



PRODUCT

USE INSTRUCTIONS



Ordering code: 003C11

Part number: FNI PBS-104-105-M

FNI PBS-104-105-M

16 DI PNP

PROFIBUS DP IO module user manual



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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!

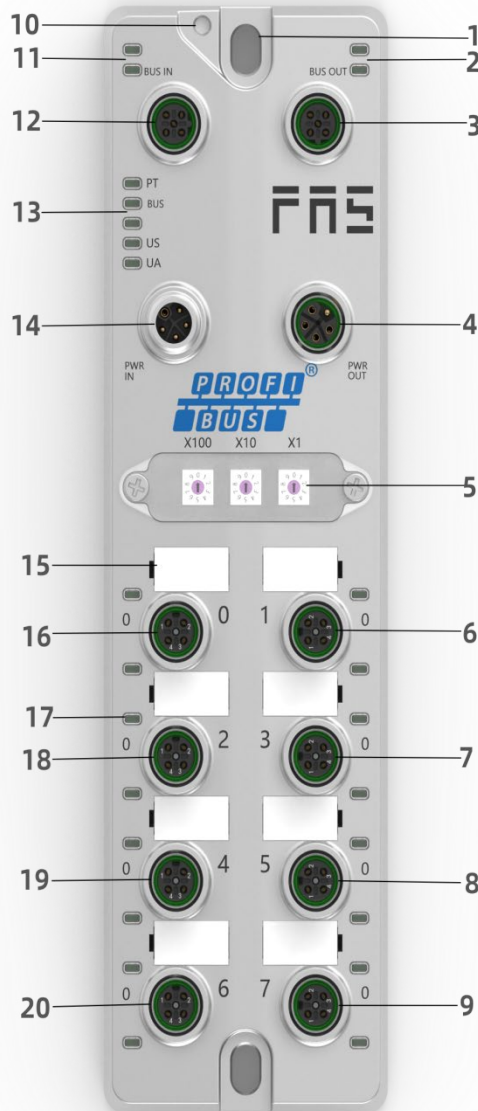
Disconnect all power before using the device!

■ General security

Debugging and inspection	Fault	Owner/operator obligations	Expected use
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 Getting Started Guide

1.1 Module overview



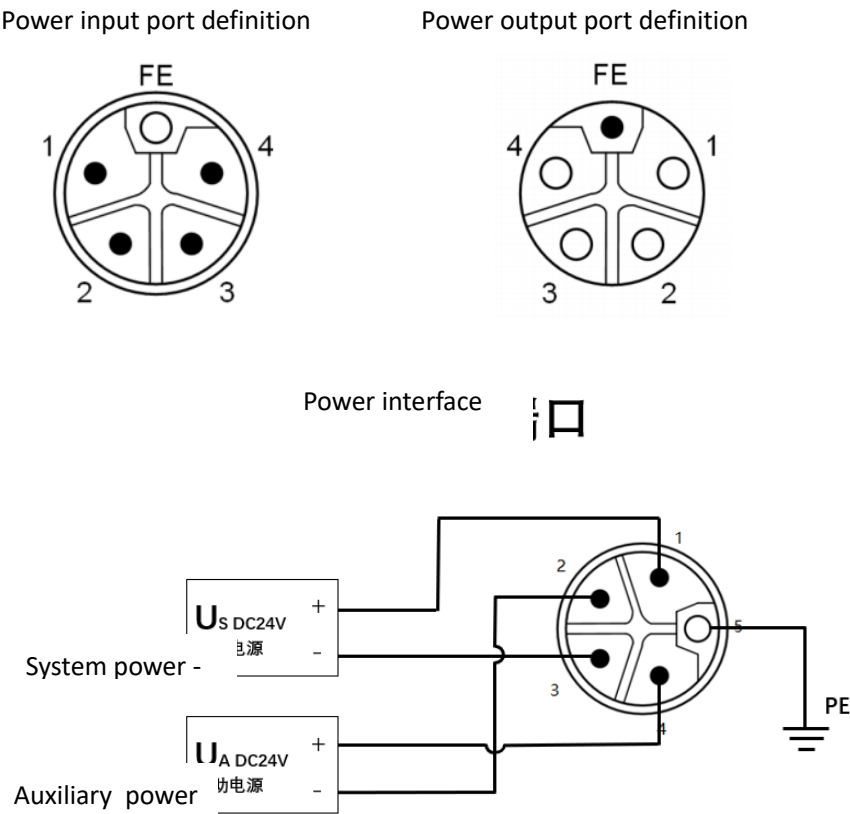
- | | |
|-----------------------------------|--|
| 1 Mounting hole | 8 Port 5 15 Port identification plate |
| 2 Network port 2 status indicator | 9 Port 7 16 Port 0 |
| 3 Network port 2 | 10 Ground connection 17 Module indicator light |
| 4 Power output port | 11 Network port 1 status indicator 18 Port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

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-coded)



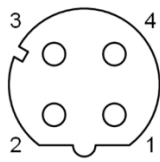
Pin	Function	Description
1	Us+	+24V(Brown)
2	Ua-*	0V(White)
3	Us-	0V(Blue)
4	Ua+*	+24V(Black)
FE	Functional ground*	FE(Yellow green)

Note:

1. 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.
2. 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-coded)

Pin	Function	
1	Tx+	Send data+

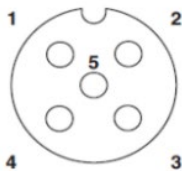


2	Rx+	Receive data+
3	Tx-	send data-
4	Rx-	Receive data-

Note:

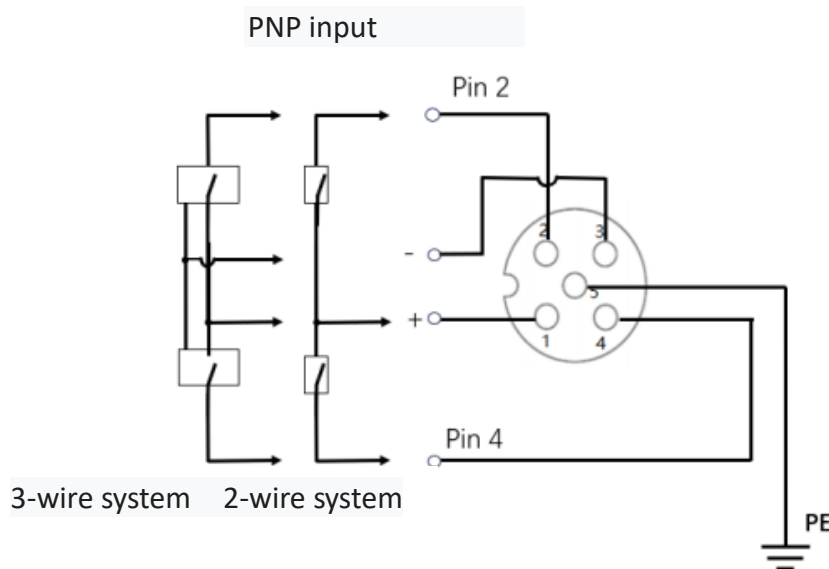
Unused I/O port sockets must be covered with end caps to meet IP20 protection rating

1.3.3 I/O-port(A-coded)



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

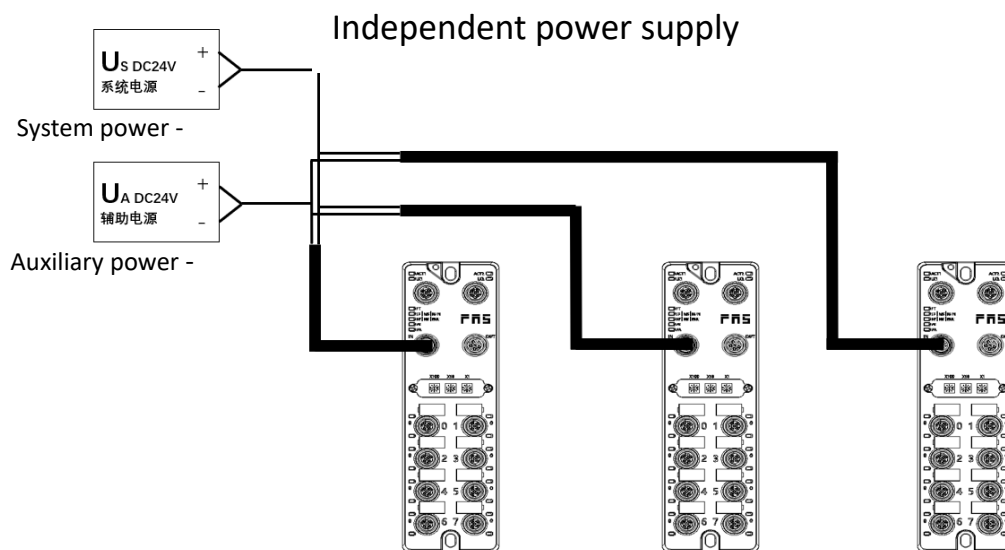
Common I/O



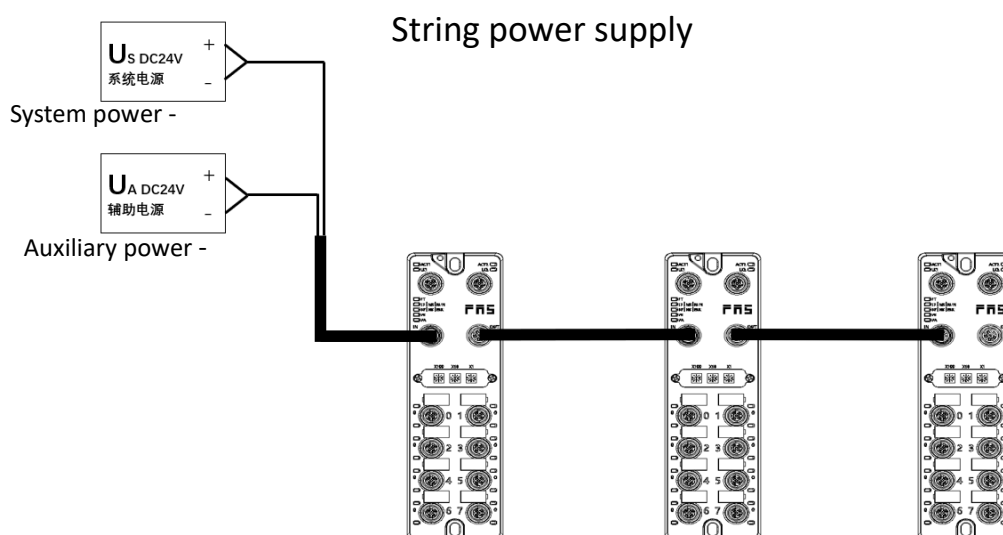
Note:

1. Regarding digital sensor input, please follow the input guidance of EN61131-2, Type 2.
2. The maximum load of a single signal input is 200mA;
3. Unused I/O port sockets must be covered with end caps to meet IP67 protection level.

1.3.4 Master module wiring method



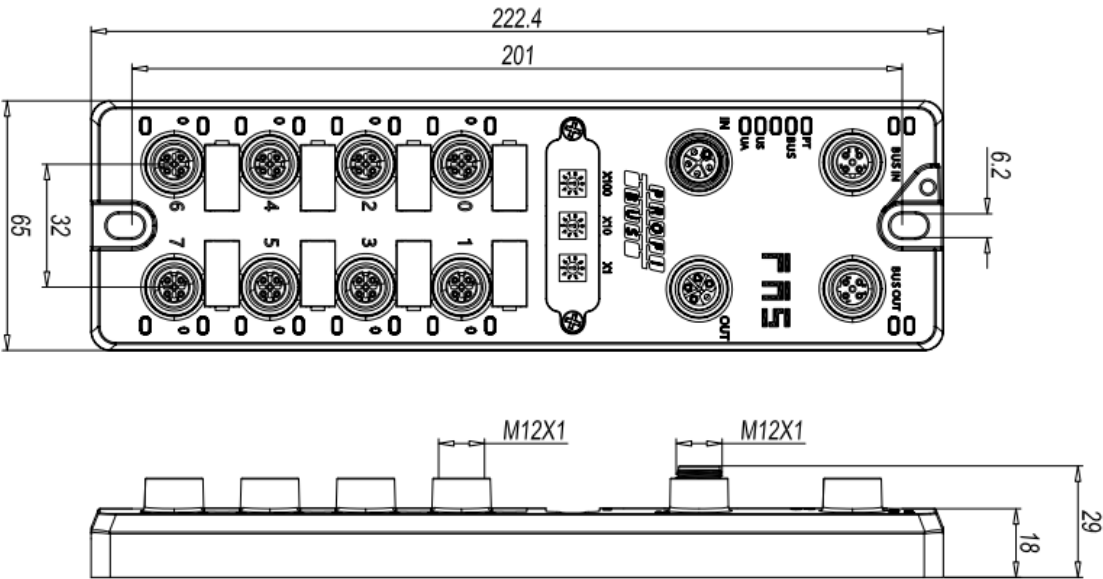
In independent power supply mode, the maximum current of each master station can reach 16A.



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

2.3	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-Coded(8*Female)
	Size(W*H*D)	65mm*222mm*29mm
	Installation type	2-Through hole mounting
	Ground bus accessories	M4
	Weight	About 670g

Operating conditions

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

2.4 Electrical data

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

2.5 Network port

Port	2 x 10Base-/100Base-Tx
Port connection	M12, D-Coded
IEEE 802.3 compliant cable types	Shielded twisted pair, minimum STP CAT 5/STP CAT 5e

Data transfer rate	10/100 M bit/s
Maximum cable length	100m
Flow control	Half working condition/full working condition (IEEE 802.3-PAUSE)

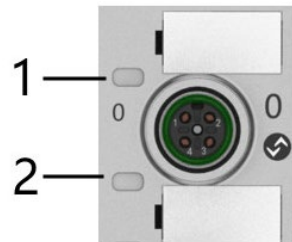
2.6 Function indicator



PT	Closure	ProfiBUS communication protocol
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Profibus-DP communication protocol module status

LED	Show	Function
BUS	Green light is always on	Communication is normal
	Green light flashes 2HZ	The master station is in CLEAR state
	Flashing red 1HZ	Not configured
	Flashing red 2HZ	No data exchange
	Red always on	Configuration error
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)



I/O port status

LED	State	Function
1	Closure	The status of Pin4 input is 0
1	Yellow	The status of Pin4 input is 1
1	Red	The port is configured as input: Pin1 overcurrent
2	Closure	The status of Pin2 input is 0
2	Yellow	The status of Pin2 input is 1
2	Red	The port is configured as input: Pin1 overcurrent

3 Integrated

3.1 Module configuration

3.1.1 Factory reset

1. When the device is powered off, dial 900;
2. Power on the device and wait for 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;

3.1.2 Node address configuration

1. When the node address is 12, dial X100=0 X10=1 X1=2

3.2 Data mapping

ProfiBus communication protocol process monitoring data									
Module	Function description								
	Status description	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Actuator shutdown pin 2	Pin2 port overcurrent 0=normal 1=overcurrent	Port7 Pin2	Port6 Pin42	Port5 Pin2	Port4 Pin2	Port3 Pin2	Port2 Pin2	Port1 Pin2	Port0 Pin2
Actuator shutdown pin 4	Pin4 port overcurrent 0=normal 1=overcurrent	Port7 Pin4	Port6 Pin4	Port5 Pin4	Port4 Pin4	Port3 Pin4	Port2 Pin4	Port1 Pin4	Port0 Pin4
Sensor supply short circuit	Pin1 port overcurrent 0=normal 1=overcurrent	Port7 Pin1	Port6 Pin1	Port5 Pin1	Port4 Pin1	Port3 Pin1	Port2 Pin1	Port1 Pin1	Port0 Pin1
Device Status	Module state	-	-	-	Us overvolt age	Ua overvolt age	overheat	Us Undervoltage	Ua Undervoltage

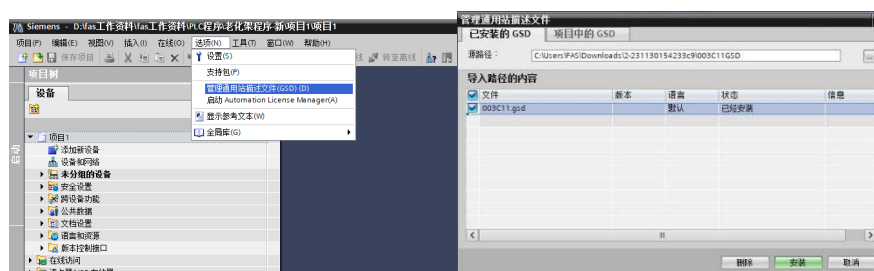
ProfiBus communication protocol slot function									
Inputpin2	Enter pin2	Port7 Pin2	Port6 Pin42	Port5 Pin2	Port4 Pin2	Port3 Pin2	Port2 Pin2	Port1 Pin2	Port0 Pin2
Inputpin4	Enter Pin4	Port7 Pin4	Port6 Pin4	Port5 Pin4	Port4 Pin4	Port3 Pin4	Port2 Pin4	Port1 Pin4	Port0 Pin4

3.3 PLC integration tutorial

(The module node address should be set before configuring the module, see 3.1.2 for details)

3.3.1 Siemens S7-1200 Portal Integration (Profibus-DP)

1. Install the GSD file

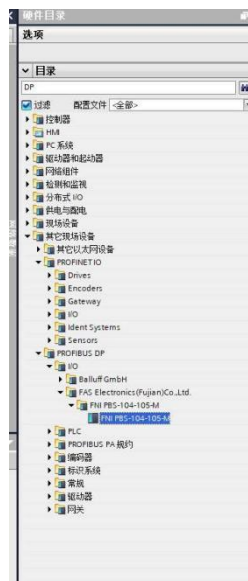


2. In PLC---Device Configuration---Network View---Hardware Catalog, select the module and drag it in, click

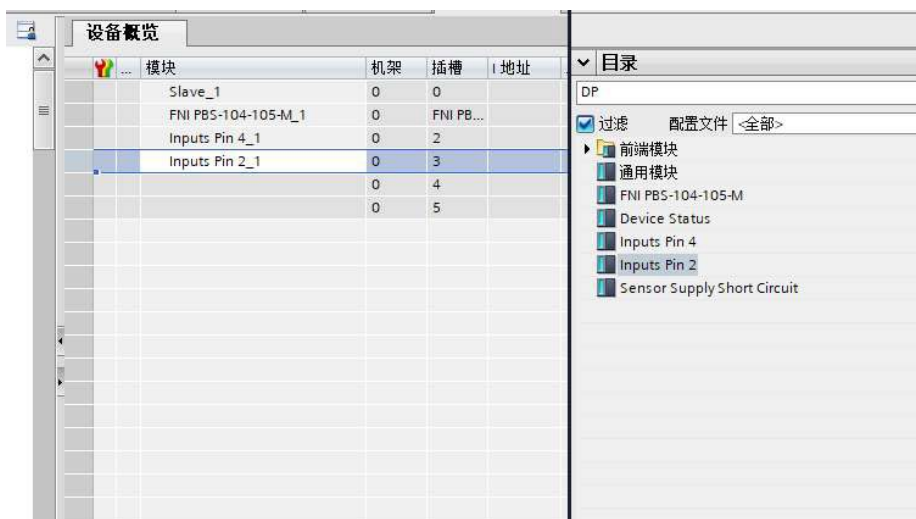
"Unassigned", and select the PLC to be connected;

3. Double-click the module to enter the configuration.

(1) Slot function configuration: Select the required data in the hardware catalog--Module and drag it into the slot in the device overview window;

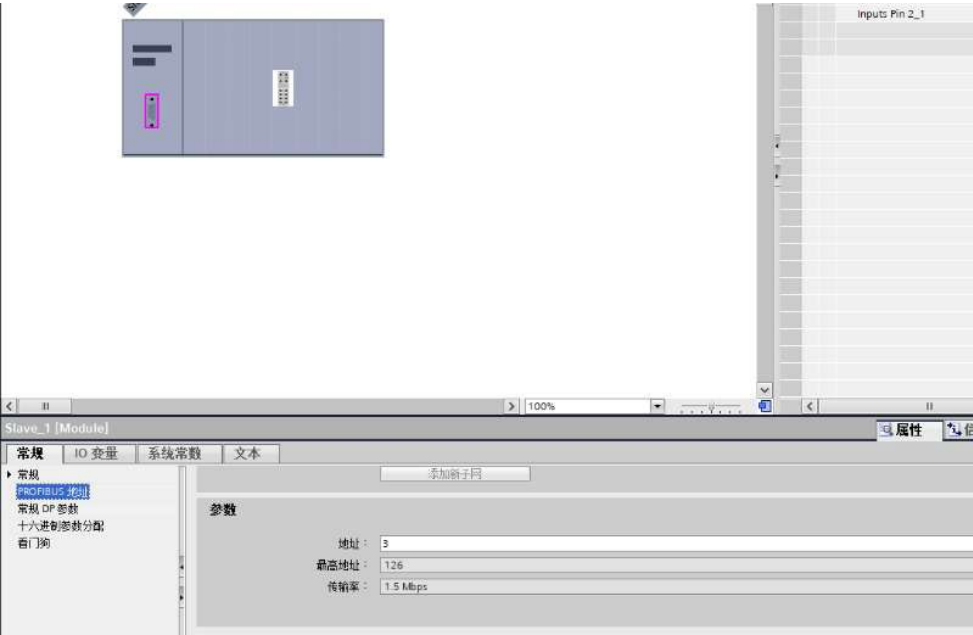


(2) Module port function configuration: Click the module icon, double-click "Inputs Pin 4" and "Inputs Pin 4" to enter slots 2 and 3;



(3) After the configuration is completed, click Download in the configuration view.

4. Assign module address: General -----PROFIBUS address-----The input address value is consistent with the dialing address on the module.

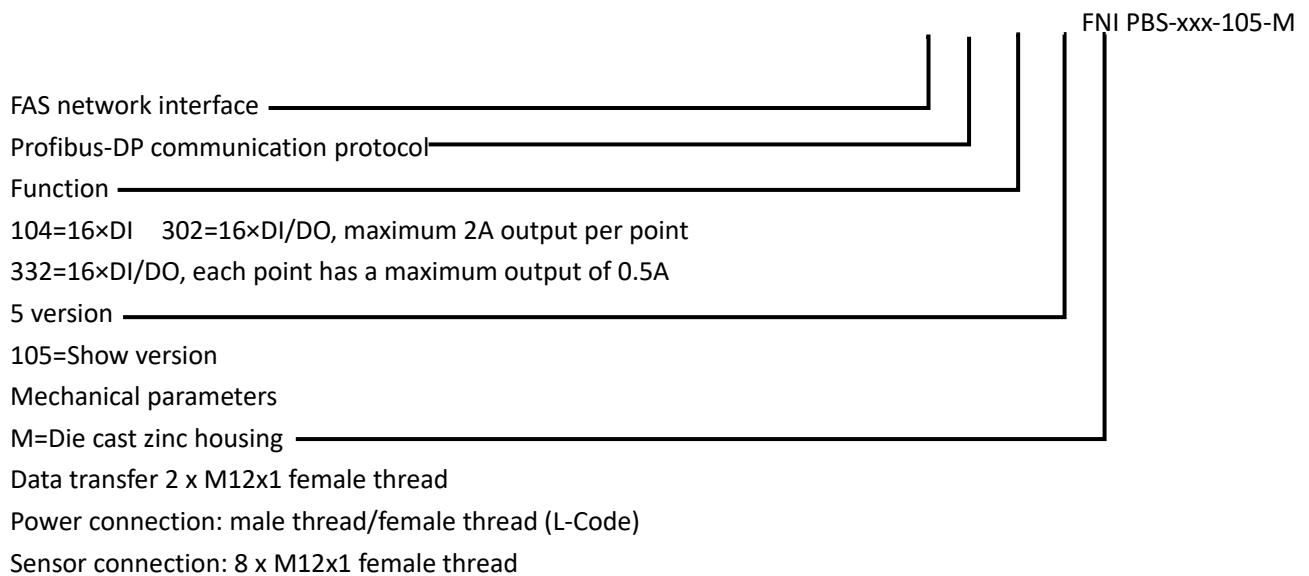


4 Appendix

4.1. Materials included

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

4.2. Ordering code



4.3 Ordering Information

Product Order Code	Ordering code
FNI PBS-104-105-M	003C11

■ High Quality Product / Sincere Service



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