

PRODUCT USE INSTRUCTIONS



[Technical support]

Ordering code: 009E14

Part number: FNI ECT-316-002-K54

IP20 Module User Manual 16DI/DO PNP adaptive



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Security

Expected use

This manual describes as decentralized input and output modules for connecting to an industrial network.

Installation and start-up

Precautions!

Installation and start-up may only be performed by trained personnel. A qualified individual is one who is familiar with the installation and operation of the product and has the necessary qualifications to perform such operations. Any damage caused by unauthorized operation or illegal and improper use is not covered by the manufacturer's warranty. The equipment operator is responsible for ensuring that appropriate safety and accident prevention regulations are observed.

Corrosion resistance

Precautions!

FNI modules generally have good chemical and oil resistance. When used in corrosive media (e.g. high concentrations of chemicals, oils, lubricants, coolants and other material media (i.e. very low water content), these media must be checked before the corresponding application material compatibility. If a module fails or is damaged due to this corrosive medium, a defect claim cannot be made.

Dangerous voltage

Precautions! Disconnect all power before using the device!

General security

Debugging	Fault	Owner/operator	Expected use
and		obligations	
inspection			
Before debugging, read the user manual carefully.	If the defect or equipment failure cannot be corrected, the operation of the equipment must be stopped to avoid damage that may be caused by unauthorized use.	This equipment is an EMC Class A compliant product. This device produces RF noise.	The warranty and limited liability statement provided by the manufacturer does not cover damage caused by: . Unauthorized tampering
This system cannot be used in an environment where the safety of personnel depends on the functionality of the equipment.	Only after the housing is fully installed can the intended use be assured.	The owner/operator must take appropriate precautions to use this equipment. This device can only use the power supply that matches this device, and can only connect cables approved for application.	•Improper use operation •The instructions provided in the user manual explain the use, installation and handling of discrepancies

1 Getting Started Guide

1.1 Module overview



- 1 Network Input
- 2 Network output
- 3 Module Status Indicator
- 4 Power supply interface
- 5 Module Status Indicator
- 7 1-8 signal interface
- 8 Sensor actuator power supply 0V
- 9 Sensor actuator power supply +24V
- 10 9-16 signal interface
- 11 Sensor actuator power supply OV
- 6 Sensor actuator power supply +24V

1.2 Mechanical connection

The module is mounted using 4 M4 bolts or DIN35 rail clamps.

1.3 Electronic connection

1.3. 1Power connector (terminal type)



Pin	Function	Describe
1	Ua+	+24V
2	Ua-	0V
3	Us+	+24V
4	Us-	0V

Power connector



Note:

- $1_{\text{\tiny S}}$ Separate US power supplies and UA power supplies are recommended.
- 2 Total UA power supply current <4A, total Us power supply current <1A;

1.3.2 Network interface(RJ45)



Pin	Function					
1	TD+	Send data+				
2	TD-	Receive data-				
3	RD+	Send data+				
4	空	-				
5	空	-				
6	RD-	Receive data-				
7	空	-				
8	空	-				

1.3.3 Signal port (screwless spring-type terminal block)



Note:

- 1. input and output signal type support: three-wire PNP, two-wire PNP, dry contact;
- 2、 Pin +24V Single output current max. 500mA. total module current <4A;
- 3 Total current <1A per 8 channels (1~8, 9~16)



NPN Input

NPN output





2 Technical data

2.1. Size





2.2 Mechanical data

Shell material	Aluminum shell			
Shell grade conform to IEC 60529	IP20			
Power interface	Terminal type			
Input port/output port	Pluggable Screwless Quick Connect Terminals			
Size(W*H*D)	113mm*92mm*54.4mm			
Installation type	Screw fixing or DIN35 rail mounting			
Weight	About 270g			

2.3 Operating condition

Operating temperature	-5°C ~ 80°C
Storage temperature	-25°C ~ 85°C

2.4 Electrical data

Supply Voltage	18~30V DC, conform to EN61131-2			
Voltage fluctuation	<1%			
Input current at supply voltage 24V	<130mA			

2.5 Network port

Port connection	RJ45			
Cable Types for Conform to IEEE 802.3	Shielded twisted pair, min STP CAT 5/STP CAT			
	5e			
Data transmission rate	100 M bit/s			
Maximum cable length	100m			
Flow control	Full working conditions (IEEE 802.3-PAUSE)			

2.6 Function indicator



Meaning of the indicator status during EtherCAT communication protocol						
LED	Demonstrate	Function				
PWR	Blue	EtherCAT protocol				
	Green light off	The device is in the initial state				
	Croon light flaching 2 EUZ	Pre operation: The device is in a pre operation				
DUN	Green light hashing 2.5HZ	state				
KUN	Groop light flaching 147	Safe operation: The device is in a safe operating				
		state				
	Green always on	Running: The device is in a running state				
	docuro	No error: EtherCAT communication on device is				
	closure	working				
ERR	Red flashing2.5HZ	Invalid Configuration				
	Red flashing1HZ	local error				
	Red light, double blinking	Application monitoring timeout				
110	Green	Input voltage is normal				
03	Red flashing	Low input voltage (< 18 V)				
	Green	Output voltage is normal				
UA	Red flashing	Low output voltage (< 18 V)				
	Red Always On	There is no output voltage(< 11 V)				

RJ45 port status



LED	State	Function			
1	Green	Device connected to Ethernet			
	always on	Device connected to Ethernet			
1	Closure	The device is not connected to the Ethernet			

I/O port state



LED	State	Function
1	Closure	State of I/O pin input or output is 0
1	Yellow	State of I/O pin input or output is 1

3 integrated

3.1 Data mapping

ECT process input data									
	Functional Description								
Bytes	Status	D:+7	Di+C	Di+E	Di+4	D:+2	D:+0	Di+1	P:+O
	Description	ВП/	ыю	ыгэ	ыц4	ыіз	ыг	ыц	ыю
0	1~8 signal input	Douto 0	Deute 7	Douto C	Deute F	Deute 4	Deute 2	Deute 2	Devite 1
0	0=Off, 1=On	Roule 8	Route 7	Roule 6	Roule 5	Roule 4	Roule 3	Route 2	Route 1
1	9~16 signal input	Route							
1	0=Off, 1=On	16	15	14	13	12	11	10	9
Data description (binary): 0 = without signal 1 = with signal									

ECT process input data									
	Functional Description								
Bytes	Status Description	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	BitO
0	1~8 signal output 0=Off, 1=On	Route 8	Route 7	Route 6	Route 5	Route 4	Route 3	Route 2	Route 1
1	9~16 signal input	Route	Route 9						
	0=Off, 1=On	16	15	14	13	12	11	10	Noute 5
Data description (binary): 0=off 1=on									

3.2 PLC Integration Tutorial

3.2.1 Integration in Omron NX1P2 Sysmac Studio (ECT)

1. Create a new project, identify the device type, device and hardware version, which can be obtained from the PLC side;



2 Click on EtherCAT, bring up the main device and right-click to display the drop-down menu and click on Show ESI Library;

	EtherCAT x			- IA#
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3、 Click on the installation file;

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						URL (CENTRE DO 1977)
-						
EI 1838	1112 A.S					

4、 Open the ESI configuration file: FAS FNI ECT-xx6-x0x-K54&D64 ECS V5.0.0.xml, which was downloaded in advance from the official website, and confirm it;

5 . Find FAS FieldBus Modules in the toolbox on the right hand side and find the module model icon and double click to add it to the network;

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 $6_{\rm N}\,$ Click on IO Variable Mapping, check the added node in I/O Mapping, and fill in the name at Variable



7. Click the PLC online mode button, the configuration interface shows the controller status online and then right-click the master device, write the device node address, note that the node address needs to be consistent with the previous EtherCAT slave device;



8. Find the controller in the menu bar, transfer to the controller, download to the PLC and agree to the confirmation;

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<u>4 Appendix</u>

4.1 Ordering Information

Product Ordering Code	Order Code
FNI ECT-316-002-K54	009E14

High quality products · Sincere service





[Technical support]

[Official website]



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