

MODEL3012 Series

10/100/1000M Media Converter

User Manual

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【Summarize】

Model3012, 10/100/1000Mbps adaptive Gigabit Ethernet fiber converter uses the switching technology to conduct media conversion, which meets the standards of IEEE802.3, IEEE802.3u, IEEE802.3z and IEEE802.3ab. This kind of media converter supports two types of media network connections: 10Base-T /100Base-TX /1000Base-T and 1000Base-SX/LX. Model3012 can conduct mutual conversion between 10Base-T / 100Base-TX /1000Base-T twisted pair electrical signals and 1000Base-SX/LX optical signals. This media converter extends the transmission distance of a network from 100m over copper wires to 100 Km. This media converter supports transmission in dual-fiber multi-mode, dual-fiber single-mode, single-fiber single-mode, SC/ST/FC style fiber-optic connections.

【Packing list】

The 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.

- MODEL3012 × 1
- User manual × 1
- Warranty card × 1
- Power adapter (DC) or power cord (AC) × 1

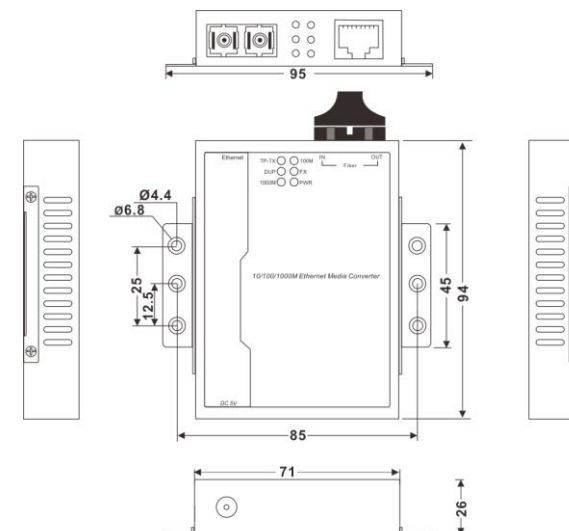
【Feature】

- Support IEEE802.3, IEEE802.3u, IEEE802.3ab, IEEE802.3z standard
- Support 10/100/1000Mbps Nway switches and 10/100/1000Mbps NIC transparent transmission
- MDI/MDI-X auto negotiation, 10M/100M/1000M auto negotiation
- Support full /half duplex, point-to-point transparent transfer
- Support optical link and electric link connection / activity status indication
- Support Nway optical fiber flow control (full duplex mode)
- Plug-and-play, easy to installation

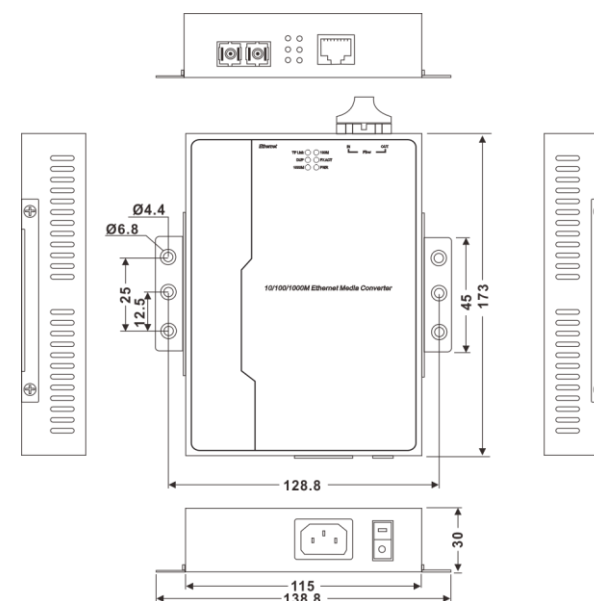
- Can insert to 2U 19", 14 slots Rackmount (power external)
- External DC5V power supply, built-in 24VDC, 48VDC or 220VAC power supply optional

【Panel layout and Dimension】

External power supply:



Built in power supply:



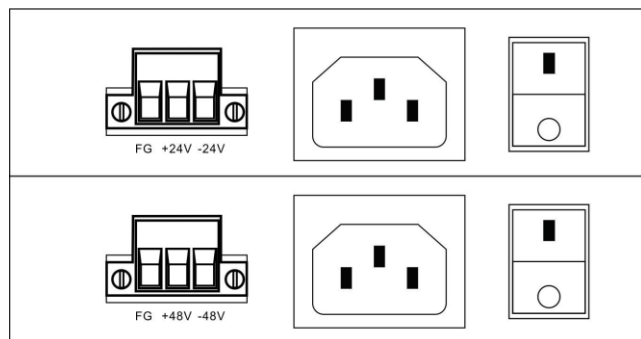
【Power supply input】

Power Panel

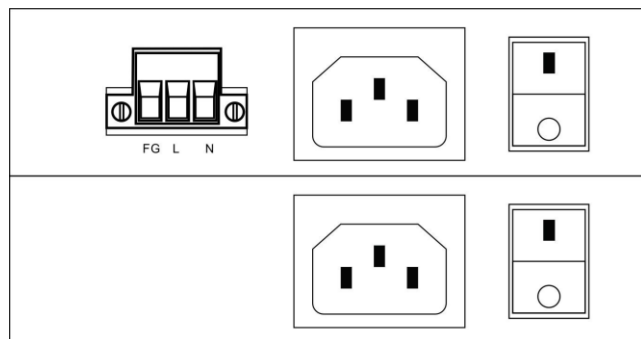
The MODLE3012 support external DC5V power supply, built-in 24VDC, 48VDC or 220VAC power supply optional.



External DC5V power supply



Built-in 24VDC or 48VDC power supply



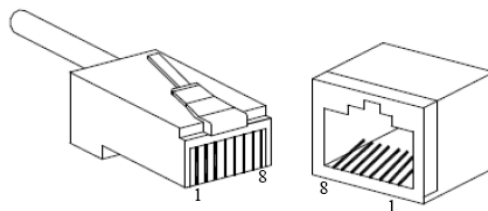
Built-in 220VAC power supply

【Dimension】

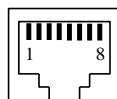
10/100/1000BaseT(X) Ethernet port

The pinout of RJ45 port display as below, connect by UTP or STP. The connect distance is no more than 100m. 1000Mbps is used

120Ω of UTP 5e; 100Mbps is used 120Ω of UTP 5; 10Mbps is used 120Ω of UTP 3, 4, 5.



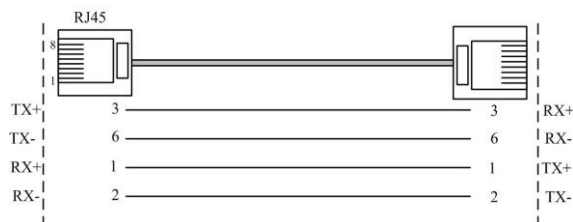
RJ 45 port support automatic MDI/MDI-X operation. That can connect the PC, Server, Converter and HUB. Pin 1, 2, 3, 4, 5, 6, 7, 8 Corresponding connections in MDI. 1→3, 2→6, 3→1, 4→7, 5→8, 6→2, 7→4, 8→5, are used as cross wiring in the MDI-X port of Converter and HUB. In MDI/MDI-X, 100/1000Base-TX PIN defines is as follows:



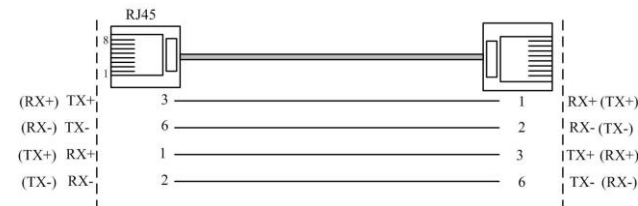
PIN	MDI	MDI-X
1	BI_DA+/TX+	BI_DB+/RX+
2	BI_DA-/TX-	BI_DB-/RX-
3	BI_DB+/RX+	BI_DA+/TX+
4	BI_DC+/—	BI_DD+/—
5	BI_DC-/—	BI_DD-/—
6	BI_DB-/RX-	BI_DA-/TX-
7	BI_DD+/—	BI_DC+/—
8	BI_DD-/—	BI_DC-/—

Note: 10Base-T/100Base-TX, “TX±”transmit data±, “RX±”receive data±, “—”not use.

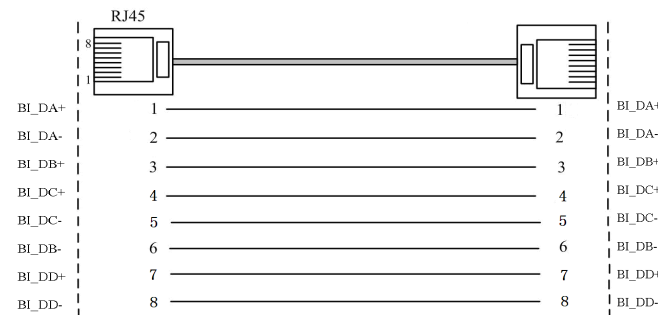
10/100Base-T(X) MDI (straight-through cable)



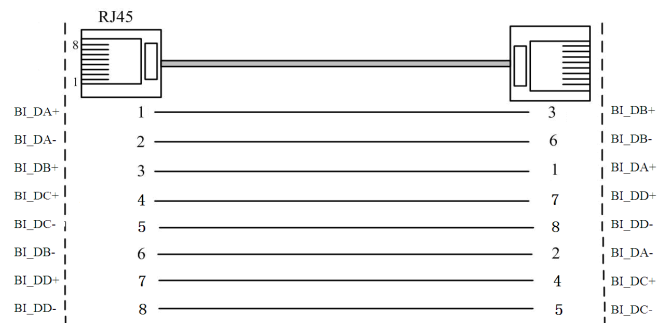
10/100Base-T(X) MDI-X (Cross over cable)



Gigabit MDI (straight-through cable)



Gigabit MDI-X (Cross over cable)

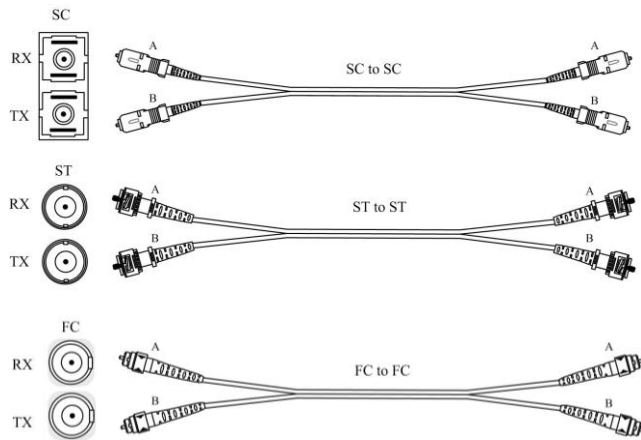


MDI/MDI-X auto connection makes switch easy to use for customers without considering the type of network cable.

1000Base-FX SC/ST/FC port

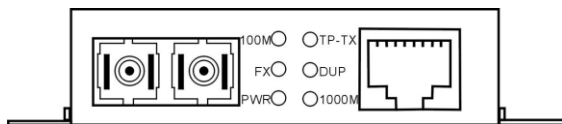
1000Base-FX port support full-duplex SC/ST/FC Multi mode or Single mode.

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



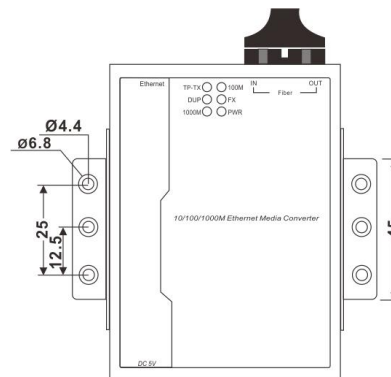
LED	STATE	INDICATION
PWR (Power)	OFF	Power Off
	BRIGHT	Power On
FX (Fiber Link Port)	OFF	Ethernet is not Connected
	BRIGHT	Ethernet is Connected
100M (10/100M)	OFF	10M Ethernet
	BRIGHT	100M Ethernet
1000M	OFF	Not 1000M Ethernet
	BRIGHT	1000M Ethernet
DUP (Duplex Mode)	OFF	Half Duplex
	FLASHING	Full Duplex
TP-TX (Ethernet Port)	OFF	Ethernet is not Connected
	FLASHING	Transmitting or Receiving Data
	BRIGHT	Ethernet is Connected

【Installation】

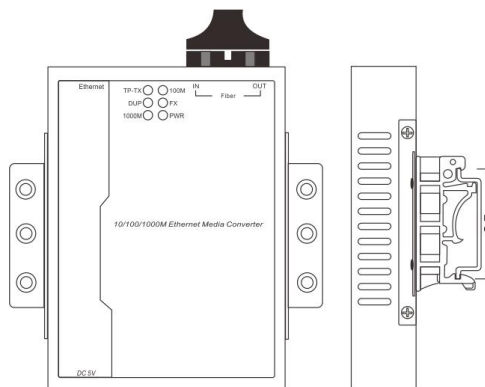
Model3012 provides DIN-rail (optional accessories) and wall mounting two types of installation.

Wall mounting installation

Unit: mm



DIN-Rail Installation



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】

Standards: IEEE802.3, IEEE802.3u, IEEE 802.3ab, IEEE802.3z

Interface

Electric port: 10Base-T/100Base-TX/1000Base-TX auto speed control, Half/full duplex and MDI/MDI-X auto detect

1000M optic fiber port: 1000Base-FX, SC/ST/FC connector

Transfer distance

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

Multi-mode:850nm/1310nm, 500m/2Km

Single-mode: 1310nm, 10/20/40Km

1550nm, 60/80/100Km

Fiber optic cables:

Single Mode:8.3/125,8.7/125,9/125 or 10/125 um

Muti-Mode: 62.5/125, 50/125 um

Power supply

External power supply: DC5V

Built-in power supply: 24VDC, 48VDC or 220VAC optional.

Load consumption: 4W

Working environment

Working temperature: -10~60℃

Storage temperature: -20~70℃

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

Mechanical Structure

Shell: Metal shell

Installation: DIN-Rail mounting

Size (L×W×H): 94mm×71mm×26mm (External power supply)

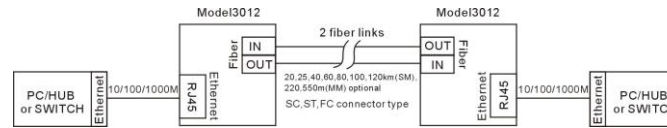
115mm×173mm×30mm (Built in power supply)

Certification

CE, FCC, RoHS

Warranty: 3 years

Applications:



Extending 10/100/100M Ethernet data distance

Troubleshooting instructions:

1. Make sure the power is connected and turned on.
2. Make sure the converter Ethernet and fiber optic cables are connected properly.
3. Check the connections according to the connection diagram.
4. Check the LED Indication status and identify possible problems from the Indication LED table above.

Note:

1. Media Converter is a sensitive electronic item, please do handle with extra care on delivery, shifting and humidity.
2. This unit will be warranty for 3 years.
3. Whenever there is a problem regarding the quality issue within the warranty period, we will take the responsibility to repair with free.
4. After the warranty period, we will charge accordingly depending on the fault or damage.
5. Whenever there is a fault, you can contact our technical support after you identify the problem and the alarm.

Common Problems:

1. PWR power supply indicator lamp not lighting

Cause:

1. Power supply not properly connected
2. Protector tube damaged
3. Power input tie-line in reverse connection
4. Internal power supply circuit with failure

Solution:

1. Check power switch and jack
2. Replace protector tube
3. Correct power supply line connection
4. Returned to the manufacturer for repair.

2. FX(Fiber Link Port) indicator lamp not lighting

Cause:

Optic fiber port link is fault.

Solution:

1. Check fiber optic is link or not.
2. Check fiber optic loss is high.
3. Clean the connector of optic interface.
4. Insert the well connector in place.
5. Returned to the manufacturer for repair.

3. TP-TX(Ethernet Port) indicator lamp not lighting

Cause:

Ethernet port link is fault.

Solution:

1. Check Ethernet(RJ45) line is link or not.
2. Check Ethernet(RJ45) port is loose.
3. Check the rate of selected media converter
4. Check the rate of Network.
5. Returned to the manufacturer for repair.

4. Network packet loss

Solution:

1. Check Ethernet rate or full/half duplex is matched or not.
2. Ethernet(RJ45) port is loose contact, or optic port is loose contact and soiled.
3. Ethernet cable not comply with Ethernet standard.