



PRODUCT

USE INSTRUCTIONS

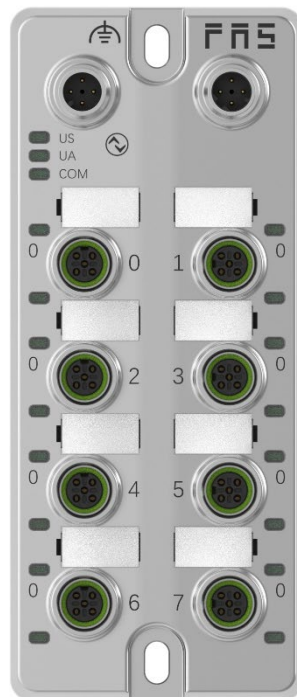


Ordering code: 00BG11

Part number: FNI IOL-309-002-M12

IO-Link Slave module user manual

16xDI/DO PNP



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■ Dangerous voltage	오류! 책갈피가 정의되어 있지 않습니다.
■ General security	오류! 책갈피가 정의되어 있지 않습니다.
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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

Things to note!

FNI modules generally have good chemical and oil resistance characteristics. When used in corrosive media (such as high concentrations of chemicals, oils, lubricants and coolants (that is, very low water content)), the above media must be checked and confirmed before the compatibility of the corresponding application materials. If a module fails or is damaged due to such corrosive media, a defect claim cannot be made.

■ Dangerous voltage

Things to note!

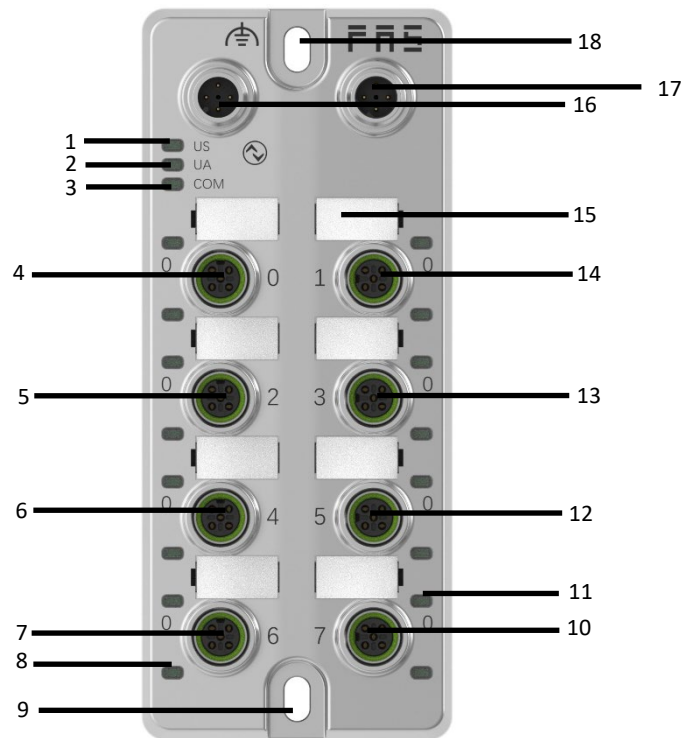
Before using the device, disconnect all power sources!

■ General security

Debugging and inspection	Fault	Owner/Operator Obligations	Intended use
Before debugging, the contents of the user manual should be read carefully.	If a defect or equipment failure cannot be corrected, operation of the equipment must be stopped to avoid possible damage caused by unauthorized use.	This device is an EMC Class A product. This device generates RF noise	The manufacturer's warranty and limited liability statement do not cover damage caused by: ·Unauthorized tampering operations ·Improper use and operation ·Usage, installation and operation that are inconsistent with the instructions and explanations provided in the user manual
This system is not intended to be used in environments where the safety of personnel depends on the functionality of the equipment.	Intended use can only be ensured after the housing is fully installed.	The owner/operator must take appropriate precautions when using this equipment. This device may only be operated from a power source that is suitable for this device and may only be connected to cables approved for the purpose	

1.Component function description

1.1Overall introduction to the module



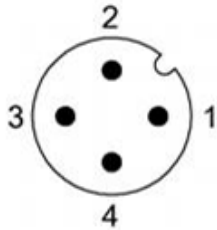
1	2	3	4	5	6
Status LED: Power	Status LED: Actuator	Status LED:IO- Link	Digital I/O port 0	Digital I/O port 2	Digital I/O port 4
7	8	9	10	11	12
Digital I/O port 6	Status LED: Digital I/O Port 4 Pin4	Fixing hole	Digital I/O port 7	Status LED: Digital I/O Port 4 Pin2	Digital I/O port 5
13	14	15	16	17	18
Digital I/O port 3	Digital I/O	Label	IO-Link interface	Extended interface	Ground connection

					hole
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2.Interface definition

2.1 IO-Link interface

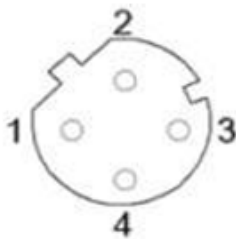
M12, A type, Male



Pin	Description
1	Us power supply, +24V
2	Ua actuator power supply, +24V
3	GND
4	C/Q, IO-Link data transmission channel

2.2 Extended interface

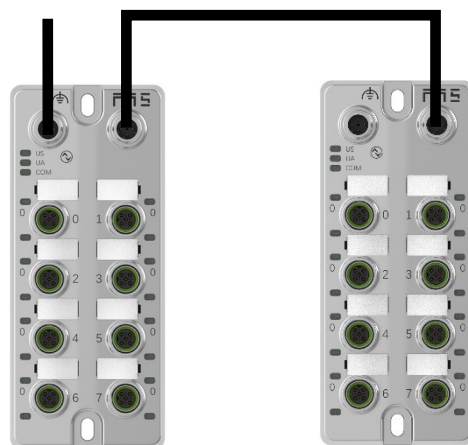
M12, D-coded, female



pin	illustrate
1	Power supply, +24V
2	communication
3	GND
4	communication

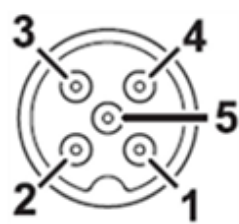
Extension notes:

1. The expansion port only allows modules of the same model.
2. The expansion port of the next level module must be connected through the expansion port.
3. Common connection methods are as shown below.

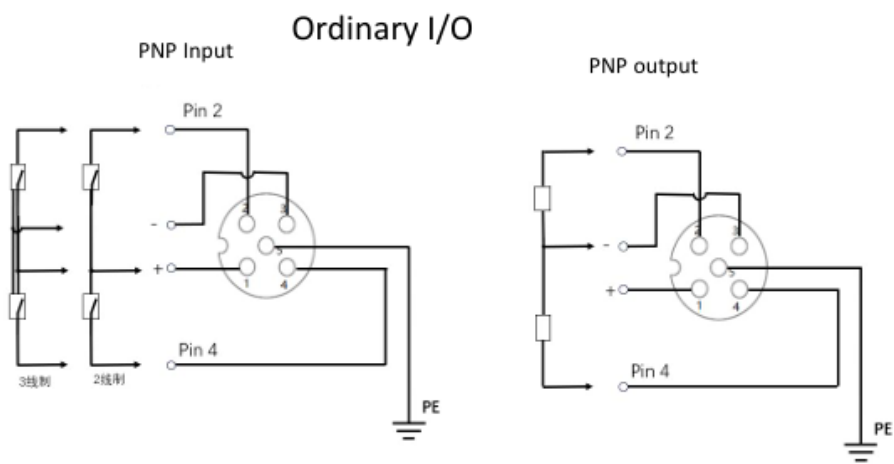


2.3 Digital input/output port connection diagram

M12, A type, Female 1e



Pin	Function
1	24V
2	Digital input/output (PNP)
3	0V, GND
4	Digital input/output (PNP)
5	FE

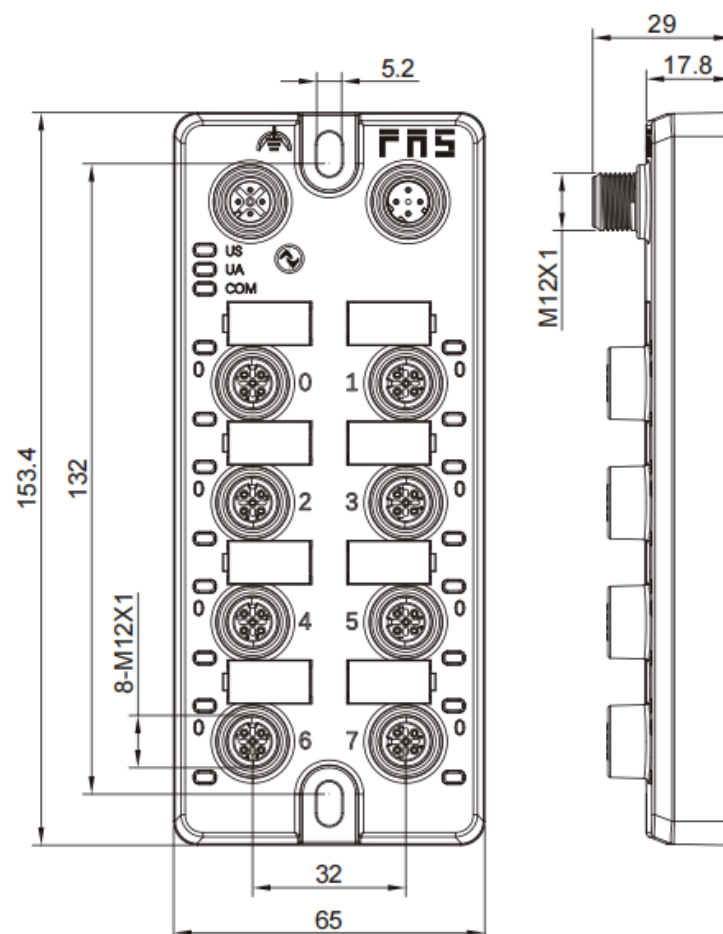


2.4 Status LED meter

Status LED	Status	Describe
US	Steady green	Module power supply is normal
	Destroy	Module is not powered
UA	Steady green	Auxiliary power supply is normal
	Destroy	No auxiliary power supply
COM	Steady green	Communication abnormality
	Flashing green	Communication is normal

2.5 Mechanical dimensions

Project	Specification
Dimensions (width x height x depth)	65MMx153.4MMx29MM



3.IO-Link data

3.1 Communication parameters

Data transmission baud rate	COM2 (38.4kbit/s)
Minimum cycle time	4.5ms
Process data cycle time	4.5ms, consistent with minimum cycle time
Process data length	4 bytes input, 4 bytes output

3.2 Process data

3.2.1 Process data/input data

Note: 0 and 1 are the first level, 2 and 3 are the second level (expansion)

Byte	0								1							
Bits	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
PIN	Input port 7 PIN 4	Input port 6 PIN 4	Input port 5 PIN 4	Input port 4 PIN 4	Input port 3 PIN 4	Input port 2 PIN 4	Input port 1 PIN 4	Input port 0 PIN 4	Input port 7 PIN 2	Input port 6 PIN 2	Input port 5 PIN 2	Input port 4 PIN 2	Input port 3 PIN 2	Input port 2 PIN 2	Input port 1 PIN 2	Input port 0 PIN 2
Byte	2								3							
Bits	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
PIN	Input port 7 PIN 4	Input port 6 PIN 4	Input port 5 PIN 4	Input port 4 PIN 4	Input port 3 PIN 4	Input port 2 PIN 4	Input port 1 PIN 4	Input port 0 PIN 4	Input port 7 PIN 2	Input port 6 PIN 2	Input port 5 PIN 2	Input port 4 PIN 2	Input port 3 PIN 2	Input port 2 PIN 2	Input port 1 PIN 2	Input port 0 PIN 2

3.2.2 Process data/output data

Note: 0 and 1 are the first level, 2 and 3 are the second level (expansion)

Byte	0								1							
Bits	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
PIN	Output port 7 PIN 4	Outputt port 6 PIN 4	Output port 5 PIN 4	Output port 4 PIN 4	Output port 3 PIN 4	Output port 2 PIN 4	Output port 1 PIN 4	Output port 0 PIN 4	Output port 7 PIN 2	Outputt port 6 PIN 2	Output port 5 PIN 2	Output port 4 PIN 2	Output port 3 PIN 2	Output port 2 PIN 2	Output port 1 PIN 2	Output port 0 PIN 2
Byte	2								3							
Bits	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
PIN	Output port 7 PIN 4	Outputt port 6 PIN 4	Output port 5 PIN 4	Output port 4 PIN 4	Output port 3 PIN 4	Output port 2 PIN 4	Output port 1 PIN 4	Output port 0 PIN 4	Output port 7 PIN 2	Outputt port 6 PIN 2	Output port 5 PIN 2	Output port 4 PIN 2	Output port 3 PIN 2	Output port 2 PIN 2	Output port 1 PIN 2	Output port 0 PIN 2

3.3 Parameter specifications

Rated working voltage	18...30V DC
Maximum current of each port (Pin1)	1A
Maximum current of each signal (Pin2, Pin4)	500mA
Total current Us	<1.4A
Total current Ua	<2A
Ambient temperature	-5~55℃ Relative humidity: 10%RH ~ 90%RH, no condensation
Storage temperature	-5~70℃ Relative humidity: <90%RH, no condensation
Short circuit protection	Have
Troubleshooting Tips	Have
Protection level	IP67 with waterproof bolts tightened
Altitude	≤2000m

3.4 Service data

	DPP	SPDU		Object name	Length	Scope	Default value
	Index	Index	Subindex				
Identification data				Supplier ID	2		0x0454
				Device ID	3		0x099EE0
		0x10	0	Supplier name	19	Read only	FAS(Fujian)Co.,LTD
		0x11	0	Supplier text	16		www.fas-elec.com
		0x12	0	Product name	max 64		FNI IOL-309-002-M12
		0x13	0	Product ID	max 32		00BG11
		0x14	0	Product text	44		IO-Link M12 PNP 16DI/DO extended with oth
		0x16	0	Hardware version	3		20211010
		0x17	0	Firmware version	3		2.04
Parameter data		0x40	0	Bit inversion	4	00000000-FFFFFFFF	0x00000000
		0x41	0	Direction	4	00000000-FFFFFFFF	0x00000000

Note:

0x40 setting bit inversion: 0-bit is not inverted, 1-bit is inverted. For example, the external input is 0x0000. When 0x40 is 0x00000000, the value is 0x00000000 (not inverted). When 0x40 is 0xFFFFFFFF, the value is 0xFFFFFFFF (inverted).

0x41 sets the direction: 0-input, 1-output.

3.5 Error code

Error code	Additional code
Device application error 0x80	Index not available 0x11
	Subindex not available 0x12
	Value out of range 0x30

3.6 Event

Class/qualifier			Code (high + low)			
Model	Type	Example				
Appear	Mistake	AL	Device hardware	Powered by	Power supply low voltage	U2=Powered by+24V
0xC0	0x30	0x03	0x5000	0x0100	0x0010	0x0002
0xF3			0x5112			
Disappear	Mistake	AL	Device hardware	Powered by	Power supply low voltage	U2=Powered by+24V
0x80	0x30	0x03	0x5000	0x0100	0x0010	0x0002
0xB3			0x5112			
Appear	Mistake	AL	Device hardware	Powered by	Power supply for peripherals	
0xC0	0x30	0x03	0x5000	0x0100	0x0060	
0xF3			0x5160			
Disappear	Mistake	AL	Device hardware	Powered by	Power supply for peripherals	
0x80	0x30	0x03	0x5000	0x0100	0x0060	
0xB3			0x5160			

■ High Quality Product / Sincere Service



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