



FuYanShengElectronic(FuJian)Co.,Ltd.

FNI PBS-302-105-M

PROFIBUS DP IO Module User Manual Manual



1 Notes	
1.1. Manual structure	3
1.2. Typography	3
1.3. Symbol	3
1.4. Abbreviations	3
1.5. Visual Bias	3
2 Security	
2.1. Intended use	4
2.2. Installation and startup	4
2.3. General Security Notes	4
2.4. Resistance to Corrosive Substances	4
3 Getting Started Guide	
3.1. Module overview	5
3.2. Mechanical connection	6
3.3. Electrical connection	6
4 Technical data	
4.1. Size	8
4.2. Mechanical data	8
4.3. Operating conditions	8
4.4. Electrical data	8
4.5. Network Port	8
4.6. Function indicator	9
5 Integration	
5.1 Module configuration	13
5.2 Data Mapping	14
5.3 PLC Integration Tutorial	16
6 Appendix	21



1 Notes

1.1. Manual structure This manual is organized by organization, so the chapters are interconnected. Section 2: Basic Safety Information. Chapter 3: Getting Started Guide Chapter 4: Technical data

1.2. Typography The following typographic conventions are used in this manual.

Enumerate The enumeration is displayed as a list with bullets. ·Entry1 ·Entry2

Action Action descriptions are represented by a front triangle. The result of the action is represented by an arrow. Action description 1 Action result Action description 2 Step programs can also be displayed numerically in parentheses. (1) Step 1 (2) Step 2

Grammar Number: Decimal numbers are displayed without additional indicators (eg 123) Hexadecimal numbers are displayed with an additional indicator hex (eg: 00hex) or with the prefix "0X" (eg: 0x00)

Cross-reference Cross-references indicate where to find additional information on this topic.

1.3. Symbols Notes This symbol indicates a general comment.

Notice! This symbol indicates the most important safety notice.

1.4. Acronym FNI FAS Network Interface I Standard input port PN Profinet ECT EtherCAT CIE CC_link IEF Basic EIP Ethernet/IP EMC Electromagnetic Compatibility FE functional ground O Standard output port

1.5. Viewing deviations The product views and explanations in this manual may deviate from the actual product. They are only left and right solutions



Explain the materials used.

2 safety

2.1. Expected usage This manual describes as decentralized input and output modules for connection to an industrial network.

Precautions!

2.2. Install and start Installation and start-up may only be carried out by trained and specialized personnel. A qualified individual is one who is familiar with the installation and operation of the product and has the necessary qualifications to do so. Any damage caused by unauthorized operation or illegal and improper use is not covered by the manufacturer's warranty. Equipment operators are responsible for ensuring that appropriate safety and accident prevention regulations are followed.

2.3. General security Notes Debug and check Before debugging, you should read the contents of the user manual carefully.

The system cannot be used in applications where the safety of personnel depends on the functionality of the equipment. intended use

The manufacturer's warranty coverage and limited liability statement do not cover damage caused by:

- Unauthorized tampering
• Improper use
• Owner/operator's obligations

This device is an EMC Class A product. This device generates RF noise.

The owner/operator must take proper precautions when using this equipment. Use only a power source compatible with this device and connect only approved cables.

Fault

In the event of a defect or equipment malfunction that cannot be corrected, the equipment must be taken out of operation to avoid possible damage from unauthorized use.

Intended use can only be ensured when the enclosure is fully installed.

2.4. Corrosion resistance

Precautions!

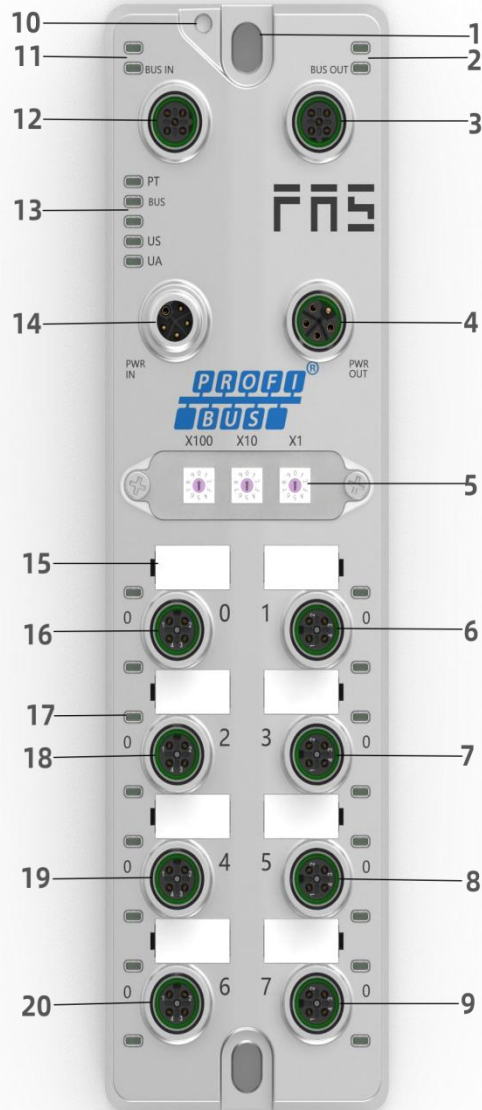
FNI modules generally have good chemical and oil resistance characteristics. When used in aggressive media (e.g. high concentrations of chemicals, oils, lubricants and coolants (i.e. low water content)), these media must be checked before the corresponding application material compatibility confirm. If the module fails or is damaged due to this corrosive medium, no claim for defects can be claimed.

Dangerous voltage Precautions!

Disconnect all power sources before using the equipment!



3.1. 模块综述



- | | | |
|-----------------------------------|------------------------------------|------------------------------|
| 1 mounting hole | 8 port 5 | 15 port identification board |
| 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 | |

3.2. Mechanical connection

The modules are connected using 2 M6 bolts and 2 washers.

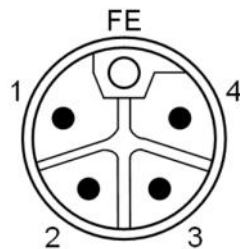
Ele

Isolation pads are available as accessories.

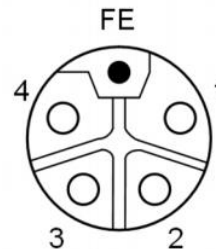
3.3. Electrical connections

3.3.1 power port (L-code)

Power input port definition



Power output port definition

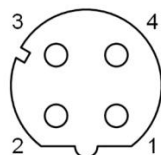


Pin	Function	describe
1	Us+	+24V(BBRR)
2	Ua-*	0V(WwhH)
3	Us-	0V(BBUU)
4	Ua+*	+24V(BBKK)
FE	Functional ground*	FE(YEYE-GGN)

Noted:

1. If possible, provide sensor/module power supply and actuator power supply separately. Total current <9A, even if the actuator power supply is daisy chained, the total current of all modules is <9A.
2. The FE connection from the housing to the machine must be low impedance and kept as short as possible.

3.3.2 Network (B-code)



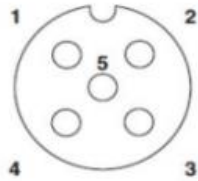
Pin	Function
1	VP(+5V)
2	RxD/TxD-N A line
3	DGND
4	RxD/TxD-P B line

Noted:

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



3.3.3 I/O-port (A-code)



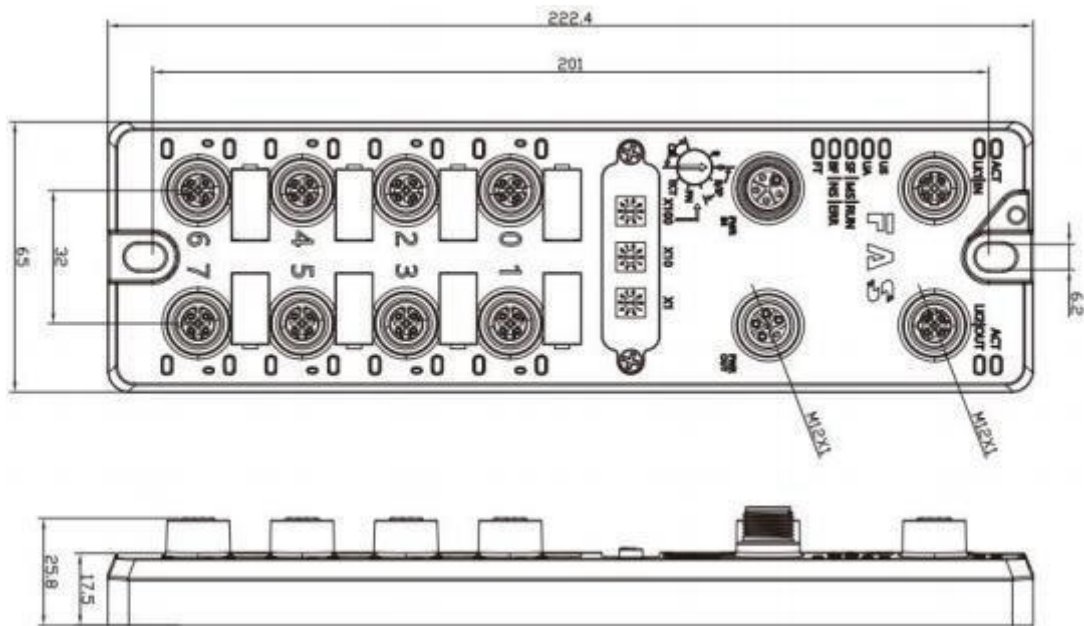
pin	function
1	+24V(BbrR)
2	input/output(wh)
3	0V(BbuK)
4	input/output(bk)
5	FE(GgyY)

Noted:

1. Regarding digital sensor input, please follow the input guidance of EN61131-2, Type
2. The maximum single output current of pins 2 and 4 is 2A. The total module current is <9A.
3. Unused I/O port sockets must be covered with end caps to meet IP67 protection level.

4. Technical data

4.1. size



4.2 Mechanical data

Shell material	Die-cast aluminum case, pearl nickel plated
Housing class according to IEC 60529	IP67 (only in plug-in or plug-in style)
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

4.3. Operating conditions

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

4.4. Electrical data

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



port	profibus-DP
cport conection	M12, B-Code
Cable types according to profibus-DP	Shielded twisted pair
data transfer rate	9.6 kBit/s,19.2 kBit/s,93.75 kBit/s,187.5 kBit/s 500kBit/s,1.5MBit/s,3MBit/s,6MBit/s,12 MBit/s
Maximum cable length	100m
flow control	Half working condition

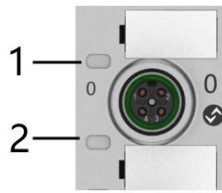
4.6 function indicator



PT	close	Profi BUS communication protocol
----	-------	----------------------------------

PN Communication protocol module status

LED	is always Displays	is Function
BUS	GN light Always on	Communication is normal
	GN light flashes 2HZ	The master station is in CLEAR state
	Red light flashes 1HZ	Not configured
	Flashing flashes 2HZ	no data exchange
	Red light Always on	Configuration error
US	GN light	Input voltage is normal
	Flashing flashes	Input voltage low (< 18 V)
UA	GN light	Output voltage is normal
	Flashing flashes	Output voltage low (< 18 V)
	Red light Always on	No output voltage present (< 11 V)



I/O port status

LED	state	Function
1	close	The status of Pin4 input or output is 0
1	YEYE	The status of Pin4 input or output is 1
1	REREDD	The port is configured as input: Pin1 overcurrent. The port is configured as output: Pin4 overcurrent.
1	Flashing red	The port is configured as output: Pin1 overcurrent
2	close	The status of Pin2 input or output is 0
2	YYE	The status of Pin2 input or output is 1
2	RED	The port is configured as input: Pin1 overcurrent. The port is configured as output: Pin2 overcurrent.
2	Flashing red	The port is configured as output: Pin1 overcurrent



5.1 Module configuration

5.1.1 rreset

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

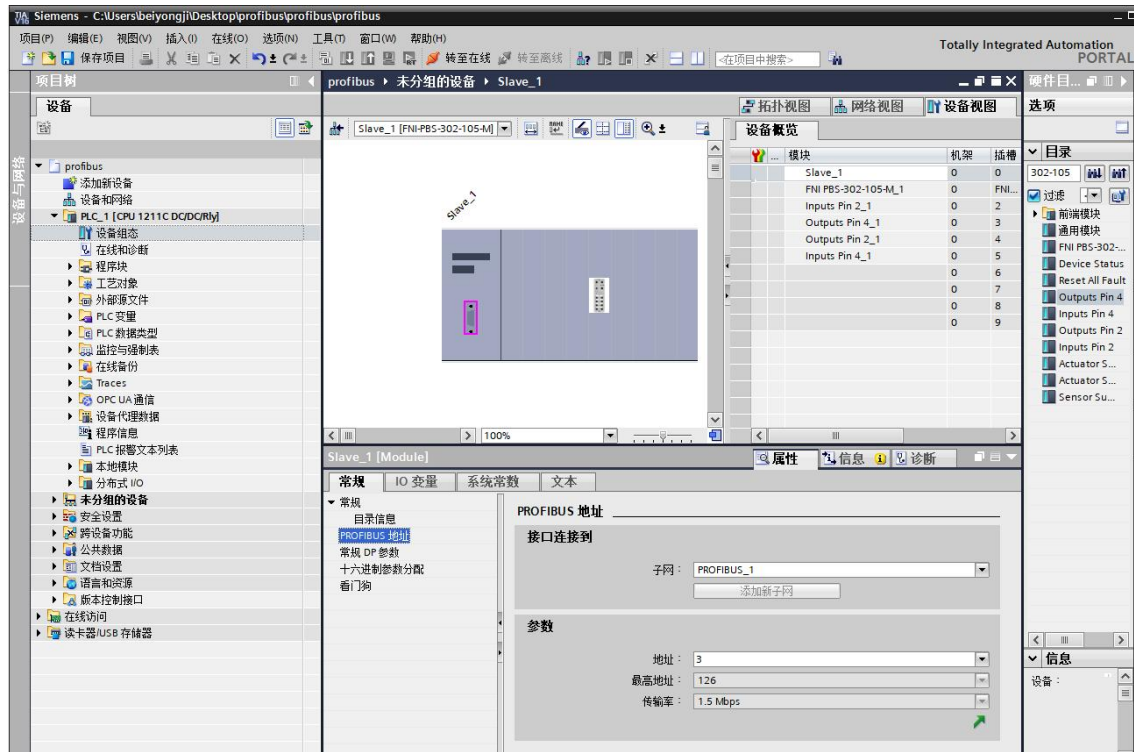
5.1.2 Node address configuration

- ① The node address is assigned by PLC: Dial address
X100=4 X10=0 X1=0
- ② Manual allocation of node address: Dial address
X100=4, node number is X10=tens digit X1=units digit

5.2 data mapping

CProfibus communication protocol process monitoring data									
module	Function description								
	Status description	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Actuator shutdown pin 2	pin2 overcurrent 0=normal	Port7 Pin2	Port6 Pin42	Port5 Pin2	Port4 Pin2	Port3 Pin2	Port2 Pin2	Port1 Pin2	Port0 Pin2
Actuator shutdown pin 4	pin4 overcurrent 0=normal	Port7 Pin4	Port6 Pin4	Port5 Pin4	Port4 Pin4	Port3 Pin4	Port2 Pin4	Port1 Pin4	Port0 Pin4
Sensor supply short circuit	pin1 overcurrent 0=normal	Port7 Pin1	Port6 Pin1	Port5 Pin1	Port4 Pin1	Port3 Pin1	Port2 Pin1	Port1 Pin1	Port0 Pin1
Device Status	module status	-	-	-	Us Over voltage	Ua Over voltage	Over heating	Us Under voltage	Ua Under voltage
Profibus CCommunication protocol Slot function									
Inputpin2	input pin2	Port7 Pin2	Port6 Pin42	Port5 Pin2	Port4 Pin2	Port3 Pin2	Port2 Pin2	Port1 Pin2	Port0 Pin2
Inputpin4	output Pin4	Port7 Pin4	Port6 Pin4	Port5 Pin4	Port4 Pin4	Port3 Pin4	Port2 Pin4	Port1 Pin4	Port0 Pin4

- (4) After the configuration is complete, in the configuration view, click Download.
4. Assign module PN name: PLC switch to online state, select "ungrouped device"---click on the module name---select online and diagnosis---function---assign **PROFIBUS** device name---Select the module to be assigned in the list (should be selected according to the physical MAC) --- Click "Assign Name" to complete the configuration! .



6.appendix

6.1Ordering information

Part number : FNI PBS-302-105-M

Order code: 003E11