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## ***Revision***

User's Manual for PLANET Power over Ethernet Adapter:

Model: POE-100, POE-100S, POE-100SK

Rev: 2.0 (August 2004)

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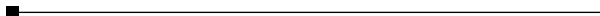
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## **Chapter 1**

### ***Introduction***

Thank you for purchasing our Power over Ethernet Adapter. This user's manual is to provide the installation and usage of this adapter for network installers and users.

PLANET's PoE products include two models: Injector and Splitter. Injector inserts current into the unused wires in a standard network cable (pin: 4, 5, 7, 8). So the cable between Injector and Splitter can transfer power and network signals simultaneously. Base on the limitation of cable on Ethernet and Fast Ethernet, the maximum distance between the two devices including Injector and Splitter can reach 100 meters.



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## **Chapter 2**

### **Package Contents**

Your Power over Ethernet Device contains the following in the package:

Model: POE-100SK

- Power over Ethernet Injector (POE-100) x 1
- Power over Ethernet Splitter (POE-100S) x 1
- Power Adapter x 1
- User's Manual x 1
- Reminder Paster x 1
- Straight 15cm UTP cable x 1
- DC plug cable x 3

Model: POE-100

- Power over Ethernet Injector (POE-100) x 1
- Power Adapter x 1
- User's Manual x 1
- Reminder Paster x 1

Model: POE-100S

- Power over Ethernet Splitter (POE-100S) x 1
- User's Manual x 1
- Straight 15cm UTP cable x 1
- DC plug cable x 3

Please consult your local dealer if any of the parts is missed.

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## **Chapter 3**

### **Features & Specifications**

#### **3.1 Features**

- Provides low-voltage DC power over existing Category 5 cabling to a device with an Ethernet port
- Distance up to 100 meters
- Protects devices from possible damages due to power-surges
- Three different output voltage options (5V/2A, 7.5V/1.5A, 12V/1A) to fit various devices
- Work with EIA568, category 5, 4-pair cable for 10Base-T or 100Base-TX, Ethernet / Fast Ethernet network

#### **3.2 Technical Specification**

Ethernet connector	2 x RJ-45 POE-100: Ethernet, Ethernet+ DC out POE-100S: Ethernet, Ethernet + DC out
Ethernet data rate	10/100Mbps
Power usage of Category 5 pin assignment (Ethernet + DC)	-: Pin 4, 5 +: Pin 7, 8
Input voltage, current	POE-100: 15VDC, 1A min.
Output voltage, current	POE-100S: DC 5V, 2A DC 7.5V, 1.5A DC 12V, 1A

DIP Switch		POE-100S: 1 for DC voltage selection
LED indication		1 power LED indicator
Number of Ethernet devices can be powered		1
Ethernet data cable		TIA/EIA-568, Category 5 cable
Dimensions (L x W x H)		64.5mm x 42.3mm x 20.4mm
Operating environment	Temperature	0~50 degree C
	Humidity	5~95%(non-condensing)

### 3.3 Product Outlook

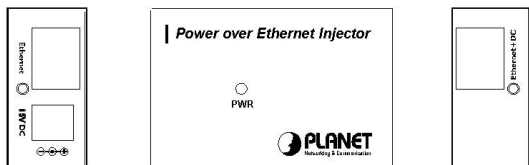


Figure 1: POE-100

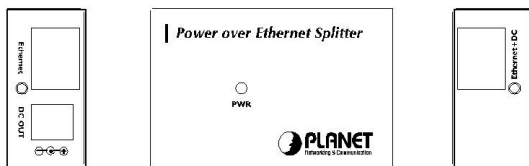


Figure 2: POE-100S

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## ***Chapter 4***

### ***Hardware Installation***

#### ***4.1 Prior installation***

Before your installation, it is recommended to check your network environment. If there is problem for you to install a networked device where it is very difficult to find a power socket for your AC-DC Adapter, POE-100 and POE-100S should provide you a way to provide DC power for this Ethernet Device conveniently and easily.

The POE-100 comes with an AC-DC adapter with 15VDC output and injects this DC power into the un-used pin of the twisted pair cable (pair 4,5 and pair 7,8).



Caution:

- 
1. Power over Ethernet (POE-100 and POE-100S) will only work under Category 5 UTP/STP cable with 4-pair. Please refer to appendix A for more.
  2. Gigabit Ethernet device cannot be used to work with POE-100 and POE-100S since 1000Base-T will use the 4-pair for data transmission. Plug in Gigabit device to POE-100 with power could damage the device.
- 

The POE-100S separates the power out and will provide three kind of power output, in different voltage and current, i.e. 5VDC/ 2A, 7.5VDC/1.5A and 12VDC/1A.



Hint:

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Please check the power requirement of the device that is going to get power from POE-100S. If the power requirement is higher than POE-100/100S can supply, it will shutdown the POE-100S. This shall shutdown your device as well.

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POE-100 and POE-100S should be installed in pair, use of third-party device could damage your device or use of only one device at a time could damage your device.

## 4.2 POE-100 – the injector installation

1. Connect a standard network cable from Hub/Switch to Ethernet port of POE-100.
2. Connect the long cable that will be used to connect to the remote device to the port Ethernet+DC .
3. In the other end of the cable, place the warning paster to the RJ-45 end.



Hint:

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This warning paster is used to warn the users if they are going to make change of the cable.

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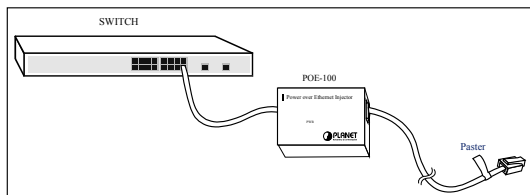


Figure 3: Warning paster location

4. Connect the AC adapter to "15V DC" of POE-100. The power LED will be steady on.

## 4.3 POE-100S – the splitter installation

1. Adjust the output voltage of POE-100S by moving the switch to correct position, i.e. 12V, 7.5V, or 5V.



Caution:

Do not adjust the output voltage of POE-100S while it is powered on. (i.e. PWR LED is steady light green)

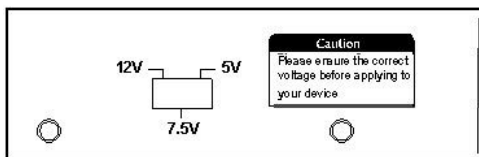


Figure 4: Output voltage switch on POE-100S

2. Connect a standard network cable from "Ethernet+DC" of POE-100 to "Ethernet+DC" of POE-100S. The power LED of POE-100S will be steady on.

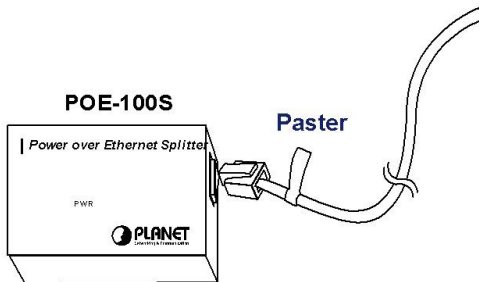


Figure 5: Connection to POE-100S



Warning:

Do not connect the cable from "Ethernet + DC" of POE-100 to remote device, otherwise the inner component of remote device may permanently malfunction.



3. Connect the UTP cable in the package from "Ethernet" of POE-100S to the RJ-45 port of remote device.
4. Connect proper DC plug from "DC OUT" of POE-100S to remote device.



Caution:

Please ensure the output voltage is correct before applying power to remote device.

5. Power on the remote device.

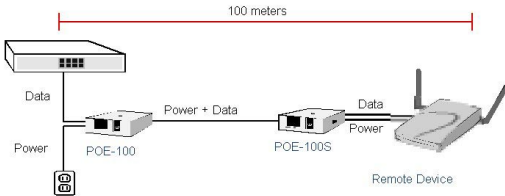


Figure 6: Connection architecture

## ***Appendix A***

### ***RJ-45 pin assignment and cable system***

#### ***A.1 Pin assignment***

The following table and diagram show the standard RJ-45 receptacle/ connector and their pin assignments:

RJ-45 Connector pin assignment		
Contact	MDI Media Dependant Interface	MDI-X Media Dependant Interface -Cross
1	TX + (transmit)	Rx + (receive)
2	TX - (transmit)	Rx - (receive)
3	Rx + (receive)	TX + (transmit)
4,5	Ground*	
6	Rx - (receive)	TX - (transmit)
7,8	DC current*	

Table A-1 The standard cable, RJ-45 pin assignment

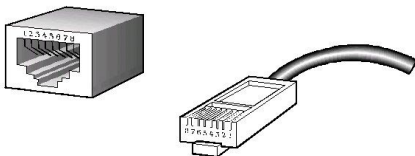


Figure A-1 The standard RJ-45 receptacle/connector

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1. DC current and voltage varies on the DIP-switch selection of POE-100S.



Remark:

2. Gigabit Ethernet is not allowed to use POE-100 products since pair 4,5 and pair 7, 8 are all being used. Only 10Base-T and 100Base-TX can apply with POE-100/100S products.

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## A.2 Cable system

### The standard RJ-45 receptacle/connector

There are 8 wires on a standard UTP/STP cable and each wire is color-coded. The following shows the pin allocation and color of straight cable and crossover cable connection:

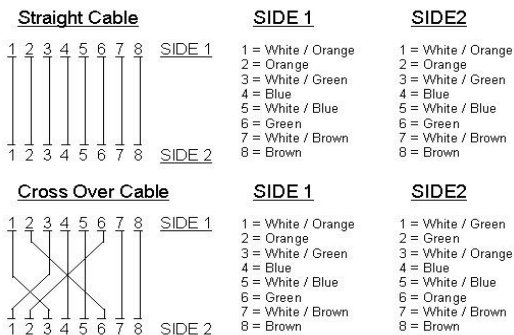


Figure A-1: Straight-Through and Crossover Cable

Please make sure your connected cable is with same pin assignment and color as above picture before deploying the cables into your network.

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## **Appendix B**

### ***Frequently Asked Question***

1. What's the correct step to apply the power to the remote device?

Ans:

- a. Please make sure the POE-100S is set to the correct DC output voltage in advance.
  - b. Connects the remote device to POE-100S, both power plug cable and Ethernet cable
  - c. Plug-in the 15VDC power to the POE-100 and check the LED on it.
  - d. Plug-in the UTP cable from POE-100 into the "Ethernet + DC" port of POE-100S. The LED on POE-100S should turn on. And the remote device starts to boot up
  - e. If you would like to change the voltage, please **DO** remove the cable from the port "Ethernet + DC" of POE-100S. Make sure the LED of POE-100S is turned off to adjust the voltage output.
2. How many remote Ethernet devices can be powered?

Ans:

- a. Due to POE-100/100S only provide one Ethernet interface, only one Ethernet device can be powered.
- b. For safety reason, POE-100/100S will only support device with power consumption below 12watts. Please make sure the remote Ethernet device is under the range of 12V 1A, 7.5V 1.5A or 5V 2A, that with power consumption below 12 watts.

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3. Can I connect POE-100 or POE-100S to other IEEE802.3af device?

Ans:

- a. POE-100 and POE-100S is not comply with IEEE802.3af, you can not connect any of it to an IEEE802.3af devices.
- b. For POE-100 it will inject power all the time. This means it will send power once it is connect with 15VDC AC adapter. So, please **DO NOT** connect the UTP cable from POE-100's "Ethernet+DC" to any Ethernet equipment directly including any IEEE802.3af complied device.
- c. Not an IEEE802.3af complied device, POE-100S will not detect and reply the signal from 802.3af injector. As a result, the Power LED will never turns on if you connect to an IEEE802.3af injector and will never power the remote device as well.



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