PRODUCT

[Technical support]

Ordering code： 00BA11

Part number： FNI IOL-709-000-M12
Type： 4xAI, 4-20 mA, 8xDI

Contents

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 and inspection	Trouble	Owner/operator obligations	Expected use
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 ·Improper use operation ·The instructions provided in the user manual explain the use, installation and handling of discrepancies
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.	

1.Component function description

1.1Module overview
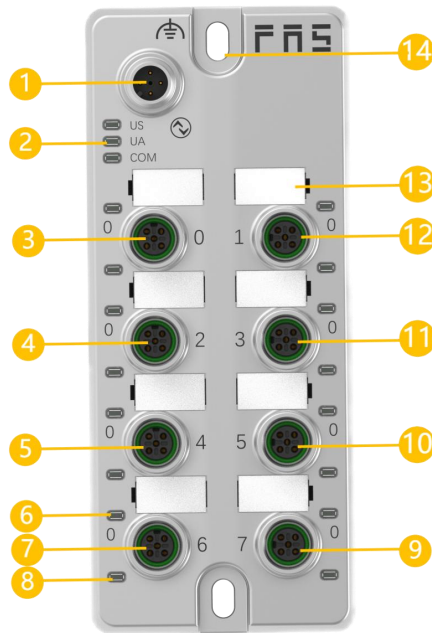
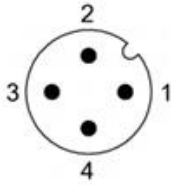| 1	2	3	4	5	6	7
IO-Link interface	Status LED	Analog input port 0	Analog input port 2	Digital I/O port 4	Status LED:Digital I/O port 6 Pin2	Digital I/O port 6
8	**9**	**10**	**11**	**12**	**13**	**14**
Status LED:Digital I/O port 6 Pin4	Digital I/O port 7	Digital I/O port 5	Analog input port 3	Analog input port 1	Label	Earth interface

2.Interface definition

2.1 IO-Link interface

M12,A-Coded,Male

Pin	Illustrate
1	US power supply,+24V（<1.2A）
2	NC
3	GND
4	C/Q, IO-Link data transmission channel

2.2 Analog input port connection diagram(M12 A-Coded)

M12,A-Coded,Female
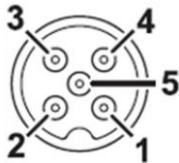
Pin	Illustrate
1	+24V （<350mA）
2	NC
3	0V,GND
4	Analog input
5	NC

Sensor wiring requirements:

1. Sensor 2-wire type:
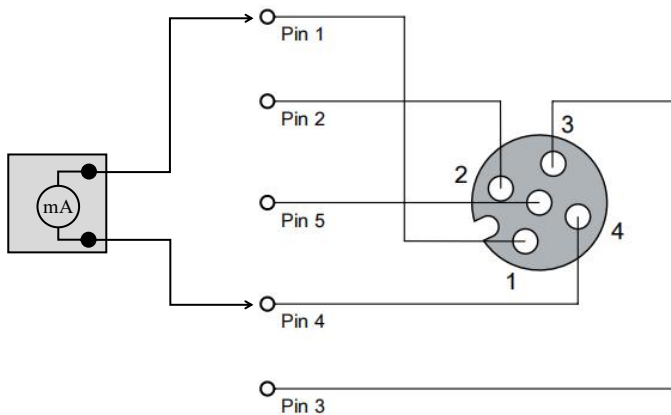
a. Pin1 Connect to the positive pole of the sensor power supply

b. Pin4 Connect the sensor signal

2. Sensor 3-wire type:
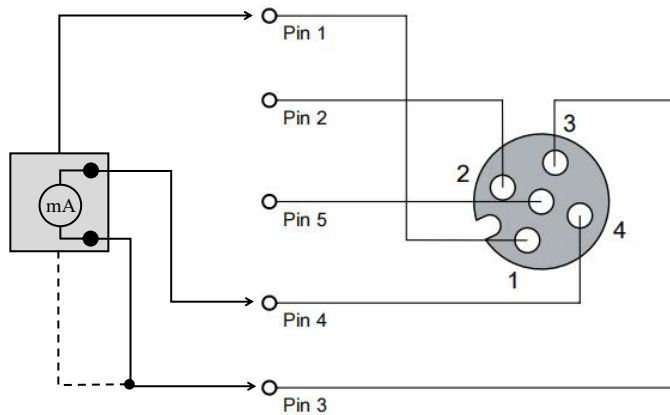
a. Pin1 Connect to the positive pole of the sensor power supply

b. Pin4 Connect sensor signal

c. Pin3 Connect to the negative pole of the sensor power supply

3. Sensor 2-wire type:
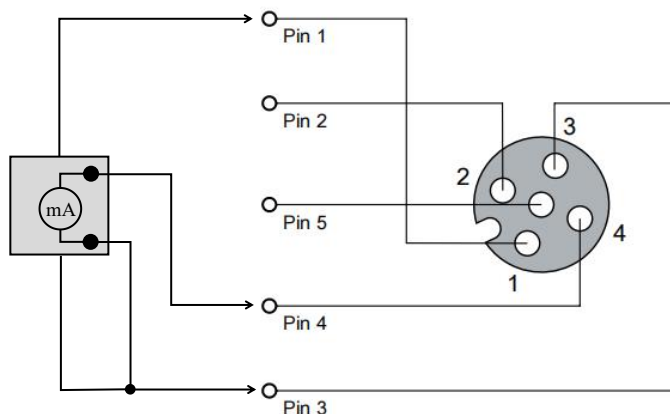
a. Pin1 Connect to the positive pole of the sensor power supply

b. Pin4 Connect to the positive pole of the sensor signal

c. Pin3 Connect the negative pole of the sensor power supply and the negative pole of the sensor signal.

2.3 Digital input port connection diagram (M12 A-coded)

M12,A-Coded,Female
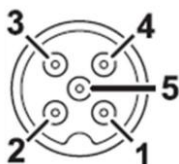
Pin	Illustrate
1	+24V （<350mA）
2	Digital input (PNP)
3	0V,GND
4	Digital input (PNP)
5	NC

2.4 Status LED meter

Module total indicator light:

LED	State	Function
1	Closure	US power supply abnormality
1	Green light is always on	US power supply is normal
2	Closure	*Spare
3	Closure	No communication
3	Green light flashes slowly intermittently	IO-Link communication failed
3	Green light turns on quickly intermittently	IO-Link communication successful
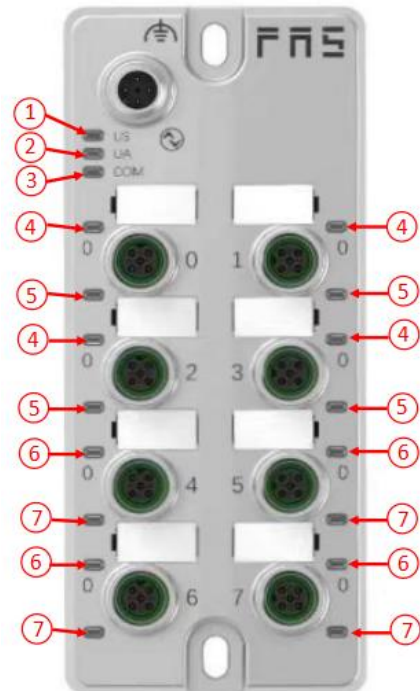
Analog input port:

LED	State	Function
4	Closure	*Spare
5	Closure	No analog signal input
5	Yellow always on	Analog signal input is valid
5	Red always on	Analog signal input short circuit

Digital input port:

LED	State	Function
6	Closure	PIN2 no digital signal input
6	Yellow always on	PIN2 digital signal input is valid
6	Red always on	PIN2 digital signal input short circuit
7	Closure	PIN4 no digital signal input
7	Yellow always on	PIN4 digital signal input is valid
7	Red always on	PIN4 digital signal input short circuit

2.5 Mechanical dimensions

Project	Specification
Dimensions (Width x Height xDepth)	65MMx153.4MMx29MM
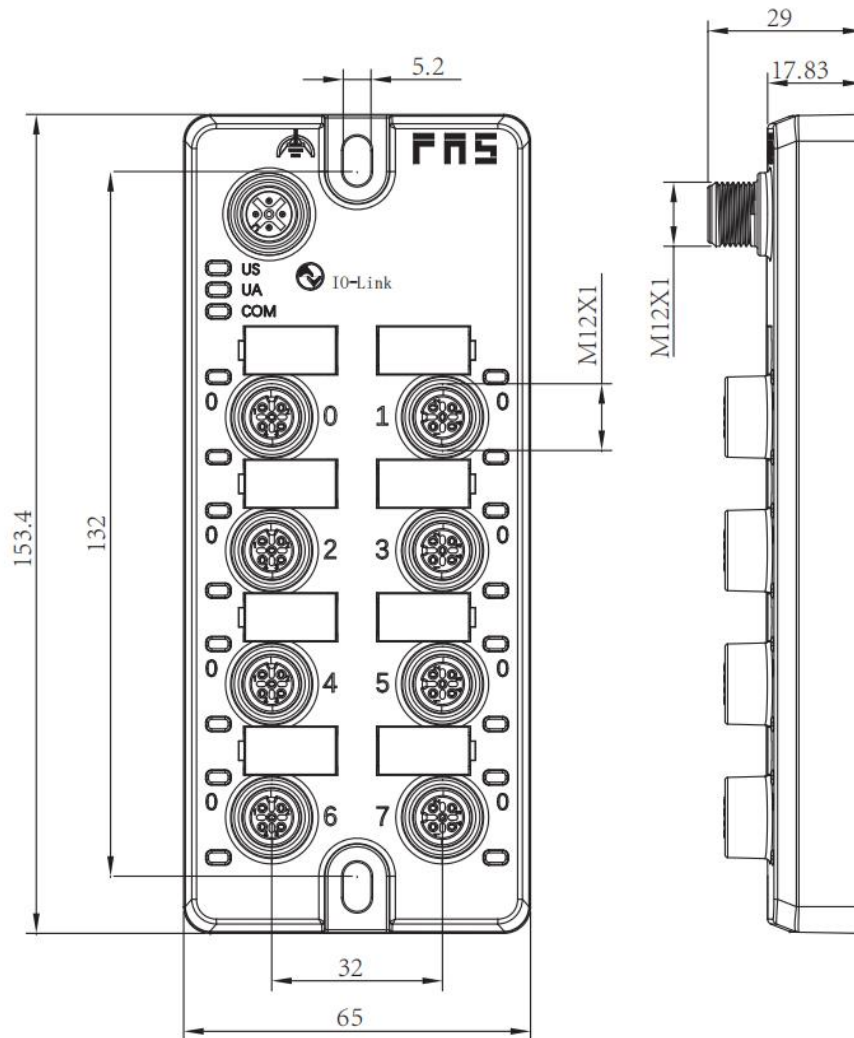
3.IO-Link data

3.1 Communication parameters

Data transmission baud rate	COM2 (38.4kbit/s)
Frame type	2.V
Minimum cycle time	5ms
Process data cycle time	5ms,corresponds to the minimum cycle time
Process data length	10 byte input
Analog detection range	4~20mA
Analog output value range	0~65535（correspond 4-20mA）

3.2 Process data

3.2.1 Process data/input data

Note: 0 is MSB, 9 is LSB.

Byte	0								1								2								3							
Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Describe	Analog input port 0																Analog input port 1															

Byte	4								5								6								7							
Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Describe	Analog input port 2																Analog input port 3															

Byte	8								9							
Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Describe	Input port 7 Pin4	Input port 6 Pin4	Input port 5 Pin4	Input port 4 Pin4	Input port 7 Pin2	Input port 6 Pin2	Input port 5 Pin2	Input port 4 Pin2	Reserved							

3.3 Service data

	DPP	SPDU		Object name	length	Scope	Defaults
	Index	Index	Subindex				
Identification data				Supplier ID	2	Read only	0x0454
				Device ID	3		0x099EE1
		0x10	0	Supplier name	19		FAS(Fujian)Co.,LTD
		0x11	0	Supplier text	16		www.fas-elec.com
		0x12	0	Product name	Max64		FNI IOL-709-000-M12
		0x13	0	Product ID	Max32		00BA11
		0x14	0	Product text	44		IO-Link M12 4AI 8DI 4…20mA
		0x16	0	Hard ware version	3		20200909
		0x17	0	Firmware version	3		2.01
Parameter data		0x40	0	Equipment type	1	00-FF	0x00

3.4 Error code

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

3.5 Event

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

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