

EtherNet/IP

EI3 Series Integrated I/O

User Manual



Nanjing Solidot Electronic Technology Co., Ltd

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1 Product Features

1.1 Product Overview

EI3 series integrated I/O module, using EtherNet/IP industrial Ethernet bus interface, is a standard IO structure EtherNet/IP slave equipment, which can be compatible with EtherNet/IP networks of multiple manufacturers, providing users with a variety of options for high-speed data acquisition, optimizing system configuration, simplifying field wiring, and improving system reliability.



1.2 Product Features:

- Input compatible functions
 The digital input signal is compatible with NPN and PNP
- Ultra-slim
 - The height is only 35 mm
- High-speed
 100 Gigabit Industrial Ethernet port
- Easy to diagnose

An innovative channel indicator design is adopted. As the indicators are placed close to the channels, channel status is displayed intuitively and clearly, facilitating detection and maintenance.

- Easy to configure The configuration is simple and supports all mainstream EtherNet/IP master stations
- Easy to install and wiring DIN 35 mm standard rail installation
 Screw-fixed terminal blocks are used for stable and fast wiring
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2 Designation Rules

2.1 Designation Rules

$\frac{\mathsf{EI}}{(1)} \ \frac{3}{(2)} \ \frac{-}{(3)} \ \frac{16}{(4)} \ \frac{16}{(5)} \ \frac{\mathsf{A}}{(6)}$

numbering	meaning	Valid values		
(1)	Bus protocols	EI: EtherNet/IP		
(2)	Product range	3: Integrated I/O		
(3)	Type of I/O	Default: digital		
(4)	Input signal point	16:16 channel	32:32 channel inputs	00:0 channel input
	numbers	input		
(5)	Output signal point	16:16 channel	32:32 channel output	00:0 channel output
	numbers	output		
(6)	Signal type	A: NPN	B:PNP	Default: compatible
				with NPN&PNP

2.2List of models

Model	Product Description:
EI3-1616A	16-channel digital I/O module, NPN type
EI3-0032A	32-channel digital output module, NPN type
EI3-3200	32-channel digital input module, NPN&PNP compatible
EI3-1616B	16-channel digital I/O module, PNP type
EI3-0032B	32-channel digital output module, PNP type

3 Product parameters

3.1 General parameters

Interface parameters				
Bus protocols	EtherNet/IP			
Number of I/O stations	According to the master station			
Data transmission	Class 5 or higher UTP or STP (STP recommended)			
medium				
Transmission distance	≤100 m (distance from station)			
Transmission rate	100 Mbps			
Bus interface	2×RJ45			
Technical parameters				
Configuration	Via the master station			
Power supply	24 VDC(18V~36V)			
Electrical isolation	500 VAC			
Weight	170 g			
Size	100×96×35 mm			
Operating temperature	-10°C~+60°C			
Storage temperature	-20°C~+75°C			
Relative humidity	95%, non-condensing			
Protection Class	IP20			

3.2 Digital parameters

Digital inputs				
Rated voltage	24 VDC(18V~30V)			
Number of signal points	16、32			
Signal type	NPN/PNP			
"0" signal voltage (PNP).	-3~+3 V			
"1" Signal Voltage (PNP).	15~30 V			
"0" signal voltage (NPN).	15~30 V			
"1" Signal Voltage (NPN).	-3~+3 V			
Input filtering	The default is 3 ms and is configurable			
Input current	4 mA			
Isolation method	Opto-coupling isolation			
Isolation withstand	500 VAC			
voltage				
Channel indicator	Green LED light			
Digital output				
Rated voltage	24 VDC(18V~30V)			
Number of signal points	16、32			
Signal type	NPN/PNP			
The type of load	Resistive loads, inductive loads			
Single-channel current	Max: 500 mA			
rating				
Common-side current	Max: 10 A			
Port Guard	Overcurrent protection			
Isolation method	Opto-coupling isolation			
Isolation withstand	500 VAC			
voltage				
Channel indicator	Green LED light			

4 Panel

4.1 Product Structure



numbering	name	illustrate
1	Dust cover for terminal	Can be opened directly
	blocks	
2	Rotary switches	Set the IP address and reset settings
3	System identification,	Indicates the power supply, module operation, and network
	indicator light	port status
(4)	Module ID	Mark the product model, channel type
5	Rail card slots	Suitable for DIN 35 mm rail fixing
6	Bus interface	2×RJ45
	Channel type	DI digital inputs
	identification	DO digital output
8	Channel indicators, signs	Indicates the signal status of the corresponding channel

9	Terminal blocks	Screw-on terminal blocks
10	Snap fastening	Fixing rail clips

4.2 Rotary switches

IP address setting

You can use a rotary switch to specify how to set the IP address of the module.



Setpoint (decimal)	How to set the IP address			
000	BOOTP-based settings			
001~254	Set the lowest IP address to 1 byte. It can be set in the range of 1~254 by "			
	×100" to 100 digits, "×10" to 10 digits, and "×1" to single digits.			
	The IP address is 3 bytes at a high level, and the value set by the host			
	computer is the same as the previous one.			
	When the IP address is set to a value other than 000 by rotating the switch			
	in the factory state, the high 3Byte is 192.168.0.			
255 ~	When the rotary switch is set to 255 or above, the module will be powered			
	on by the previous start mode and parameters.			

The rotary switch at the factory is set to "000".

Remark:

1、 Tool selection

Screwdriver size: 2 mm opening.

 The rotary switch IP must be set in the event of a power failure. If you need to change the IP address during communication, you must power it on again after the new settings are completed.

Reset function

A factory reset can be performed by means of a special operation of the rotary switch. For specific operation methods, please refer to: <u>7.2 Restore factory settings</u>.

4.3 Indicator function



Name	Mark	Color	Status	Status description
Power	Р	green	ON	The power supply is normal
indicator			OFF	The product is not powered on or the power supply is
				abnormal
Network	L/A1	green	ON	Establish a network connection
indicator IN			flashing	Network connection and data interaction
			OFF	No data interactions or anomalies
Network	L/A2	green	ON	Establish a network connection
indicator OUT			flashing	Network connection and data interaction
			OFF	No data interactions or anomalies
Network status	NS	green	ON	The device is connected
indicator			1Hz	The device is undergoing a power start-up test.
			flashing	
			OFF	The device does not obtain an IP address, the device
				does not establish a connection but obtains an IP
				address, or the IP address is duplicated or the power
				is cut off.
Module status	MS	red	ON	An unrecoverable major error occurred on the device
indicator			1Hz	The device is undergoing a power start-up test;
			flashing	A minor exception that is recoverable occurs on the
				device.
			OFF	The device is normal, and the power is cut off.
Enter the	00~1F	green	ON	The module channel has a signal input

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channel status			OFF	There is no signal input or abnormal signal input in
indicator				the module channel
Output channel	00~1F	green	ON	The module channel has a signal output
status indicator			OFF	There is no signal output in the module channel or
				the signal output is abnormal

4.4 Product model and information identification



name	logotype	description
Module	EI3-1616A	Module model
model		
Bus	EtherNet/IP	Bus protocols
protocols		
	16DI+16DO	16 channels of digital input + 16 channels of
		digital output
Channel	IN:TYP4mA(DC24V);NPN/PNP	Input channel: current 4mA, voltage 24V,
type		compatible with NPN &PNP
	OUT:Max.0.5A/Ch; NPN	Output channel: single channel current up to
		0.5A, NPN type

4.5 Terminal block identification

EI3-1616A/EI3-1616B



logotype	description
S24V	
SOV	system power supply
ON	Protecting earthing
WITH	Enter the public side
OF	Digital input channels
00~0F	Input channel
F24V	Operation newer supply
F0V	Operation power supply
NC	Empty terminals
DO	Digital output channel
10~1F	Output channel

Note: EI3-1616A/EI3-1616B terminal blocks have the same markings.

EI3-0032A/EI3-0032B

X100 X10	X1	PE NC OF DOa S24V SOV OF	0 01	02 0A	03 04 0B 00	4 05 2 0D	06 0E	07 0F
EI3-0032A	32DO,NPN OUT:Max.0.5A/Ch		E	Etł	ner	Ne	t/	IP [°]
sDot		F24V F0V 10	0 11	12	13 1	4 15	<u>16</u>	17

logotype	description
S24V	System side newer supply
SOV	system-side power supply
ON	Protecting earthing
NC	Empty terminals
DOa	Digital output channel
Age	Digital Output channel
00~0F	Output channel
10~1F	
F24V	Field cide nower supply
FOV	rield-side power supply

Note: EI3-0032A/EI3-0032B terminal blocks have the same markings.

EI3-3200



logotype	description
S24V	Sustem side nower supply
SOV	system-side power supply
ON	Protecting earthing
СОМА	Entor the public cide
СОМВ	Enter the public side
Dio.	Digital input channels
DIb	Digital input channels
00~0F	Input channel
10~1F	input channel
NC	Empty terminals

5 Installation and Disassembly

Precautions for installation and disassembly

- Ensure that the cabinet is well ventilated (e.g. install an exhaust fan in the cabinet).
- Do not install this device next to or on top of a device that may cause overheating.
- Be sure to install the module vertically, with sufficient spacing between the module and surrounding equipment.
- Installation/disassembly must be carried out in the state of cutting off the power supply.

Installation instructions

In order to maintain normal heat dissipation of the module, it is necessary to install the module vertically to ensure smooth airflow inside the module.



Minimum clearance

The protection level of the module is IP20, which needs to be installed in the box or cabinet, and when installing, the module and other modules or heating equipment, the module and other equipment or wiring slots, please follow the minimum clearance (unit: mm) shown in the figure below.



5.1 Exterior Dimension Drawing

Dimensions (unit:mm)



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5.2 Installation and disassembly

Installation





2

steps

Push the buckle at the bottom of the module outward, as shown in figure ① to the position as shown in figure ②, and hear a "click" sound.

1



The upper edge of the module buckle is aligned with the upper edge of the guide rail, and the module is put into the guide rail, as shown in Figure ③.

3



The module placement is shown in Figure ④.



Push the direction of the snap guide rail, hear the sound, and complete the module installation, as shown in Figure (5).

disassembly



steps

Insert the flat head into the buckle and force it in the direction of the module (hear the sound) as shown in Figure (6), Disassemble the module in the opposite

direction of the installation module.

6

6 Wiring

6.1 Terminal blocks

Terminal blocks		
Power and signal	Number of poles	2 x 20 P
cable terminals	Wire size	24~17 AWG 0.2~1.0 mm ²
Bus interface	2 x RJ45	Class 5 or higher UTP or STP (STP recommended).

6.2 Wiring instructions and requirements

Power wiring precautions

- The power supply on the system side of the module and the power supply on the field side are configured separately and should not be mixed.
- PE needs to be reliably grounded.

Wiring tool requirements

The terminals are designed with fixing screws, which can be

used for both cable installation and removal

Slotted screwdriver operation (specification: ≤2mm).

-0

Stripping length requirements						
The recommended stripping length is 6 mm.	-					
	-					
Wiring method						
For a single strand of hard wire, strip the wire of the corr	esponding					
length, insert the wire into the terminal and tighten the s	crews with					
a screwdriver.						
For multi-strand flexible wires, after stripping the wires of the						
corresponding length, use the cold-pressed terminals						
corresponding to the standard specifications (tubular insulated terminals, the reference specifications are						
shown in the table below), and the wires are inserted into the terminals and the screws are tightened with						
a screwdriver.						
Specification table of tubular insulated ends						
Specifications:	Model	The cross-sectional area				
		of the conductor is mm ²				

		1 L L
	E0508	0.5
	E7506	0.75
	E7508	0.75
	E1006	1.0
The length of the tubular insulated terminal L is ≥ 6 mm	E1008	1.0

• Signal terminal wiring requirements

Refer to the wiring diagram and wiring method of the corresponding I/O module, and press the signal cable into the terminal block

E0306

E0506

0.3

0.5

• Bus wiring requirements

- Standard RJ45 network interface and standard crystal connector
- The length of the cable between the devices must not exceed 100 m



Pin Signal number TD+ 1 2 E.G.-3 RD+ 4 One 5 One 6 RD-7 One 8 One

6.3I/O module wiring diagram

6.3.1 EI3-1616A



F24

FO

*F 0V internal conduction

Pin	direction	The name of	Pin	direction	The name of
number		the signal	number		the signal
1	input	PE	11	input	S24V
2	input	СОМ	12	input	SOV
3	input	X00	13	input	X08
4	input	X01	14	input	X09
5	input	X02	15	input	X0A
6	input	X03	16	input	XOB
7	input	X04	17	input	X0C
8	input	X05	18	input	X0D
9	input	X06	19	input	XOE
10	input	X07	20	input	X0F

Pin	direction	The name of	Pin	direction	The name of
number		the signal	number		the signal
1	input	F24V	11	input	F0V
2	input	F0V	12	default	NC
3	output	Y00	13	output	Y08
4	output	Y01	14	output	Y09
5	output	Y02	15	output	Y0A
6	output	Y03	16	output	YOB
7	output	Y04	17	output	Y0C
8	output	Y05	18	output	Y0D
9	output	Y06	19	output	YOE
10	output	Y07	20	output	YOF

Note: The rated current of the module terminal port is 8A, and when the total current of the output load of the module channel exceeds 8A, the two FOV ports need to be wired.

6.3.2 EI3-0032A



*F 0V internal conduction

X100 X10 X1		0000000
P LIAT LIA2 NS MS	PE NC 00 01 DOa S24V S0V 08 09	02 03 04 05 06 07 0 0 0 0 0 0 0 0
EI3-0032A 32DO,NPN		Ether Met (ID)
	VCh	Ethenvet/IP
s'Dot		
	F24V F0V 10 11 DOb	12 13 14 15 16 17 1 13 14 15 16 17 14 18 10 10 1E 1F

Pin	direction	The name of
number		the signal
1	input	PE
2	default	NC
3	output	Y00
4	output	Y01
5	output	Y02
6	output	Y03
7	output	Y04
8	output	Y05
9	output	Y06
10	output	Y07

Pin	direction	The name of
number		the signal
11	input	S24V
12	input	SOV
13	output	Y08
14	output	Y09
15	output	Y0A
16	output	YOB
17	output	Y0C
18	output	Y0D
19	output	YOE
20	output	YOF

Pin	direction	The name of		Pin	direction	The name of
number		the signal	1	number		the signal
1	input	F24V		11	input	F0V
2	input	F0V		12	default	NC
3	output	Y10		13	output	Y18
4	output	Y11		14	output	Y19
5	output	Y12		15	output	Y1A
6	output	Y13		16	output	Y1B

7	output	Y14	17	output	Y1C
8	output	Y15	18	output	Y1D
9	output	Y16	19	output	Y1E
10	output	Y17	20	output	Y1F

Note: The rated current of the module terminal port is 8A, and when the total current of the output load of the module channel exceeds 8A, the two FOV ports need to be wired.

6.3.3 EI3-3200



*No interoperability between COMA and COMB



Pin	direction	The name of
number		the signal
1	input	PE
2	input	COMA
3	input	X00
4	input	X01
5	input	X02
6	input	X03
7	input	X04
8	input	X05
9	input	X06
10	input	X07

Pin	direction	The name of
number		the signal
11	input	S24V
12	input	SOV
13	input	X08
14	input	X09
15	input	X0A
16	input	XOB
17	input	X0C
18	input	X0D
19	input	X0E
20	input	X0F

Pin	direction	The name of
number		the signal
1	default	NC
2	default	NC
3	input	X10
4	input	X11
5	input	X12
6	input	X13
7	input	X14
8	input	X15
9	input	X16
10	input	X17

Pin	direction	The name of
number		the signal
11	default	NC
12	input	СОМВ
13	input	X18
14	input	X19
15	input	X1A
16	input	X1B
17	input	X1C
18	input	X1D
19	input	X1E
20	input	X1F

6.3.4 EI3-1616B



Pin	direction	The name of		Pin	direction	The name of
number		the signal	nu	ımber		the signal
1	input	PE		11	input	S24V
2	input	WITH		12	input	SOV
3	input	X00		13	input	X08
4	input	X01		14	input	X09
5	input	X02		15	input	X0A
6	input	X03		16	input	XOB
7	input	X04		17	input	X0C
8	input	X05		18	input	X0D

9	input	X06		19	input	X0E
10	input	X07		20	input	X0F
Pin	direction	The name of		Pin	direction	The name of
number		the signal		number		the signal
1	input	F24V		11	input	F0V
2	input	F0V		12	not	NC
3	output	Y00	-	13	output	Y08
4	output	Y01	-	14	output	Y09
5	output	Y02	-	15	output	Y0A
6	output	Y03	-	16	output	YOB
7	output	Y04	-	17	output	Y0C
8	output	Y05		18	output	Y0D
9	output	Y06		19	output	YOE
10	output	Y07		20	output	YOF

Note: The rated current of the module terminal port is 8A, and when the total current of the output load of the module channel exceeds 8A, the two F0V ports need to be wired.

6.3.5 EI3-0032B



Pin	direction	The name of	Pi	า	direction	The name of
number		the signal	num	ber		the signal
1	input	PE	11		input	S24V
2	default	NC	12	2	input	S0V
3	output	Y00	13	;	output	Y08

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4	output	Y01	14	output	
5	output	Y02	15	output	
6	output	Y03	16	output	
7	output	Y04	17	output	
8	output	Y05	18	output	
9	output	Y06	19	output	
10	output	Y07	20	output	

Pin	direction	The name of	Pin	direction	The name of
number		the signal	number		the signal
1	input	F24V	11	input	F0V
2	input	F0V	12	default	NC
3	output	Y10	13	output	Y18
4	output	Y11	14	output	Y19
5	output	Y12	15	output	Y1A
6	output	Y13	16	output	Y1B
7	output	Y14	17	output	Y1C
8	output	Y15	18	output	Y1D
9	output	Y16	19	output	Y1E
10	output	Y17	20	output	Y1F

Note: The rated current of the module terminal port is 8A, and when the total current of the output load of the module channel exceeds 8A, the two F0V ports need to be wired.

7 Operation

7.1IP settings and modifications

7.1.1 Set the IP address via the rotary switch

- When the IP address is set by rotating the switch in the factory state The IP address is 192.168.0.XXX (XXX is the set value of the rotary switch, range 1~254).
- When the IP address has been set by the host computer, and the IP address is set by the rotary switch

The IP address continues to pass through the high position of the IP address set by the host computer by 3 bytes, and the low position of 1 byte is the set value of the rotary switch.

For example, if you change the setting of the rotary switch after setting it to 172.10.0.12 on the host computer, the IP address is 172.10.0.XXX (XXX is the set value of the rotary switch (1~254).)

Precautions

- Description and operation method of rotary switch" see <u>4.2 Rotary Switch</u>".
- When the module leaves the factory, the rotary switch is set to "000", and the IP address is not assigned.
- After the host computer is modified, the module will change the startup mode to a fixed IP to start and restart automatically. The module is started with a rotary switch setting value and an IP address that is assigned to the network segment.
- Abnormal rotary switch setting: When the rotary switch is set to 255 or above, the module will be started by the previous start mode and parameters after powering on.

7.1.2 Set the IP address through the host computer software

Using the KEYENCE KV-8000 and the host computer KV STUDIO Ver.10G as examples, this section describes how to modify the IP address.

a. After finding the device, click the IP address on the device to modify the IP address, and select Fixed IP Activation as the IP address setting method. Click OK after the modification is complete, as shown in the following figure.

🛃 EtherNet/IP settings					- 0	×
File(F) Edit(E) Settings(S) View	v(V) Convert(C) EDS file(D) Communica	tion(N) Tool(T)	Help(H)			
📲 🕦 🐕 🗣 🕺 X 🖻 👘 👫 🛙	1 🔗 🙃 🗬 🧠 😿 խ 🖿 🕜					
KV-8000[0] : 192.168.0.1		EtherNe	t/IP unit			ņ
T		Unit list	:(<u>1</u>) Unit setti	ing(2) Search unit(3)	0	
		10 Th	📲 Display a	11	~	
1: EI3-1616A : 192.		Un	it name	IP address	MAC address	
Exclusive Owner		EI	13-1616A	192.168.0.120	8C:F3:E7:30:E1:24	
	IP address settings		×			
		Fixed ID start				
	IP address setting method(S)	Fixed IF Start	~			
	IP address(I)	<u>192</u> . 168 . 0	. 120			
	Advanced settings(A)	ОК	Cancel			
		EI3-1	616A[2.3]	astria Tashnalagu	Co. Itd	
		When p	ower on next	time:Fixed IP sta	rt	
		EDS T	Lie for E13-1	elea		
Dutput						ņ
	1					
N Node name	IP address Connec	ction	RPI[IN] RE (ms)	(ms) Time out	Refresh priority	
1 EI3-1616A	192.168 PExclusive Owr	ner [IN_10	30.0	30.0 RPI*16	Normal	
• • • • Message (Verify) Setup	list	<				>
			Editor	OK	Cancel Apply	
				on	sector (pp)	_ //

Precautions

 If you use BOOTP to modify the IP address, you need to set the request acceptance time during scanning and the timeout time when the IP address is set to 60s or more, and after the modification is completed, you need to set the module to a fixed IP to start, otherwise the assigned IP address will be lost after power failure.

7.2 Restore Factory Settings

If the IP address is forgotten, lost, or other abnormal situations during use, the module can reset the module through the IP address reset function. The module can perform a factory reset operation by means of a special operation of the rotary switch, which is performed as follows:

1) Turn the rotary switch to 999 and power on the module;

2) After the module is powered on, the rotary switch is dialed back to 000 under the condition of uninterrupted power;

3) After the rotary switch is dialed back to 000, the module automatically restores the factory settings;

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4) After the module is restored to factory settings, the IP address parameter is cleared, and the boot mode is BOOTP.

7.3 Parameter description

7.3.1 Digital input filter period setting

Digital input filtering prevents the program from responding to unexpectedly fast changes in the input signal that can occur due to switch contact hopping or electrical noise. For modules with input channels, the filtering time of the digital input can be selected by the filter period parameter setting, and the clutter within the set time can be filtered, and the channel cannot be configured separately.

For example, an input filtering time of 3 ms indicates that a single signal changes from "0" to "1", or from "1" to "0" for 3 ms before it can be detected, while a single high or low pulse shorter than 3 ms will not be detected.

7.3.2 Output signal clear/hold

The Clear/Hold function is for modules with output channels, and this function can be configured to perform the output action of the module in the event of a bus abnormality.

Clear output: When the communication is disconnected, the output channel of the module will automatically clear the output.

Hold Output: When the communication is disconnected, the output channel of the module keeps the output all the time.

7.3.3 Configure the output action of the module in the bus RUN/IDLE state

For modules with output channels, you can choose whether to hold or empty the output of the module when the bus state switches to the idle state.

This manual uses KV STUDIO Ver.10G as an example to introduce the module parameter configuration method, and the specific steps are detailed in Section 7.4.1 Parameter Setting.

7.4 Modular configuration applications

7.4.1 APPLICATION IN THE KV STUDIO SOFTWARE ENVIRONMENT

1. Preparation

- Hardware environment
 - > Model EI3-1616A
 - > One computer, pre-installed KV STUDIO Ver.10G software
 - > Ethernet-specific shielded cable
 - > KEYENCE PLC, this description takes KV-8000 as an example
 - > One switching power supply
 - > Module installation rails and rail fixtures
 - > Device profiles
 - Address for obtaining the configuration file: https://www.solidotech.com/documents/configfile
- Hardware configuration and wiring
 Please follow the requirements of "5 installation and disassembly" and "6 wiring".

2. Create a project

- a. OPEN THE KV STUDIO SOFTWARE AND SELECT "FILE -> NEW PROJECT" .
- b. In the pop-up box, enter "Project Name", "PLC Model", and "Position", as shown in the following figure.

KV SI	UDIO											
File(F)	View(V)	Monitor/Simulator	(N) Ope	eration recorder/	Replay(R)	Tool(T)	Window(W)	Help(H)			
i 🗋 🍋			1	Ethernet	• 1	D 💕 -	i 🖬 🔂 🖬 🛙	新田		: F5 \$F5 F4	SF4 F7 SF7 F8 SF8 F8 SF8	
14 =	$\cong \mathbb{Z}$	8 8 9 5 B	8 % 0		H & H	₩.₩	H > O 🗐	50	12:00		- Comments	*
				Non-sector et					~	1		
				New project					~			
				Project name(h	D		PLC n	nodel(K)				
				EI3			KV-800	00	~			
				Position(P)								
				D:\Backup\Doo	uments\KE	YENCE/K	/S10G\KVS\PRO	JECT	Refer(S)			
				Comment(C)								
									~			
									×			
				Avv display con								
				KVS FROJECI								
				Register sp	cial device	cmnts(M)	OK		Cancel			
									_			

• Project Name: Customizable

• Supported models: View the appearance of the PLC and select the corresponding model, for example, KV-8000.

c. The "Confirm Unit Setting Information" window pops up, and you can choose to start the unit editor, close the dialog box, or read the unit configuration from the PLC as needed. Select "No" to demonstrate the operation, as shown in the following figure.



3. Communication settings

Select the communication mode, if the PLC is connected to the host computer software through the network cable, then select "Ethernet", if it is connected through USB, then select "USB".

Ethernet procedure

a. Click the button on the menu bar to display the "Communication Settings" window, as

shown in the following figure.

PC comm port		
() USB(<u>U</u>)	⊖ Serial(<u>S</u>)	
C Ethernet(E)	\bigcirc Bluetooth(<u>H</u>)	\bigcirc Modem(<u>M</u>)
JSB settings		
No settings.		
Routing setting(<u>R</u>)		
Routing setting(R) PC comm port : USB via VT/DT : No via network : No Connected model :		
Routing setting(R) PC comm port : USB via VT/DT : No via network : No Connected model :		Detail(<u>A</u>)

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 Select "Ethernet", click "Destinations", select "1 sample", set the IP address, and click
 "Search destination", as shown in the following figure, the IP address is configured in the "192.168.0" CIDR block.

onin settings		>
PC comm port		
	⊖ Serial(<u>S</u>)	
Ethernet(E)	O Bluetooth(<u>H</u>)	○ Modem(<u>M</u>)
Ethernet settings		
IP address(])	192 . 168 . 0 . 10	Search dest.(F)
Port No.(P)	8500	Conn. test(T)
Routing setting	(<u>R</u>)	
Routing setting PC comm port : U via VT/DT : No	(R) SB	
PC comm port : U via VT/DT : No via network : No Connected model	(R) 58	
Routing setting PC comm port : U via VT/DT : No via network : No Connected model	(E) SB	Detail(≜)
Routing setting PC comm port : U via VT/DT : No via network No Connected model Destinations(L)	(B) 58 1: OK	Detail(A) Cancel
Routing setting Comm part: U VT/DT: No Via network: No Connected model Destinations(L) Add to des	(B) SB I: stinations list(A)	Detail(≙) Cancel
Routing setting Comm part : U Via VT/DT: No Via network: No Connected model Destinations(L) Add to des Open desti	(B) SB I: stinations list(A) inations list(O)	Detail(A) Cancel

c. In the Search Detection Target pop-up window, click "Execute", as shown in the following figure.

Select network care	d				
Network card (N)	Realtek PCIe	GbE Family Contro	ller		~
IP address	192.168.0.2	22			
Subnet mask	255.255.255	5.0			
Part No (D)	500	Evente	(C) Charl		
Port No.(P)	500	Execute	(<u>S</u>) Stop(<u>B)</u>	
Find Ethernet unit w	here broadcas	st packets reach. (KV only)		
*Network load may	y increase acc	cording to the numb	per of connected un	its.	
Result					
MAC address	Conn	ected Unit type	IP address	Project name	

d. Select the found PLC and click "Select", as shown in the following figure.

elect network card									
Network card (N)	Realtek PCIe GbE Family Contro	ller							
IP address	192.168.0.222								
Subnet mask	255.255.255.0								
ort No.(P) 850	00 Execute	(S) Stop(I	 Search in progress 						
Network load may	increase according to the numb	per of connected un	ts.						
	On a stand the life is to see	(D) and down a re-							
AC address -01-FC-71-EB-01	KV-8000	192.168.0.10	Project name 122						
AC address	KV-2000	P address 192.168.0.10	Project name						

e. Click the "OK" button in the communication settings window.

"USB Connection" operation mode

On the "Communication Settings" screen, select USB.

4、 EtherNet/IP Settings

 a. Double-click "Unit Configuration -> KV-8000 -> EtherNet/IP R30000 DMI10000" in the navigation tree on the left to display the "EtherNet/IP Settings" window. Select "Manual" or "Auto Configuration", as needed. Here select "Manual" to demonstrate the operation, as shown in the following figure. When the settings are complete, click "OK" to close the window.

K EtherNet/IP settings			-		×
File(F) Edit(E) Settings(S) View(V) Convert(C) EDS file(D) Communication(N) Tool(T) H	elp(H)				
	EtherNet/IP uni	t			ņ
RV-8000[0] . 192.168.0.10	Unit list(1)	Jnit setting(2) Se	arch ur	iit(3)	
		= 15			
	Unit	name	Rev.	EDS fil	~
	E Keyence	Corporation			
	KV-55	00	1.1	KV-5500	
	KV-75	00	1.1	KV-7500	
	10 KV-80	00	1.1	KV-8000	
	E KV-EP	02	1.1	EtherNe	
	KV-N	116ER	1.1	16-poin	
	KV-N	116ET*	1.1	16-poin	
EtherNet/IP settings	×	116EX	1.1	16-poin	
	1	MAEI	1.1	2+1ch a	
The EtherNet/IP setting has not been set. Please select t	he setting method.	18ER	1.1	8-point	
* "Manual"Set the configuration from the equipment is * "Auto Configuration"Search the connected equipment	t. Int to be set automatically	ISET*	1.1	8-point	
		ISEX	1.1	8-point	~
Manual(M) Auto Configuration	(<u>A</u>)		-	>	
Output					ņ
🖻 🛍 🛤 🎜 🗷 🐘 🐘					
N Node name IP address Connection I	RPI[IN] RPI[OUT] (ms) (ms)	Time out	Refr prior	esh ity	
H + + H Message/Verify Setup list				>	
	Editor	OK	Cance	Apply	

5、 Install the EDS file

a. Right-click the KV-8000 in the unit editor window and select "EtherNet/IP Setting" to enter the settings page, as shown in the following figure.

ar 🗗 X bib	, ⊻∎ ® '	e 1 6		合同人		Unit	
Width:57mm Height:90mm Depth:115mm	KV-8000					Select unit(1) Setup u TE ₽= ▷ ♀ ∞ ♣	nit(2)
Curr. Cons.:400mA Weight:340g	R3000	EtherNe Setup n	et/IP setting(F nail(M)) Ctrl+F Ctrl+M		 Function Socket function Base 	Not used(*) 👻
		Mail Co FTP clie	ommand Mak nt setting(J)	er(2)		Leading DM No. Number of DMs	DM10000 230
						Number of rel	R30000 640
						Baud rate Setting metho	100/10Mbps aut Fixed IP addre
					v	Socket function When socket function following functions used. "Socket0"~"So socket".	n is used, the , settings may be cket15", "Common KV
Message						L	
Process	Row	No.	Code	Message			

b. Click "EDS File" in the menu bar of the EtherNet/IP Settings page and click "Reg", as shown in the following figure.

EtherNet/IP settings							-	- 🗆	\times
File(F) Edit(E) Settings(S) View(V)	Convert(C) EDS file(D)	Communication(N)	Tool(T)	Help(H)					
📲 🛈 🖹 🕾 👗 🖄 🛸 h 🗎 🛤 🤗	🕞 殿 🖉 🛛 Reg(l)		1						
The second second second second second	Delete	(D)			EtherNet/IP un	it			л
KV-8000[0] : 192.168.0.10	Search	(S)			Linit Bet(1)	Unit cotting(2) C	o arch u	attra)	
NU	Edit co	mments(E)				= %=	sarch u	niu <u>s</u>)	
	Add to	scan list(A)					-		
	Display	all EDS files(V)			Unit	c name	Rev.	EDS fil.	·· ^
		. (D)			W-55	00	1.1	KV-5500.	
	Proper	ty(P)			100 KV-75	00	1.1	KV-7500.	
					10 KV-80	00	1.1	KV-8000.	
					E KV-EF	02	1.1	EtherNe.	
					KV-	N16ER	1.1	16-poin.	
					KV-	N16ET*	1.1	16-poin.	
					KV-	N16EX	1.1	16-poin.	
					KV-	MAEM	1.1	2+1ch a.	
					KV-	NSER	1.1	8-point.	
					KV-	N8ET*	1.1	8-point.	
					KV-	NSEX	1.1	8-point.	· · ·
					<				>
Output									
									4
N Node name	IP address	Connection		RPI[I (ms	N] RPI[OUT]) (ms)	Time out	Ref: prio:	resh rity	
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		1 <							>
Read EDS file and register to the unit list		U -		Editor		OK	Caner	Ares I	
neau Los me, and register to the unit list.				Laitor		UN	Cance	Apply	

c. In the folder where the EDS file is stored, select the EDS file of the corresponding model and click "OK", as shown in the following figure.

LtherNet/IP settings						- 1	n x
File(F) Edit(E) Settings(S) View(V) Convert(C) EDS file(D)	Communication(N) Too	ol(T) Help(H)				
📲 🔃 🚔 🖏 👗 🛍 🍠 🐔 🙉) 🤍 😿 🔥 🖢	1 🕜					
KV-8000[0] : 192.168.0.10				EtherNet/IP un	iit		ą
				Unit list(1)	Unit setting(2) !	Search unit(<u>3</u>)	
■ 打开					= 3		×
查找范围(I):	EDS文件		V @ 🕈	P*			
*		4					
快速切口							
皇白	EI3-1616A_V	1.0.E					
	US]					
库							
							*
此电脑							
🔿 🔿							
网络							
							4
N Node name						Internet (+)	
	文件名(N):	E13-1616A_V1. 0. EDS			~	打开(0)	
H + + H Message/Verify Setup	XHHAT(I):	LUS file(*.eds; *.erl)			~	取消	

6、Topological configuration

The topology configuration can be "manually added" and "automatically configured". Manual configuration is used for this configuration.

a. Go to the "EtherNet/IP Settings" page and switch to the "Search Unit" tab, as shown in the following figure.

EtherNet//D settings							_		×
File(F) Edit(F) Settings(C) View(0)	Convert(C) EDC	Fle(D) Communication(N)	Teel(T)	Hala/U	1				^
			1001(1)	neip					
	() (in () (in)				EtherNet/IP un	it			а
KV-8000[0] : 192.168.0.10					Unit list(1)	Unit setting(2)	Search unit(3)	-	
						isplay all		~	
					Unit na	ame	IP address	MAC	a
					<				>
Output									ą
na ma M .57 12 ma 12 ma									
N Node name	IP address	Connection		RPI[] (ms	IN] RPI[OUT]) (ms)	Time out	Refresh		
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		<	8						>
		u		Edito	r	OK	Cancel	Apple	v

b. Click at to select the communication path, and the USB connection mode is shown in the following figure.

LtherNet/IP settings						-	
File(F) Edit(E) Settings(S) View(V)	Convert(C) EDS	file(D) Communication(N) Tool(1	T) Help(H)				
📲 🕼 🐕 🗞 🛍 👘 뵭 📑 🔗	r 😚 🙉 🔍 😿	la lit 🕜					
KV-8000[0] : 192.168.0.10			Eth	nerNet/IP un	it		ņ
			U	nit list(<u>1</u>) I	Unit setting(<u>2</u>	Search unit(3)	
			9 ₆	B A D	isplay all		~
				Unit na	me	IP address	MAC a
	Select	communication path	×				
	⊚Et	nernet port of EtherNet/IP unit via PLC(P)				
	ОРС	Ethernet port direct link(D)					
			_				
			:	_			>
		ОК	Cancel				
Output							a
₽ # <i>5</i>7 12 0 0							
N Node name	IP address	Connection	RPI[IN] (ms)	RPI[OUT] (ms)	Time out	Refresh priority	
H + + H Message Verify Setup list		<					>
			Editor		OK	Cancel	Apply

c. "PC Ethernet port direct link" is the network cable connection method, as shown in the following figure.

LtherNet/IP settings								×
File(F) Edit(E) Settings(S) View(V)	Convert(C) EDS file(I	D) Communication(N) Too	ol(T) Help(H)					
📲 🛈 🐕 🖧 🖕 🛍 🛔 📑 🖉	🍠 🚳 🕲 🗑 😿 🖿	et 🕜						
KV-8000[0] : 192.168.0.10			Et	herNet/IP un	it			
			U	nit list(1)	Unit setting	(2) Search unit(3)		
			1		isplay all		\sim	
				Unit na	me	IP address	MAC	a
	Select cor	nmunication path	×	1				
	OEthern	et port of EtherNet/IP unit via PL	_C(P)					
	PC Eth	ernet port direct link(<u>D</u>)						
	e	ОК	Cancel	-				>
Output								4
🖻 🗈 🛤 🖅 🛚 🕾 🖳 🔛								
N Node name	IP address	Connection	RPI[IN] (ms)	RPI[OUT] (ms)	Time out	Refresh priority		
14 4 > > Message Verify Setup list		<						>
			Editor		OK	Cancel	Appl	/ []

d. Select "PC Ethernet port direct link", and the "Select network card " window will pop up, and set the network card and IP address of the machine, as shown in the following figure.

LitherNet/IP settings						-		\times
File(F) Edit(E) Settings(S)	View(V) Convert(C) EDS file(D) Communication(N) Tool(1) Help(H)					
KV-8000[0] : 192.168	.0.10		Eth	nerNet/IP un	it			ņ
			U	nit list(1)	Unit setting(2) Search unit(3)		
				빠고	isplay all			
				Unit na	me	IP address	MAC	a
	Select network car	d			×			
	Network card(N)	Realtek PCIe GbE Family Controller			~			
	IP address	192.168.0.222						
	Subsetmeek	255 255 255 0						
	Subnetmask		ОК		Cancel			>
Output								ņ
🖻 💼 🛤 🎜 🗷 🖳 🐘								
N Node name	IP add:	Connection	RPI[IN] (ms)	RPI[OUT] (ms)	Time out	Refresh priority	i T	
H + + H Message Verify S	etup list /	<						>
			Editor		OK	Cancel	Appl	1 /

e. Click to find the device connected to the network. Set the CIDR block of the IP address to be searched and click "Search", as shown in the following figure.

	y ED (m) (m) 🕅 EQ	ey 🕜				25		
KV-8000[0] : 192.168.0.10				Eti	nerNet/IP un	it		
				U	nit list(<u>1</u>) I	Unit setting(¿	Search unit(3)	I
					- 14 D	isplay all		~
					Unit na	me	IP address	MAC a.
	Search ur	nit settings		×				
	Sparch e	Tart address	100 160	0 0	1			
	Search s		192 . 168 .	0.0				
	Search ei	nd address(E)	192 . 168 .	0 . 255				
	Search	n unit without IP add	ress(U)					
	Reque	st acceptance time	<u>O)</u> 15	s				
			Paarch/E)	Cancel				
		_	earch(E)	Cancer				
tout								
tput				L	DDT COUTD		Refresh	
tput	TP address	Connecti	on	RPI[IN]	KET[001]	Time out		
put Im Im <td< td=""><td>IP address</td><td>Connecti</td><td>on</td><td>RPI[IN] (ms)</td><td>(ms)</td><td>Time out</td><td>priority</td><td></td></td<>	IP address	Connecti	on	RPI[IN] (ms)	(ms)	Time out	priority	

f. After the search is complete, it is displayed as shown in the following image.

LtherNet/IP settings				- 🗆	×
File(F) Edit(E) Settings(S) View(V) Conver	t(C) EDS file(D) Communication(N)	Tool(<u>T</u>) Help(<u>H</u>)			
🐗 🛈 🛱 🖧 🖕 🛍 🛔 📑 🔗 🐔 🕯	R 🔍 🗹 🖿 🕜				
KV-8000[0] : 192.168.0.10		EtherNet/IP unit			ņ
		Unit list(<u>1</u>) Unit s	etting(2) Search unit(3)		
		Displa	y all	~	
		Unit name	IP address	MAC address	
		EI3-1616A	192.168.0.120	8C:F3:E7:30:E1:24	1
		EI3-1616A[2.3]	B		
		Nanjing Solidot	Electric Technology (Co.,Ltd.	
		EDS file for EI	art time: Fixed iF star 3-1616A		
Output					ą.
la in # ₽ 8 la la					
N Node name IP ac	ddress Connection	RPI[IN]	RPI[OUT] (ms) Time out	Refresh	
		,,			_
H + + H Message Verify Setup list	[] <				>
		Editor	OK	Cancel Apply	

g. Double-click the found device to add it to the configuration, as shown in the figure below.



7、Set the IP address

On the Searched Device page, double-click the IP address bar and configure the IP address in the pop-up box. The default CIDR block is 192.168.0. Notification:

- The timeout period for setting the IP address needs to be configured to 60s.
 - If an IP address is configured for the DIP switch, the IP address of the DIP switch shall prevail.

In this example, EI3-1616A sets the IP address by rotating the switch, and the IP address is set to 192.168.0.3.

8、Parameter setting

a. Click the Menu Bar Toggle Mode option to switch to editor mode, as shown in the following image.

📷 KV STUDIO -[Editor: KV-8000] - [EI3 *]								
File(F) Edit(E) View(V) Program(M) Script(S)	Convert(A)	M	onitor/Simulator(N)	Debug(D)	Operation	n recorder/Replay(<u>R</u>)	Tool() Window(W)	Help(<u>H</u>)
: 🗅 🔒 🖶 🖹 😫 🛤 🖶 🗔 🕢 🗄 🔛 Ether	net		- 🛯 🖻 📲 📦	🖸 🖬 🖷	🏛 🚉 🖭	FS SFS F4 SF4	F7 SF7 F8 SF8 F9 SF9	
i 🖌 🗄 🗄 🐹 🐼 🎬 🖷 🍈 🕏 🔂 💁 🌒 🌒	▶ ■ Ⅱ	144	A H H V H >	0.1	F 🙆 🛅 🗄	Editor	Comments Co	mment 1 •
Project 🛛 🗘 🗙	Main 🗙					Editor		
Unit configuration			1	2	1	Monitor Online edit	5	6
■ [0] KV-8000 ■ [EherNet/IP R30000 [M10000] □ Dit configuration switching ■ Device comment ■ Label ■ Operation recorder setting	00001			_		Simulator Simulator edit Replay		
 CFU system setting Program: E13 Every-scan execution Main Initialize module Standby module 	00002							
<pre>Fixed-period module Inter-unit sync module Finction Block Macro Subroutine macro Self-hold macro</pre>	00003							
Device default price default price setting Othenory card life remory life document	00004							

b. Go to the "EtherNet/IP Settings" page, click "Exclusive Owner", and the "Connection Settings" window pops up. In the "Connection Settings" window, click "Setup parameter", as shown in the following figure.

EtherNet/IP settings]	Connection settings - 1:EI3	-1616Δ	2 X	-	×
File(F) Edit(E) Settings(S) View(V	/) Convert(C) E	Operation Settings - 1.Els	TOTOR	. ^		
		Connection list(L)				
		No. Conner	App	lication type		
KV-8000[0] : 192.168.0.10				owner		џ
					Search unit(<u>3</u>)	
1. FT2-16161 . 162 16						^
Exclusive Owner	.0.0.120				1	
		Add(A) Delete(t	E)		192.168.0.120	
		Connection name(C)	Exclusive Owner	~	EI3-1616A	
		Time out(T)	RPI*16 V (IN:480 0ms / OL	JT-480 0ms)	EI3-1616A	
		Time out(_)			Nanjing Solidot E	
		Refresh priority(E)	Normal	~	2.3	
			Setup parameter(P) As	sign device(D)	<setting></setting>	
		[N (input from adapter)			No	
		Connection type	Point-to-point	~	Unit error	
		Connection point	IN 100	~		
		Connection point	114_100	<u> </u>	No	
		Data size	1 Word		No	
		Send trigger	Cyclic	~		-
		RPI (communication cycle)	30.0 ms (2.0 to 50.0m	ns)		~
		Production inhibit time	- ms			
		OUT (output to adapter)				
Output		Connection type	Point-to-point	~		д
		Connection point	OUT_150	~		
		Data aiza	1 Word			
N Node name	IP addres:	Data size	·		Refresh	
	100.100	RPI (communication cycle)	30.0 ms (2.0 to 50.0m	ns)	priority	
1 Aug E13-1616A	192.168		Keep consistent with IN		Normal	
h						
I Viessage Verify Setup list	/		OK	Cancel	3	>
			Carton		Cancel Apply	

c. In the "Parameter Setting" window, you can configure the module parameters, and the EI3 series integrated IO parameters include three functions: output signal clearing/holding, module output action configuration in bus RUN/IDLE state, and input filter cycle setting, as shown in the following figure.

LetherNet/IP settings	Connection settings - 1:EI3-1616A ?	× ×
File(F) Edit(E) Settings(S) View(V) Convert(C)	Connection list(I)	
	No Connection Application type	
	1 Exclusive Owner (IN 100.OUT 150) Reclusive owner	
KV-8000[0] : 192.168.0.10		The state of the s
	Setup parameter ×	Search unit(3)
	Parameter(P) EI3-1616A ~	
1: EI3-1616A : 192.168.0.120		^
Exclusive Owner	No. Parameter Set value Attribute	1
	0003 Hold or Clear Paramter 0: Clear V RW	192.168.0.120
	Conf 0005 IDLE Status Output M 0 : Clear R/W	EI3-1616A
	Time 0006 DI Filter Config 3 : DI Filter 3ms R/W	EI3-1616A
		Nanjing Solidot E
	Refre	× 2.3
		<setting></setting>
		<setting></setting>
	10 0	No
	Con	V Unit error
	Con	× No.
	Date	No
	Data	
	Sen Description Hold:1 Clear:0	~
	Default value 0	
	RPI Range 0 to 1	
	Pror value	
	Remarks	
	QU'	
Output	Con	~ _
	Con	-
N Node name IP addres	Data Restore to default(D) OK Cancel	Refresh
	RPI (communication cycle) 30.0 ms (2.0 to 50.0ms)	priority
	Keep consistent with IN	NOIMAL
he had been a fille the fill of the fill o		
I Viessage verify Setup list	OK Can	cel
	Lanor	Cancel Apply

d. Click the "Hold or Clear Parameter" option, select **0** to clear, select **1** to hold, and the parameter is cleared by default, as shown in the following figure. After the settings are complete, click "OK" to save the parameters, click "Apply" in the "EtherNet/IP Settings" window, and download them to the controller for the parameters to take effect.

🛃 EtherNet/IP settings	Connection settings - 1:EI3-1616A ?	× – – ×
File(F) Edit(E) Settings(S) View(V) Convert(C)	Connection list(1)	
	No Connection Application type	
	1 Exclusive Owner (IN 100.OUT 150) Reclusive owner	
KV-8000[0] : 192.168.0.10		••••••••••••••••••••••••••••••••••••••
a.	Setup parameter X	Search unit(<u>3</u>)
	Parameter(P) EI2-16164	
1: EI3-1616A : 192.168.0.120		^
Exclusive Owner	No. Parameter Set value Attribute	1
	0003 Hold or Clear Paramter 0 : Clear VRW	192.168.0.120
	Conr 0005 IDLE Status Output M 0: Clear R/W	✓ EI3-1616A
	Time 0006 DI Filter Config 1: Hold R/W	EI3-1616A
		Nanjing Solidot E
	Refre	× 2.3
		<setting></setting>
		<setting></setting>
	În (NO Unit error
	Con	Child Ellor
	Con	▼ No
	Data	No
	Sen Description Hold:1 Clear:0	~
	BPI Barrow 0 to 1	~
	Current set 0	
	Prot value	
	Remarks	
Output	Con	- -
B B A 5 8 5	Con	×.
	Data Restore to default(D) OK Cancel	Dafrash
N Node name IP addres	20.0	priority
1 EI3-1616A 192.168	RPI (communication cycle) 30.0 ms (2.0 to 50.0ms)	Normal
I + + Message/Verify/Setup list	OK Canc	el >
	Luitor	Cancel Apply

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e. Click the "IDLE Status Output Mode", select **0** to clear, select **1** to hold, and the parameter is cleared by default, as shown in the following figure. After the settings are complete, click "OK" to save the parameters, click "Apply" in the "EtherNet/IP Settings" window, and download them to the controller for the parameters to take effect.

EtherNet/IP settings	Connection settings - 1:FI3-1616A ? ×	X
File(F) Edit(E) Settings(S) View(V) Convert(C) E	Connection liet/1)	
MOBELYBBB NAGOO		-
	1 Exclusive Owner (IN 100 OLT 150) Reclusive owner	
KV-8000[0] : 192.168.0.10		4
	Setup parameter X	Search unit(<u>3</u>)
	Demonster (D)	
1: EI3-1616A : 192.168.0.120	Parameter(P)	^
Exclusive Owner	No. Parameter Set value Attribute	1
	0003 Hold or Clear Paramter 0 : Clear R/W	192.168.0.120
	Conr 0005 IDLE Status Output M 0 : Clear VR/W V	EI3-1616A
	0006 DI Filter Config 0: Clear R/W	EI3-1616A
	1:Hold	Nanjing Solidot E
	Refre	2.3
		<setting></setting>
	IN C	Ne Ne
	jet .	Unit error
	Con	I CHIC ELLOL
	Con	No
	Data	No
	Sen Description Hold:1 Clear:0	
	RPI Parat Value 0	~
	Current set 0	
	Prot value	
	OUT	
	Con	1
Output		
	Con	
	Data Restore to default(D) OK Cancel	
N Node name IP addres:		Refresh
	RPI (communication cycle) 30.0 ms (2.0 to 50.0ms)	priority
LI3-1616A 192.168	Keep consistent with IN	Normal
I I I Message Verify Setup list	OK Cancel	>
	Lunor	Cancel Apply

f. Enter the filter period setting function, click the "DI Filter Config" option, the default filter time of the DI filter is 3ms, and set the filter time by selecting the setting value of the corresponding filter time, as shown in the figure below. After the settings are complete, click "OK" to save the parameters, click "Apply" in the "EtherNet/IP Settings" window, and download them to the controller for the parameters to take effect.

LtherNet/IP settings	Co	nnection	settings - 1:	FI3-1616A			×			×
File(F) Edit(E) Settings(S) View(V) Co	nvert(C) E Co	onnection I	ist/l)							
		No	Con	nection	Ann	lication type		f l		
		1 Exclu	sive Owner	IN 100.OUT	150] exclusive	owner				
KV-8000[0] : 192.168.0.10								1.0.1.1.00		*
		Setup	parameter			×		Search unit(3)	
		Paran	neter(P)		EI3-1616A					
1: EI3-1616A : 192.168.0.1	20									^
Exclusive Owner		No	. Pa	rameter	Set value	Attribute		1		
		00	03 Hold or C	Clear Paramte	r 0: Clear	R/W		192.168.0.12	20	
	C	onr 00	05 IDLE Sta	tus Output M	0 : Clear	R/W	~	E13-1616A		
	Ti	me	00 DI Filler (Joning	3 : DI Filter 3ms	POW		Naniing Soli	idot E	
	D				1 : DI Filter 1ms			2.3		
	The second se	ene			2 : DI Filter 2ms		E	<setting></setting>		
					3 : DI Filter 3ms			<setting></setting>		
		NO			5 : DI Filter 5ms			No		
	C	Con			6 : DI Filter 6ms		\sim	Unit error		
		Con			7 : DI Filter 7ms		~			
					9 DI Filter 9ms		-	No		
	C	Data			10 : DI Filter 10ms			No		
	s	Sen Desc	vintion Se	at required DI t	11 : DI Filter 11ms	_	~			-
		Defau	It value 3	et required by	12 : DI Filter 12ms					
	R	PI Rang	e 0	to 255	14 : DI Filter 14ms					~
	P	Curre value	ntset 3		15 : DI Filter 15ms					
		Rema	irks		16 : DI Filter 16ms					
	2	201			18 : DI Filter 18ms		-			
Output	C	Con			19 : DI Filter 19ms		\sim			a
	c	Con			20 : DI Filter 20ms 125 : DI Filter 250us		~	-		
		Beet	are to default		150 : DI Filter 500us	Cancal				
N Node name II	P addres:	Data Rest	ore to default			Cancer	-	Refresh	1	
1 ET3-1616A	R 168	RPI (comm	unication cyc	de) 30.0	ms (2.0 to 50.0n	ns)		Normal	2	_
13				Keep (consistent with IN					
It t > H Message Verify Setup list					OK	0.00				>
(complete and					OK	Can	Cel			
	· · · ·				Lunco	10	~~~	Cancel	Apply	

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- g. After the configuration is complete, click OK in the "Set up parameters" window.
- h. In the "Connection Settings" window, click the "OK" button.
- i. In the "EtherNet/IP Settings" window, click the "Apply" button, and then click the "OK" button.
- j. In the "Unit Editor" window, click the "Apply" button, and then click the "OK" button.

9. Configuration download

After the module configuration and parameter setting are completed, it is downloaded to the PLC for operation.

a. Click "Monitor/Simulator (N) -> Transfer to PLC -> Monitor Mode (C)" in the menu bar, as shown in the following figure.



b. In the transfer program window, select "Clear Programs in PLC", click "Select All", and click "Execute" to download the program to the PLC, as shown in the following figure.



c. A prompt box pops up: "Change to PORGRAM mode and overwrite", click and select "Yes", as shown in the following figure.

K <mark>V</mark> STUD	IO			\times
?	Change to P Continue?	PROGRAM mode	e and overwrite?	
		是①	否(N)]

d. After the PLC is written, a dialog box is displayed: "Change to RUN mode?", click "Yes", as shown in the following figure, to enter the monitoring mode.

KV STUDIO	\times
Change to R	UN mode?

e. After the configuration download is completed, as shown in the following figure.

🜃 KV STUDIO -[Monitor: KV-8000] - [EI3 *]									
File(F) Edit(E) View(V) Program(M) Script	(S) Convert(A)	Monit	tor/Simulator(N)	Debug(D)	Operation recorder/R	teplay(R) Tool(T)	Window(W) H	lelp(H)	
i 🗅 📂 🖬 🗎 👘 🖷 🗟 🍘 i 🛍 🗉	thernet	*	DF 40	🖸 🖬 🐐		SF5 F4 SF4 F7 SF7	F8 SF8 <u>F9</u> <u>SF9</u>		
i 🗶 🏣 📰 🌌 🐼 🎬 🖷 🏅 🗞 🗟 🖳 🔵			нн 🛛 🗰 С	> 0 🕼 🖳	🙆 💷 🕴 Monitor	•	Comments Com	ment 1	•
Project 🏾	× Main ×								
E III Unit configuration			1	2	3	4	5	6	
 [0] KV-8000 EtherNet/IP R30000 EM10000 [1] EI3-1616A [2] Duvice comment [3] Label [4] Operation recorder setting [5] Operation recorder setting [5] CFU system setting [5] Program: EI3 [5] Program: exemption 	00001								
 Every-scan execution Main Initialize module Standby module Fixed-period module Inter-unit sync module Function Block 	00002								
Macro Subroutine macro Subroutine macro Self-hold macro Bevice default File register setting O:Memory card I:CFU memory User document	00003								

10. Data monitoring

a. In monitor mode, double-click the "EI3-1616A" icon to open the monitoring table and monitor the module, as shown in the following figure.

🞆 KV STUDIO -[Monitor: KV-8000] - [EI3 *]						
File(E) Edit(E) View(V) Program(M) Script(S)	Convert(A) Monito	or/Simulator(<u>N</u>) D	ebug(<u>D</u>) Operation	recorder/Replay(<u>R</u>) To	ool() (Window(W)	Help(<u>H</u>)
🗄 🗅 😁 🖶 🖻 🛍 🗟 🖶 🖨 💫 🕐 Ethern	net 🔹	D) 🗹 🐔 🗏 🕼 🖂 I	ET FS SF5 F4 SF4 F	7 SE7 F8 SE8 <u>F9 SF9</u>	
i 🖈 🏣 📰 🌌 🐼 🎬 🖷 🏅 🗞 🗞 ୟ 🔘 🔘		< H ▼ H > () 🔄 🗣 🖄 🔝 🗄	Monitor	Comments Com	ment 1 •
Project 🛛 🕹 🗙	Main 🗙					
🚍 📲 Unit configuration		1	2	3 4	5	6
a [0] KV-8000						
EtherNet/IP R30000 DM10000 L11 FI3_16160	t Sensor IO n	nonitor:KV-8000[0].	EI3-1616A[1]		_	×
Unit configuration switching						
Tevice comment	Device	Current value	Display format	C	omments	^
- 🖬 Label	W00	1	0 DEC 16BIT	KV-8000[0].EI3-16	16A[1]IN 100[0] 16A[1]OUT 150[0]	
CPU system setting						~
🛢 🚔 Program: EI3						
Every-scan execution						
Main						
Standby module	00002					
- Fixed-period module						
Inter-unit sync module						
E function Block						1
🔄 🔄 Subroutine macro						
E Device default	00003					
0:Memory card						
1:CPU memory						
🛿 📇 User document						

b. In the Current Value input box of the output channel of the monitoring table, write 65535, and you can see that the indicators of 16 output channels are all lit up, as shown in the following figure.



c. When the input channel 1 of the module inputs an effective voltage, the input value can be monitored at the current value of the input channel in the monitoring table, as shown in the following figure.

📷 KV STUDIO -[Monitor: KV-8000] - [EI3 *]							
File(F) Edit(E) View(V) Program(M) Script(S)	Convert(A) Mo	nitor/Simulator(<u>N</u>)	Debug(D) Operation	recorder/Replay(<u>R</u>)	Tool() Window(W)	Help(H)	
i 🗅 📂 🖶 🗃 📸 🛍 🗟 🖶 🔂 🕜 i 🖭 Ether	net		🛱 🖬 🖷 🏨 🖻	FS SFS F4 SF4	F7 SF7 F8 SF8 F9 SF9		
i 🖈 🌐 📰 🌌 🐼 🎬 🖷 🏅 🗞 🗟 🖳 🔘		K H ¥ H >	• 🔘 📲 🗣 🕐 🔤 🗄	Monitor	Comments Co	mment 1 🔹	
Project 🛛 🕹 🗸	Main 🗙						
Unit configuration		1	2	3	4 5	6	
[0] KV-8000 EtherNet/IP R30000 DM10000	🚝 Sensor I	O monitor:KV-8000	0].EI3-1616A[1]				
[1] EI3-1616A Unit configuration switching		⊞ ⊑					
Tevice comment	Device	Current valu	e Display format		Comments	^	
- 🔤 Label		100	1 DEC 16BIT	KV-8000[0].EI3-	1616A[1]IN 100[0]		
CPH system setting		03	JJJ DEC IODII	RV-0000101.213-	10104111001 130101	*	
E Program: EI3		-					
🚍 🫅 Every-scan execution							
🖬 🚟 Main							
Standby module	00002						
Fixed-period module							
Inter-unit sync module	Monitor/Simulator(N) Debug(D) Operation recorder/Replay(B) Tool(T) Window(W) Help(H) Image: Convert(A) Monitor/Simulator(N) Debug(D) Operation recorder/Replay(B) Tool(T) Window(W) Help(H) Image: Convert(A) Image: Convert(A) Monitor Image: Convert(A) Monitor Comments Comments Image: Convert(A) Image: Convert(A)						
Macro							
- 🔄 Subroutine macro							
- 📩 Self-hold macro							
Device default	00003						
- 0:Memory card							
1:CPU memory							
🛛 🛄 User document							

7.4.2 Applications in the CX-One software environment

1. Preparation

- Hardware environment
 - Model EI3-0032A
 - > One computer with pre-installed CX-One software
 - > Ethernet-specific shielded cable
 - > One OMRON PLC, this description takes CJ2M-EIP21 as an example
 - > One switching power supply
 - > Module mounting rails and rail fixtures
 - Device profiles
 Address for obtaining the configuration file: https://www.solidotech.com/documents/configfile
- Hardware configuration and wiring
 Please follow the requirements of <u>"5 installation and removal"</u> and <u>"6 wiring"</u>.

2. Create a new project

a. Open the CX-One software and click "File -> New", as shown in the following figure.



b. In the "Change PLC" window, customize the device name, select "Device Type", that is, PLC series, in this case, "CJ2M" series, and click "Settings", as shown in the following figure.

CX-Programmer
File Edit View Insert PLC Program Simulation Tools Window Help
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□□ 22 22 22 22 22 22 22 22 22 22 22 22 2
碑 碑 亘 ☱ ★ % % %
変更PLC

c. The "Device Type Settings" window pops up, check the appearance of the PLC, select the actual device type, in this example the CPU is "CPU31", set the CPU model, and click "OK", as shown in the figure below.

CX-Programmer	
File Edit View Insert PLC Program Simulation	Tools Window Help
] D ≌ ⊟ & 5 b ⊁ b 6 6 2 ⊆	##\$\$\$\$ 0 \$ \$ \$
」 < X Q Q Ⅲ [S] ☷ 🖾 📑 ि 🔛 🖾 🖓	↓ ケッキャー ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
]□ 🗖 🖗 🖓 🖓 🖓 🕼 😭 🕼 🖓 🖓 13	; \$\$\$\$\$\$ \$\$\$\$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$ \$\$
]]薛薛 国 旨 * 🌤 🌤 🇯	设备类型设置 [CJ2M] X
	通用 CPU类型 CPU11 CPU11 CPU11 CPU11 CPU12 CPU13 CPU33 CPU33 CPU35

d. In the "Change PLC" window, select "Network Type" to the type to be connected. In this example, "EtherNet/IP" is selected, as shown in the following figure.

📟 CX-Programmer	
File Edit View Insert PLC Program Simulation Tools Window	Help
<u> </u> □ ≥ = _R 5 G 3 B B B 2 2 A # % %	• ? №
	- ◇ ダ 甘 君 元 ∟ 꾲 録 参 幽 智 智 智 知 知 離 悪 回 回 回
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	PLC ★ 器名称 器名本称 子子型 学者类型 子子型 学者体子M+/TP 使定(g) 時本了M+/TP 使定(g) 時本了M+/TP 使定(g) 時本了M+/TP 使定(g) 時本了M+/TP 使定(g) 時本 新典型 一 使定(g) 時本 一 世(g) 一 一 世(g) 一 一 一 一 一 一 一 一 一 一 一 一 一

e. Click the "Settings" button on the right side of the network type, and the "Network Settings" window will pop up. Set the IP address in the network settings window to keep the IP addresses of the computer, PLC, and module in the same network segment. After the settings are complete, click "OK" and then click "OK" in the "Change PLC" window to create a new project, as shown in the following figure.

CX-Programmer	
文件(F) 编辑(E) 视图(V) 插入(I) PLC 编程(P) 模拟(S) 工具(T) 窗口(コ(W) 帮助(H)
🗋 🗃 🖬 👧 🏉 💁 🖇 🛍 🛍 🗠 🗠 🗛) # 72 4 ① ? K? A & 4 5 5 1 1 5 D C 4 # 4 1 5 1 1
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网络设置 [EtherNet/IP]	X Additi直映像 X PC
网络	
- 目标PLC	EtherNet/P
● IP地址: 192 . 168 . 0 . 2	SYSMAC CSICLICPANES
响应超时 (s)	
10 🔶	
确定 取消	肖 帮助

3、Set the IP address of the PLC

- a. Double-click "I/O Table and Unit Settings" in the navigation tree on the left to open "PLC I/O Table".
- b. Expand the "Built-in Port/Plug-in Board" in the "PLC IO Table", double-click the PLC, that is, CJ2M-EIP21, to open the edit parameter window, and reset the IP address of the PLC (if not required, don' t do it).
- c. In this example, set the IP address of the PLC to 192.168.0.2, click "OK" to set the IP address of the PLC, as shown in the following figure.

🧱 未命名標題 - CX-Programmer - [EI3.新程序1.段1 [梯形图]]		
受 文件(F) 编辑(E) 视图(V) 插入(I) PLC 编程(P) 模拟(S) 工具(T) 窗口(W)	帮助(H)	
D 🚅 🖬 🙀 🖉 🕵 🖇 🛍 🛍 🗠 🗠 🗰 🕷	CJ2M-EIP21 [编辑参数]	×
_ < ≪ Q <	TCP/IP 以太网 FINS/UDP FINS/TCP FTP 自动调整时间 状态区 SNMP SNMP Trap	
PLC IO表 - E3 文件(F) 編組(E) 税服(V) 法项(O) 帮助(H) 参(A) (A) (A) (A) (A) (A) (A) (A) (A) (A)	IP地址 192,168,0,2 子网境码 255,255,0 武以网关 192,168,0,2 子网境码 255,255,0 武以网关 192,168,0,2 广 从BOOTP能学習或印刷地址 0.0.0 BOOTP能学習或印刷地址 BOOTP能量得被消除。 MAE, BOOTP能量得被消除。	
● 段1 ● END ● 功能块	「播 ◎ 全1(4.385D) ○ 全0(4.385D)	
	传送(单元至PC)(E) 传送(PC到单元)(D) 比较 重启(B)	

4、 Install the EDS file

a. Right-click CJ2M-EIP21 in the "PLC IO table" and select "Startup Dedicated Application -> Inheritance Setting Startup", as shown in the following figure.



b. In the "Select Special Program" window, select "Network Configurator" and click "OK", as shown in the following figure.

 〒 未命名標題 - CX-Programmer - 〒 文件(F) 编辑(E) 视图(V) 插入(□ 🚔 🖬 🙀 🚇 🔩 2 ○ ♀ ♀ ♀ ♀ ↓ 	EI3.新程序1.段1 [棋) PLC 编程(P) 楼 6 	新国]] (秋(S) 工具(T) 窗口(W) 帮助(H) (い) (二) (本) 二 電 器 (な) (① ? N (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	? <u>&</u> 続 # 少日目	<mark>₺ 182 182 1.2</mark> 元 ∟ ¥ 1.53	,
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□ ●	 ? PLC IO 表 - E Q件(F) 编辑(E) ④ [] ● [] * ! 1 CJ2M-CPU3 * CJ2M-CPU3 * CJ0001 * CJ0000 	3 选择特殊程序 [CJ2M-EIP21] [X-Integrator Network Configurator 必明 Network Configurator Application software to build and set the EtherNet/IP network.	- X		
			取消 2M-CPU 离线		

c. Enter the "Network Configurator" Setting interface, as shown in the following figure.

	Impair Suituation tools without help Impair Suitua	×
NewProject BBJC12M] Offline BBJC12M] Offline State Types Symbols Programs NewProgram1(00) Symbols Symbo	Image: Street of the street	
	Message Code Date Description	
Project	Ready L:EtherNet/IP T:Unknown Realtek PCIe GbE Family Controller 192.168.0.1 100M ③ Off-line	
	Nume Autris of Value Comments	

100

d. On the "Network Configurator" setting interface, select "EDS File -> Install", as shown in the following figure.



e. Select the "EDS file" to be installed, and the installation is complete. The installation icon window pops up, click "No", as shown in the following figure.

File Edit View Inset PLC Pr Pile Edit View Inset PLC	ogam Simulation Tools Window Help Image: Simulation Tools Option Help Image: Simulation Image: Si
Project /	X Message Code Date Description Ready LEtherNet/IP TUnknown Realtek-PCIe GbE Family Controller 192.168.0.1 100M @ Off-line
For Help, press F1	E13(192.168.0.2) - Offline rung 0 (0, 0) - 100%

5. Hardware configuration

a. On "Network Configurator" setting interface, select "Option -> Select Interface", Switch the interface to "Ethernet I/F", as shown in the figure below

File Edit View Insert PLC P	rogram Simulation Tools Window Help		
D 🖻 🖬 🛃 🍜 🖪 🕺 K 🖻	Untitled - Network Configurator		- 0 ×
≤ ≪ Q < [] ⊗ Ξ ⊗ Ξ	File Edit View Network Device EDS File Tools	Option Help	
西 🗛 🐺 🖓 🖓 📾 🕷 🗒 📴	□ ☞ ■ 토 등 정 섬 석 작 작 색	Select Interface CJ2 USB/Serial Port	
律律 国일 4%%%%	× 13 13 ♦ ♦ 0 # # # # #	Edit Configuration File CS/CJ1 Serial Port -> EIP Unit I/F	
-		Setup Monitor Refresh Timer Ethernet -> CS/CJ1 ETN-EIP Unit I/F	
Image: Setwork Configurator Image: Setwork Configurator Image: Setwork Configurator Image: Setwork Configurator	Install Plugin Module NJ/NX/NY Series Ethernet Direct VF Install Interface Module NJ/NX Series USB Port		
	Update Parameter automatically, when Configuration was changed Update Device Status automatically, when it was connected on Network		
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b. On the "Network Configurator" page, click Connect on the toolbar to pop up the "Select

Interface" window, select the NIC corresponding to the configuration port of the computer, and click "OK", as shown in the following figure.

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c. The "Select Connect Network Port" window pops up, click "OK", as shown in the figure below.

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d. The "Select Connect Network Port" window pops up, click "OK", as shown in the figure below.

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e. On the "Network Configurator" page, click ^{**}Upload Tool on the toolbar, and in the pop-up

confirmation window, click "Yes", as shown in the following figure.

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f. The "Target Device" window pops up, select the device in the configuration according to the IP address, and click "OK", as shown in the figure below.

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g. After the loading is complete, you can see that the device is added to the network, as shown in the following figure.



6. Set the label variable

a. Double-click the PLC device in the configuration, multiple prompt boxes will pop up, and click "OK", as shown in the following figure.

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b. In the "Edit Device Parameters" window, select the device in the "Unregister Device List" menu

and click the button to register the device, as shown in the following figure.



c. Double-click 192.168.0. in the Product Name3(#003)EI3-0032A, the Edit connection window of EI3-0032A is displayed, as shown in the following figure.

Pile Edit View Inset PLC Program Simulation 1 ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	2015 Window Help 도 및 상상 (D 오 위원) (요 홍 월 명, 명, 명 명, 명 명 명 명 명 명 명 명 명 명 명 명 명
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d. In the "Edit connection" window of EI3-0032A, click the "Edit Tag Set" button to the right of "Output Tag Set", as shown in the figure below.



e. The "Edit Tag Set" window pops up, click the "Edit Tags" button, the "Edit Tags" window pops up, click the "New" button, the "Edit Tag" window pops up, as shown in the figure below.



f. In the "Edit Tag" window, you can set the downstream data. In this example, EI3-0032A occupies 4 bytes of data in the downlink, so set 4 bytes for size and D200 for Name, as shown in the following figure.



Name: the starting ID of the downstream data, which represents the starting ID of the output module in the configuration.

Size: downlink data.

The starting ID value of the downstream data must be greater than the starting ID of the upstream data + the upstream data.

If other modules have downlink data, you can add tags as follows.

g. Click "Regist", "Close", "OK", and "OK" to complete the output label variable settings. The method of setting the input label variable is the same as that of the output label.

h. In the "Edit connection" window of EI3-0032A, select "Downstream Data" from the checklist below the "Edit Tag Set" button on the right of "Output Tag Set", as shown in the following figure.

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i. Click "Regist", click "Close", and click "OK" to complete the setting after the registration is completed, as shown in the following figure.

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7. Parameter setting of the IO module

- a. Double-click the IO module to enter the "Edit Device Parameters" menu..
- b. In the "Parameters" menu folder, you can configure parameters such as output clearing, holding,



8、 PLC download

a. Select PLC "CJ2M-EIP21", click the "Download to Device" icon in the toolbar of the "Network"

Configurator" interface, and click "Yes" in the pop-up "Network Configurator" window, as shown in the figure below.



b. Select the module and click the "Download with Current mode" button, as shown in the figure below.

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c. The download completion window is displayed, indicating that the download is complete, click "OK", as shown in the following figure.

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Note: After the download is completed, if the PLC reports a connection error, check the parameter configuration, and try to download it again after power-off and restart (download Network Configurator first, then CX-Programmer).

9、Data monitoring

a. Switch to the CX-Programmer page, click the toolbar monitoring tool 👼, and the monitoring page

appears at the bottom of the page, as shown in the following figure.

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b. Double-click the monitor bar to pop up the "Edit Dialog". In the "Name&Address" column, write the registered address, as shown in the following figure.

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c. Click the toolbar "Operation Online" button, and the PLC is online, as shown in the following figure.

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d. Right-click on the monitor bar to enter a numeric value for forced output, as shown in the figure below.

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8 FAQ

8.1 Unable to scan the module

1. Check the network line connection

Use the Windows command to ping the IP address of the module. If the ping succeeds, check the status of the indicator light. If the ping fails, check the network line connection. If there is no abnormality in the network line connection, set the request acceptance time during device scanning to 60s and scan again. module, if unknown devices can be scanned, the reason is that the module IP is not assigned, and the IP can be reassigned. If the corresponding module still cannot be scanned, check the status of the indicator light.

2. Check the indicator status

If the RUN light flashes, the IP address exists, but the controller and the module may not be in the same network segment, restore the module to factory settings and then reset the IP address, if the RUN light goes out and the ERR light flashes, the module detects that there may be duplicate IP addresses in the network. Troubleshoot and handle devices with duplicate IP addresses.

8.2The IP address assignment is abnormal

1. The device cannot be scanned under the factory setting parameters

The time to receive a request when modifying a module lookup is 60 seconds.

2. Assigning IP address using BOOTP times out

Click Advanced Settings in IP address settings and set the timeout period to 60s. If this occurs when the timeout period is set to 60 seconds, check whether the controller address is on the same network segment as the IP address assigned to the module.

3. The assigned IP address is lost after a power outage

After using BOOTP to assign an IP address, the module is not set to a fixed IP address to boot.

4. Use the rotary switch to modify the IP address, and the IP address does not change

If the IP address setting is outside the specified range or the IP address is set to 0, check whether the rotary switch setting meets the expected value.