ALLNET®

ALL-MC303P2WIRE-SET

USER MANUAL

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Chapter 1 Product Appearance and Description

⚠️ **This user manual is suitable for POE product items of OT-PLC602POE-2P, OT-PLC604POE. This user manual takes OT-PLC602POE-2P as an example to introduce the parameters in detail. For other products, please refer to the corresponding product user manual!**

Product Introduction

OT-PLC602POE-2P Single Port PoE Ethernet Extender is a high-speed Ethernet transmission device. It can transmit Ethernet and Power signals together for PoE devices. Max distance is 600 meters over any pair of 2-wire such as Cat5, coaxial cable and power line, etc. The maximum physical bandwidth can reach 200Mbps.

It consists of the master unit and slave unit. By PoE power equipment, it can directly supply power for the remote unit, supporting point to point and point to multi-point. It can greatly simplify the project cabling, applied to expand network system and transmit long distances of PoE device signals.

Features

◆ Max PoE transmission distance is 600m (RVS 2×1mm$^{2 ;}$ RVV2×1mm^2)

◆ Max physical bandwidth reach 200Mbps

◆ Support power over cable technology

◆ Transparent transmission, low power consumption and no adjustment

◆ Dip switch for power output: 12VDC/2A or PoE

◆ Built-in ESD protection circuit, in case of static damage

Technical Parameters

Power Input	DC Input		12VDC, 48～56VDC
	Power Consumption		≤3.5W / PC
Power Output	Dip Switch	RJ45/PoE output	Standard 48VDC; IEEE802.3af/at
		2P DC output	12VDC 2A (overload protection)
Transmission / Rate	Standard Compliance		IEEE802.3u
	Up Down Agreement		CSMA/CA
	Physical Speed		200Mbps
	Encryption Way		128-bit AES Encryption
Physical Characteristic	Dimension (L × W × H)		133mm×86.5mm×25mm
	Material		Aluminum
	Net Weight		220g / PC

Operating Environment	Working Temperature	20°C ~ 60°C
	Working Humidity	<95% (Non condensation)

Connection Diagram

48~56VDC

POE Camera

Internet

Dimension

Unit:mm
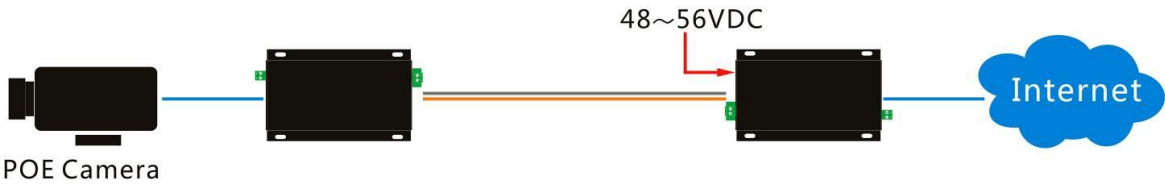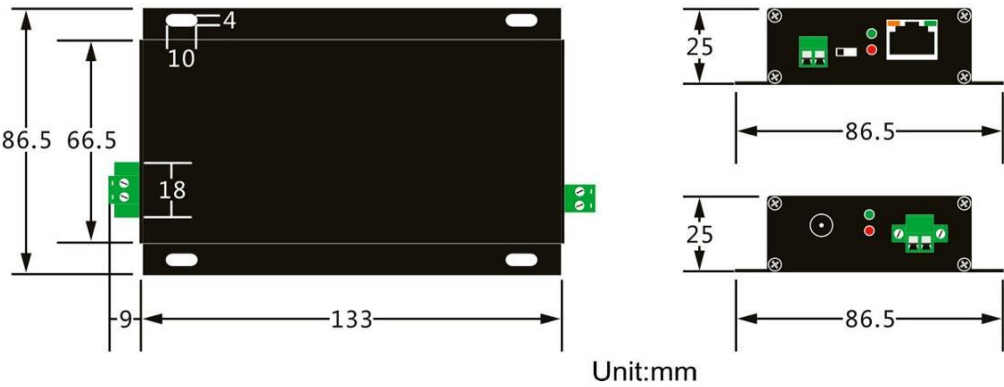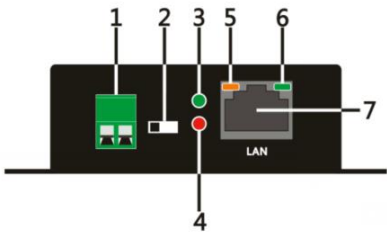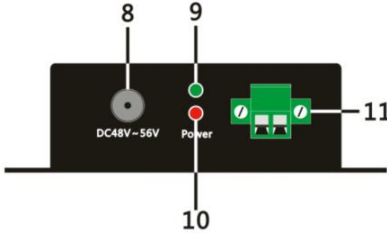
Note: Dimension error value ±1 mm

Terminal Description

| No.	Description	Function
1	Power Indicator	12V Output
2	PoE/DC DIP switch	Power output switch
3	Power Indicator	Show PoE output Status
4	Power Indicator	Show DC output Status
5	Data Indicator	Show Communication Status
6	Line Indicator	Show Cable Status
7	RJ45 Port	Ethernet Signal Interface
8	Power Port	Main Power Interface
9	Line Indicator	Show Cable Status
10	Power Indicator	Show Power Supply Status
11	2-wire Port	2-wire Interface

Ethernet Bandwidth Table

OT-PLC602POE-2P supports enhanced high speed network data transmission. The data differs from the cables types. Moreover, the longer distance of cable, the lower the transmission rate accordingly. The following testing details are for your reference:
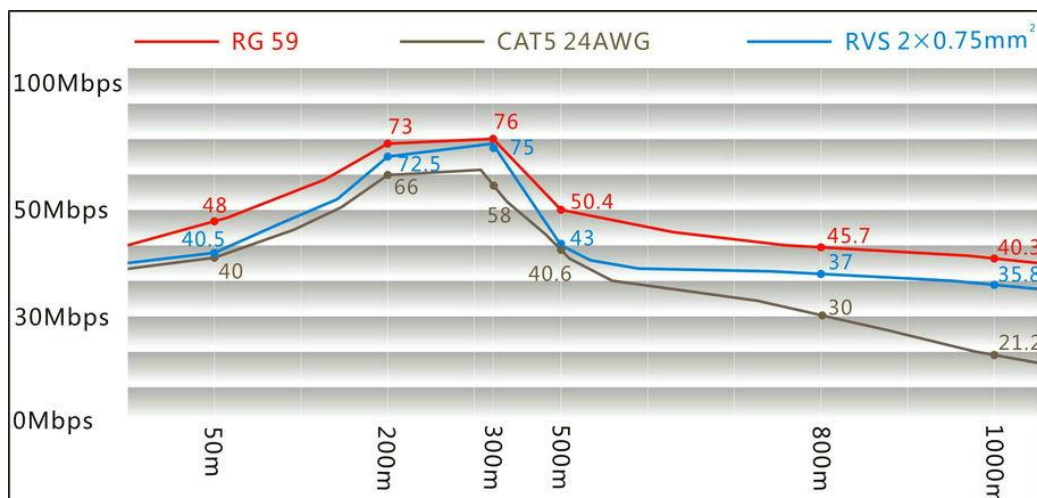
The above date is one-way network parameters, the test is carried out under the condition that the cable has not been fully expanded, which may be different from the actual application data. This

data is for your reference only.

PoE Power Attenuation Table
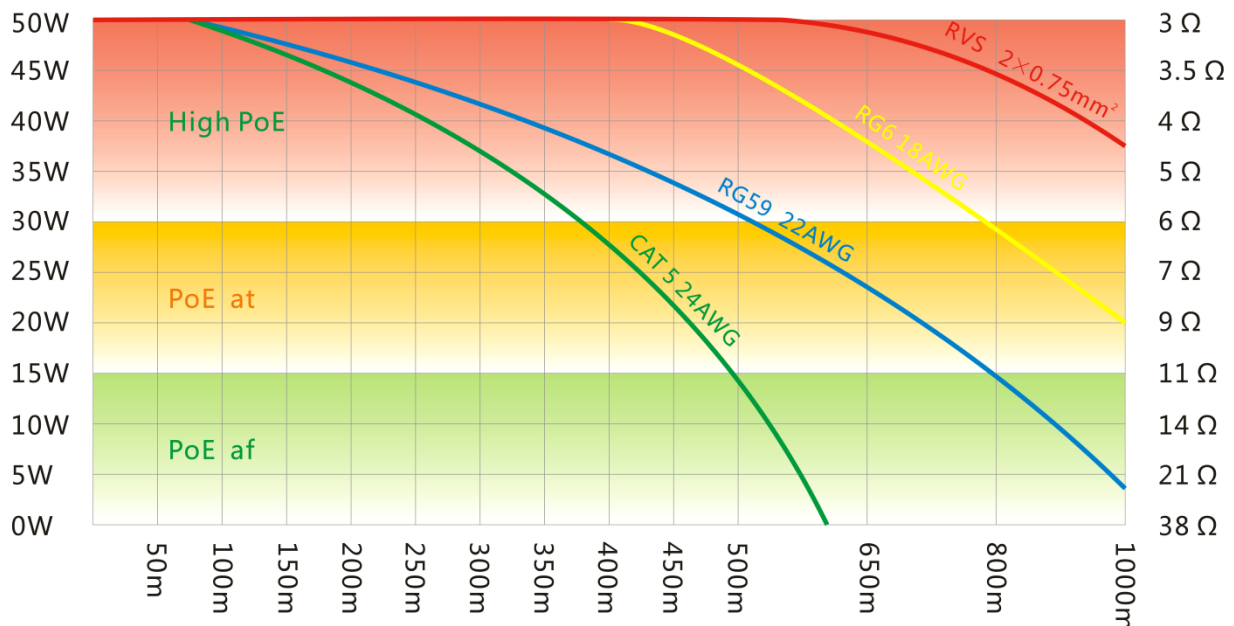
Tips: Power loss and attenuation differs from the cable types. The above diagram lists four kinds of cable power attenuation, This data is just for your reference.

Other Features

Multicast Qos

OT-PLC602POE-2P supports multicast function which can realize one point to multi-point data forwarding, bringing the high transmission efficiency. Under the condition of small Ethernet bandwidth, it can stably transmit data flow and support the network equipments of giving the priority to transmit data stream.
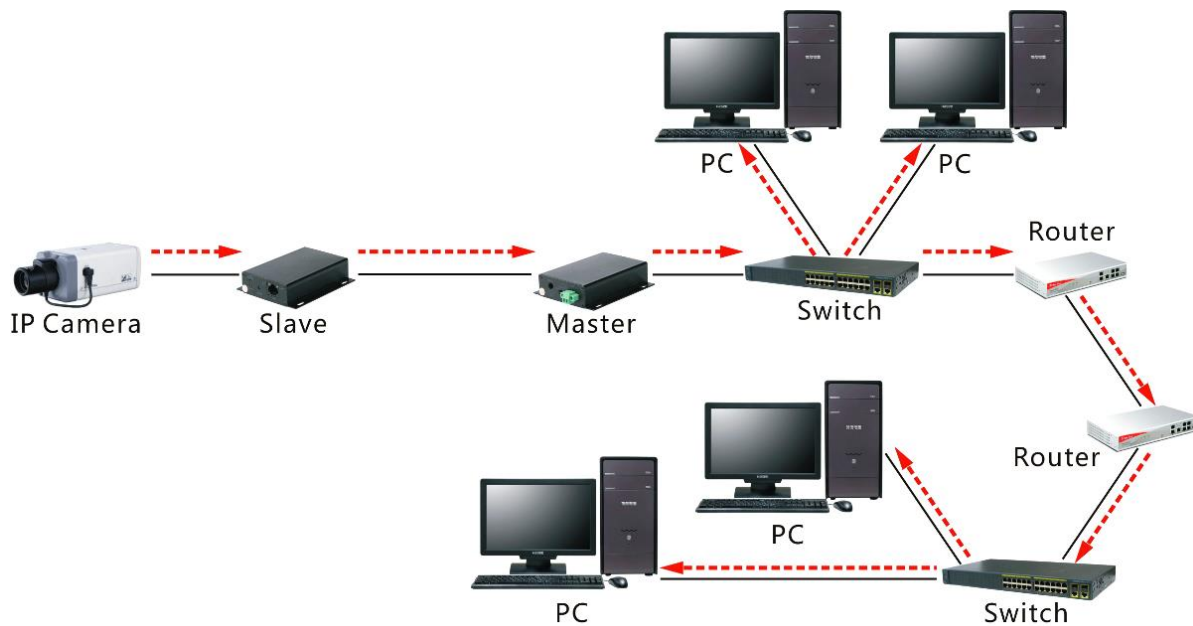
PoE Power Supply

1. Provide PoE Power Supply for front-end PoE device (The device only supports PoE Output, don't support PoE Input).
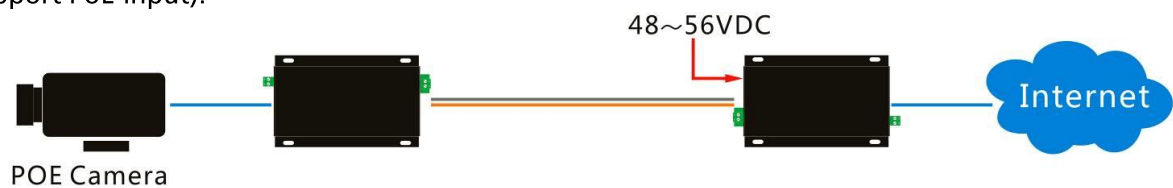
2. Provide low voltage 12VDC for front-end device.
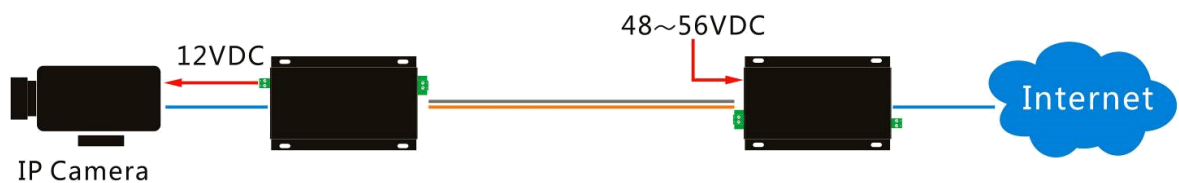
3. To avoid the large voltage drop in long distance transmission, provide the 48~56VDC power supply for slave unit. The master unit can also get the power supply.

4. When connect 12VDC power supply for master unit, the power supply cannot satisfy slave unit's

power requirement because of the voltage drop in long distance transmission. Provide 12VDC power supply for slave unit as supplement.
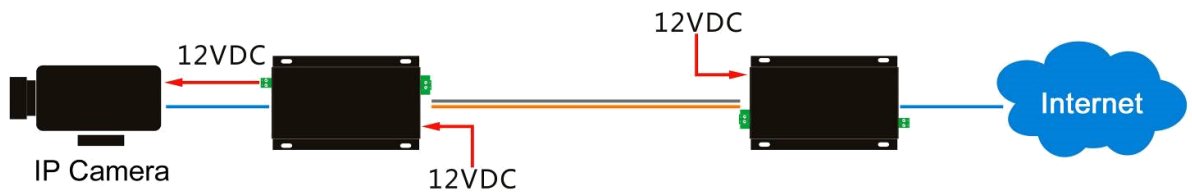
Tips:

A. Please pay more attention to the **Positive** and **Negative pole** when you connect the 2-wire transmission cable.

B. The power consumption supports PoE / Non-PoE equipment power supply standard, due to the difference of line loss and transmission distance, it may not be able to meet simultaneously two kinds of power supply requirement, only through dip switch setting to choose one kind of power output mode.

Chapter 2 Installation and Connection

Installation Steps

Installation Instructions

Definition of Master & Slave; Terminal device & Remote device:

Master & Slave: Ethernet Extender Unit connected to the computer is Master by default. Ethernet Extender Unit connected to the camera is Slave by default.

Terminal device / Remote device: Terminal device generally refers to the direction of computer / machine room, and remote device generally refers to the direction of camera.

Installation Preparation

Confirm installation place as per the label details on the product. If shows Master, it should be installed in machine room; if shows Slave, it should be installed near the remote device.

Please check the grouping code, two or multiple Ethernet Extender with the same grouping code should be installed on both sides of a line, and can't connect to Ethernet Extenders with other grouping code, otherwise it will cause communication failure.
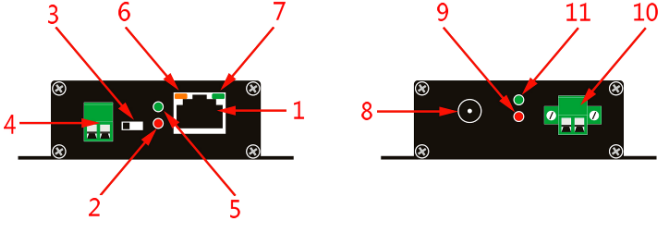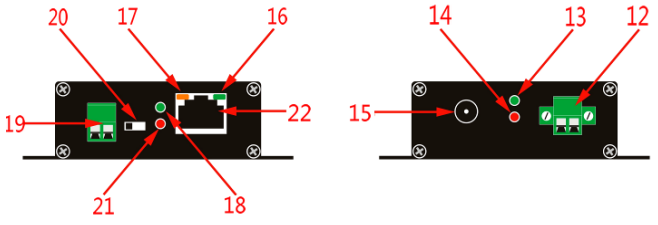
For example:

Group 01 (Total 2pcs)	Group 01 (Total 2pcs)
MAC:AF71081	MAC:AF71082
Password:****(Master)	Password:****(Slave)

Installation Steps

| Step	Installation Instruction	Step	Installation Instruction
1	Connect Cat5 cable to RJ45 terminal (1) of master unit	12	2-wire cable connection terminal (12)
2	DC power output indicator (2)	13	Ethernet transmission indicator (13)
3	Power output mode dip switch (3)	14	Power indicator (14)
4	Lower voltage 12VDC power output terminal (4)	15	DC power output indicator (15)
5	PoE power output indicator (5)	16	Ethernet transmission indicator (16)
6	Line status indicator (6)	17	Line status indicator (17)
7	Ethernet transmission indicator (7)	18	PoE power output indicator (18)
8	DC power input terminal (8)	19	Lower voltage 12VDC power output terminal (19)
9	Power indicator (9)	20	Power output mode dip switch (20)
10	2-wire cable terminal (10)	21	DC power output indicator (21)
11	Ethernet transmission indicator (11)	22	Connect Cat5 cable to RJ45 port of slave unit (22)

Use Tips

When you use OT-PLC602POE-2P, please follow the below tips as a reference, in order to reduce the fault in the process of using and the inspection work.
1. The device supports auto-negotiation allocation master and slave. It also can be set master-slave side and grouped by the software. Each group (one point to multi-point communications group) only allows one Master, others are Slaves. Otherwise, the network data won't be able to transmit.
2. Signal transmission cable must be the copper cable. Other material cables will cause the decrease of signal transmission quality and distance.
3. Long-distance cable connections must be by standard connection method, such as welding or using connectors.
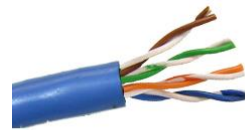
4. Make sure the electrode of transmission cable is consistent, otherwise, it is easy to cause the power failure.

5. Please choose matching power adaptor **(12VDC or 48～56VDC)**.

6. There is no waterproof design for this product, please make sure that it is used in dry environment.

7. If device fails, do not disassemble or repair it by yourself. Please contact us timely.

Accessory Requirements

Cable: Ethernet Extender can use different types cable, you can choose the below cables for your reference.
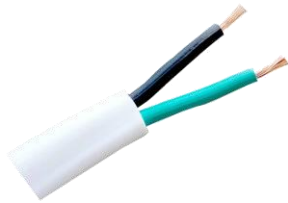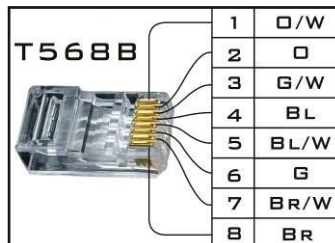

Power Line: RVV, RVS, RVVP, RVB 2×0.5mm2

UTP Cable: Cat 5 or above

Connector: RJ45 port uses standard crystal head connection; coaxial cable can use 2-wire to BNC connector.

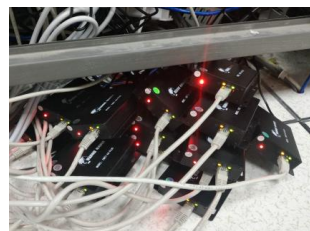| T568B	1	O/W
	2	O
	3	G/W
	4	BL
	5	BL/W
	6	G
	7	BR/W
	8	BR

RJ45 port by EIA / TIA568B

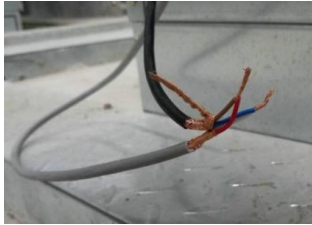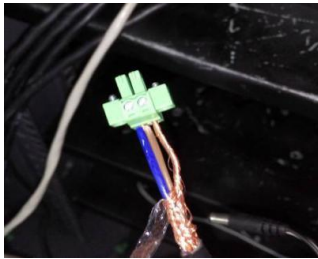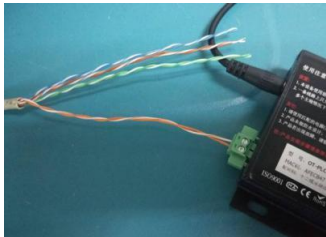# Chapter 3 Equipment Maintenance and Management

Troubleshooting

Notice: During the installation, please refer to user manual and use tips to avoid the human failure.

🔺 Do not use centralized power supply or remote switching power supply, please use separate, small power adaptor.

🔺 Ethernet Extenders should not be installed in same cabinet or equipment box if not be grouped, they are easily to cause communication failure.

🔺 Make sure the electrode of transmission cable is consistent, otherwise, it is easy to cause the power failure.

🔺 If there is network fault, please firstly check whether it is Ethernet Extender failure.

🔺 Please directly connect Ethernet Extender to terminal devices, if Ethernet Extender work well, then please check the failure except Ethernet Extender.

🔺 If directly connect Ethernet Extender to terminal devices, the network does not work. Do not disassemble or repair Ethernet Extender by yourself, please contact us timely.

Fault Phenomenon	Solutions	Images
About the troubleshooting of signal indicators, please refer to the pictures on the right.		
No power	Please check the power adaptor, and replace it if it was broken.	
The power indicator is off and on in every 2 minutes	When Ethernet Extenders do not transmit network signal, automatic rebooting belongs to normal phenomenon.	
The green indicator turns off after a few seconds	Cable disconnected and no connection, check and restore cable connection.	
The yellow indicator is off	Network devices do not transmit data	

The yellow indicator flashes several times and goes off	Network signal is blocked; Ethernet Extenders are wrongly grouping or installed, please check and re-group all the Ethernet Extenders.	
Power failures cause network failure.		
The power indicator is dim	Power adaptors are aged to damage, low voltage; replace power adaptors.	
The green indicator and the yellow indicator are both off	Voltage and current is lower than the working value of Ethernet Extender, it is caused by remote and centralized power supply, please change into 48VDC/1A power adaptors to near power supply.	
About the troubleshooting of Ethernet Extender grouping, please refer to the chapter of grouping or consult our engineer team.		
No data transfer	Group the Ethernet Extender.	
The slaves of Ethernet Extender cannot be found completely	Install Master in terminal side, slave install in remote side, strong cable connection.	Wrongly group or install the Ethernet Extender; there are multiple masters in one line, which cause network failure.
	Please check all the network devices' power supply.	
	There is only one master in one line.	
	Change the repeated MAC into different MAC and write to the devices.	
Wrong connection causes network failure.		
Correct cable connection, no communication	Ethernet Extenders with different grouping code are installed in one line or there are 2 masters in one line.	
Correct cable connection, large delay and broken network	Multiple Ethernet Extenders are stacked together, without grouping and separating Master/Slave, please re-grouping Ethernet Extender and separate installation.	

Cable failures cause network failure.

CAT5/6 cable problem	Poor quality and poor contact of RJ45 Port.	
	Wrong line sequence of RJ45 Port, please use 568B to make RJ45 Port, directly connect network devices to check them.	
Various cable mixed connection	2-wire, coaxial and twisted pair cable are by mixed connection at will, the joint is not strong, please make improvement.	
Shielded twisted pair cable cannot transmit signal smoothly	Make the shielding layer as one end, select the one core in two as the other end and connect Ethernet extender to solve the problem of the loss of signal.	
Cat5/6 cables are connected in in parallel	Using Cat5/6 cable to transmit, just use one pair, the rest three pairs should stay in disconnection.	
The cable is broken	Using the multimeter to test the line, if the cable was broken, replace a set of cables	
Wrong cable connection	Up and down in place of the cable should be carefully checked and measured, line number should be matched correspondingly, cannot be connected wrongly	
Too many connectors	Avoid too many cable connectors. It is suggested within three connectors.	
The distance is too far	POE Transmission distance is within 600 meters. The farther the distance, select a	

		larger cable specifications	

Types	Fault Phenomenon	Test Ways	Solutions
The other types of network failure	No network connection	Does the network camera match the terminal facility?	Different brands of network monitoring equipment can support ONVIF, then the connection can be achieved
	Video is freezing and not smooth	Whether network throughput and encoding / decoding ability of terminal devices can support smooth signal display?	Please check network throughput of the switch and processing ability of the decoder
	The network camera often disconnects	Does the protocol of network equipment version match the network protocol?	The network camera directly connects to terminal equipment to test.
	No connection of network multimedia display	Power supply and cable connection status.	To make sure the power supply of each device is normal and cable connections are normal
	Remote devices can't be detected	Bandwidth limitation.	Group the device and open multicast function
	Video files transfer slowly	The number of multimedia display group is too large.	The number of network multimedia display is too much. Appropriately reduce some, resend and conduct the test.
	Network multimedia display often disconnects	Check the cable terminal and devices fixing.	The cable and power connectors of Ethernet extender should be fixed. Ethernet Extender should also be fixedly installed.
	Plug cable to recover network transmission	The temperature control of the environment.	Multiple Ethernet Extenders are installed together, should be separated, and install a radiator, it is forbidden to arbitrarily stacked together

ALLNET GmbH Computersysteme declares that the device **ALL-MC303P2WIRE-Set** is in compliance with the essential requirements and other relevant provisions of Directive 2014/30/EU. The Declaration of conformity can be found under this link: http://ce.allnet.de/

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⚠ Safety Warnings

For your safety, be sure to read and follow all warning notices and instructions.

- Do not open the device. Opening or removing the device cover can expose you to dangerous high voltage points or other risks. Only qualified service personnel can service the device. Please contact your vendor for further information.

- Do not use your device during a thunderstorm. There may be a risk of electric shock brought about by lightning.

- Do not expose your device to dust or corrosive liquids.

- Do not use this product near water sources.

- Make sure to connect the cables to the correct ports.

- Do not obstruct the ventilation slots on the device.