



PRODUCT

PRODUCT USE INSTRUCTIONS



[Technical support]

Ordering code : 001B11

Part number: FNI PNT-508-105-M

FNI PNT-508-105-M

8xIO-Link, 16 DI/DO PNP

IO-Link Master Module User Manual



[Catalog](#)

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■ 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!

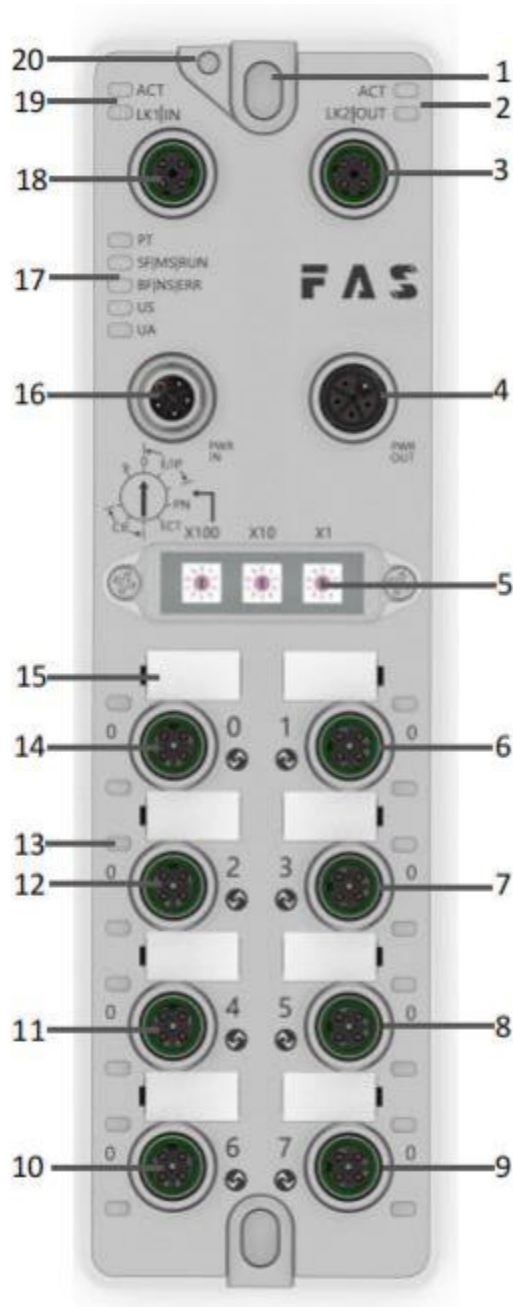
Disconnect all power before using the device!

■ General security

Debugging and inspection	Fault	Owner/operator obligations	Expected use
<p>Before debugging, read the user manual carefully.</p>	<p>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.</p>	<p>This equipment is an EMC Class A compliant product. This device produces RF noise.</p>	<p>The warranty and limited liability statement provided by the manufacturer does not cover damage caused by:</p> <ul style="list-style-type: none"> ·Unauthorized tampering ·Improper use operation ·The instructions provided in the user manual explain the use, installation and handling of discrepancies
<p>This system cannot be used in an environment where the safety of personnel depends on the functionality of the equipment.</p>	<p>Only after the housing is fully installed can the intended use be assured.</p>	<p>The owner/operator must take appropriate precautions to use this equipment.</p> <p>This device can only use the power supply that matches this device, and can only connect cables approved for application.</p>	

1 Getting started guide

1.1 Module overview



- | | | | | | |
|---|---------------------------------|----|-----------------------------|----|---------------------------------|
| 1 | Mounting hole | 8 | Port 5 | 15 | Port identification plate |
| 2 | Network port 2 status indicator | 9 | Port 7 | 16 | Power input port |
| 3 | Network port 2 | 10 | Port 6 | 17 | Module indicator light |
| 4 | Power output port | 11 | Port 4 | 18 | Network port 1 |
| 5 | DIP switch | 12 | Port 2 | 19 | Network port 1 status indicator |
| 6 | Port 1 | 13 | Port status indicator light | 20 | Ground connection |
| 7 | Port 3 | 14 | Port 0 | | |

1.2 Mechanical connection

The modules are connected using 2 M6 bolts and 2 washers.
Isolation pads are available as accessories.

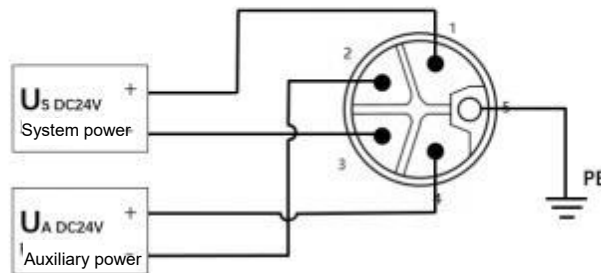
1.3 Electrical connection

1.3.1 Power interface(L-code)

Definition of power input port Definition of power output port



Power port

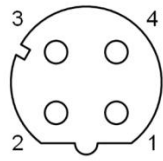


Pin	Funcio	Description
1	Us+	+24V (Brown)
2	Ua-*	0V (White)
3	Us-	0V (Blue)
4	Ua+*	+24V (Black)
FE	Functional ground*	FE (Yellow green)

Note:

- If possible, provide sensor/module power supply and actuator power supply separately.
Total current <16A, even if the actuator power supply is daisy chained, the total current of all modules is <16A.
- The FE connection from the housing to the machine must be low impedance and kept as short as possible.

1.3.2 Network interface (D-code)

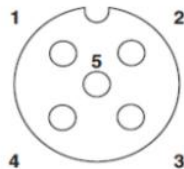


Pin	Function	
1	Tx+	Send data+
2	Rx+	Receive data+
3	Tx-	Send data-
4	Rx-	Receive data-

Note:

Unused I/O port sockets must be covered with end caps to meet IP67 protection rating.

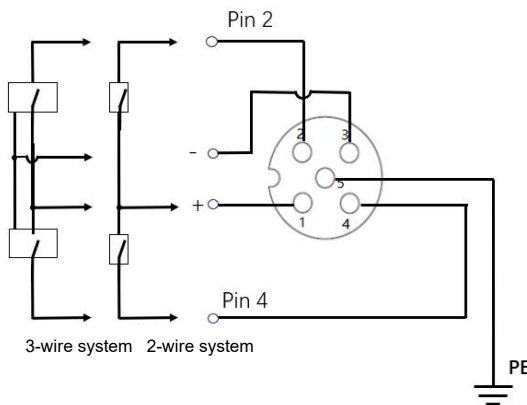
1.3.3 I/O-port (A-code)



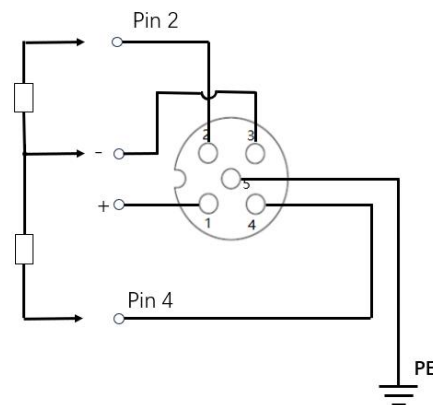
Pin	Function
1	+24V (Brown) maximum current 1A
2	Input /Output (White)
3	0V(Blue)
4	Input /Output/IOLINK(Black)
5	FE(Gray)

Normal I/O

PNP input



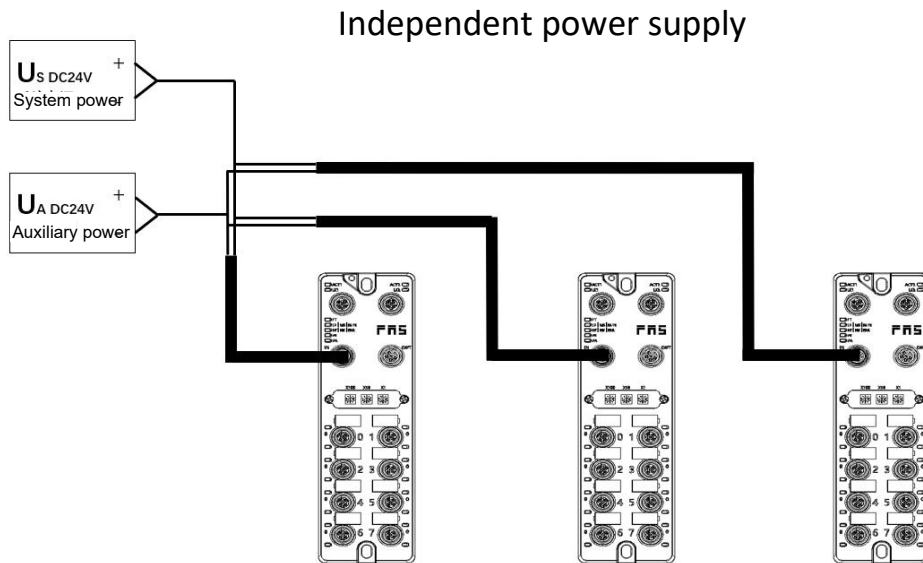
PNP output



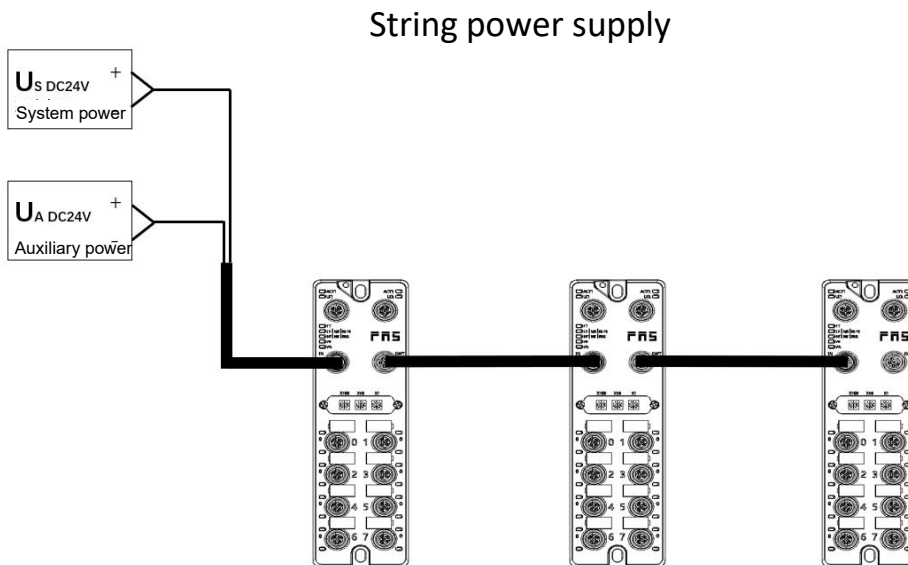
Note:

1. Regarding digital sensor input, please follow the input guidance of EN61131-2, Type 2.
2. The maximum output current of each port is 2A. The total module current is 16A.
3. Unused I/O port sockets must be covered with end caps to meet IP67 protection level.

1.3.4 Master module wiring method



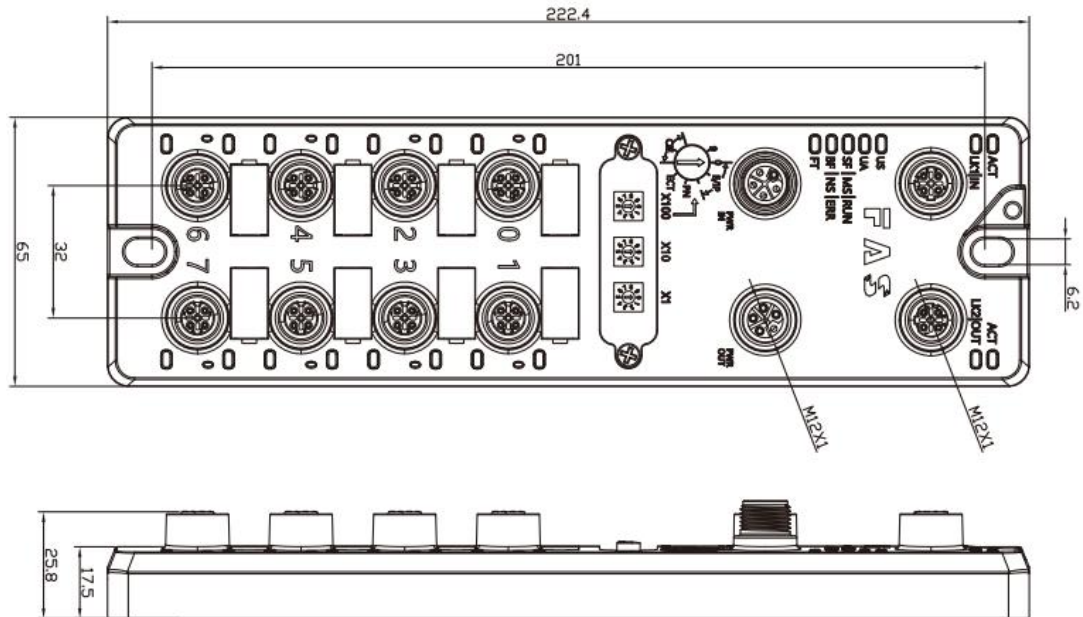
In independent power supply mode, the maximum current of each master station can reach 16A.



In the serial power supply wiring mode, if the rear module needs to be connected to the front module, the cumulative current must not exceed 16A.

2. Technical data

2.1 Size



2.2 Mechanical data

Shell material	Die-cast aluminum housing, pearl nickel plated
Housing rating according to IEC 60529	IP67 (Only in plug-in or plug type)
Power interface	L-Code (male and female)
Input port/output port	M12, A-Code (8*Female)
Size(W*H*D)	65mm*222mm*25.8mm
Installation type	2-Through hole mounting
Ground bus accessories	M4
Weight	About 670g

2.3 Operating conditions

Operating temperature	-5°C ~ 70°C
Storage temperature	-25°C ~ 70°C

2.4. Electrical data

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

2.5 Network port

Prt	2 x 10Base-/100Base-Tx
Port connection	M12, D-Code
IEEE 802.3 compliant cable types	Shielded twisted pair, minimum STP CAT 5/STP CAT 5e
Data transfer rate	10/100Mbit/s
Maximum cable length	100m
Flow control	Half working condition/full working condition (IEEE 802.3-PAUSE)

2.6 Function indicator

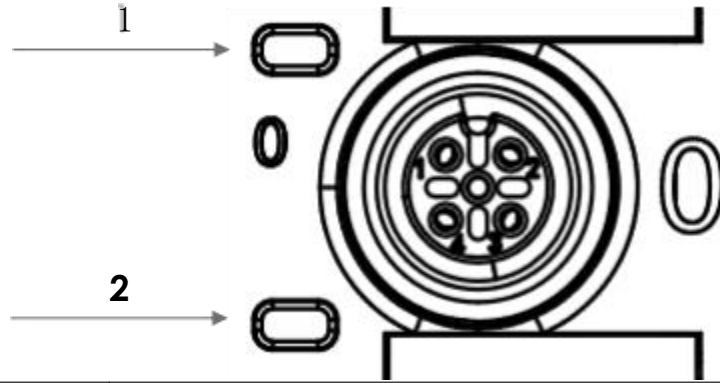


PT	Yellow	ProfiNet communication protocol
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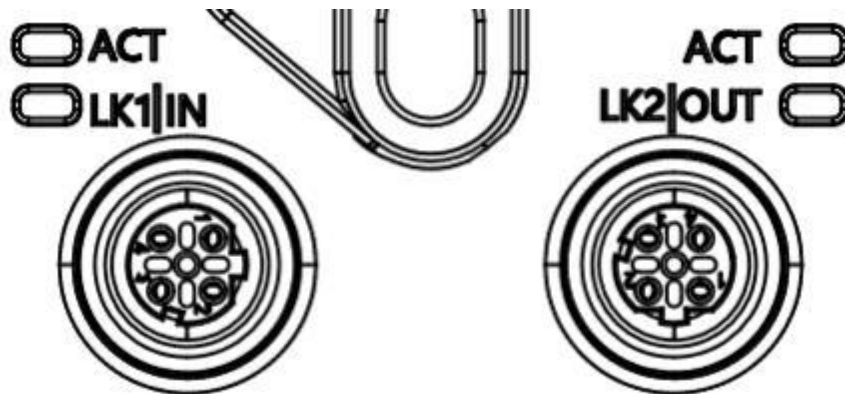
Profinet Communication protocol module status

LED	Show	Function
SF	Closure	Normal operation
	Red always on 3s 1HZ	Bus startup
	Red always on	system error
BF	Closure	Normal operation
	Red flashing 2HZ	No data exchange
	Red always on	No configuration; Or low-speed physical links; Or there is no physical link
US	Green	Input voltage is normal
	Red flashing	Low input voltage (<18V)
UA	Green	Output voltage is normal
	Red flashing	Low output voltage (<18V)
	Red always on	No output voltage (<11 V)

I/O port status



LED	State	Function
1	Closure	The status of Pin4 input or output is 0
1	Yellow	The status of Pin4 input or output is 1
1	Red	Port configured as output: Pin4 short circuit
1	Flashing red	Port configured as output: Pin1 short circuit
1	Green	IO-Link is connected
1	Flashing green	IO-Link not connected
2	Closure	The status of Pin2 input or output is 0
2	Yellow	The status of Pin2 input or output is 1
2	Red	The UA power supply is cut off or the network is disconnected or Pin2 is short-circuited.
2	Flashing red	Pin1 short circuit



Network port status

LED	State	Function
ACT	Closure	Bus rate: 10Mbit/s
	Yellow	Bus rate: 100Mbit/s
LK1 IN (ECT IN)	Flashing green	Data transfer in progress
LK2 IN (ECT OUT)	Flashing green	Data transfer in progress

3.Integration

3.1 Module configuration

ProfiNet Communication protocol Process monitoring data									
Module	Function Description								
	Status description	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Actuator shutdown pin 2	Pin2port short circuit 0=normal 1=short circuit	Port7 Pin2	Port6 Pin42	Port 5 Pin 2	Port4 Pin2	Port3 Pin2	Port2 Pin2	Port1 Pin2	Port0 Pin2
Actuator shutdown pin 4	Pin4port short circuit 0=normal 1=short circuit	Port7 Pin4	Port6 Pin4	Port 5 Pin 4	Port4 Pin4	Port3 Pin4	Port2 Pin4	Port1 Pin4	Port0 Pin4
Sensor supply short circuit	Pin1port short circuit 0=normal 1=short circuit	Port7 Pin1	Port6 Pin1	Port 5 Pin 1	Port4 Pin1	Port3 Pin1	Port2 Pin1	Port1 Pin1	Port0 Pin1
Device Status	Module status	-	-	-	Us Over voltage	Ua Over voltage	过热	Us Under voltage	Ua Under voltage
IO-Link communication state	Communication Status 0=break 1=connect	Port7	Port6	Port5	Port4	Port3	Port2	Port1	Port0
IO-Link PD Valid	IOLinkPD effective 0=ban 1=enable	Port7	Port6	Port5	Port4	Port3	Port2	Port1	Port0
Standard I/O	Standard IO auxiliary slot	(Match Input Pin2, Pin4, Output Pin2, Pin4 for use)							

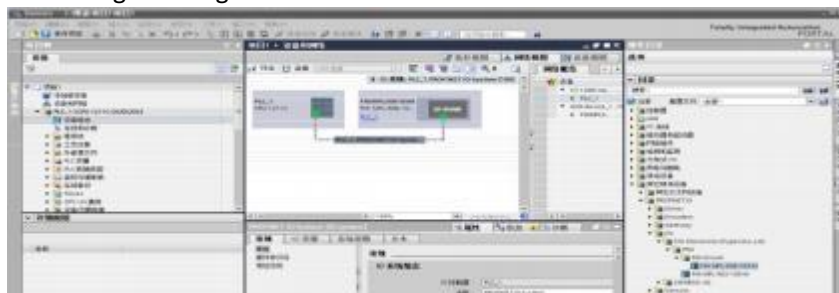
3.2 PLCIntegrated Tutorial

3.2.1 Siemens S7-1200 Botu Integrated (PN)

1、Install GSD file

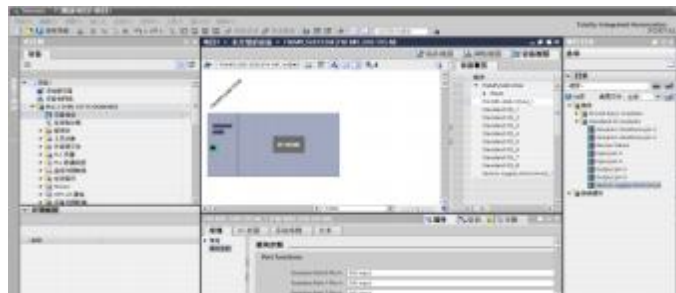


- 2、 Select a module from PLC - Equipment Configuration - Network View - Hardware Catalog and drag it in. Click "Unallocated" and select the PLC to connect to;

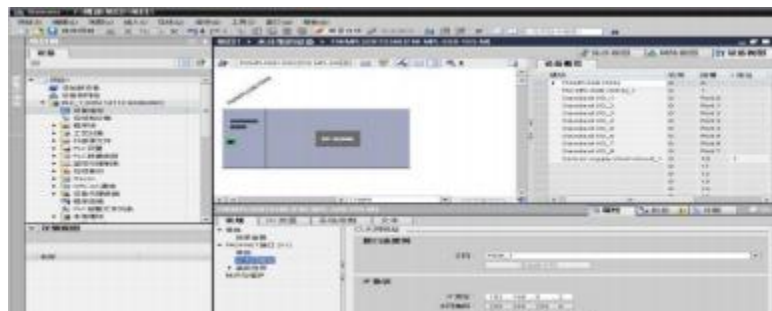


- 3、 Double click the module to enter configuration,

- (1) Slot function configuration: In the hardware directory, select the required data for the module and drag it into the slot in the device overview window;
- (2) Module Port Function Configuration: Click on the module icon, select "General", and then click on slot 1 to configure the port function

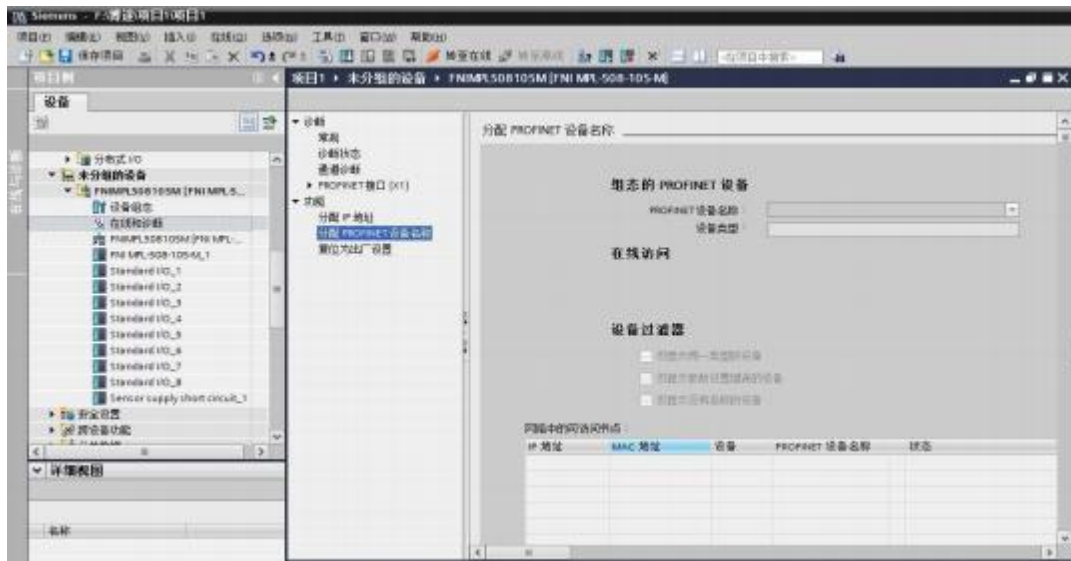


- (3) Module Function Configuration: Click on the module icon, select "General", and then click on slot 0 to configure module functions



- (4) After configuration is complete, click on download in the configuration view.

4、Assign module PN name: Switch the PLC to online mode, select "ungrouped devices" - click on the module name - select online and diagnostic - function - assign PROFINET device name - select the module to be assigned from the list (based on the physical MAC selection) - click on "Assign name" to complete the configuration!

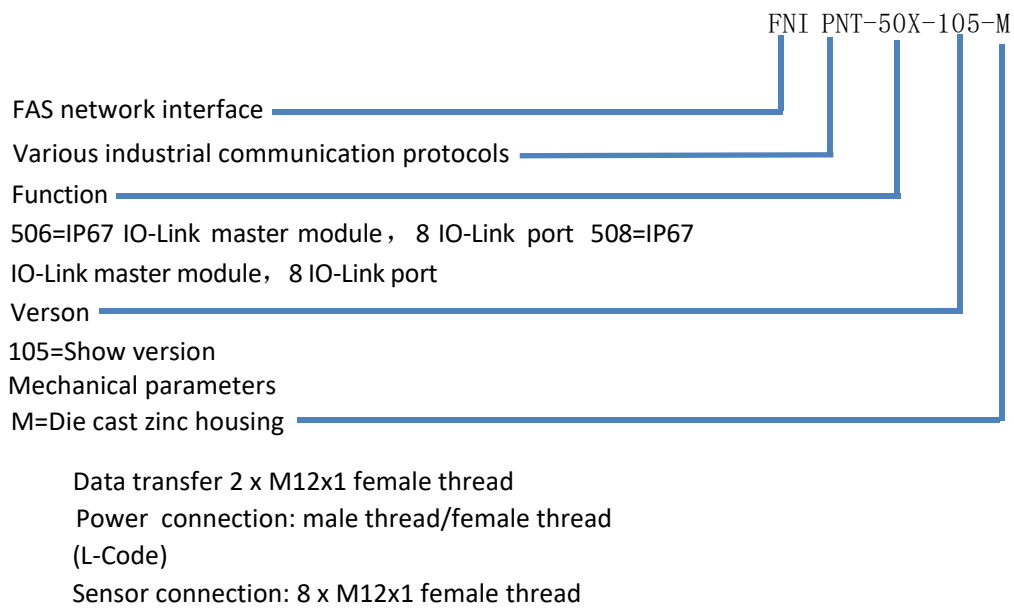


4 Appendix

4.1. Materials included

- FNI PNT contains the following parts
- I/O-Block
- 4 blind plugs M12
- Ground bus
- Thread M4x6
- 20 tags

4.2. Order code



4.3 Ordering information

Product ordering code	Ordering code
FNI PNT-508-105-M	001B11

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[Technical support]



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