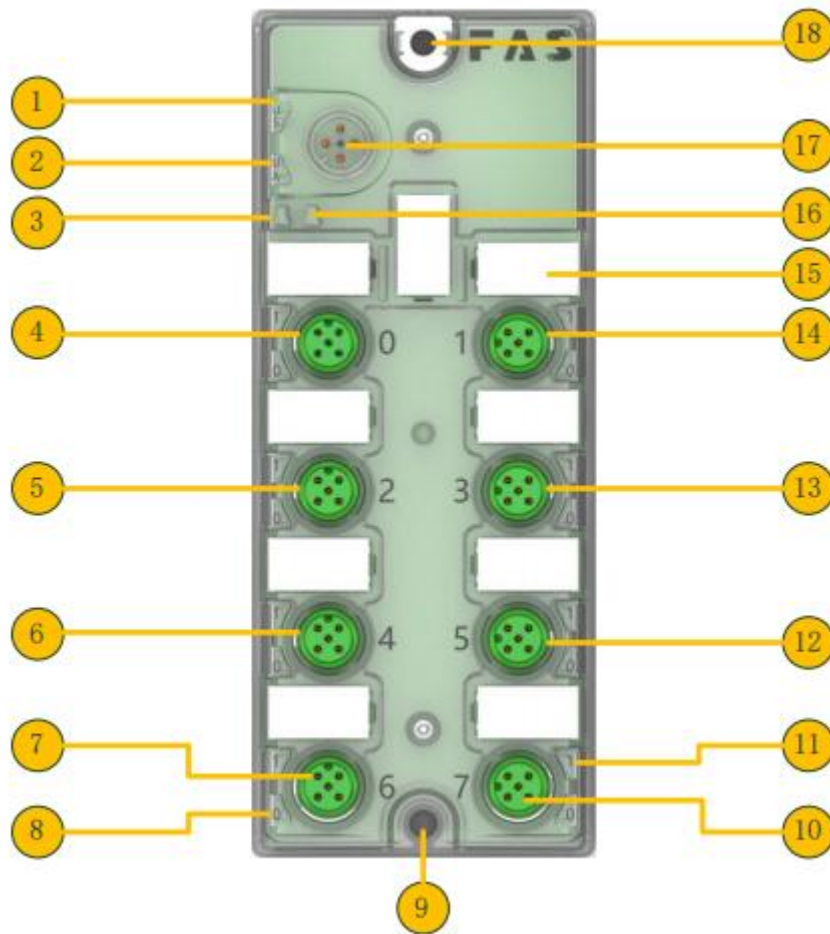


FNI IOL-711-001-M12 00BT31

User manual

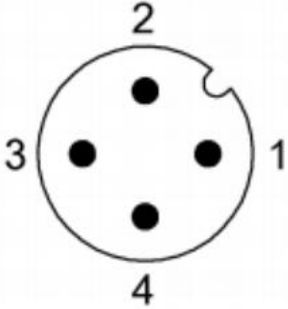
1. Connection diagram



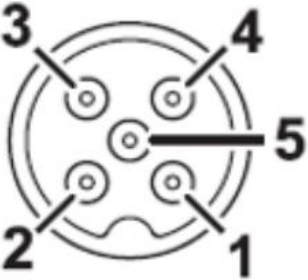
- 1 Status LED: Us module power supply
- 2 Status LED: Uaactuator power supply
- 3 Status LED: IO-Link communication
- 4 Analog input port 0
- 5 Analog input port 2
- 6 Analog input port 4
- 7 Analog input port 6
- 8 Status LED:
- 9 fixing holes reserved

- 10 Analog Input Port 7
- 11 Status LED: Analog Input
- 12 Analog Input Port 5
- 13 Analog Input Port 3
- 14 Analog Input Port 1
- 15 Label
- 16 Status LED: Module abnormality
- 17 IO-Link interface
- 18 Fixing holes and grounding points

2. IO-Link Interface definition

IO-Link(Class A)	PIN	Function	Cable color
	1	Us Module power supply 24V	BR
	2	Ua Actuator power supply 24V	WH
	3	Negative pole of power supply 0V	BU
	4	C/Q IO-Link	BK

3. Analog input interface definition

IO-Link(Class A)	PIN	Function	Cable color
	1	Analog input positive	red
	2	Analog input positive	red
	3	Analog input negative	white
	4	Analog input negative	ehite
	5	未连not connected接	-



3.1 Sensor wiring requirements:

1、 Sensor 2-wire type:

- a. Pins 1 and 2 are short-circuited to the positive electrode of the sensor.
- b. Pins 3 and 4 are short-circuited to the negative pole of the sensor.

2、 Sensor 3-wire type:

- a. Pins 1 and 2 are short-circuited to the positive electrode of the sensor.
- b. Pin 3 is connected to the negative pole of the sensor.
- c. Pin 4 is connected to the negative pole of the sensor.

3、 Sensor 4-wire type:

- a. Pin 1 is connected to the positive electrode of the sensor.
- b. Pin 2 is connected to the positive electrode of the sensor.
- c. Pin 3 is connected to the negative pole of the sensor.
- d. Pin 4 is connected to the negative pole of the sensor.

4. IO-Link data

4.1 parameter

Data transmission baud rate	COM2 (38.4kbit/s)
Minimum cycle time	3ms
Process data cycle time	3ms
Process data length	16 字节输入



4.2 process input data

模拟输入 端口0 Analog input	Byte1								Byte0								positive =0 negative=1
	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
	port 0 PT100温度值 temperature value															正温=0 负温=1	
模拟输入 端口1 Analog input	Byte3								Byte2								positive =0 negative=1
	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
	port 1 PT100温度值 temperature value															正温=0 负温=1	
模拟输入 端口2 Analog input	Byte5								Byte4								positive =0 negative=1
	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
	port 2 PT100温度值 temperature value															正温=0 负温=1	
模拟输入 端口3 Analog input	Byte7								Byte6								positive =0 negative=1
	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
	port 3 PT100温度值 temperature value															正温=0 负温=1	
模拟输入 端口4 Analog input	Byte9								Byte8								positive =0 negative=1
	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
	port 4 PT100温度值 temperature value															正温=0 负温=1	
模拟输入 端口5 Analog input	Byte11								Byte10								positive =0 negative=1
	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
	port 5 PT100温度值 temperature value															正温=0 负温=1	
模拟输入 端口6 Analog input	Byte13								Byte12								positive =0 negative=1
	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
	port 6 PT100温度值 temperature value															正温=0 负温=1	
模拟输入 端口7 Analog input	Byte15								Byte14								positive =0 negative=1
	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
	port 7 PT100温度值 temperature value															正温=0 负温=1	



4.2.1 Process input data calculation example:

byte
bit
Hexadecimal value
Binary value

字节	Byte1								Byte0							
位	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
16进制值	0x27								0x10							
2进制值	0	0	1	0	0	1	1	1	0	0	0	1	0	0	0	0
实际温度 值计算	二进制值 0010 0111 0001 0000 (正负温标志位为0, 不需右移一位) 转化为十进制值 10000 PT100温度值 = 10000 * 0.01 = 100°C														正温=0 负温=1	

positive =0
negative=1

The binary value 0010 0111 0001 0000 (conquering the temperature flag is 0, no need to shift one bit to the right) is converted into the decimal value 10000PT100 temperature value -10000*0.01=100°

byte
bit
Hexadecimal value
Binary value

字节	Byte1								Byte0							
位	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
16进制值	0x17								0x95							
2进制值	0	0	0	1	0	1	1	1	1	0	0	1	0	1	0	1
换算说明	二进制值 0000 1011 1100 1010 (正负温标志位为1, 需右移一位) 转化为十进制值 3018 PT100温度值 = 3018 * 0.01 = -30.18°C														正温=0 负温=1	

positive =0
negative=1

Binary values 0000, 1011, 1100, 1010, (conquering temperature flag is, 1, needs to be shifted one position to the right) are converted into decimal values 3018PT100 temperature value -3018*0.01=-30.18°

4.3 Parameter data/request data

identification
data

	SPDU		object name	length	scope	default value
	index	subindex				
	/	/	supplier ID	2	/	0x0454
	/	/	device ID	3	/	0x099CE2
identification data	0x10	0	Supplier name	9	Read only	FAS (Fujian) Co., LTD
	0x11	0	Supplier text	16		www.fas-elec.com
	0x12	0	product name	13		FNI IOL-711-001-M12
	0x13	0	product ID	5		00BT31
	0x14	0	product text	44		IO-Link M12 8AI PT100
	0x16	0	hardware version	3		1.0
	0x17	0	Software version	3	1.0	

4.4 error code

Device application error:

0x80

Additional code:

0x11 Index is not available

0x12 Sub-index is not available

0x30 Value is out of range



4.5 event

Class/Qualifier			Code(High Bit + Low Bit)			
Pattern	Type	Instance				
Appear	Error	AL	Hardware	Power supply	Low voltage	U2=power supply
0xC0	0x30	0x03	0x5000	0x0100	0x0010	0x0002
0xF3			0x5112			
Disappear	Error	AL	Hardware	Power supply	Low voltage	U2=power supply
0x80	0x30	0x03	0x5000	0x0100	0x0010	0x0002
0xB3			0x5112			
Appear	Error	AL	Hardware	Power supply	Peripheral power supply	
0xC0	0x30	0x03	0x5000	0x0100	0x0060	
0xF3			0x5160			
Disappear	Error	AL	Hardware	Power supply	Peripheral power supply	
0x80	0x30	0x03	0x5000	0x0100	0x0060	
0xB3			0x5160			