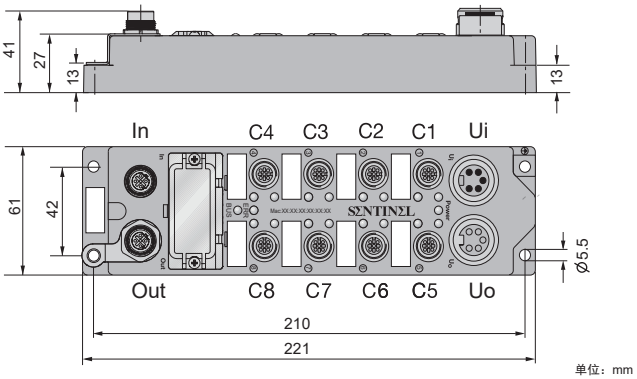
I/O Modules for PROFINET

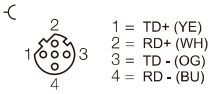
16 channel PNP input adaptive
16 channel 0.5A PNP output adaptive
ELPN-16SAP-L001



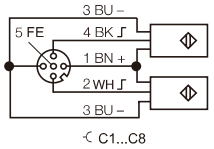
- Profinet I/O Device
- Integrated Ethernet Switch
- Support 100Base-TX
- Dual D-code M12 Ethernet I/O Modules interface
- High-strength plastic housing
- Shock and vibration resistance
- Electronic circuit resin sealing
- Nickel-plated copper connector
- With IP67 high protection level

Model	ELPN-16SAP-L001
Supply voltage	24VDC ± 10%
Operating current	< 200mA
Supply current	Recommended >8A
Output	
Number of outputs	16
Output type	PNP controls 24V output on/off
Output current	0.5A Maximum 1A (Note: The total current of C1-C4 shall not exceed 4A; the total current of C5-C8 shall not exceed 4A)
Output protection	Overload protection, overheating protection
Output protection reaction time	Approximately 20ms
Switching frequency	100HZ
Output voltage drop	0.6V
Electrical isolation	Optocoupler isolation
Input	
Number of inputs	16
Input type	PNP(High level is valid)
Input impedance	3KΩ
Input rated current	7mA
Input delay	3ms
Switch threshold	2mA/4mA
Electrical isolation	Optocoupler isolation
Communication interface	
Number of communication interface	2
Transmission standard	100Base-TX
Auto-negotiation	Supported
Auto-MDI/MDIX	Supported
Maximum transmission rate	100Mbit/s
Operating temperature	-20-55℃

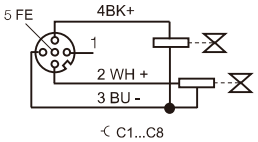
I/O Modules connector M12



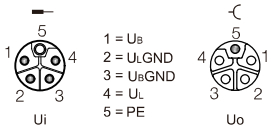
Input signal connector M12



Output signal connector M12



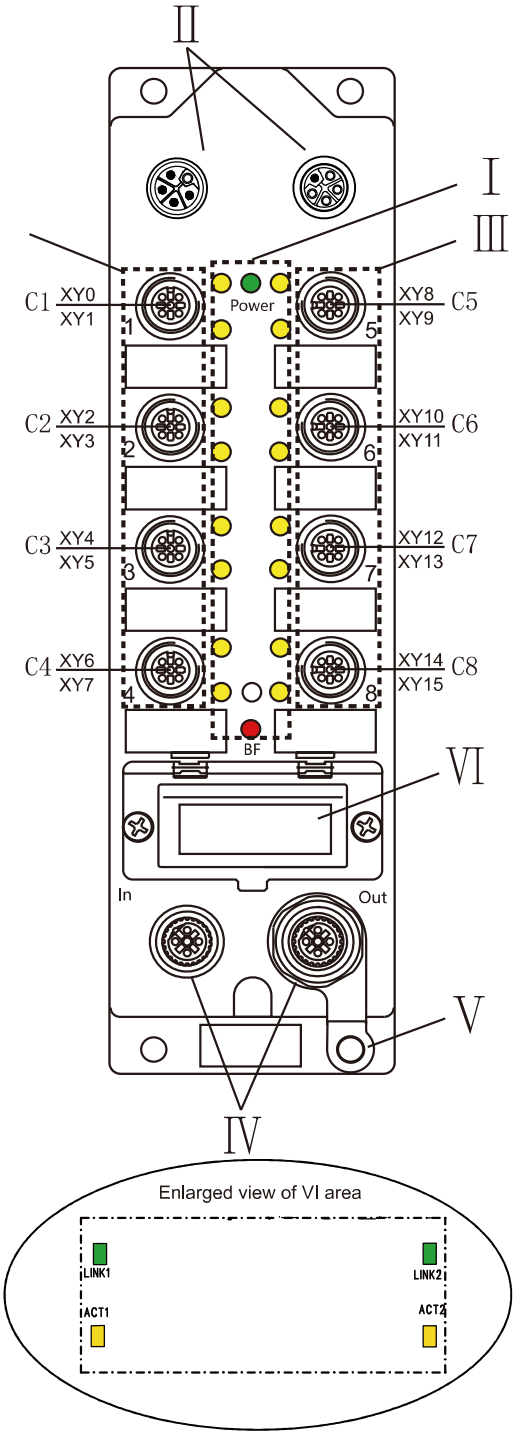
Power supply connector L-coded



Note: U_B is the module power supply, U_L is the load power supply;

User Manual

Area Code	Project	Description	
I	Module LEDS	LED name	Detailed introduction
		Power	Green LED lights: ON:The module power supply (Ub) is normal OFF:The module power supply is disconnected
		BF	Red LED lights: ON : BUS no connection. Flashing : The connection is normal,but no communication was established with Profinet I/O Connector. OFF : Communication has been established with Profinet I/O Connector.
		XY0 to XY15	Yellow LED lights: ON : Input or Output active OFF: Input or Output inactive (X : Input , Y : Output)
II	Power suppy	Ui (left) : Power input, L-coded, 5-pin male Uo (right) : Power output, L-coded, 5-pin female	
III	I/O load connec-tion terminals	M12 A-code 5-pin , female C * indicates the * th port, X* represents the * bit in the input port, Y* indicates the * bit in the output port For example: $C1\frac{XY0}{XY1}$ Indicates that port C1 is input-output adaptive, the 4th hole of the port corresponds to XY0, representing the 0th bit; the 2nd hole corresponds to XY1, representing the 1st bit;	
IV	Bus	In (left) : Profinet Bus in , M12 , D-Code , 5-pin , female Out (right) : Profinet Bus out , M12 , D-Code , 5-pin , female	
V	PE	Ground connection	
VI	Network status indicator	LINK1	Bus in , Green LED lights: ON : This port establishes a physical connection. OFF: No connection is established on this port
		ACT1	Bus in ,Yellow LED lights: ON : This port has data exchange; OFF: There is no data exchange for this port
		LINK2	Bus out , Green LED lights: ON : This port establishes a physical connection. OFF: No connection is established on this port
		ACT2	Bus out , Yellow LED lights: ON : This port has data exchange; OFF: There is no data exchange for this port



Working mechanism:

This module is an adaptive module. The input and output functions do not need to be configured. You only need to implement the input and output connection methods in hardware and then operate the corresponding input and output points.

For example:

When the module is used as an input, after the hardware is connected to the input signal, you can directly operate the corresponding input point. At this time, do not operate the output point corresponding to this point.

When the module is used as an output, if the output point is set, the corresponding input point will also have a signal input, and this input point can be used as the output feedback signal.

The C * P * represents the *th pin of the C * port; for example: The C2P2 represents pin 2 of the C2 port;
X* represents the number of the entire 16-bit input data, for example: X0 represents the 0th bit of the input data;
Y* represents the number of the entire 16-bit output data, for example: Y8 represents the 8th bit of the 16-bit output data;

	BYTE	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Intputs	0	X7 C4P2	X6 C4P4	X5 C3P2	X4 C3P4	X3 C2P2	X2 C2P4	X1 C1P2	X0 C1P4
Intputs	1	X15 C8P2	X14 C8P4	X13 C7P2	X12 C7P4	X11 C6P2	X10 C6P4	X9 C5P2	X8 C5P4

	BYTE	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Outputs	0	Y7 C4P2	Y6 C4P4	Y5 C3P2	Y4 C3P4	Y3 C2P2	Y2 C2P4	Y1 C1P2	Y0 C1P4
Outputs	1	Y15 C8P2	Y14 C8P4	Y13 C7P2	Y12 C7P4	Y11 C6P2	Y10 C6P4	Y9 C5P2	Y8 C5P4