000m
Use ambient air	No corrosion

EMC grade	Area A
General physical parameters	
Protection level	IP40

3.2 IO module Technical Parameters

DI Input technical parameters	
Rated input voltage	NPN: 0~5V
	PNP: 15~30V
ON/OFF response time	11us
Input filter time	0-10ms, default 3ms
Insulation method	Optocoupler Isolation
Current consumption per channel	15V 2.8mA; 24V 5mA; 30V 5.7mA
DO output technical parameters	
Rated output voltage	NPN: 0V
	PNP: 24V
Maximum load current	0.5A (continuous 8-channel maximum total load current 2A)
ON/OFF Response time	20us (PNP) and 11us (NPN)
Insulation method	Optocoupler Isolation
Relay output technical parameters	
Rated voltage	AC250V/DC30V
Rated current	AC250V 5A/DC30V 5A
ON/OFF response time	≤15ms
Contact Type	Normally open contact
Relay electrical life	1x10 ⁵ times (AgNi, 3A AC250V/DC30V, resistive load, 85°C, 1s on, 9s off) 5x10 ⁴ times (AgNi, 5A AC250V/DC30V, resistive load, room temperature, 1s on, 9s off)
Relay mechanical life	2×10 ⁷ times
IO module electrical technical parameters	

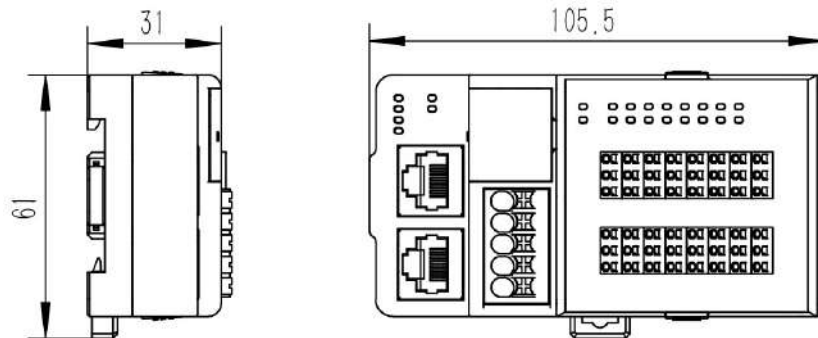
Port protection	none
Environmental technical parameters	
Operating temperature	-10℃~55℃
Relative humidity of working environment	10%-95% no condensation
Working environment altitude	<2000m
Storage temperature	-20℃~55℃
EMCgrade	Area A
General physical parameters	
Protection level	IP40

4. Mechanical Installation

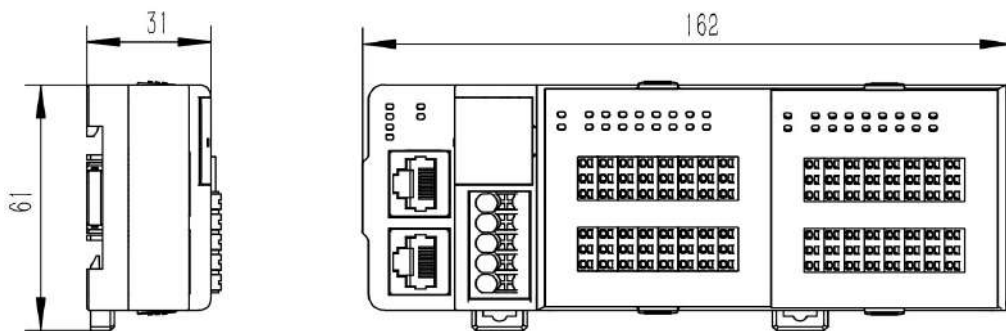
4.1 Module Dimensions

The dimensions in the following figures are all in mm

4.1.1 EC2-S1 Module Dimensions



4.1.2 EC2-S2 Module Dimensions

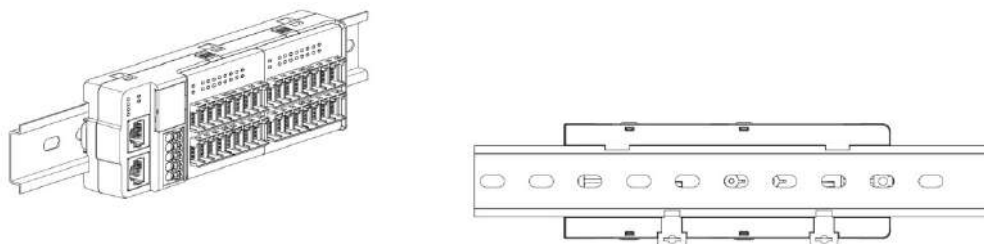


4.2 Module Installation

The RS series modules can be installed in three ways: horizontal rail mounting, vertical rail mounting, and screw fixing (with screw mounting holes of $\phi 4.5$ diameter).

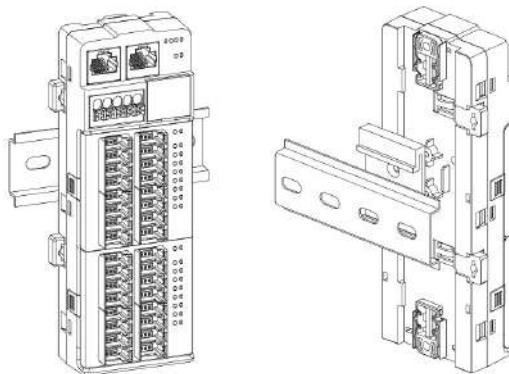
4.2.1 Horizontal rail installation

1. After fixing the module on the guide rail, push the two buckles inwards.



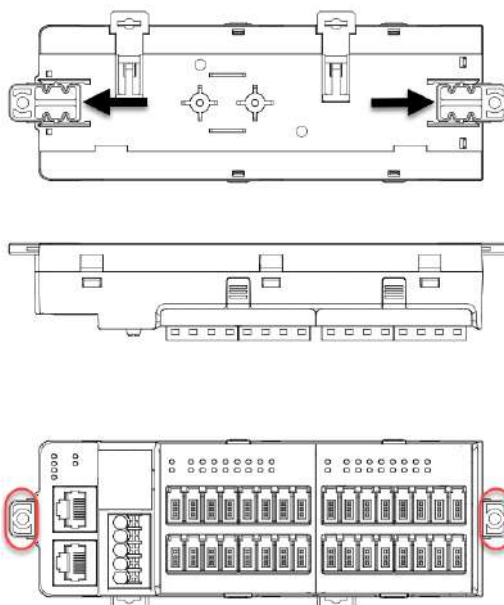
4.2.2 Vertical rail installation

1. The matching backplane must first be fixed to the module as shown in the diagram. Once it is firmly fixed, it can be installed on the guide rail as shown in the diagram.



4.2.3 Screw-on installation

1. You need to push out the two fixing buckles on the left and right sides of the bottom, and then fix them with screws.

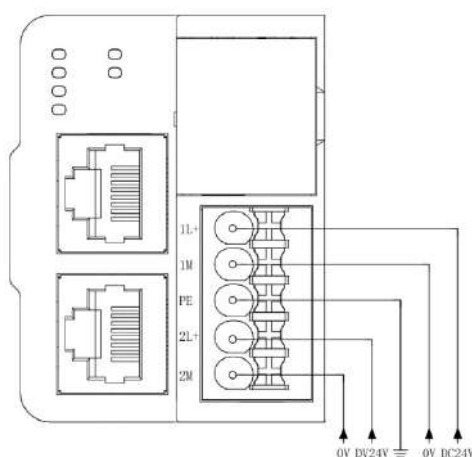


5. Electrical Installation

5.1 Base wiring diagram

5.1.1 Wiring diagram of Ethernet port base

The base needs to be connected to two sets of DC24V, 1L+/1MFor system power, 2L+/2MFor IO power supply, it is recommended to introduce two sets from the same power adapter**DC24V**Plug the wire into the base.

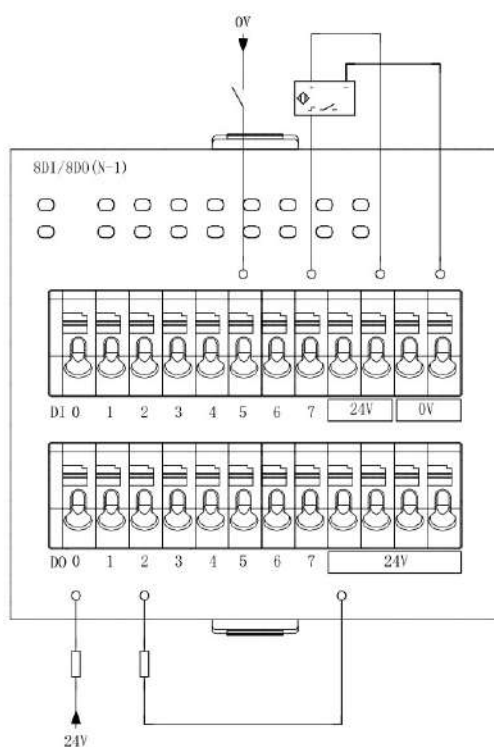


5.2 IO module wiring diagram

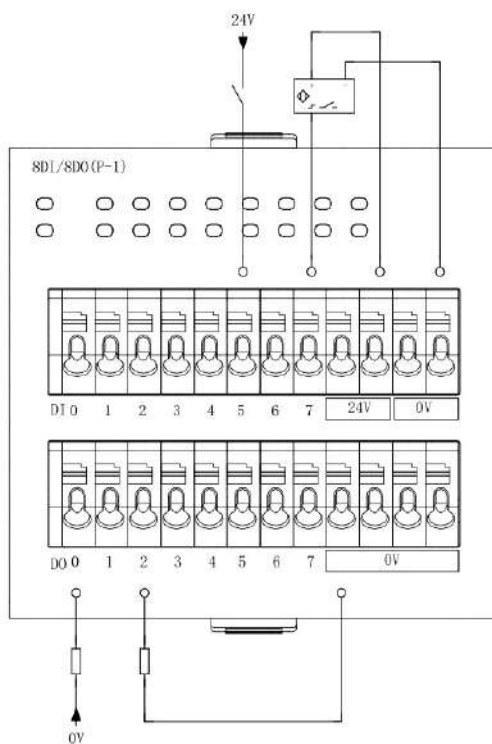
The IO module wiring diagram introduces the wiring methods of various IO modules. 4V or 0V It can power sensors or loads. IO modules can be divided into single-row European terminals, three-in-one terminals, E-CON connectors, relay modules.

IO module terminal type	Wire diameter	Remark
Single row European terminal	0.2-1.0mm ²	The length of the cold-pressed terminal should be 10mmAbove
Trinity Terminal	0.2-0.75mm ²	
E-CON Connectors	0.13-0.50mm ²	

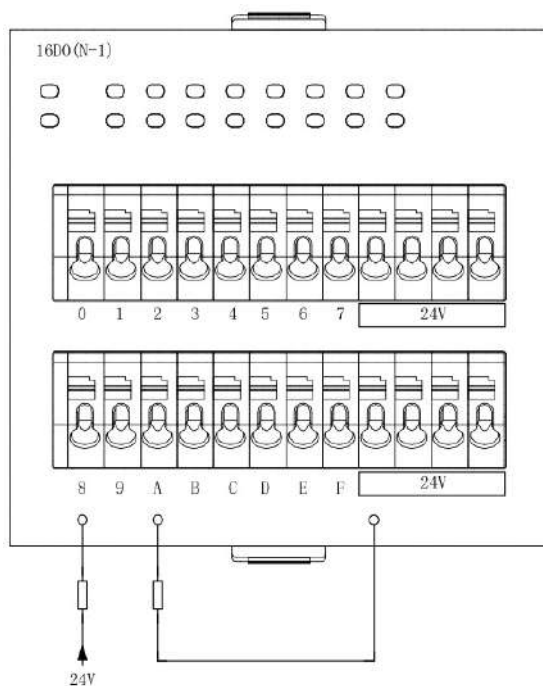
5.2.3 8DI/8DO(N-1)Wiring Diagram



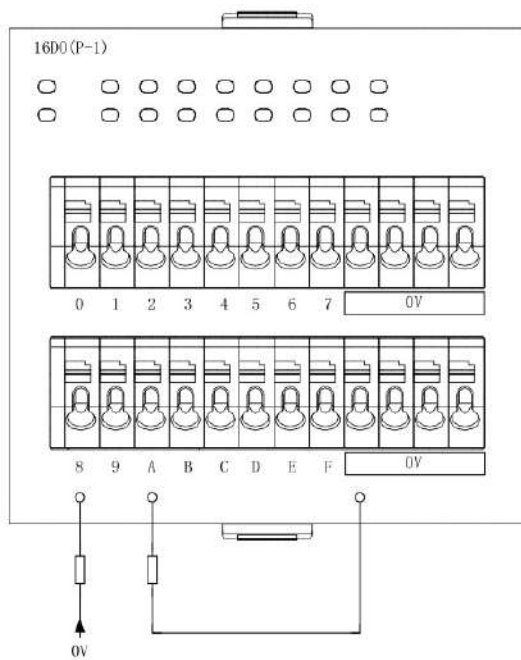
5.2.4 8DI/8DO(P-1)Wiring Diagram



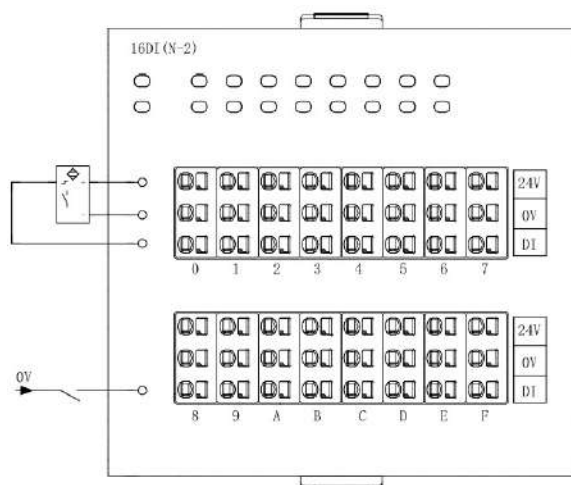
5.2.5 16DO(N-1)Wiring Diagram



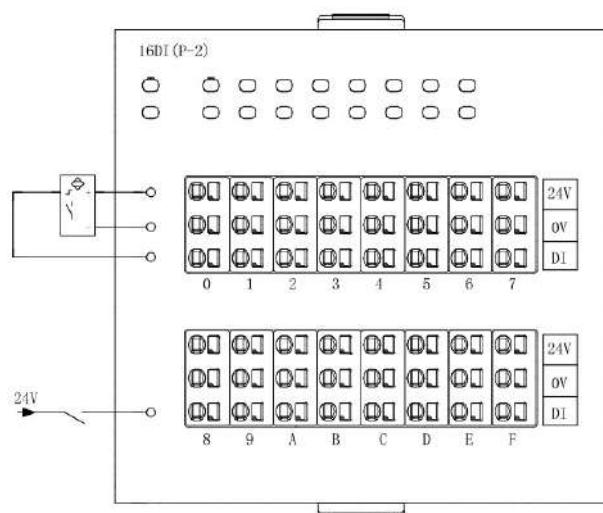
5.2.6 16DO(P-1)Wiring Diagram



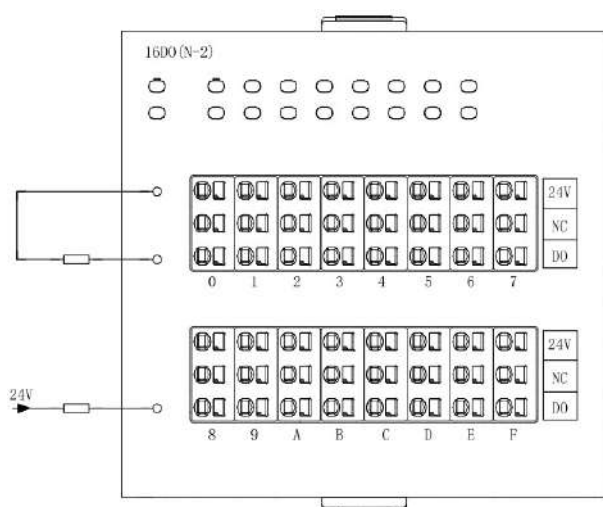
5.2.7 16DI(N-2)Wiring Diagram



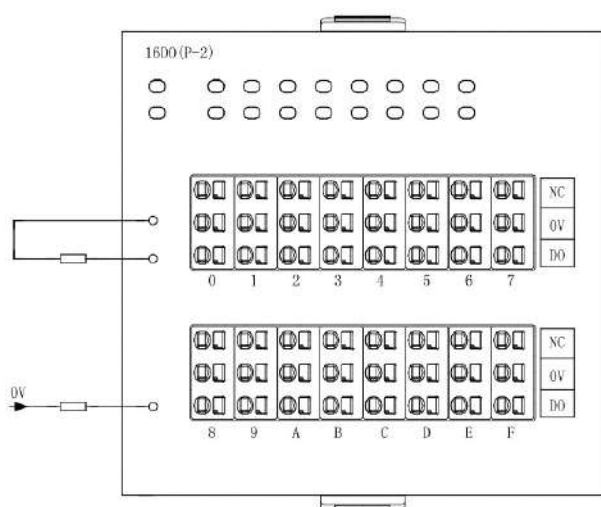
5.2.8 16DI (P-2)Wiring Diagram



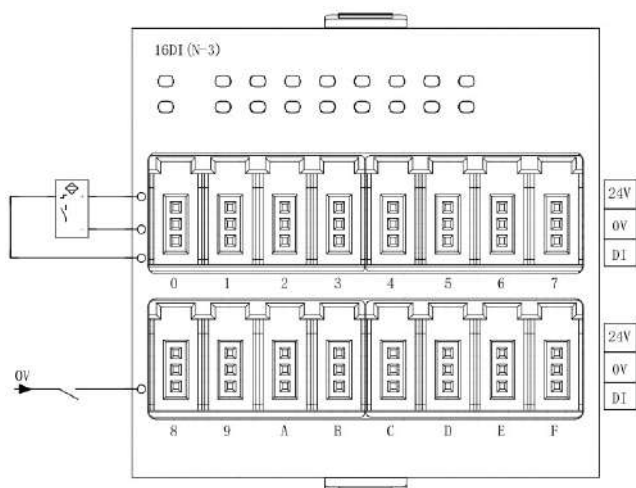
5.2.9 16DO(N-2)Wiring Diagram



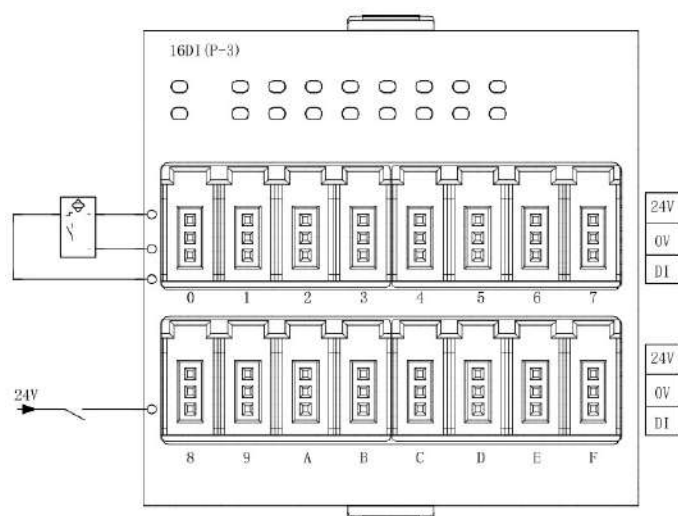
5.2.10 16DO(P-2)Wiring Diagram



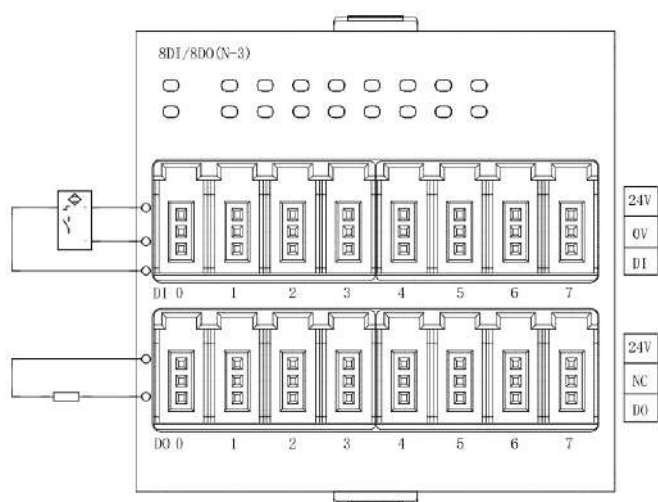
5.2.11 16DI (N-3)Wiring Diagram



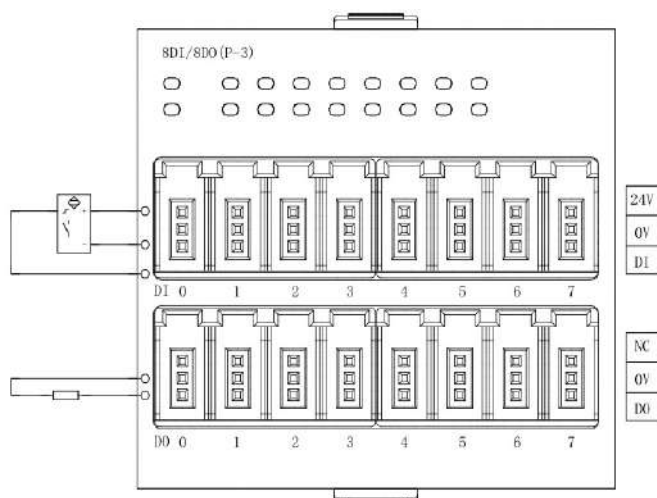
5.2.12 16DI (P-3)Wiring Diagram



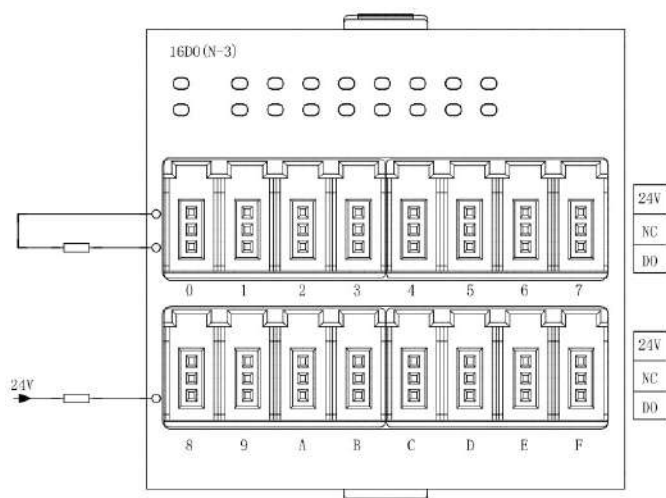
5.2.13 8DI/8DO (N-3)Wiring Diagram



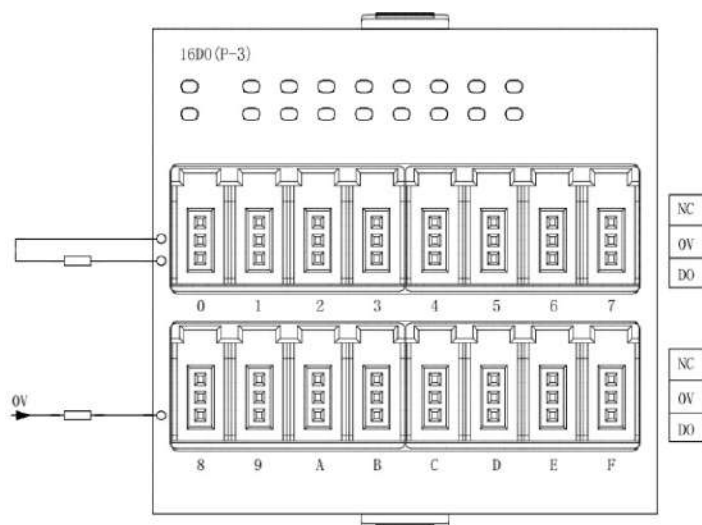
5.2.14 8DI/8DO (P-3)Wiring Diagram



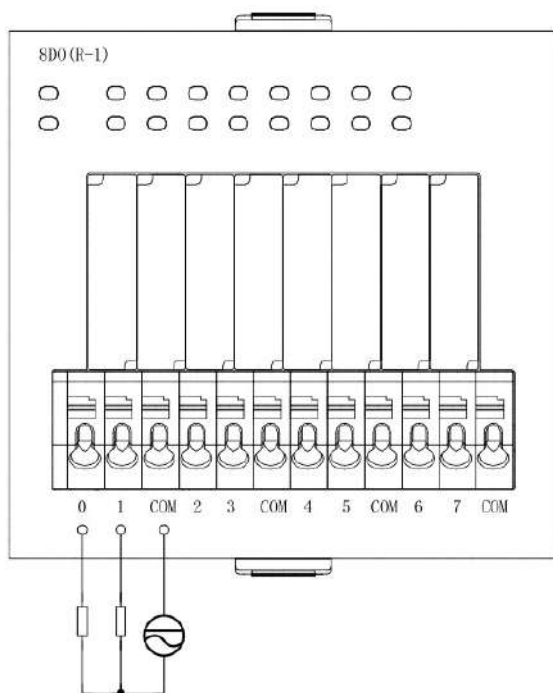
5.2.15 16DO(N-3)Wiring Diagram



5.2.16 16DO(P-3)Wiring Diagram



5.2.17 8DO(R-1)Wiring Diagram



6.Object Dictionary

6.1 Object dictionary table

index	Sub-index	name	Data Types	Access Type
8000h	02	Slot 1 module type	STRING	RW
	03	Slots1Module Name	STRING	RW
	0A	Topology information	UDINT	RW
	0B	Slots1Slot number information	UINT	RW
	20-2F	Slot 1 DI/DO parameter	UINT	RW
8010h	02	Slots2Module Type	STRING	RW
	03	Slots2Module Name	STRING	RW
	0A	Topology information	UDINT	RW
	0B	Slots2Slot number information	UINT	RW
	20-2F	Slots2Middle DI/DO parameter	UINT	RW
F800h	01	Output behavior when bus is abnormal	USINT	RW
	02	Parameter preservation	USINT	RW
	03	Restore module parameters	USINT	RO
	04	Factory Reset	USINT	WO

6.2 Object dictionary detailed description

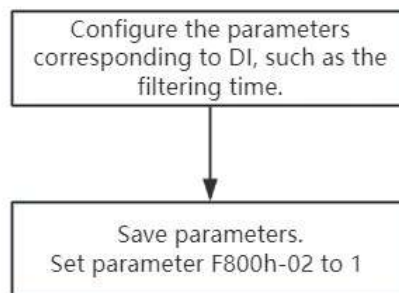
F800h Device configuration parameters

index	Sub-index	name	value	illustrate
F800h	01	Output behavior when bus is abnormal	All outputs off	The output is OFF
			Enable substitute value	Output using replacement values
			Hold last value	Keep the last output status of the program
	02	Parameter preservation	0	Parameters are not saved, default values
			1	Take effect after power off and restart
			2	Parameters take effect immediately and are lost when power is off
	03	Restore module	0	default value

		parameters	1	Module parameters saved
			0	default value
	04	Factory Reset	1	Restore to factory default, clear module user parameters

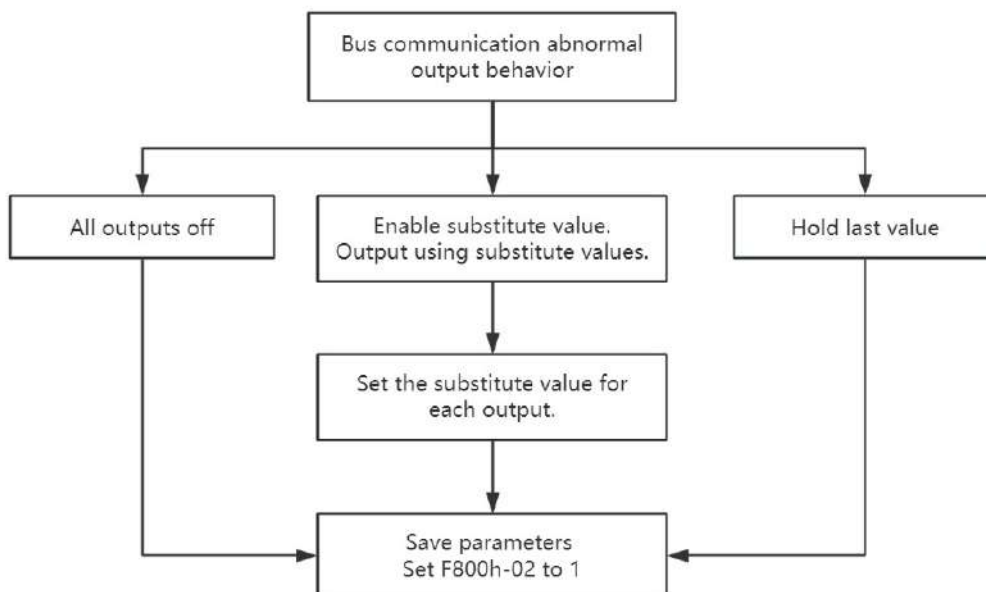
6.3 DI channel parameter configuration process

After the DI channel parameter (filter) configuration is completed, the value of sub-index 02 in F800h must be changed to 1.



6.4 DO channel parameter configuration process

After the DO channel parameter (bus output abnormal DO state value) configuration is completed, the value of sub-index 02 in F800h must be changed to 1.



7.RS-EtherCAT module configuration and application

7.1 TwinCAT3

7.1.1 Installing and uninstalling XML document

(1) Install XML document

Copy the XML file that needs to be installed to the TwinCAT3 installation directory, for example, to the path: C:\TwinCAT\3.1\Config\Io\EtherCAT;

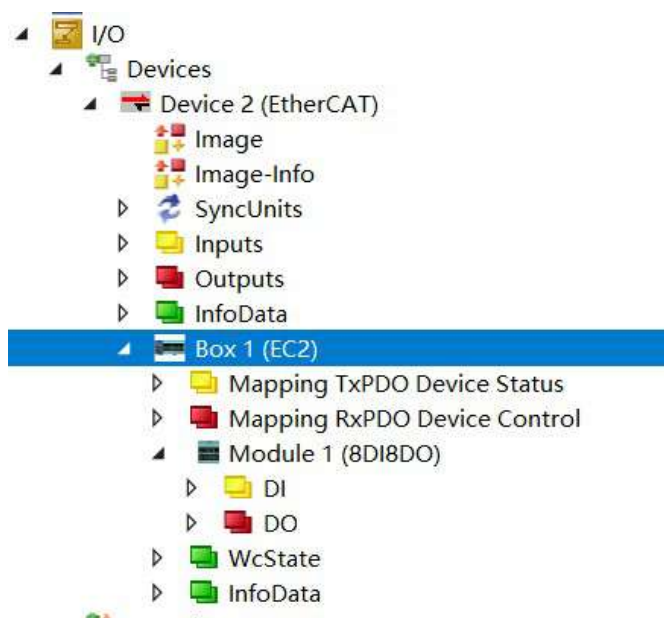
(2) Uninstall XML document

To uninstall the XML file in TwinCAT 3, simply delete the desired XML file from the designated installation directory, such as: C:\TwinCAT\3.1\Config\Io\EtherCAT.

7.1.2 Configuration IO modules

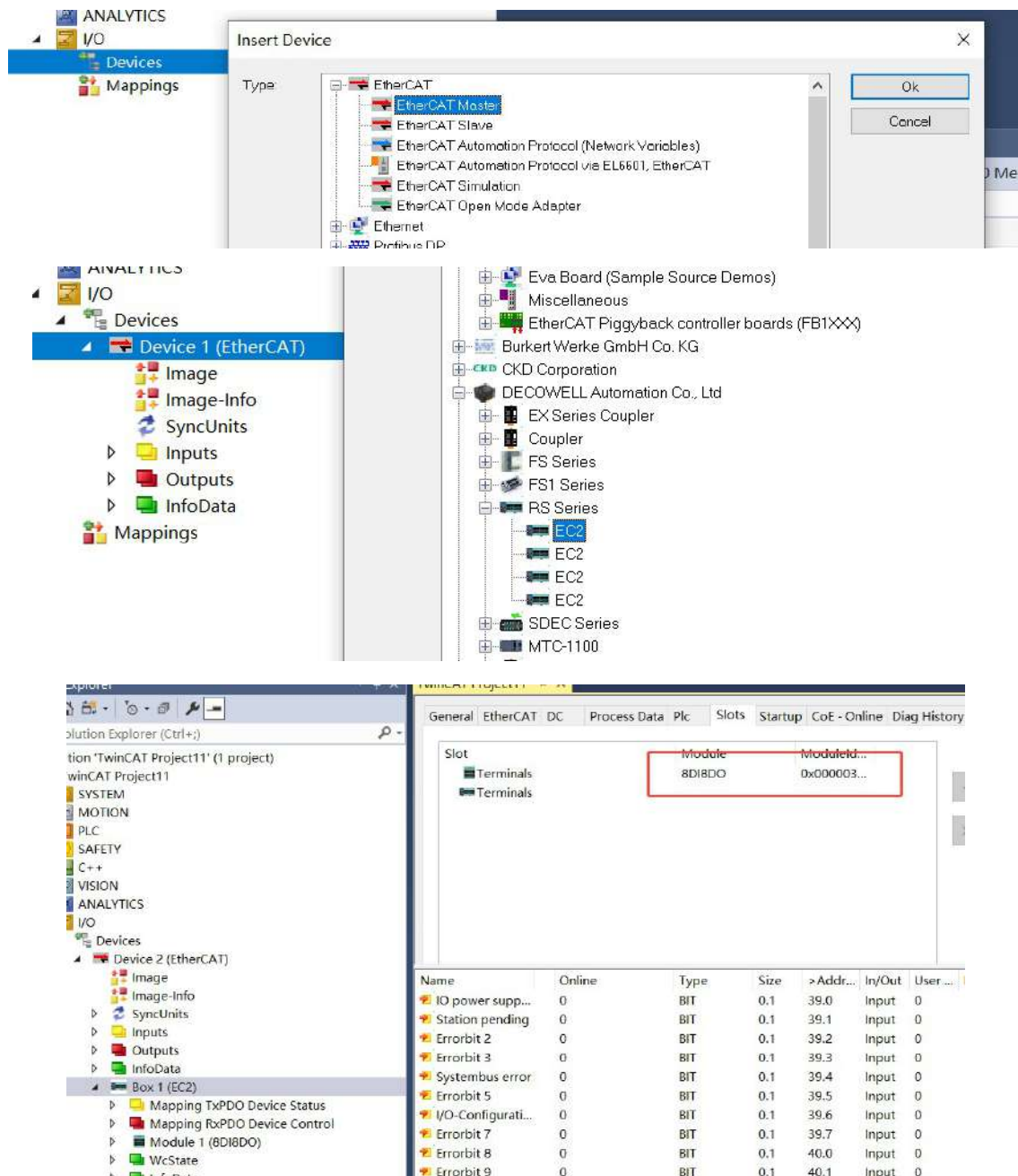
Online Scan IO Modules:

Open TwinCAT3 software to create a project, right-click "Device" and select "Scan" scan the connected IO Module, as shown in the figure below.



Manually add IO modules:

Right-click on "Device" and select "Add New Item". In the pop-up window, choose "EtherCAT Master". Then, right-click the added EtherCAT Master, select "Add New Item", choose the RS module under the "RS Series", and add the corresponding IO modules in the RS slots (e.g., 8DI/8DO in this case).



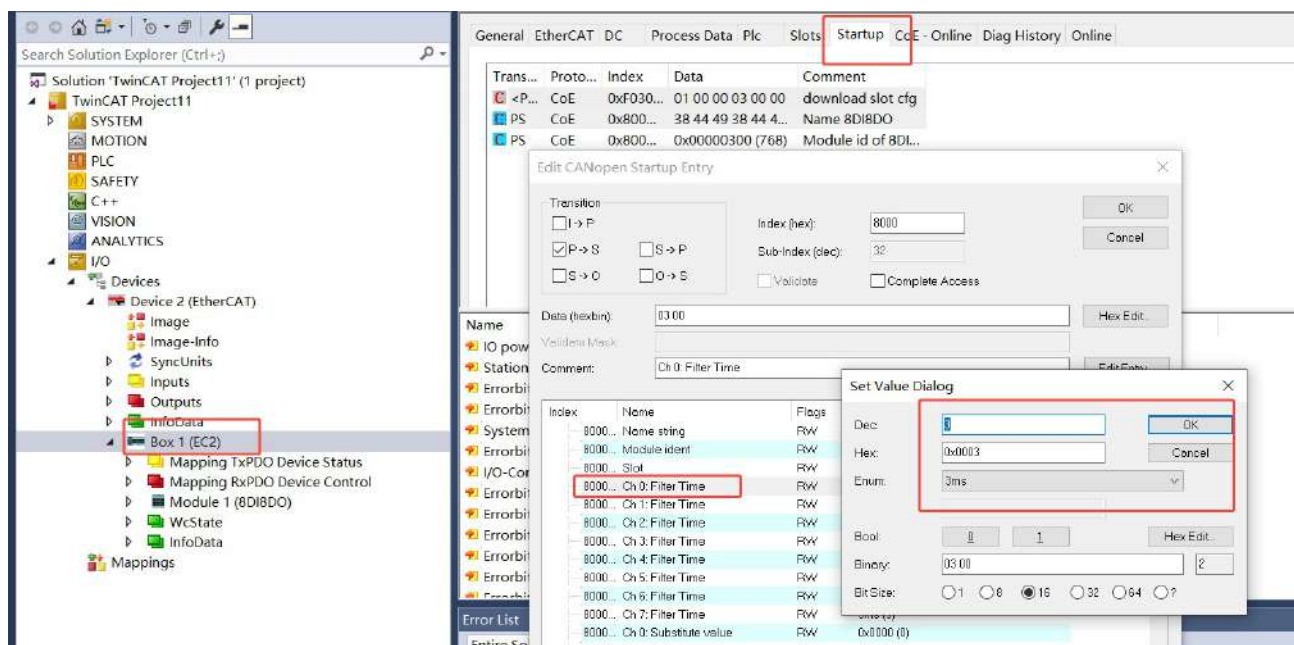
7.1.3 Configuration parameters

The configuration parameters are divided into three sections: DI parameter configuration, DO parameter configuration, and parameter saving. After modifying either DI or DO parameters, the parameters must be saved.

(1) DI Filter time configuration

In the EC2 module, the DI filter time can be configured by setting the startup parameters (the default DI

filter time is 3 ms). The configurable range is 0–10 ms. After completing the parameter configuration, the program must be re-downloaded to the PLC. (In this case, the DI filter time is configured via startup parameters, but it can also be configured online through CoE_Online.)

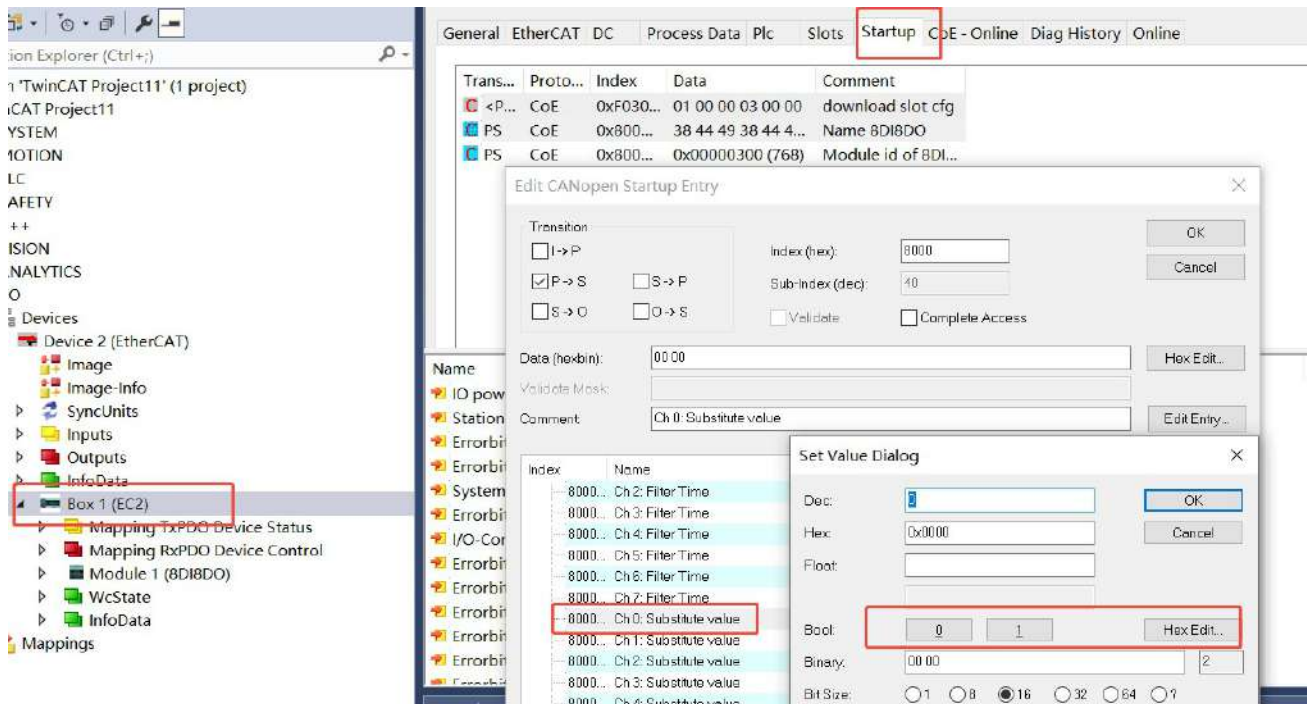


(2) Output configuration when bus communication is abnormal

When the bus communication is abnormal, DO Output values can be configured in three ways:

Parameter Value	illustrate
All output off	The output is OFF
Enable substitute value	Output using replacement values
Hold last value	Keep the last output status of the program

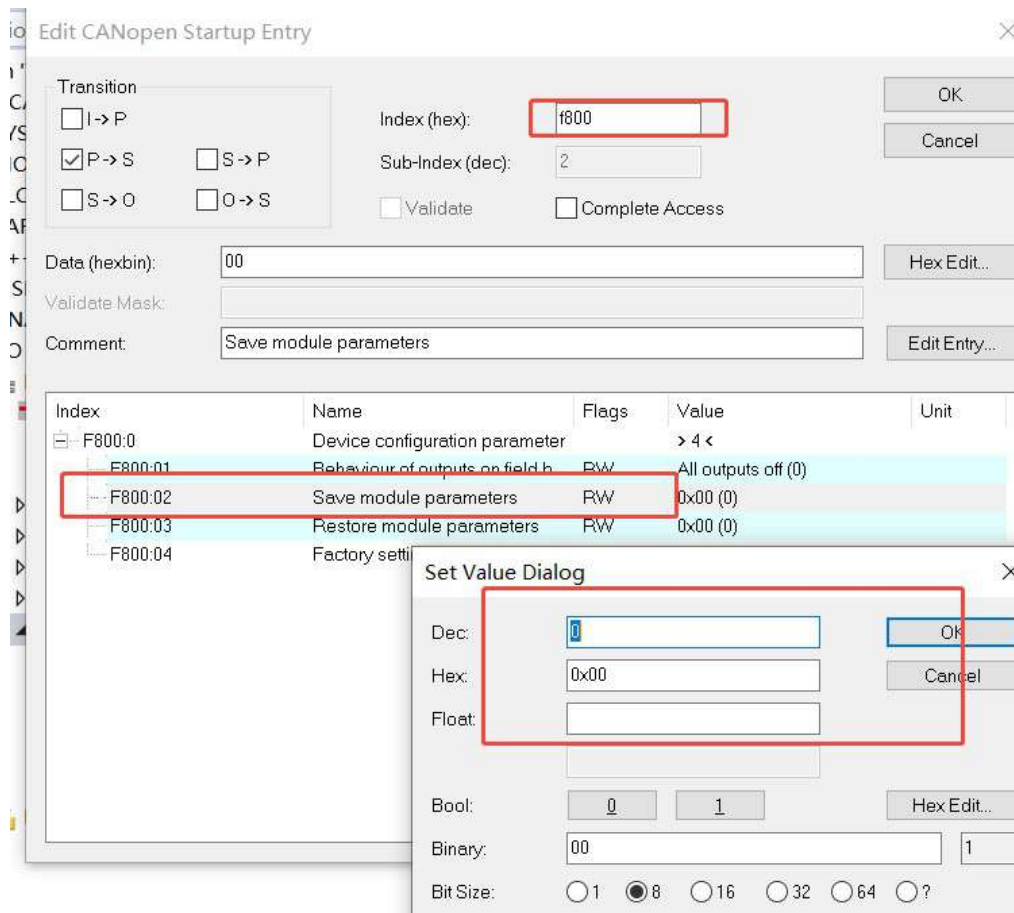
Substitute channel replacement value configuration, the configurable value range is 0 or 1, the default value is 0.



(3) Module parameter storage

After modifying the DI or DO parameters, the value of sub-index 02 under index F800h must be set to 1.

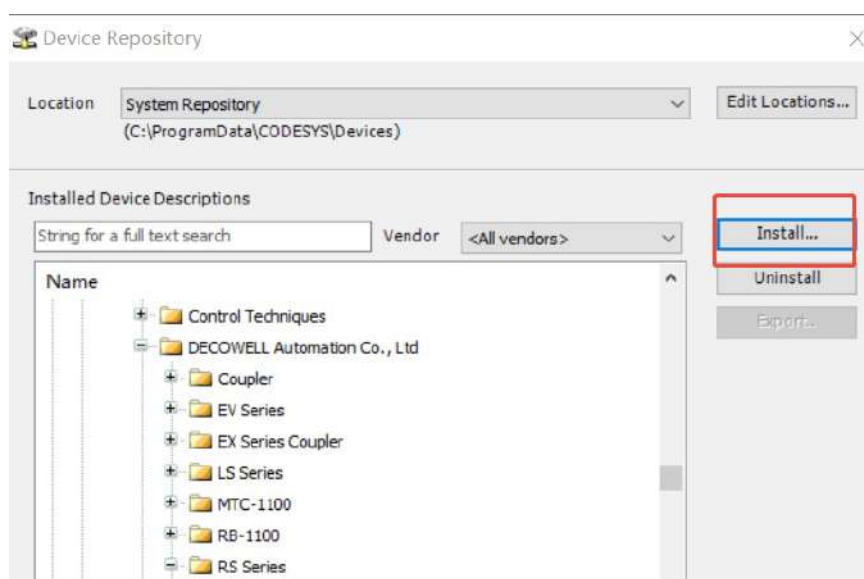
index	Sub-index	name	value	illustrate
F800h	02	Parameter preservation	0	Parameters are not saved, default values
			1	Take effect after power off and restart
			2	Parameters take effect immediately and are lost when power is off



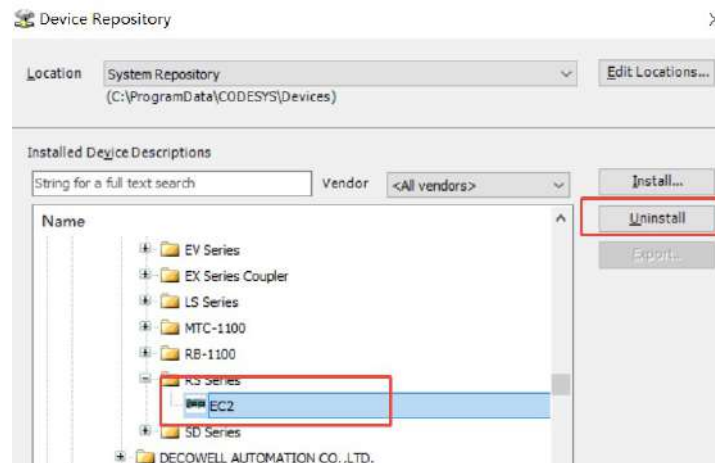
7.2 CODESYS

7.2.1 Installing and uninstalling XML document

(1) Open CODESYS programming software, select "Install" in the device library window, and select the file type to be installed as "EtherCAT XML Device Description Profile".

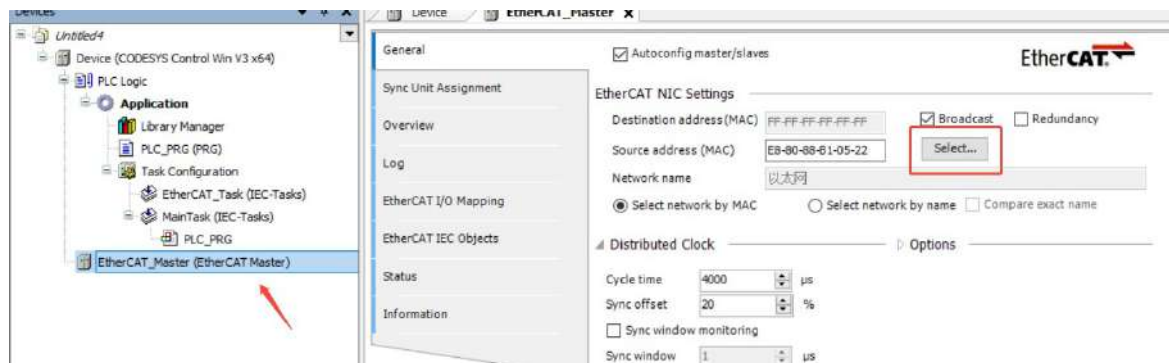


(2) In the device library, select the EtherCAT slave XML document



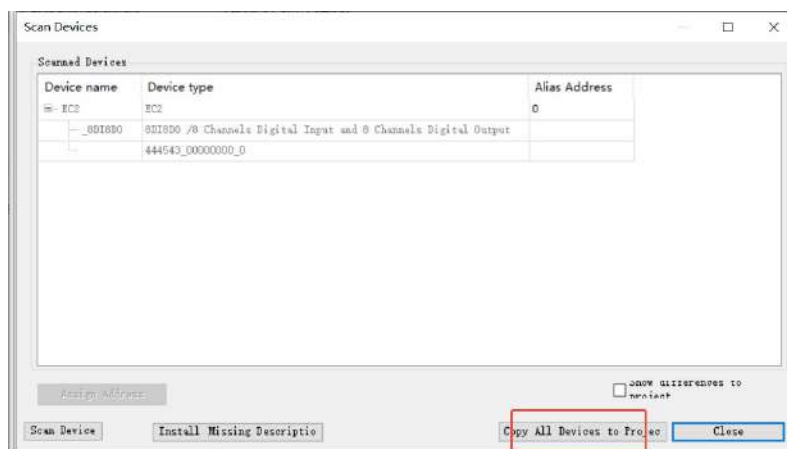
7.2.2 Configuration IO modules

Open the CODESYS programming software to create a project, right-click "Device" to add EtherCAT Master to the project tree, and configure its EtherCAT communication port parameters.

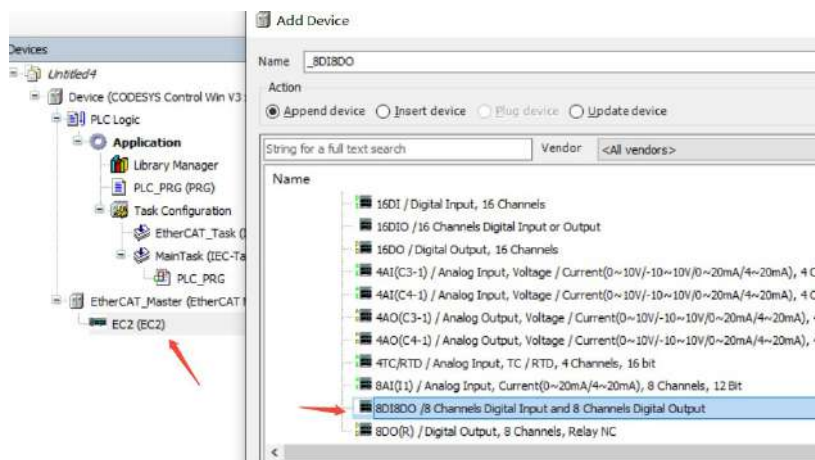


Online Scan IO Modules:

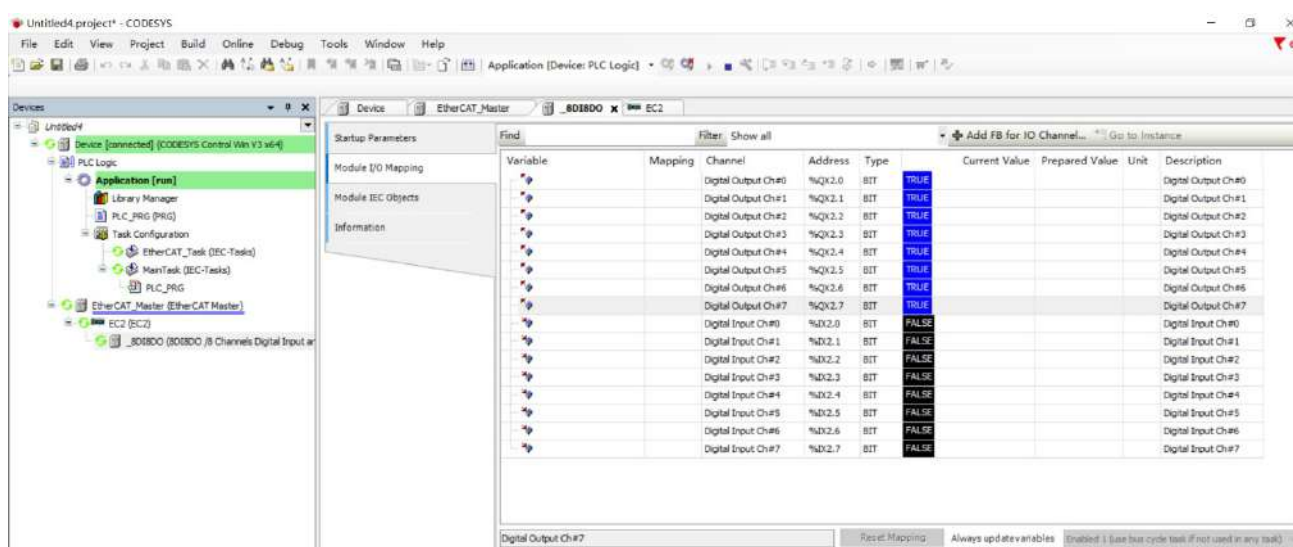
After the configuration is complete, log in to the device and right-click "EtherCAT_Master", select "Scan for devices" and add the IO module is scanned to the project.



device library. Next, right-click the EC2 module in the project tree, select "Add Device" again, and choose the IO module type that matches your actual hardware configuration.



Download the program to PLC, run and monitor whether the communication is normal. Double-click "_8DI8DO" to change the output channel value to TRUE and write.

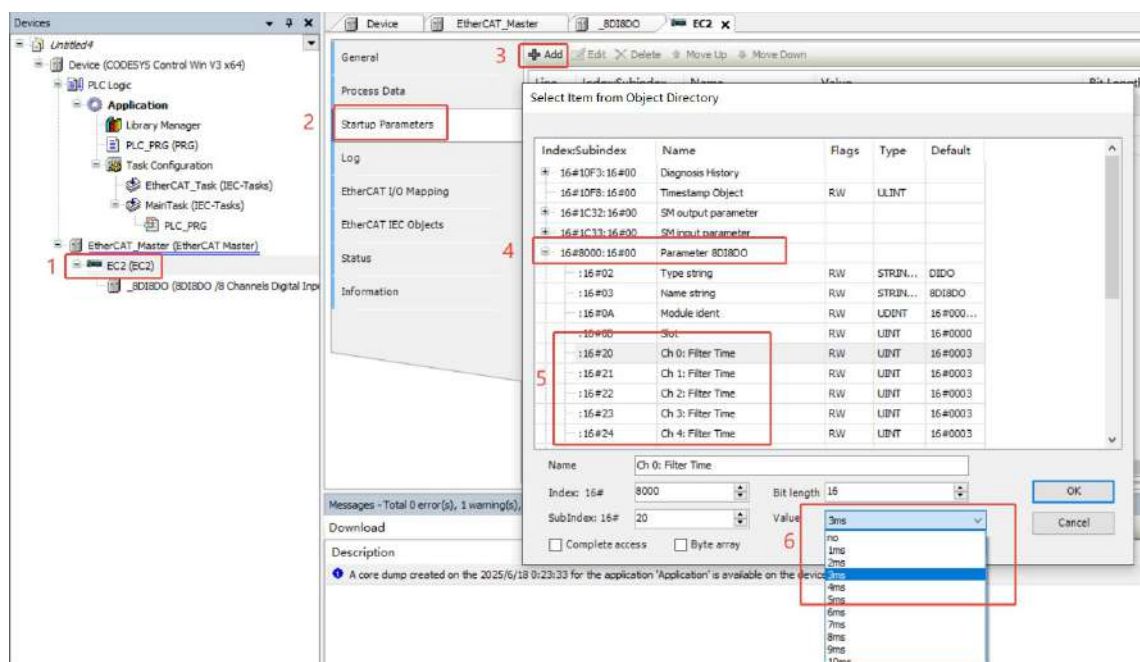


7.2.3 Configuration parameters

Parameter Configuration consists of three parts: DI parameter configuration, DO parameter configuration, and parameter saving. After modifying DI or DO parameters, the changes must be saved.

(1) DI Filter Time Configuration

In the EC2 module, the DI filter time (default: 3ms, configurable range: 0–10ms) is set via startup parameters. After configuration, the program must be re-downloaded to the PLC. (In this example, startup parameters are used for configuration. Alternatively, CoE online parameter configuration can be used.)

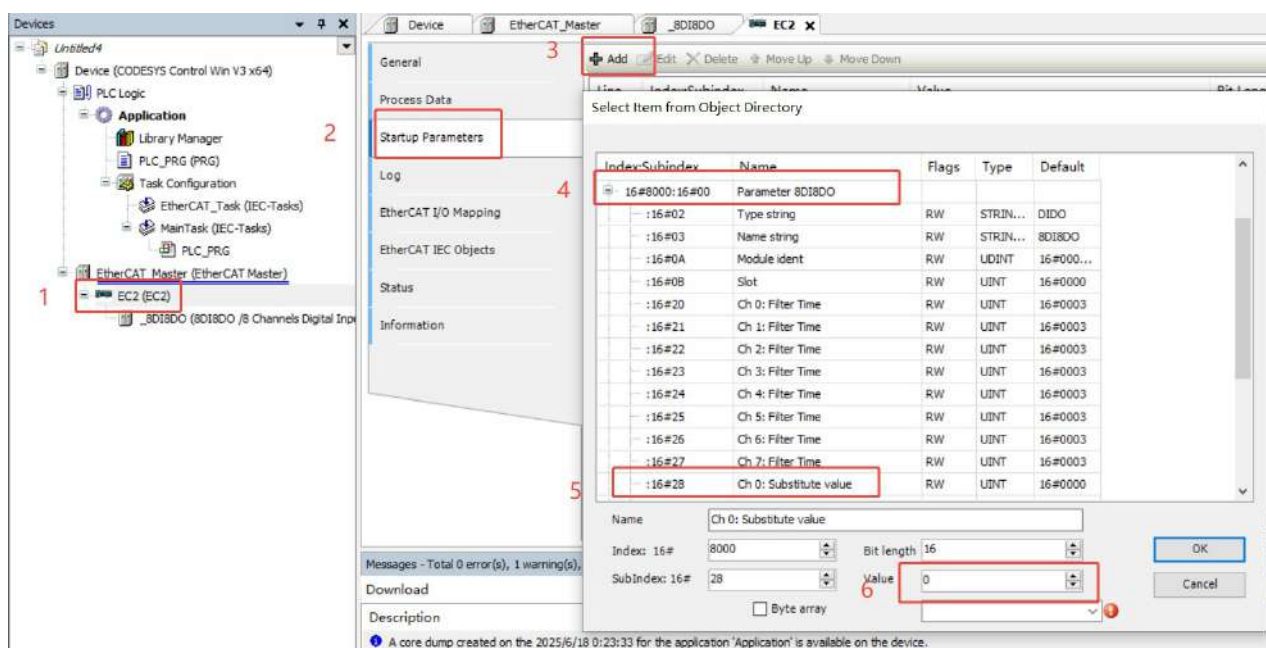


(2) Output configuration when bus communication is abnormal

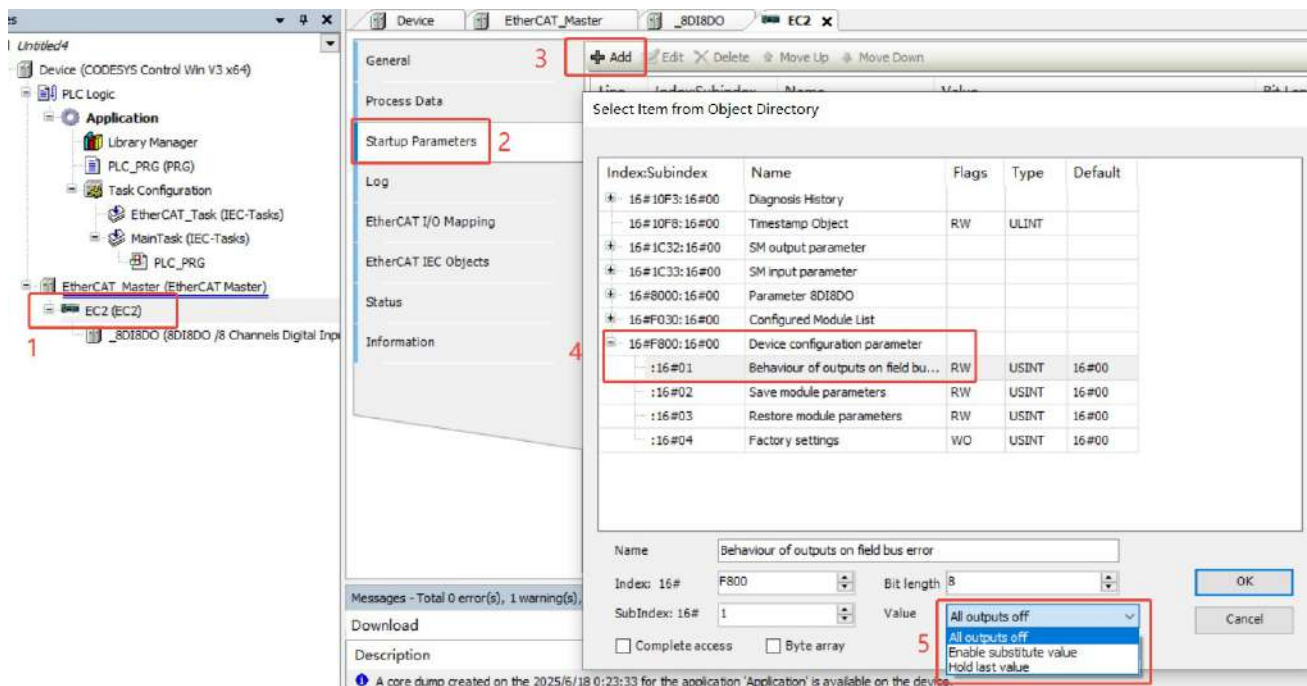
When the bus communication is abnormal, DO output values can be configured in three ways:

Parameter Value	illustrate
All output off	The output is OFF
Enable substitute value	Output using replacement values
Hold last value	Keep the last output status of the program

Substitute channel replacement value configuration, the configurable value range is 0 or 1, the default value is 0.



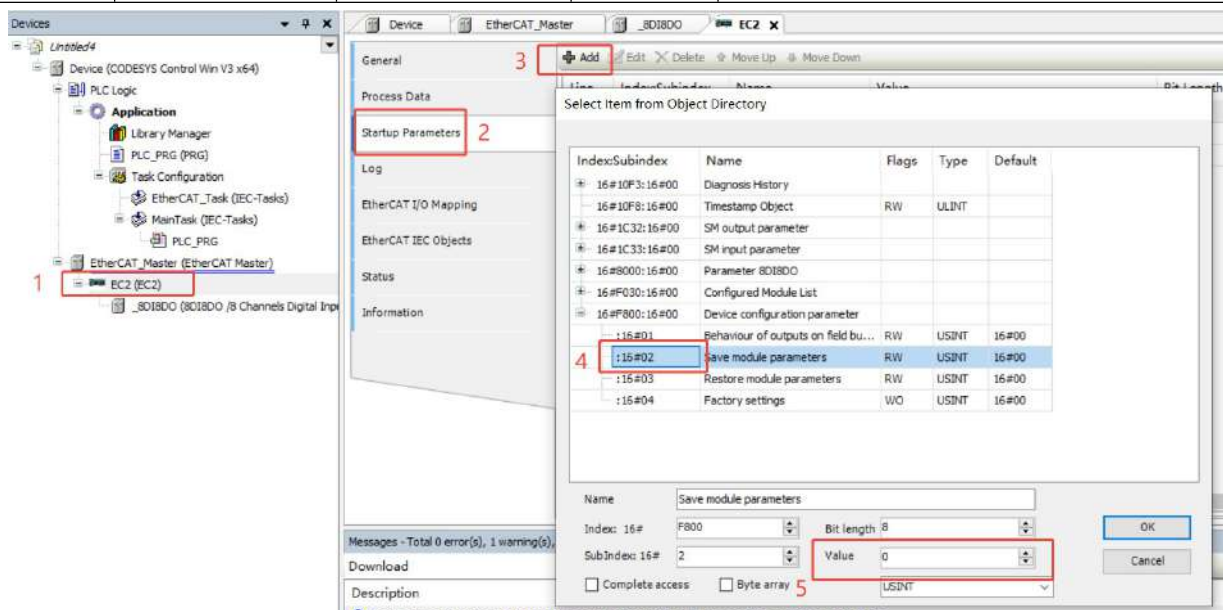
When the bus is abnormal, DO status Settings



(3) Module parameter storage

After modifying DI or DO parameters, the value of sub-index 02 in index F800h must be changed to 1.

index	Sub-index	name	value	illustrate
F800h	02	Parameter preservation	0	Parameters are not saved, default values
			1	Take effect after power off and restart
			2	Parameters take effect immediately and are lost when power is off



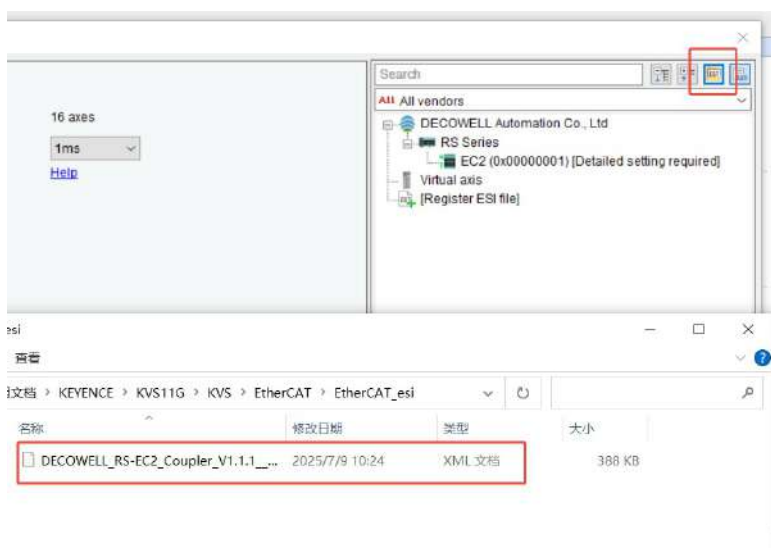
7.3 KV STUDIO

7.3.1 Installing and uninstalling XML document

(1) Double-click "Axis Configuration Settings" under KV-XH16EC, then install the EtherCAT slave XML file in the pop-up axis configuration window.

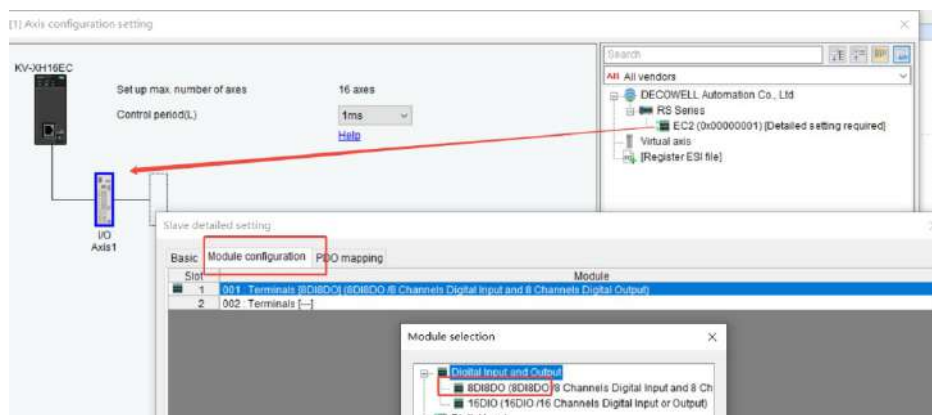


(2) To uninstall the XML file: In the Axis Configuration Settings window, select "Open ESI Folder". Locate and delete the corresponding EtherCAT slave XML file to be removed



7.3.2 Configuration IO modules

In the Axis Configuration Settings window, select the EtherCAT slave station to be configured, and set the module type in the IO slot.



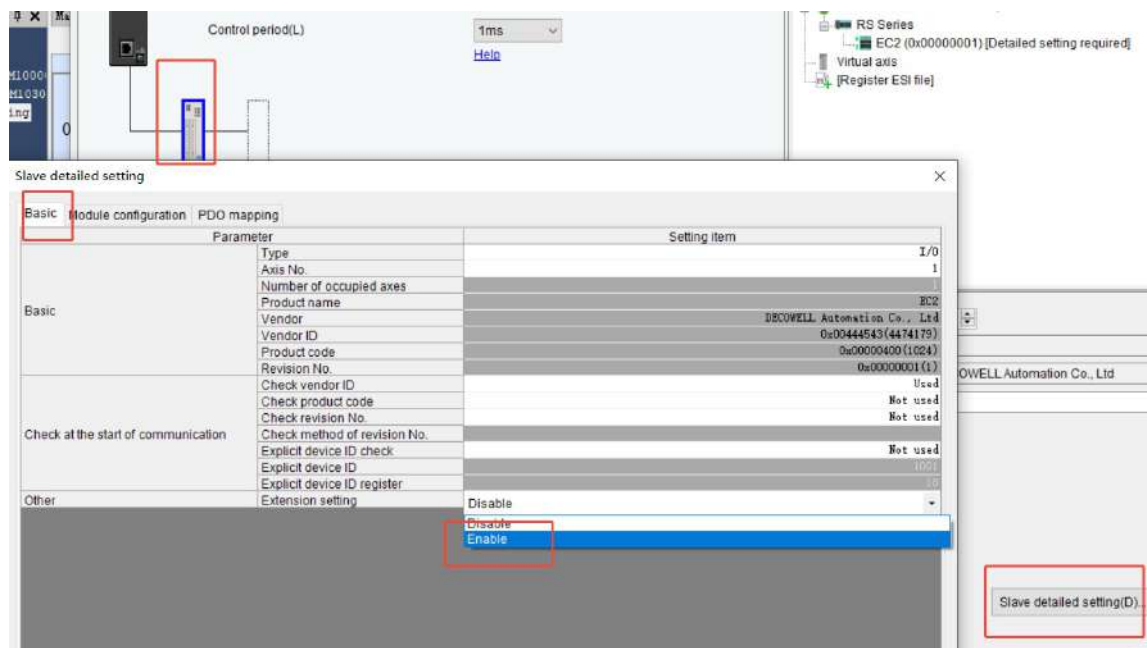
7.3.3 Configuration parameters

Parameter Configuration consists of three parts: DI parameter configuration, DO parameter configuration, and parameter saving. After modifying DI or DO parameters, the changes must be saved.

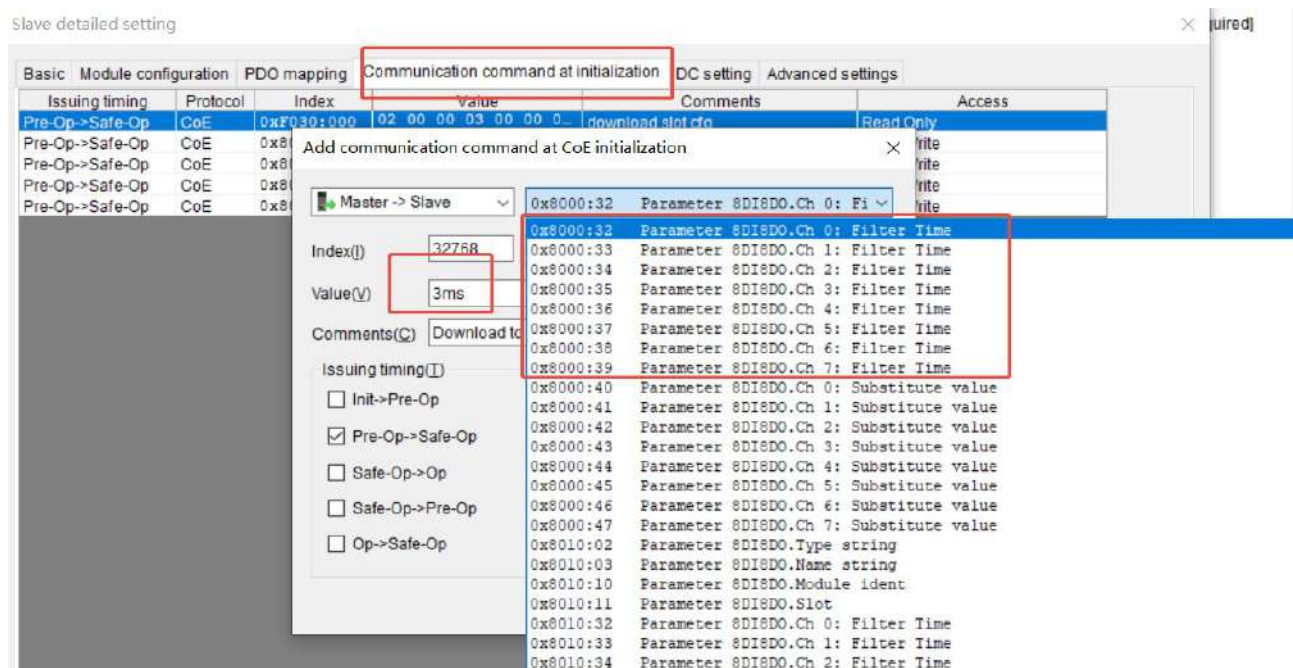
(1) DI Filter Time Configuration

In the EC2 module, the DI filter time is set via startup parameters.

Select the module to be configured, click "Slave Detailed Settings" and start the extended settings.

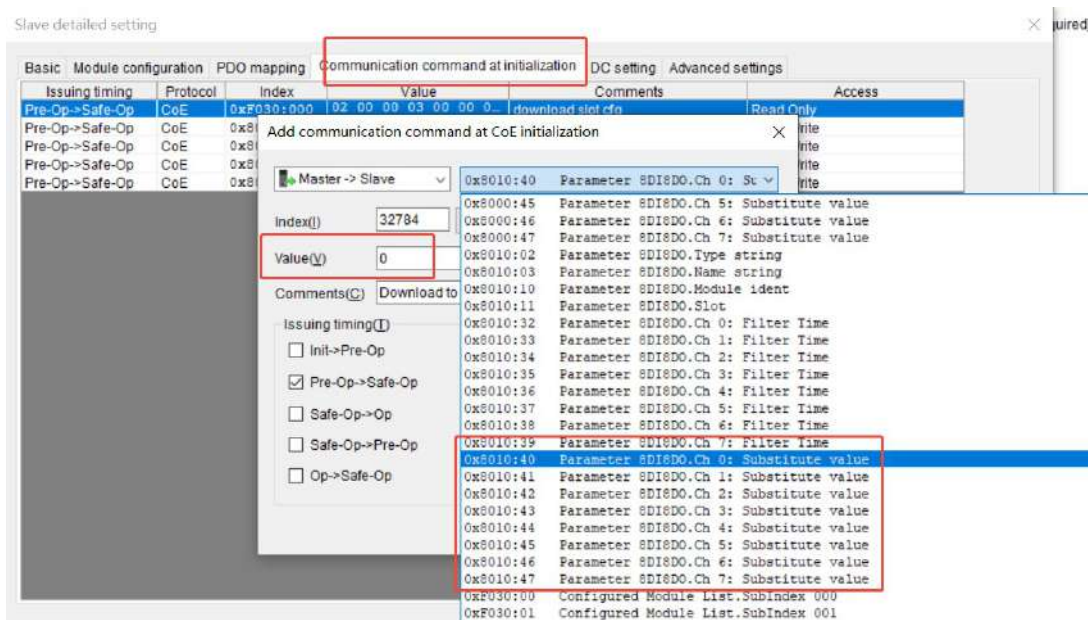


Configure the communication instructions during initialization and select the DI channel, and modify the filter time. (default: 3ms, configurable range: 0–10ms)

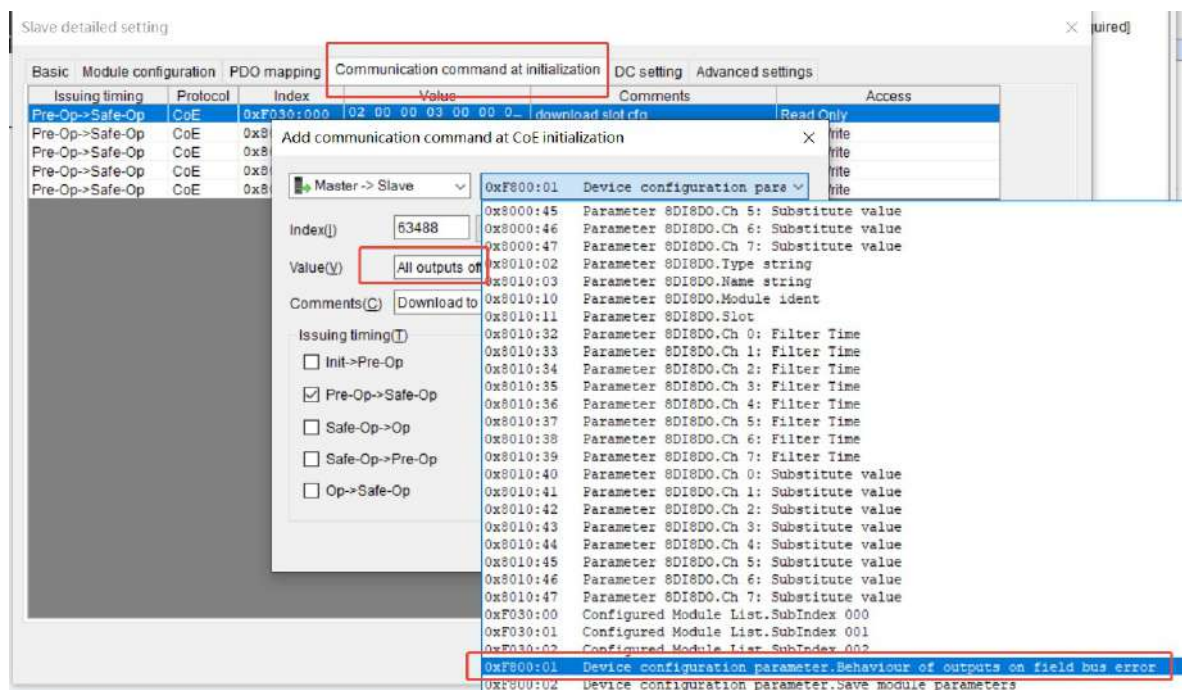


(2) Output configuration when bus communication is abnormal

Substitute Channel replacement value configuration, the configurable value range is 0 or 1, the default value is 0.



When the bus is abnormal, DO Status Settings



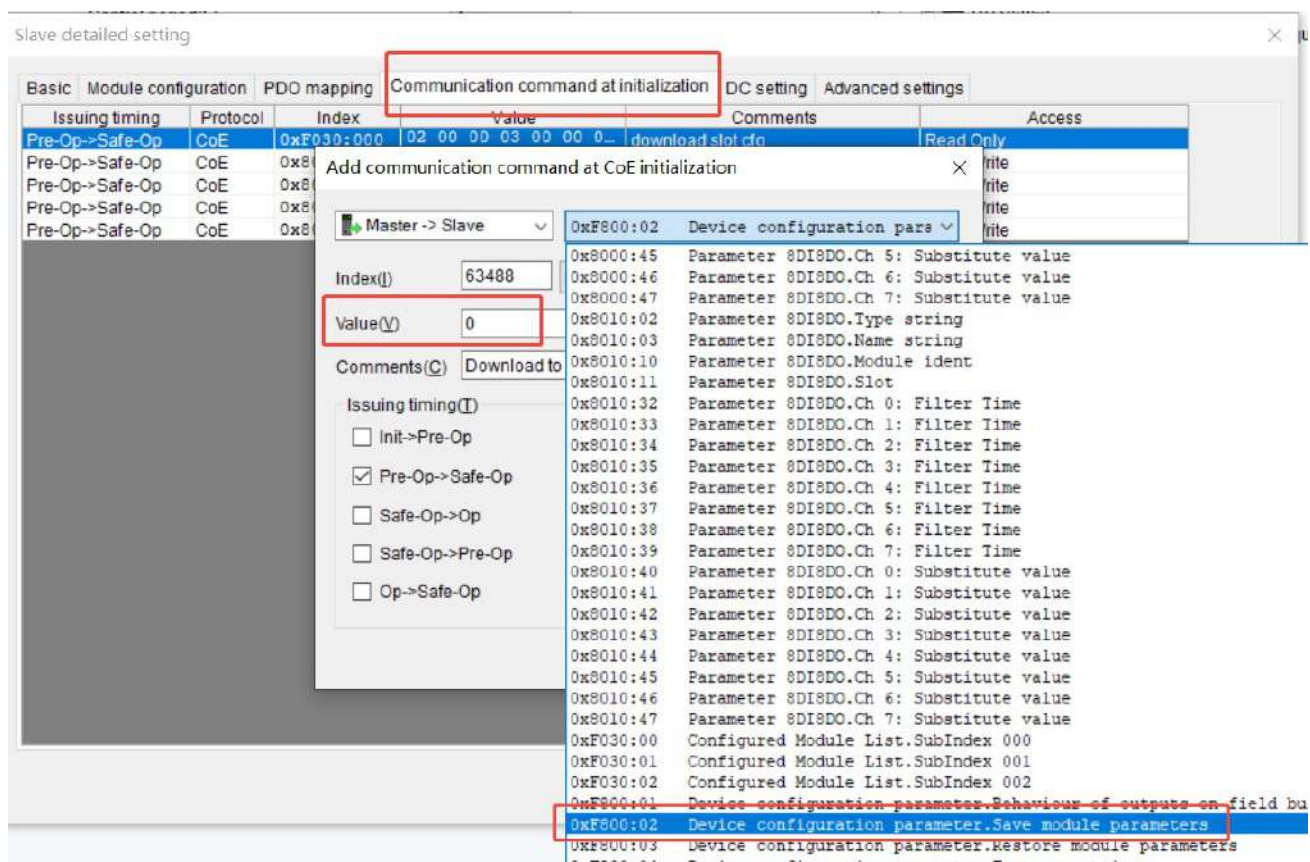
When the bus communication is abnormal, DO output values can be configured in three ways:

Parameter Value	illustrate
All output off	The output is OFF
Enable substitute value	Output using replacement values
Hold last value	Keep the last output status of the program

(3) Module parameter storage

After modifying DI or DO parameters, it is required to set the value of Sub-index 02 in Index F800h to 1.

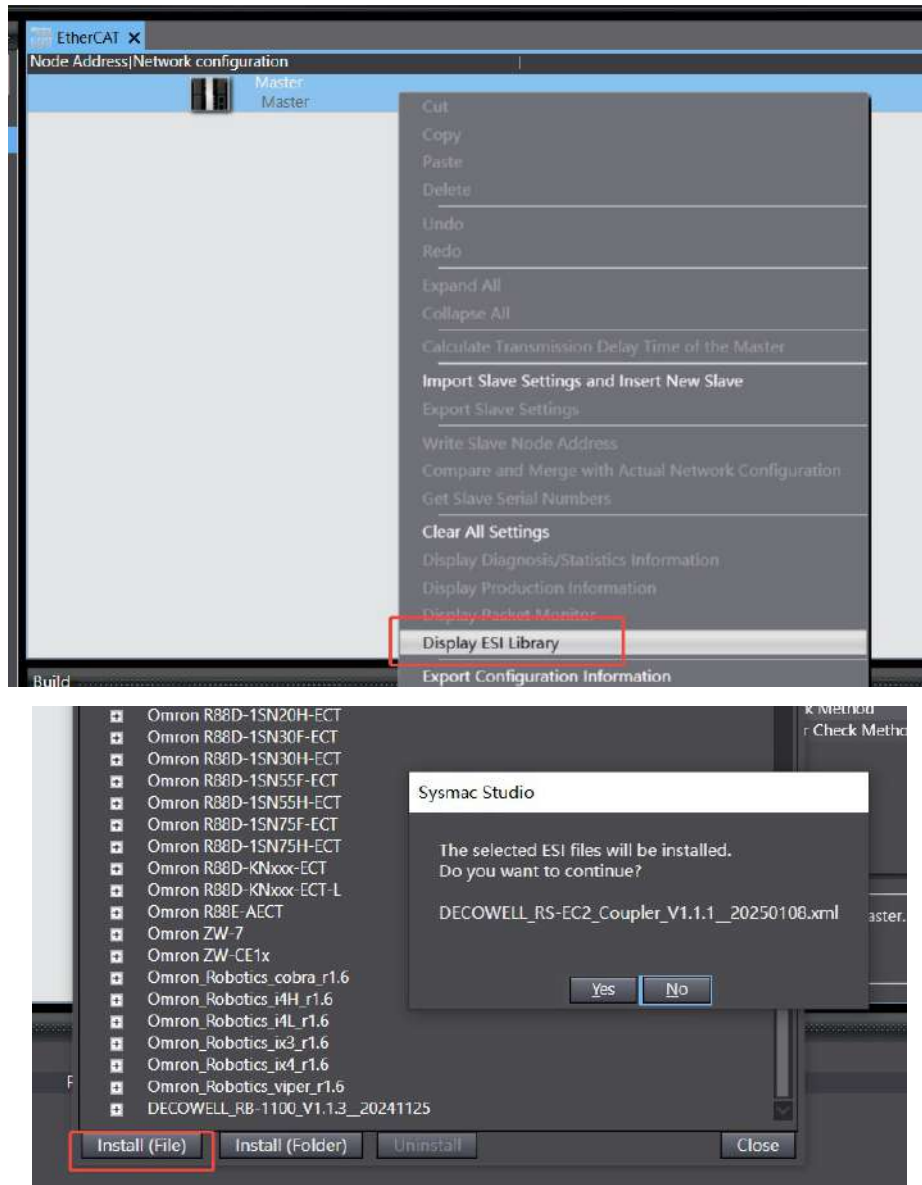
index	Sub-index	name	value	illustrate
F800h	02	Parameter preservation	0	Parameters are not saved, default values
			1	Take effect after power off and restart
			2	Parameters take effect immediately and are lost when power is off



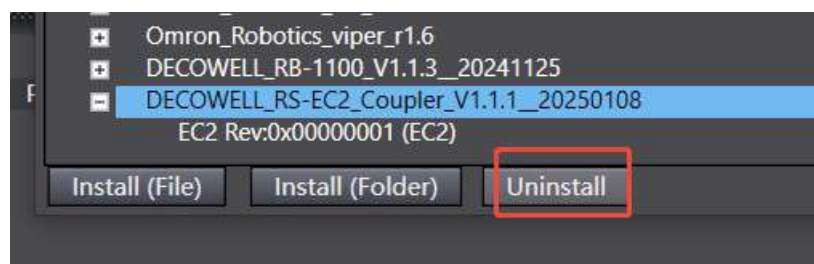
7.4 Sysmac Studio

7.4.1 Installing and uninstalling XML document

(1) To install the XML file, in the ESI library, select the EtherCAT XML file that needs to be installed.



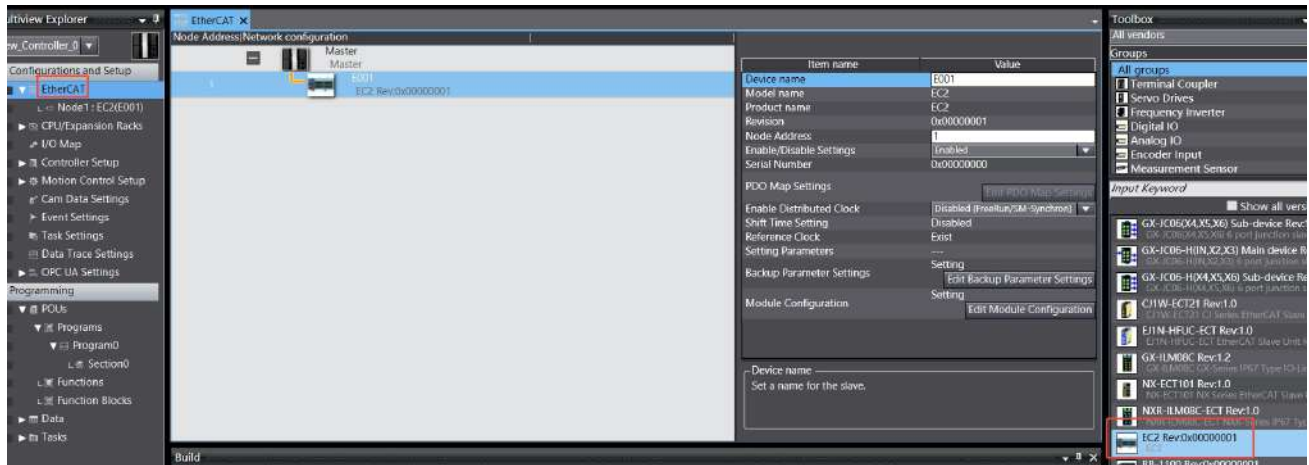
(2) Uninstall XMLFile, in ESIIn the library, select the EtherCAT XMLdocument.



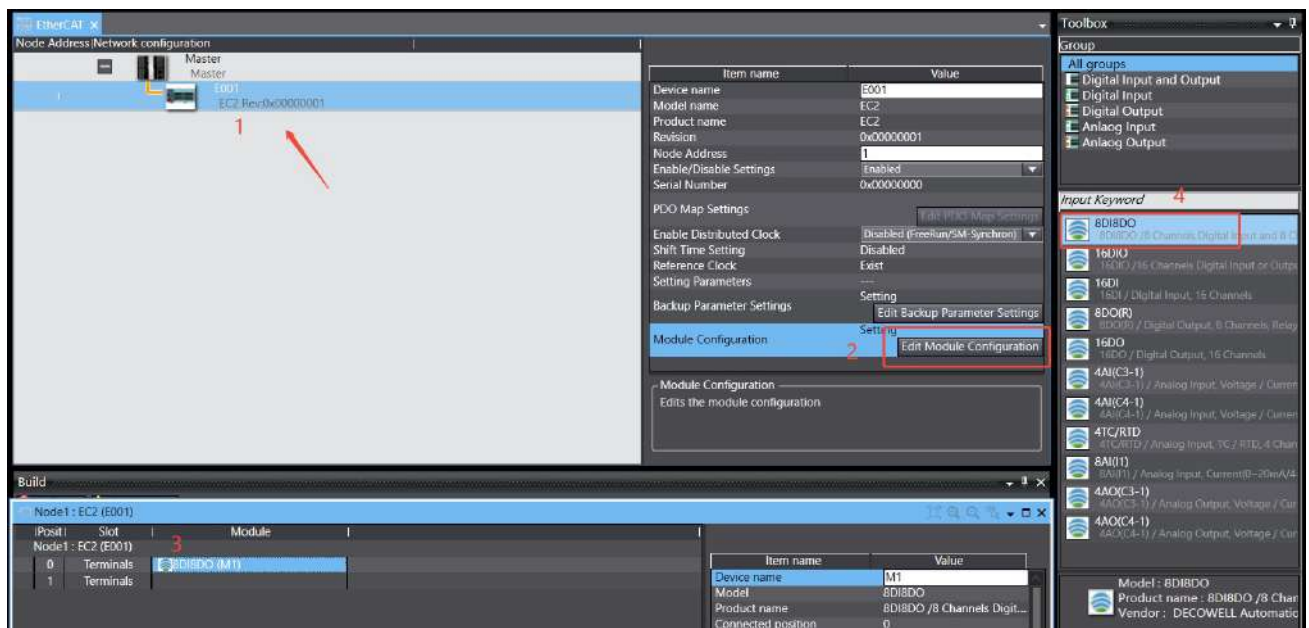
7.4.2 Configuration IO modules

Manually add IO modules:

Double-click "EtherCAT" and add the RS module in the EtherCAT window.

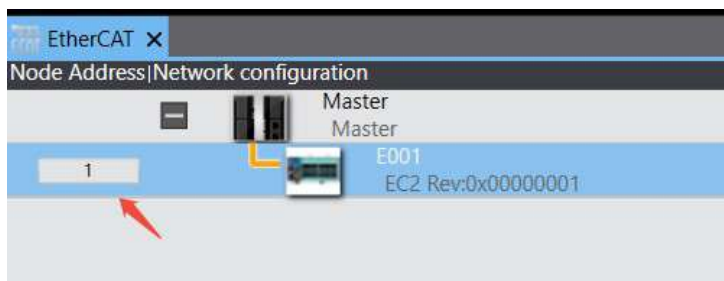


Configure IO slots: In the EtherCAT window, select the RS module in the node, click "Edit Module Configuration", and configure the module model in the slots (The configuration must match the actual modules; the example uses 8DI/8DO modules).



Node settings:

The RS series EtherCAT modules can set node addresses via DIP switches - refer to section 2.1.3 for DIP switch configuration instructions. If the DIP switch sets the node to 5, manually modify the configured RS module node to 5. Communication will fail if node addresses don't match.

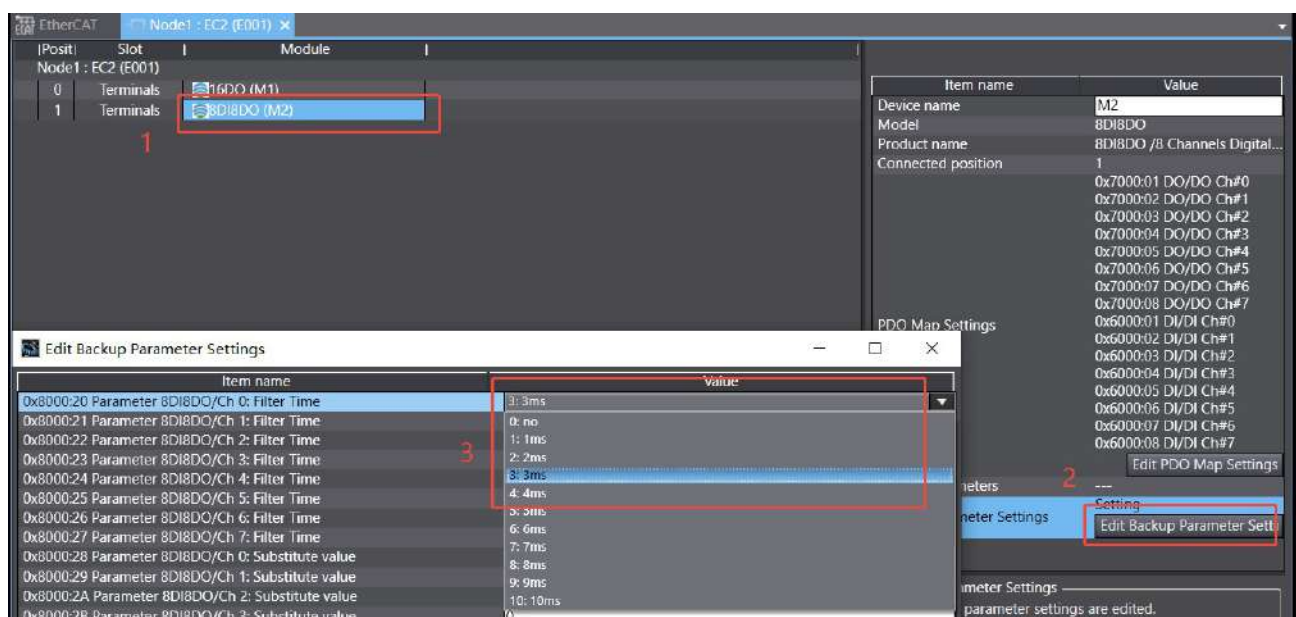


7.4.3 Configuration parameters

Parameter Configuration consists of three parts: DI parameter configuration, DO parameter configuration, and parameter saving. After modifying DI or DO parameters, the changes must be saved.

(1) DI Filter Time Configuration

In the EC2 module, the DI filter time is set via startup parameters. (default DI filter time is 3ms, and the configurable range is 0-10ms).

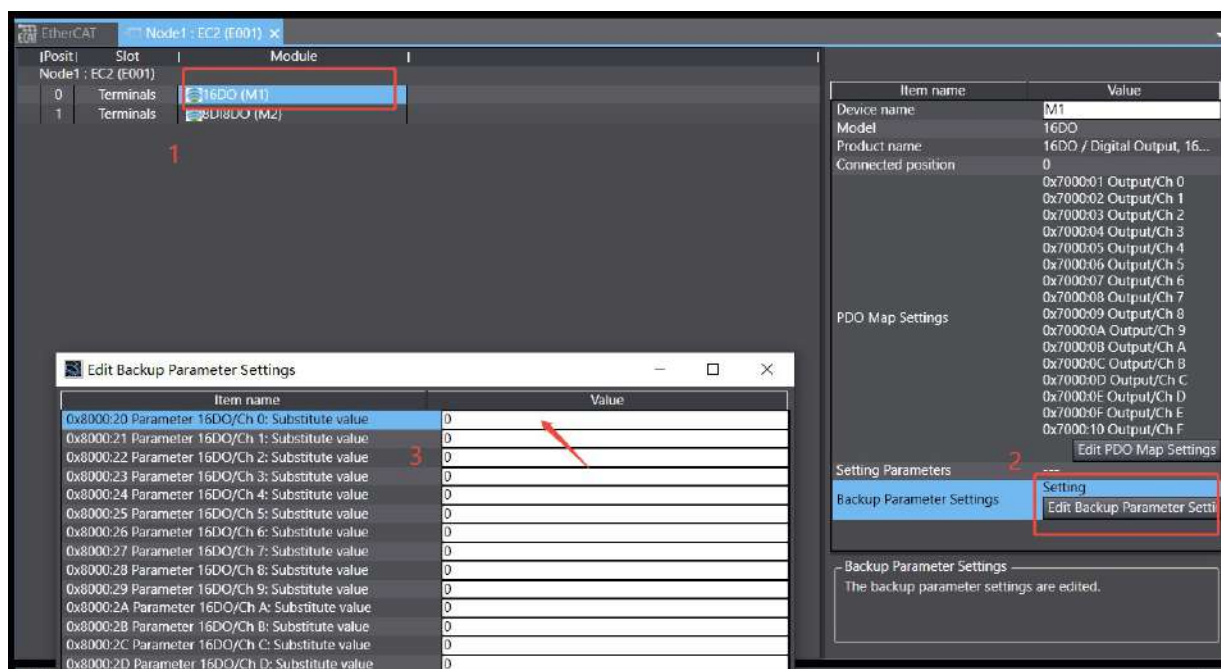


(2) Output configuration when bus communication is abnormal

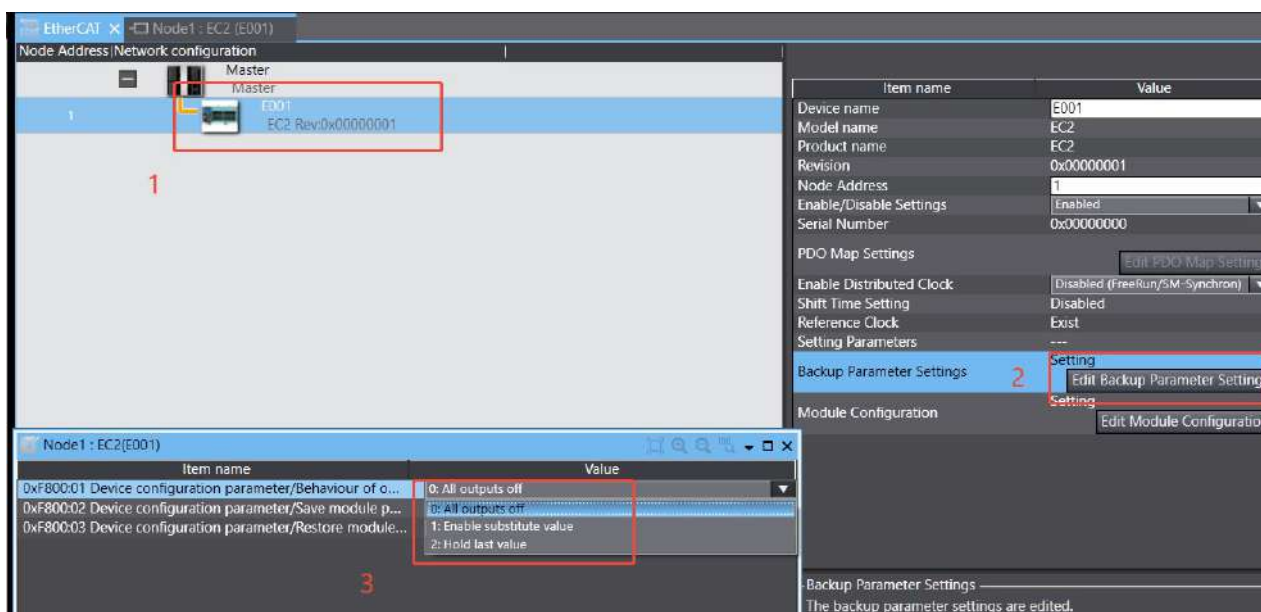
When the bus communication is abnormal, DO output values can be configured in three ways:

Parameter Value	illustrate
All output off	The output is OFF
Enable substitute value	Output using replacement values
Hold last value	Keep the last output status of the program

Substitute Channel replacement value configuration, the configurable value range is 0 or 1, the default value is 0.



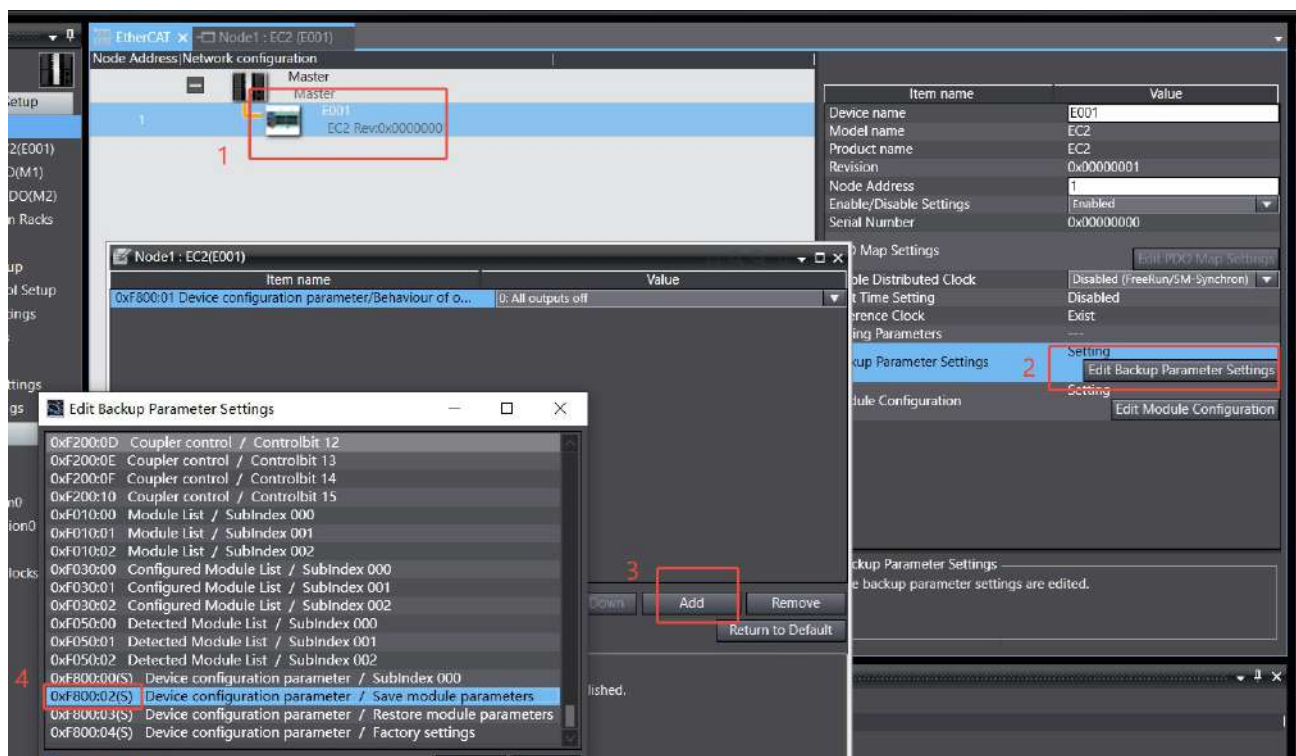
When the bus is abnormal, DO status Settings



(3) Module parameter storage

After modifying DI or DO parameters, it is required to set the value of Sub-index 02 in Index F800h to 1.

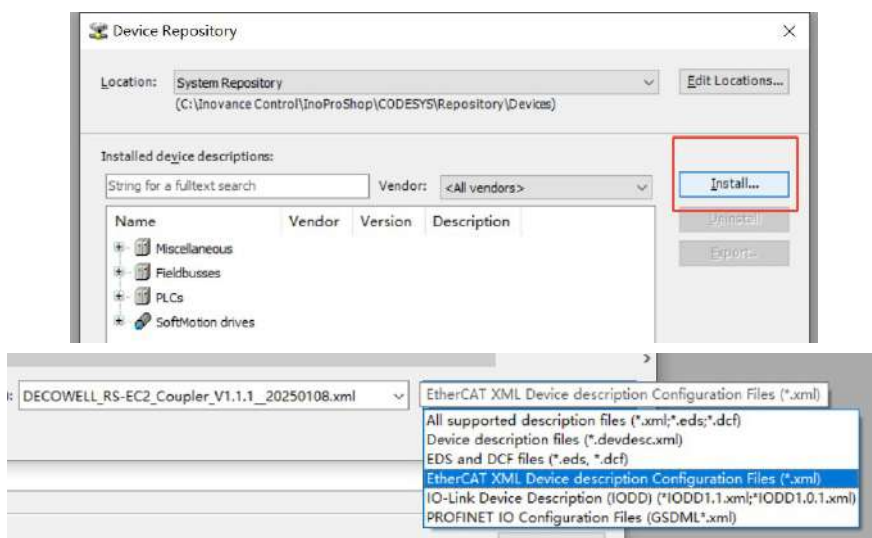
index	Sub-index	name	value	illustrate
F800h	02	Parameter preservation	0	Parameters are not saved, default values
			1	Take effect after power off and restart
			2	Parameters take effect immediately and are lost when power is off



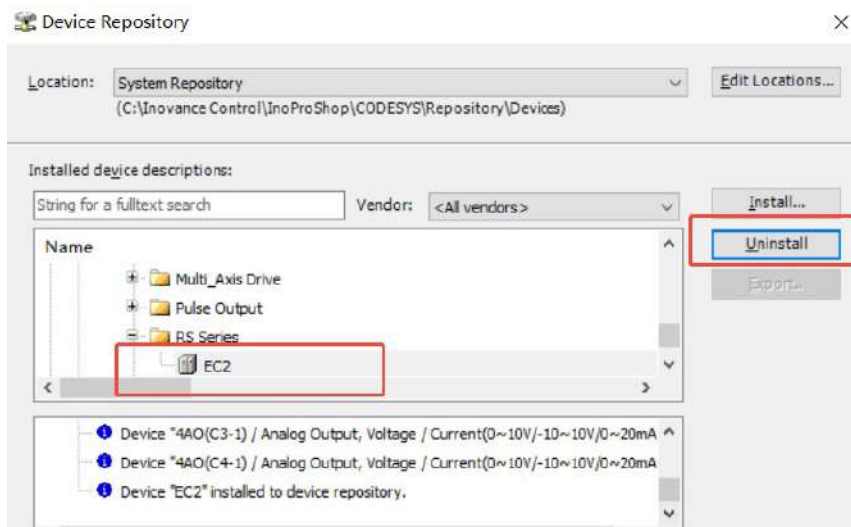
7.5 InoProShop

7.5.1 Installing and uninstalling XML document

(1) Open the InoProShop programming software, select "Install" in the device library window, and choose the file type to be installed as "EtherCAT XML device description configuration file" in the device description file window.

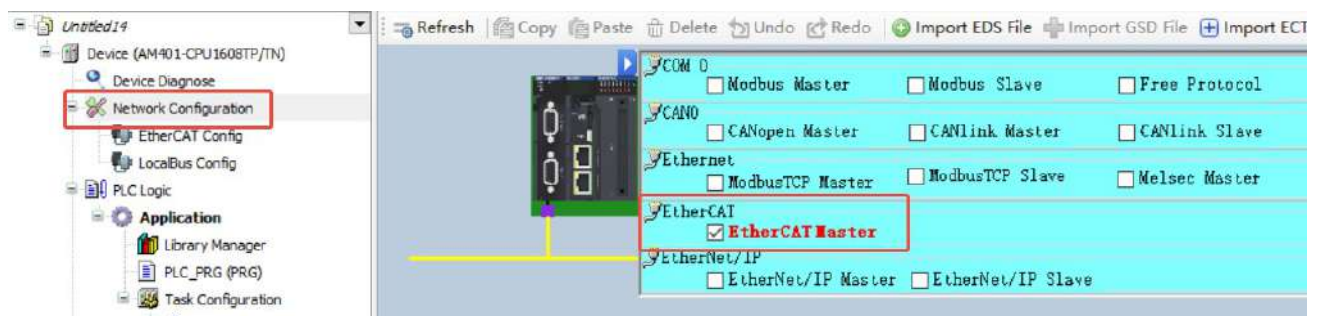


(2) In the device library, select the EtherCAT Slave XML document



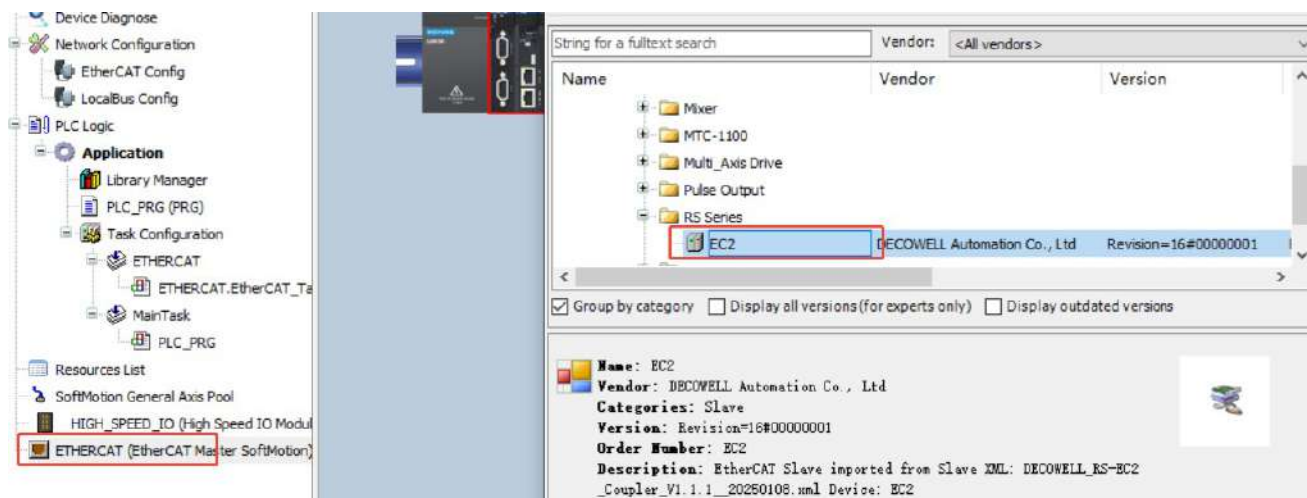
7.5.2 Configuration IO Modules

Click Network Configuration, and choose EtherCAT Master.

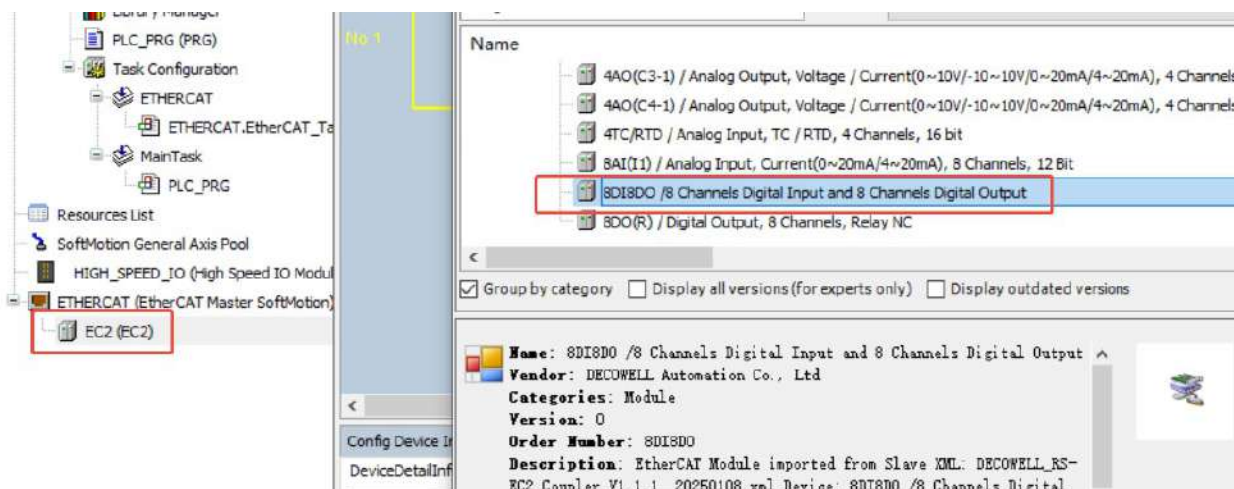


Manually add IO modules:

Right-click ETHERCAT, select Add Device, and select RS module in the Add Device window .

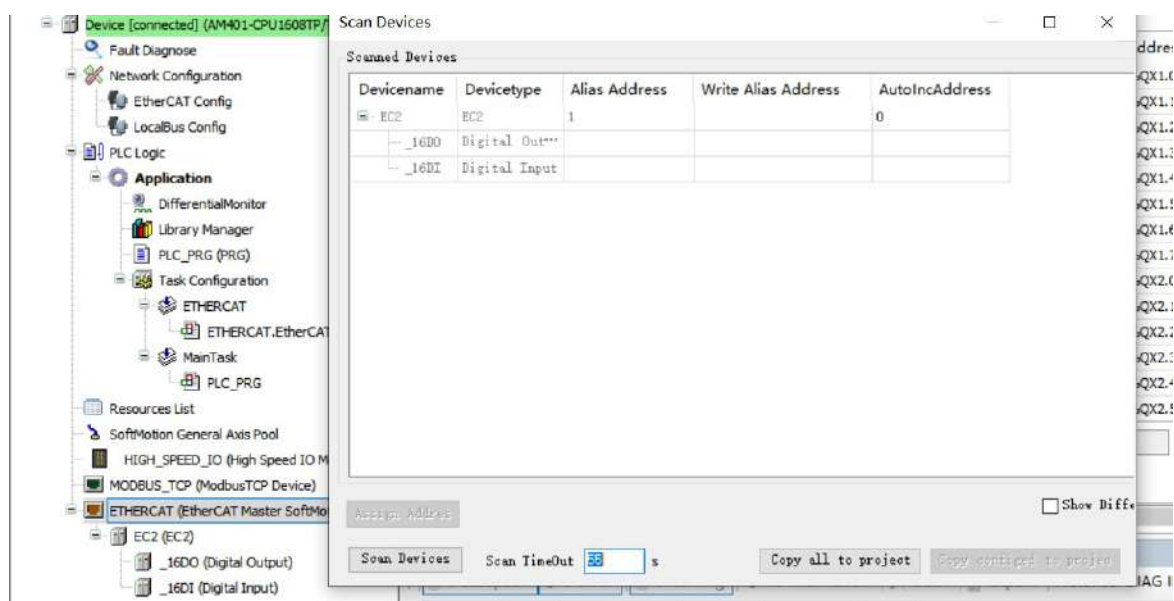


Add an IO module by right-clicking on "EC2" and selecting "Add Device." In the Add Device window, choose the IO module type that matches the actual hardware module.



Online Scan IO modules:

Select "EtherCAT" and choose "Scan Devices." In the Scan Devices window, click "Scan Devices" and add the scanned devices to the configuration.

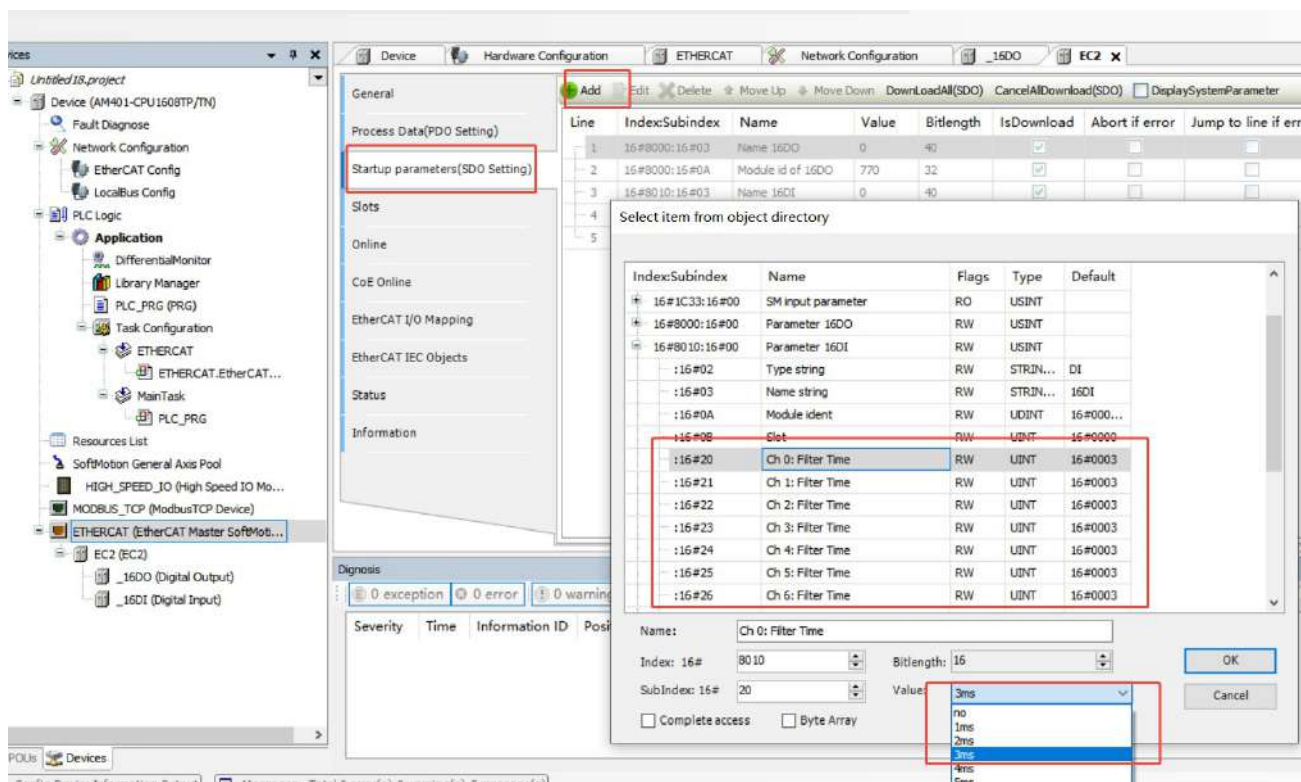


7.5.3 Configuration parameters

Parameter Configuration consists of three parts: DI parameter configuration, DO parameter configuration, and parameter saving. After modifying DI or DO parameters, the changes must be saved.

(1) DI Filter Time Configuration

In the EC2 module, the DI filter time (default: 3ms, configurable range: 0–10ms) is set via startup parameters.

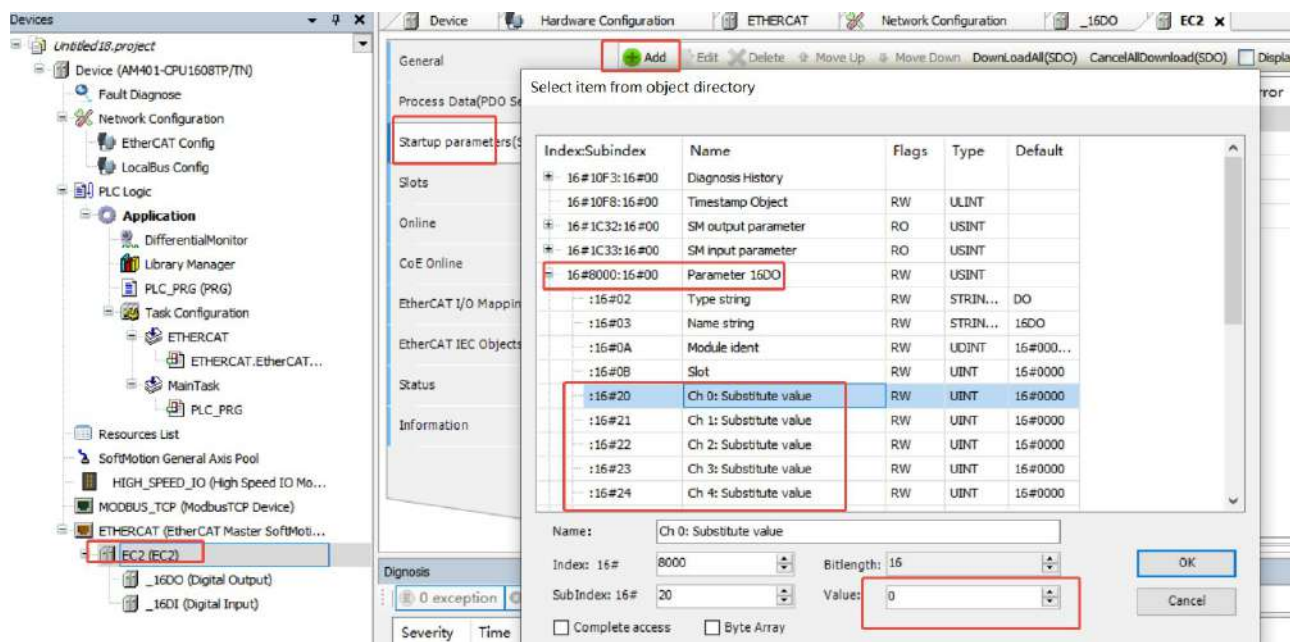


(2) Output configuration when bus communication is abnormal

When the bus communication is abnormal, DO output values can be configured in three ways:

Parameter Value	illustrate
All output off	The output is OFF
Enable substitute value	Output using replacement values
Hold last value	Keep the last output status of the program

Substitute channel replacement value configuration, the configurable value range is 0 or 1, the default value is 0.

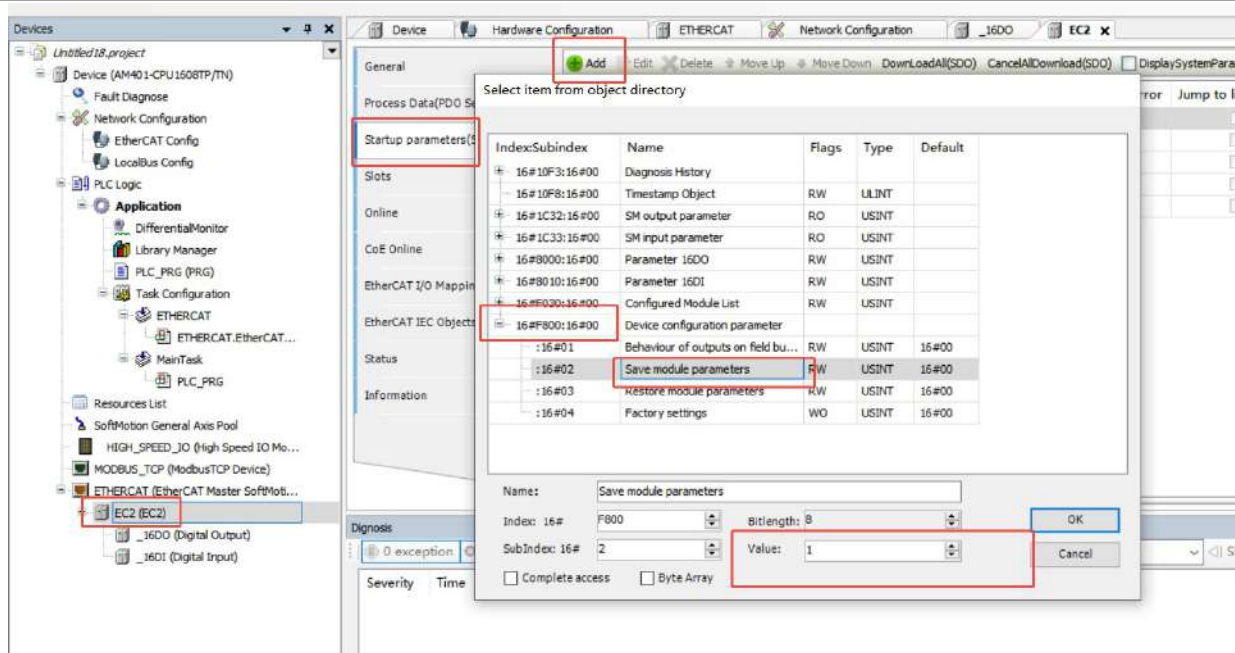


When the bus is abnormal, DO status Settings

(3) Module parameter storage

After modifying DI or DO parameters, the value of sub-index 02 in index F800h must be changed to 1.

Index	Sub-index	Name	Value	Illustrate
F800h	02	Parameter preservation	0	Parameters are not saved, default values
			1	Take effect after power off and restart
			2	Parameters take effect immediately and are lost when power is off





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