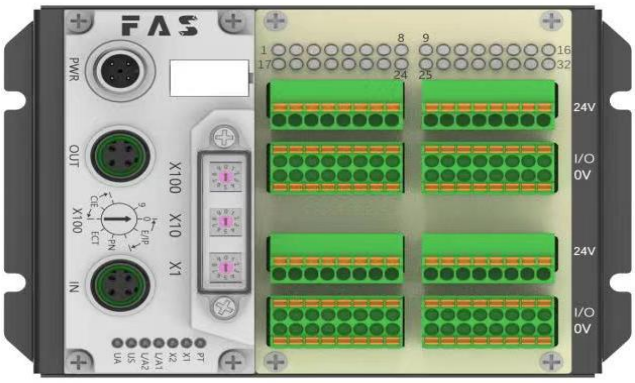
FuYanShengElectronic(FuJian)Co.,Ltd.

FNI ECT-106-009-K54

(009E53)

IP 20 Module User Manual



1 Notes

1.1. Manual structure

1.1This manual is organized by organization, so the chapters are interconnected.

Section 2: Basic Security Information.

Chapter 3: Getting Started Guide

Chapter 4: Technical Data

.....

1.2. Typography

The following typographic conventions are used in this manual.

Enumerate The enumeration is displayed as a list with bullets.

- Headword 1
- Headword 2

Action

Action descriptions are represented by a front triangle.

he res lt of the action is represented by an arrow.

Action description 1

Action result

Action description 2

Step programs can also be displayed numerically in parent eses.

(1) Step1

(2) Step2

Grammar number:

Decimal numbers are displayed without additional indicator s (eg 123)

Hexadecimal numbers are displayed with an additional indi ator hex (eg: 00hex) or with the prefix "0X" (eg: 0x00)

Cross reference

Cross-references indicate where to find additional inform tion on this topic.

1.3. Symbol

Notes

This symbol indicates a general comment.

Notice!!

This symbol indicates the most important safety notice.

1.3. Acronym	FNI	FAS network interface
	I	Standard input port
	PN	Profinet
	ECT	EtherCAT
	CCIEBS	CC-Link IE Field Basic Slave
	EIP	Ethernet/IP
	EMC	Electromagnetic Compatibility
	FE	Functional ground
	O	Standard output port
1.5.Viewing angle deviation		Product views and explanations in this manual may deviate from the actual product. They are only used left and right to explain the material.

2 Safety

2.1.Expected usage

This manual describes as a decentralized input and output module for connection to an industrial network.

2.2. Install and start

Precautions!

Installation and start-up should only be carried out by trained and specialized personnel. A qualified individual is one who is familiar with the installation and operation of the product and has the necessary qualifications to do so. Any damage caused by unauthorized operation or illegal and improper use is not covered by the manufacturer's warranty. Equipment operators are responsible for ensuring compliance with appropriate safety and accident prevention regulations.

2.3. General security Notes

Debug and check

Before debugging, you should read the contents of the user manual carefully.

The system cannot be used in applications where the safety of personnel depends on the functionality of the equipment.

intended use

The manufacturer's warranty coverage and limited liability statement do not cover damage caused by:

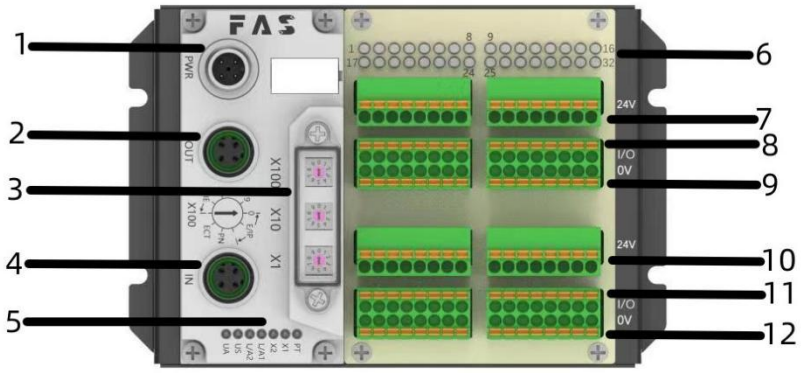
- Unauthorized tampering
- Improper use
- Handling, installation and operation that do not conform to the instructions provided in the user manual

Owner/Operator Obligations

This device is an EMC Class A compliant product. This device gen

Content

3.1. 模块综述



1	Power supply interface	7	Sensor power supply+24V
2	EtherCAT output port	8	1-16 Signal interface
3	DIP switch	9	Sensor power supply 0V
4	EtherCAT input port	10	Sensor power supply+24V
5	Module status indicator	11	17-32 Signal interface
6	Signal status indicator light	12	Sensor power supply 0V

LED	display	Function
PT	blue	EtherCAT protocol
X1	close	No error, device initializing
	Green light flashes 2.5HZ	Pre-operation: The device is in pre-operation state
	Green light flashes 1HZ	Safe operation: The equipment is in safe operation.
	Steady green	Running: The device is running
X2	close	No errors, device EtherCAT communication is working
	Red light flashes 2.5HZ	Invalid configuration
	red light flashing 1HZ	local error
	red light double flash	Application monitoring timeout
L/A1	Steady green	Device (IN) connected to Ethernet
	Yellow light flashes	Device (IN) sends/receives Ethernet frames
	close	Device (IN) is not connected to Ethernet
L/A2	Steady green	Device (OUT) connected to Ethernet
	Yellow light flashes	Device (OUT) sends/receives Ethernet frames
	closure	Device (OUT) is not connected to Ethernet
US	green	Input voltage is normal
	Flashing red	Input voltage low (< 18 V)
UA	green	Output voltage is normal
	Flashing red	Output voltage low (< 18 V)
	Red always on	No output voltage present (< 11 V)

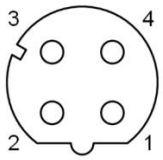
3.1 guide

3.2. mechanical connection3. The module is installed with 4 M4 bolts or DIN35 rail clips.

3. Electrical connections

3.3.1

Network Interface (D-code)

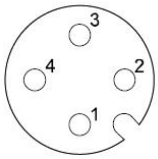


Pin	Pin	
1	Tx+	send data+
2	Rx+	receive data-
3	Tx-	send data+
4	Rx-	receive data-

illustrate:

Unused I/O port sockets must be covered with end caps to meet the IP67 degree of protection. Power port (A-code)

3.3.2

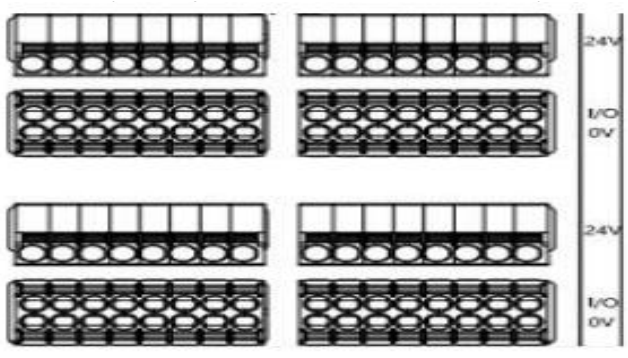


Pin	Pin	
1	UA	Actuator Power(BR)
2	GND	Actuator Gnd(WH)
3	US	Bus Power(BU)
4	GND	Bus Gnd(BK)

illustrate:

1、It is recommended to provide Bus power and Actuator power separately.
2、The total current of the Actuator power supply is <4A, and the total current of the Bus power supply is <1A;
3、The FE connection from the case to the machine must be low impedance and kept as short as possible.

3.3.3



illustrate

1、Input and output signal types support: three-wire PNP, two-wire PNP, dry contact;
2、Pin +24V single output current maximum 350mA. The total current of the module is <4A;
3、The total current of each 8 channels (1~8, 9~16, 17~24, 25~32) is <1A;

4.2 mechanical data

Shell material	Aluminum shell
Shell rating conforms to IEC 60529	IP20
power interface	A-Code
input port/output port	Pluggable screw-free quick connect terminals
Size(W*H*D)	136.5mm*92mm*52.7mm
installation type	Screw fixing or DIN35 guide rail snap-on
Weight	about 670g

4.3. Operating conditions

operating temperature	-5° C ~ 80° C
storage temperature	-25° C ~ 85° C

4.4. electrical data

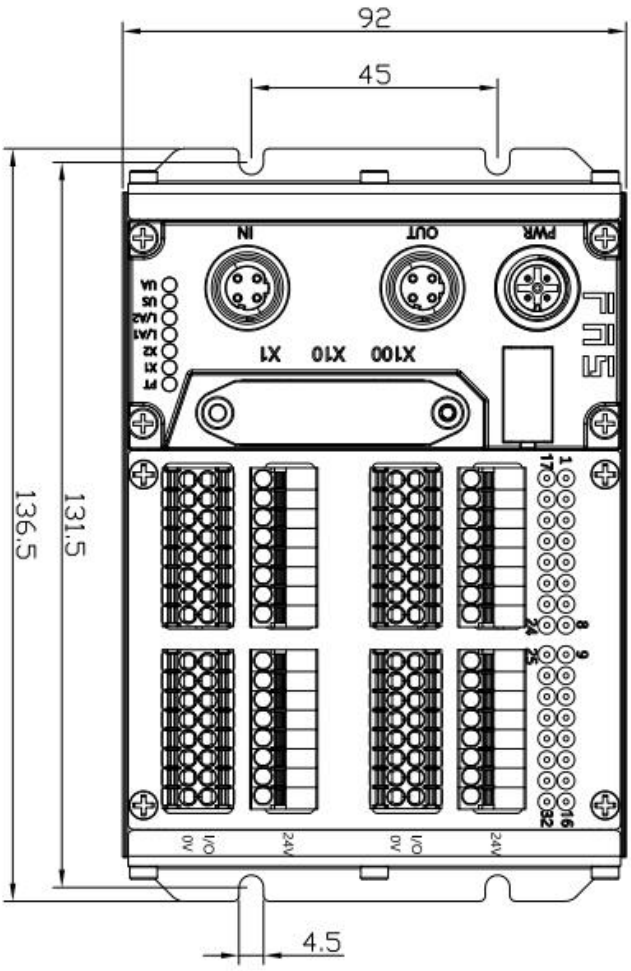
voltage	18~30V DC，symbol EN61131-2
voltage fluctuation	＜1%
Operating current at supply voltage 24V	<130mA

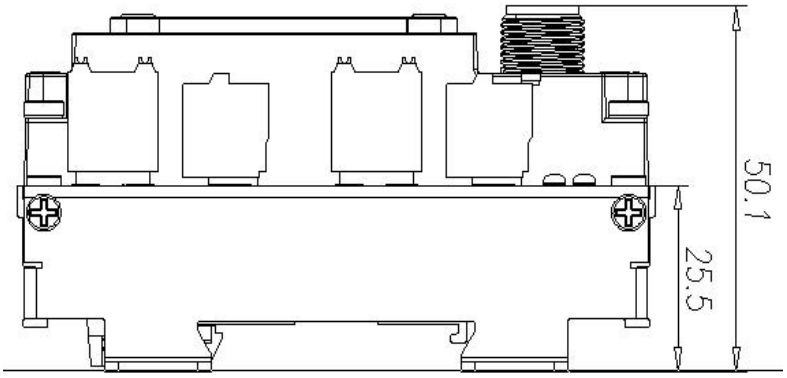
4.5 network port

Poet	2 x 10Base-/100Base-Tx
port connection	M12，D-Code
IEEE 802.3 Compliant Cable Type	Shielded twisted pair, min. STP CAT 5/STP CAT 5e
data transfer rate	10/100 M bit/s
cable length	100m
flow control	half working condition/full working condition(IEEE 802.3-PAUSE)

4 Technical data

4.1. size





5 integrated

5.1 Module configuration

5.1.1 reset

1. When the device is powered off, dial 900;
2.. Power on the device and wait 10 seconds;
3.Power off the device and dial the code to the state before setting;
4.Power on the device and restore it to factory status;

5.1.2 Node address configuration

①The node address is assigned by PLC: Dial address X100=4 X10=0 X1=0
②Manual allocation of node address: Dial address X100=4, node number is X10=tens digit X1=units digit

Example:

Dial code: X100=4, X10=2, X1=5
The node number is 25
Note that the maximum node number is 99.
After dialing adjustment, you need to power on again;

5.2 data mapping

Digital Output Mapping_Standard Output 01-08_3000_01 :
Channel 1~8 output signal mapping

Digital Output Mapping_Standard Output 09-16_6000_02:
Channel 09~16 output signal mapping

Digital Output Mapping_Standard Output 17-24_6000_03:
Channel 17~24 output signal mapping

Digital Output Mapping_Standard Output 25-32_6000_04:
Channel 25~32 output signal mapping

Digital Input Mapping_Standard Input 01-08_3000_01:
Channel 1~8 input signal mapping

Digital Input Mapping_Standard Input 09-16_6000_02:
Channel 09~16 input signal mapping

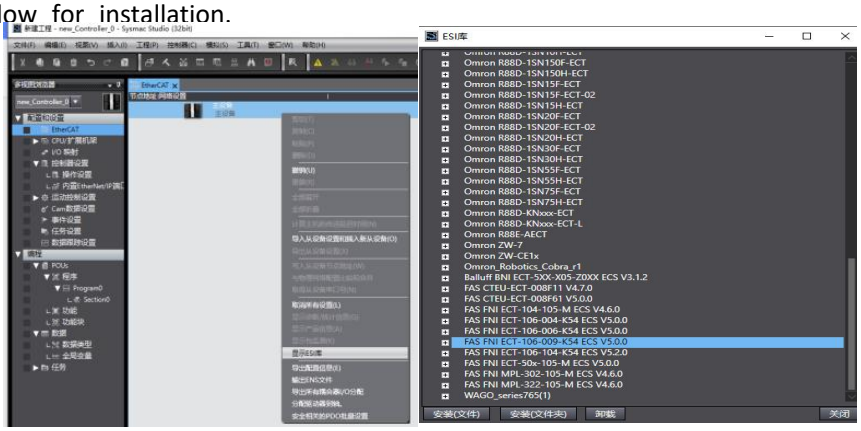
Digital Input Mapping_Standard Input 17-24_6000_03:
Channel 17~24 input signal mapping

Digital Input Mapping_Standard Input 25-32_6000_04:
Channel 25~32 input signal mapping

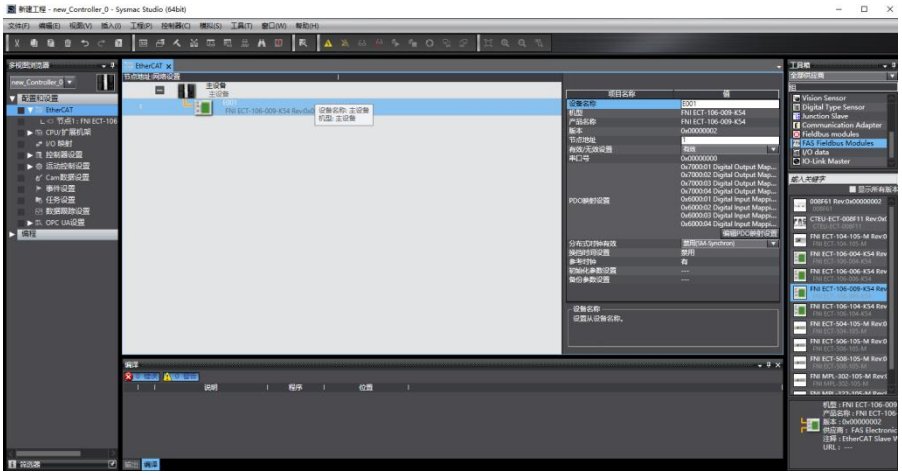
5.3 PLC Integration tutorial

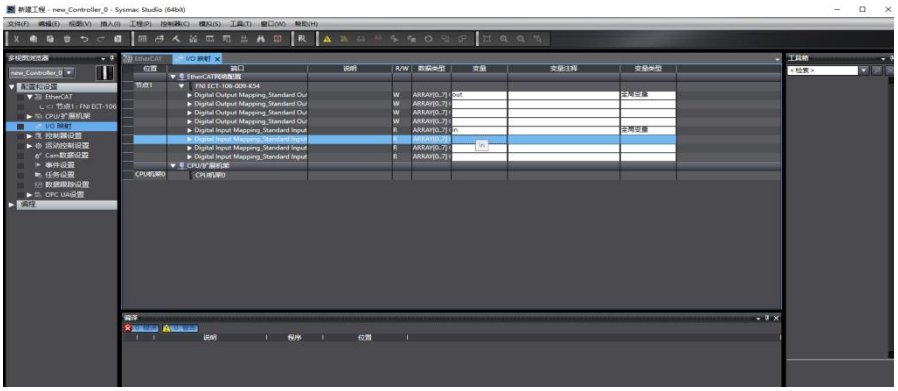
5.3.1 Omron NX1P2 Sysmac Studio integrated (ECT)

1. Install the ESI file: Double-click EtherCAT in Configuration and Settings--right-click the main device--select "Show ESI Library", and select the ESI file in the pop-up window for installation.



2、Configure the module into the EtherCAT network: Find the FieldBus Modules in the toolbox on the right. Find the module model icon in the toolbox and double-click to join the network.





3、PLC goes to online mode, right-click the master device and write the slave device node address

4. Variable mapping: Select the configured node in the I/O mapping, fill in the name of the variable, and the configuration is completed! .

6 appendix

6.1. Order code

Part number	Order code
FNI ECT-106-009-K54	009E53