IPMC101 Series

Industrial PoE Media Converter

User Manual

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【Summarize】

The industrial PoE media converter is a kind of industrial PoE media converter, it support 1 10Base-T/100Base-TX port and 1 100Base-FX or 100Base-X SFP Fiber port optional. These converters are classified as power source equipment (PSE), and when used in this way provide up to 30 watts to IEEE802.3at compliant powered devices (PDs), eliminating the need for additional wiring.

It support CE, FCC standard, adopt industry standard design, IP40 protection, rugged high-strength metal case, power supply input (48VDC), -40 to 75°C working temperature. The converters support IEEE802.3/IEEE802.3u/IEEE802.3x with 10/100M, full/half-duplex, and MDI/MDI-X auto-sensing, providing a complete solution for your industrial Ethernet network.

【Packing list】

The industrial PoE media converter is shipped with the following items. If any of these items are missing or damaged, please contact your customer service representative for assistance.

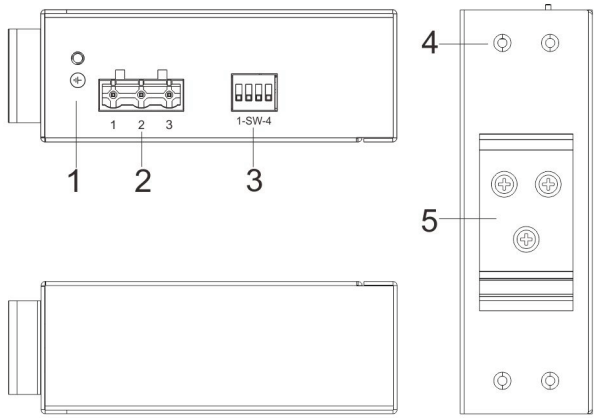
- Industrial PoE media converter x 1
- User manual x 1
- DIN-Rail mounting kit x 1
- Warranty card x 1

【Feature】

- Support 1 10/100Base-TX port
- Support 1 100Base-FX or 100Base-X SFP Fiber port
- Support IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.3af/at, store and forward
- Compatible with both IEE802.3at (30W) and IEEE802.3af (15.4W)
- Ethernet port support 10/100M self-adaption and PoE function
- DC48V power input, reverse connection protection
- IP40 protect grade, high strength iron shell, DIN Rail installation
- Industrial grade 4 design, -40～75° C working temperature.

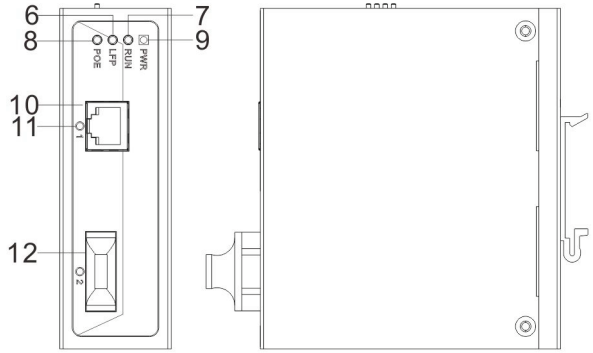
【Panel layout】

Vertical view and bottom view **Rear view**



IPMC101-F-POE

Front view and side view



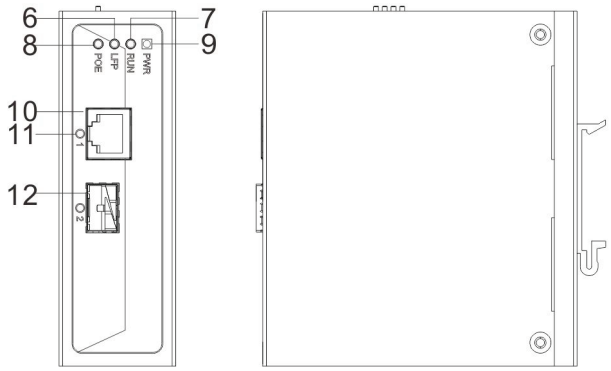
1. Ground screw
2. Terminal block for power input
3. DIP switches
4. Screw holes for wall mounting kit
5. DIN-Rail mounting kit
6. Remote interface alarm indicator
7. System running indicator
8. PoE indicator
9. Power input indicator
10. 10/100M Base-T(x) PoE port

11. Fast Ethernet port Link/ACT indicator

12. 100Base-FX fiber port

IPMC101-SF-POE

Front view and side view



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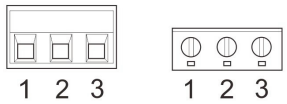
【Power supply input】



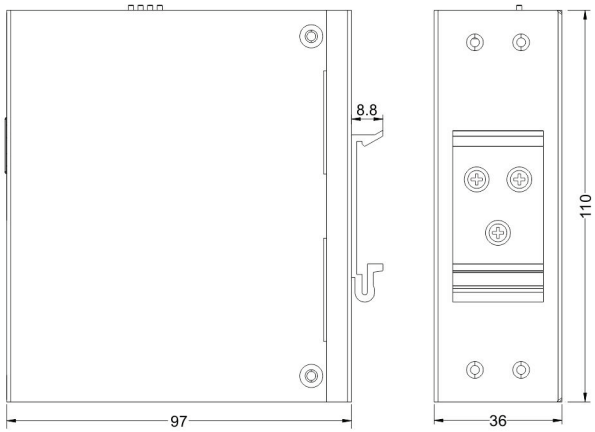
The device provides 3 bits terminal block (1/V+, 2/GND, 3/V-), 1 and 3 is 44～55VDC power input. The power supports reverse polarity protection.

【DIP Switch】

Top panel provided 4 bits DIP switch to do function configure (ON to enable effective). 1 is flow control. 2 is jumbo frame. 3 is LFP (remote alarm) mode. 4 is reserve.

【Dimension】

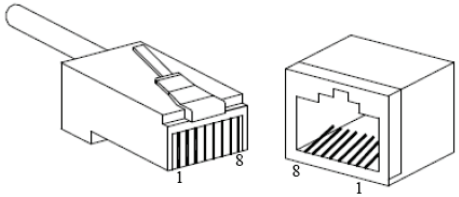
The series of devices size is the same, and the type of the Ethernet interface is different. Unit (mm)



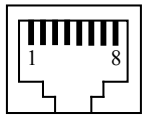
【Communication connector】

10/100BaseT(X) Ethernet port

The pinout define of RJ45 port display as below, connect by UTP or STP. The connect distance is no more than 100m. 100Mbps is used 120Ω of UTP 5, 10Mbps is used 120Ω of UTP 3 ,4, 5.



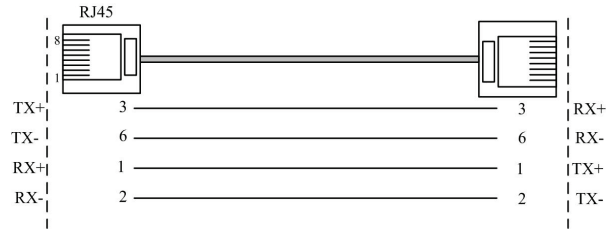
RJ45 port support automatic MDI/MDI-X operation. can connect the PC, Server, Converter and HUB .Pin 1,2,3,6 Corresponding connection in MDI. 1→3, 2→6, 3→1, 6→2 are used as cross wiring in the MDI-X port of Converter and HUB. 10Base-T/100Base-TX are used in MDI/MDI-X, the define of Pin in the table as below.



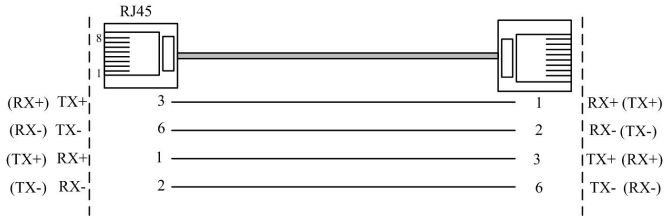
NO.	MDI signal	MDI-X signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
6	RX-	TX-
4, 5, 7, 8	—	—

Note：“TX±”Transmit Data±，“RX±”Receive Data±，“—” Not use。

10/100Base-T(X) MDI (straight-through cable)



10/100Base-T(X) MDI-X (Cross over cable)



MDI/MDI-X auto connection makes switch easy to use for customers without considering the type of network cable.

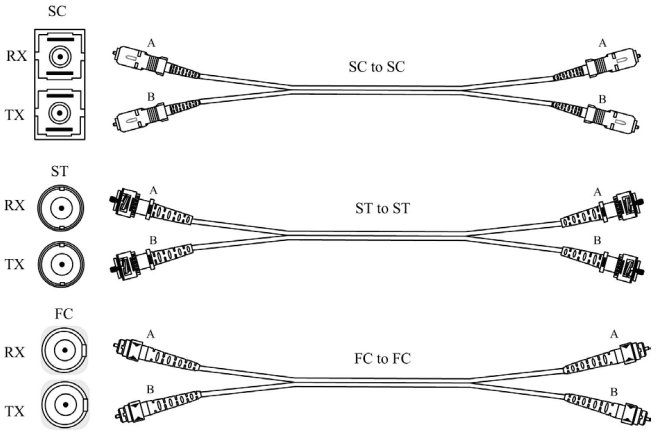
100Base-FX Fiber port

100Base-FX full-duplex SM or MM port, SC/ST/FC type .The fiber port must be used in pair, TX (transmit) port connect remote switch’s RX(receive) port; RX(receive) port connect remote switch’s TX(transmit) port.

The optical fiber connection supports the line to instruct enhance the reliability of network effectively.

Suppose: If you make your own cable, we suggest labeling the two sides of the same line with the same letter (A-to-A and B-to-B,

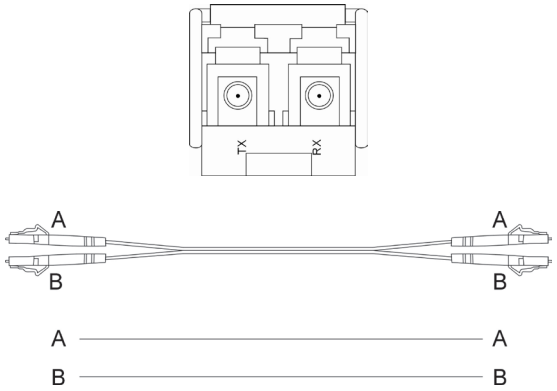
shown as below, or A1-to-A2 and B1-to-B2).



100Base SFP fiber port(mini-GBIC)

100Base SFP fiber port adopts Fast mini-GBIC transmission, can choice different SFP module according to different transfer distance. Fiber interface must use for pair, TX port is transmit side, must connect to RX (receive side). The fiber interface support loss line indicator.

Suppose: If you make your own cable, we suggest labeling the two sides of the same line with the same letter (A-to-A and B-to-B, shown as below, or A1-to-A2 and B1-to-B2).



【LED Indicator】

LED indictor light on the front panel of product, the function of each LED is described in the table as below.

System indication LED		
LED	**State**	**Description**
PWR	ON	Power is being supplied to power input PWR input
	OFF	Power is not being supplied to power input PWR input
RUN	ON/OFF	System is not running well
	Blinking	System is running well
LFP	ON	Remote interface had no connection or unwonted
	OFF	Remote interface connection regular
POE	ON	The PoE device is connected by IEEE802.3af/at standard
	OFF	No PoE power output or no PoE connected PoE devices
Link/ACT (1~2)	ON	Port connection is active
	OFF	Port connection is not active
	Blinking	Data transmitted

【Installation】

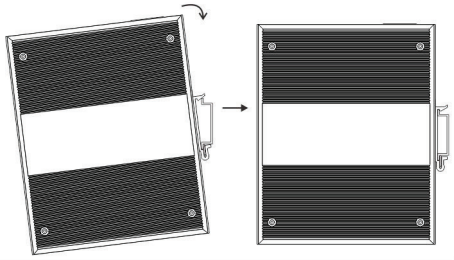
Before installation, confirm that the work environment meet the installation require, including the power needs and abundant space. Whether it is close to the connection equipment and other equipments are prepared or not.

1. Avoid in the sunshine, keep away from the heat fountainhead or the area where in intense EMI.
2. Examine the cables and plugs that installation requirements.
3. Examine whether the cables be seemly or not (less than 100m) according to reasonable scheme.
4. Power: 48VDC (44~55VDC) power input
5. Environment: Working temperature: -40～75℃
   Storage Temperature: -40～85℃
   Relative humidity: 5%～95%

DIN Rail Installation

In order to use in industrial environments expediently, the product adopt 35mm DIN-Rail installation, the installation steps as below:

1. Examine the DIN-Rail attachment
2. Examine DIN Rail whether be firm and the position is suitability or not.
3. Insert the top of the DIN-Rail into the slot just below the stiff metal spring.
4. The DIN-Rail attachment unit will snap into place as shown below.



Wiring Requirements

Cable laying need to meet the following requirements,

1. It is needed to check whether the type, quantity and specification of cable match the requirement before cable laying;
2. It is needed to check the cable is damaged or not, factory records and quality assurance booklet before cable laying;
3. The required cable specification, quantity, direction and laying position need to match construction requirements, and cable length depends on actual position;
4. All the cable cannot have break-down and terminal in the middle;
5. Cables should be straight in the hallways and turning;
6. Cable should be straight in the groove, and cannot beyond the groove in case of holding back the inlet and outlet holes. Cables should be banded and fixed when they are out of the groove;

7. User cable should be separated from the power lines. Cables, power lines and grounding lines cannot be overlapped and mixed when they are in the same groove road. When cable is too long, it cannot hold down other cable, but structure in the middle of alignment rack;
8. Pigtail cannot be tied and swerved as less as possible. Swerving radius cannot be too small (small swerving causes terrible loss of link). Its banding should be moderate, not too tight, and should be separated from other cables;
9. It should have corresponding simple signal at both sides of the cable for maintaining.

【Specification】

Technology

Standard: Support IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.3af, IEEE802.3at

Flow control: IEEE802.3x flow control, back press flow control

Exchange attribute

100M forward speed: 148810pps

Transmit mode: store and forward

Bandwidth: 0.6G

Memory: 1K

Exchange delay time:＜10μs

Interface

RJ45 port: 10Base-T/100Base-TX Self-adaption, Half/full duplex and MDI/MDI-X auto detect

Fast fiber port: 100Base-FX, SC/ST/FC, support single mode (20/40/60/80Km optional), multi mode (2Km), wavelength: 1310nm, 1550nm

SFP port: 100Base-X SFP slot

POE Pin-out: 1/2(+), 3/6(-)

Transfer distance

Twisted cable: 100M (standard CAT5/CAT5e cable)

Multi-mode: 1310nm, 2Km

Single-mode: 1310nm, 20/40/60Km

1550nm, 80/100/120Km

LED indicator

Run indicator: Run

Interface indicator: Link (1~2)

Power supply indicator: PWR

LFP Alarm indicator: LFP

PoE indicator: POE

Power supply

Input Voltage:48VDC (44～55)VDC

Type of input: 3 bits terminal block

Supports reverse polarity protection

Consumption

- IPMC101-F-POE

No-load consumption: 1.63W@48VDC

Full-load consumption: 18.96W@48VDC

- IPMC101-SF-POE

No-load consumption: 1.97W@48VDC

Full-load consumption: 18.62W@48VDC

Single PoE port maximum consumption: 30W@48VDC

Working environment

Working temperature: -40～75℃

Storage temperature: -40～85℃

Relative Humidity: 5%~95 %(no condensation)

Mechanical Structure

Shell: IP40 protect grade, metal shell

Installation: DIN-Rail or Wall mounts

Weight: 390g

Size (W×H×D): 36mm×110mm×97mm

Industry Standard

EMI: FCC Part 15, CISPR (EN55022) class A

EMS: EN61000-4-2 (ESD), Level 2

EN61000-4-4 (EFT) , Level 2

EN61000-4-5 (Surge) , Level 2

Shock: IEC 60068-2-27

Free fall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Certification

CE, FCC, RoHS, UL508 (Pending)

Warranty: 5 years