

# OptiXstar P602E

## Quick Start

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# 1 Product Appearance



## NOTE

If the appearance of the product in this document differs from the actual product, the actual product prevails.

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# 2 Installing the Device

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The OptiXstar P602E supports outdoor network box installation and indoor desktop installation, wall mounting, or network box installation.

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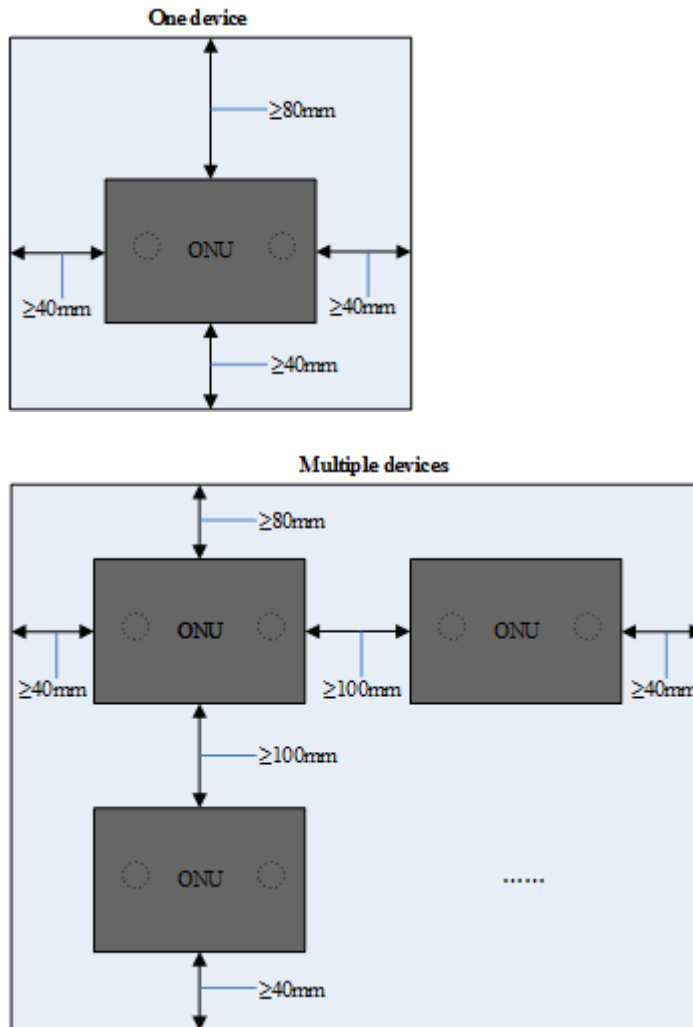
## NOTICE

- The OptiXstar P602E belongs to the remote optical access unit (ONU) product series. It is referred to ONU in the following description.
  - Do not stack horizontally placed ONU.
  - Do not install the ONU outdoor.
  - The ONU is vulnerable to lightning strikes, surge protectors need to be deployed for the power port and be routed securely in the cabinet or network box installation. You are advised to follow the suggestions below to install a surge protector:
    1. Use a Huawei-authenticated surge protector for the power port. Ensure that the power port surge protector is reliably grounded and the ground cable (cross sectional area  $\geq 6 \text{ mm}^2$ ) is as short as possible. Use surge protectors of the following specifications:
      1. Surge current: 20 kA in common/differential mode;
      2. The maximal running voltage: 385 V AC;
      3. The protecting voltage: 1.8 kV.
    2. Other requirements for the installation of a surge protector:
      1. Impedance:  $< 10 \Omega$  for the network box from the ground;  $< 0.1 \Omega$  for the surge protector from the ground bar
      2. Ensure that network box is reliably grounded and ground cable is shorter than 50 m. Use a cable of longer than 5 m to connect the surge protector of the input port of the power adapter to the power port of the ONU and coil the cable.
      3. To install the surge protector near the ONU and behind the air switch (lightning protection voltage: 20 kV). The ONU is powered in front of the socket. Ensure that the distance between the AC power cable and network cable is longer than 50 cm. When the ONU is mounted to a pole, keep the network cable as short as possible and do not route the excessive network cable in parallel with the AC power cable (recommended length of parallel routing  $< 50 \text{ cm}$ ).
    3. Other specifications (including waterproof, temperature, and humidity requirements): consistent with those for other ONUs.
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## Space for Heat Dissipation

### NOTE

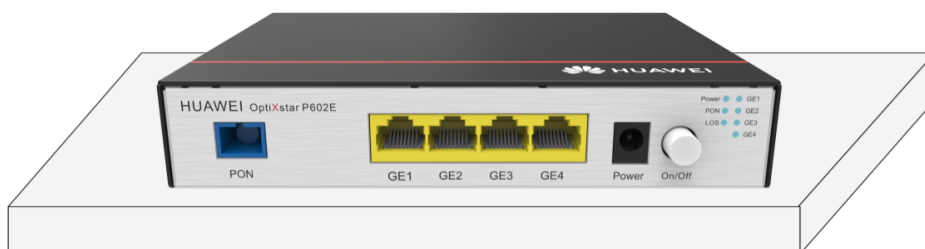
- The space requirements for heat dissipation indicated in the following figures are applicable to ONUs desktop flat, wall-mounted and network box installation.
- The heat dissipation sides are not allowed to have any contact with the wall or desktop.



## Mounting on the desktop

### NOTE

Do not stack the device when it is placed on the desktop.



## Mounting on the wall

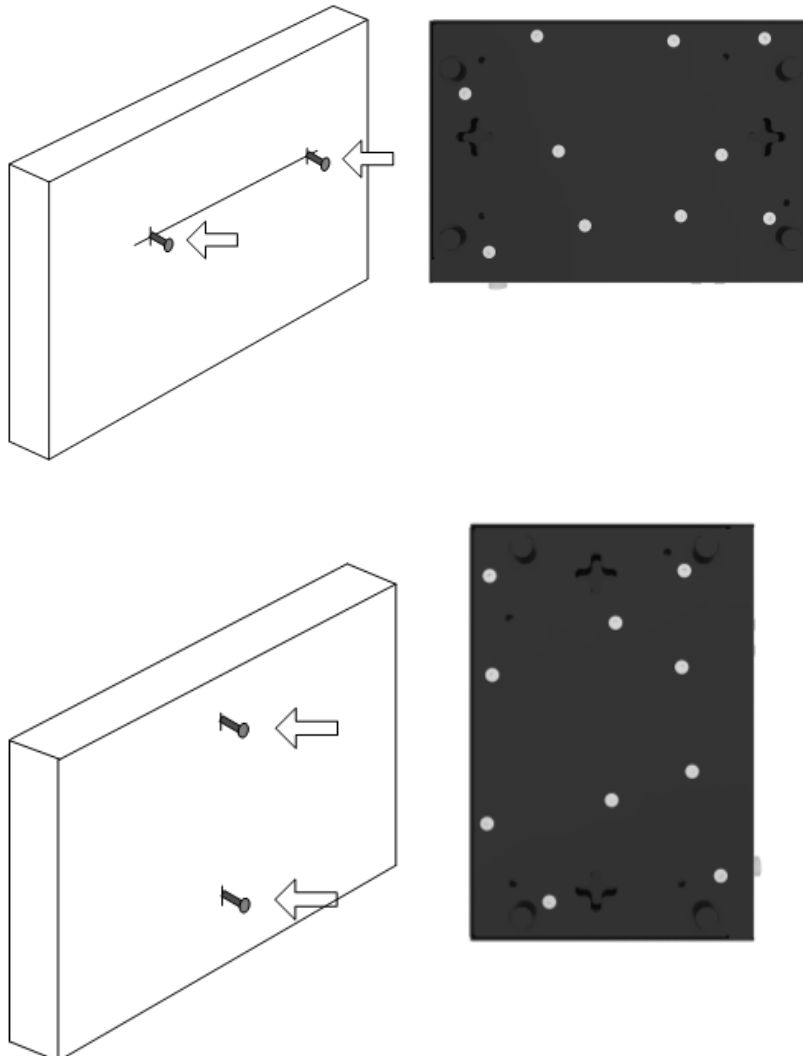
It is recommended that the port be facing down to prevent other objects such as dust from falling in for wall mounting, as shown in the following figure.

1. Mark two positions with the same spacing as that between the two mounting holes of the ONU using a marker on a wall.
2. Select a proper drill bit according to the outer diameter of the screws. Use a hammer drill to drill the marked positions on the wall. Then clean the holes and install two expansion bolts.

### NOTE

It is recommended that the screw diameter be less than or equal to 4 mm, the nut diameter be 6 to 8 mm, and the length should not be less than 20 mm.

3. Use a screwdriver to fasten the screws into the expansion bolts, reserving 5 mm ends out of the wall, and mount the ONU onto the screws.

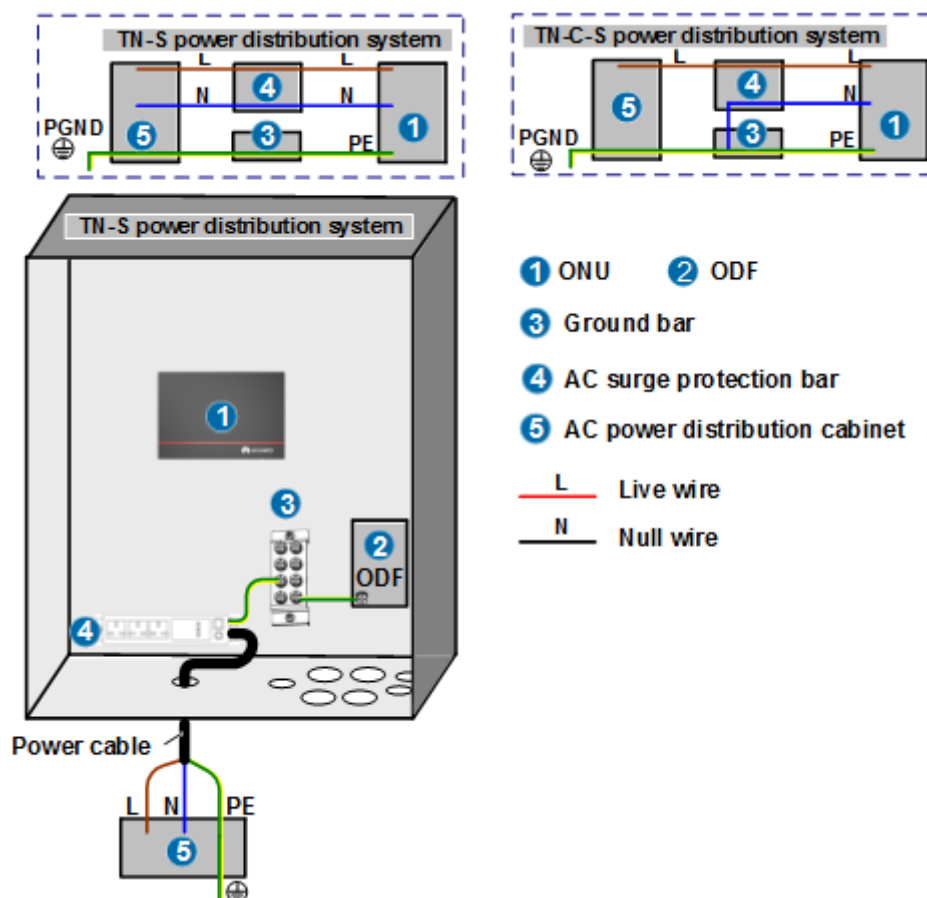


## Mounting in the network box

### NOTICE

- Do not use an enclosed network box and ensure that the air intake and exhaust vents are not blocked to ensure proper heat dissipation of the ONU.
- If the network box is installed indoors or in a corridor that is free from rain, the network box must meet the requirements of IP31 protection. ("IP" is short for international protection. The first number indicates a class for preventing the solid particle from entering the device and the second number indicates a class for preventing water from entering the network box. "3" means that solid particles with diameters equal to or larger than 2.5 mm can be prevented from entering the box. "1" means that the drips fallen vertically cannot damage the device.)
- If the network box is installed outdoors or in a corridor that is exposed to rain, the network box must meet the requirements of IP55 protection. ("5" means that the network box cannot completely prevent dust from entering, but the amount of dust that enters the network box does not damage the device. "5" means that the water sprayed from different directions to the network box does not damage the device.)
- The method for installing the ONU in a non-Huawei network box depends on the network box specifications. When the ONU is installed in a non-Huawei network box, the preceding heat dissipation space rules must be observed.

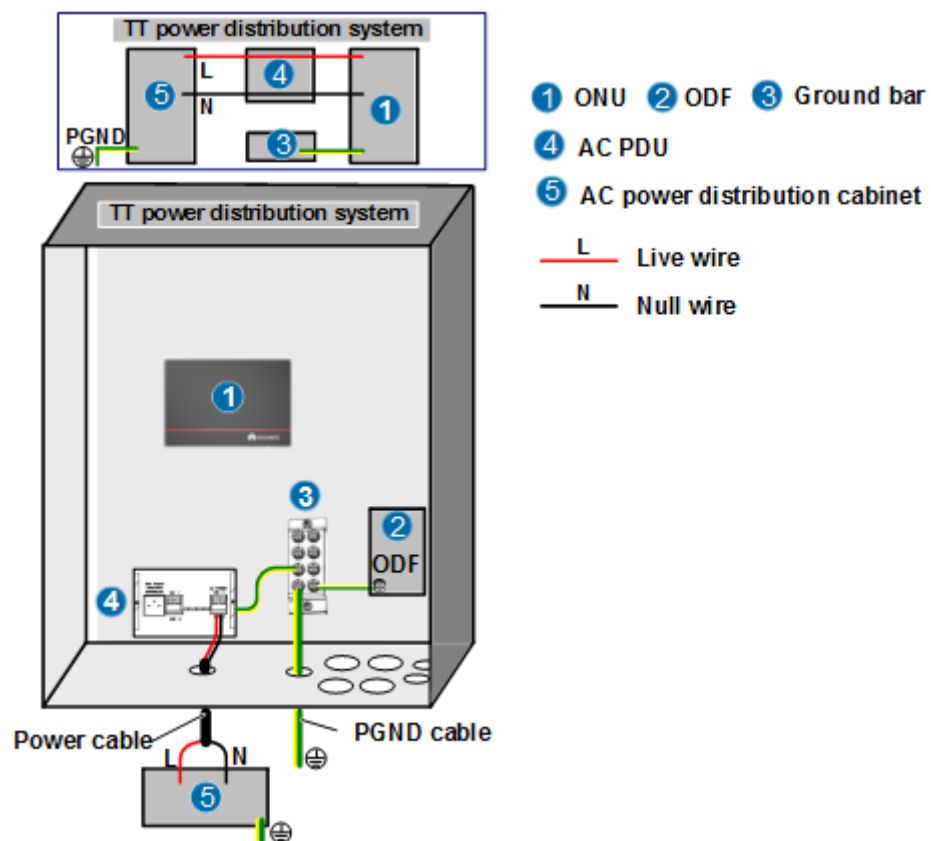
- **Guide for Grounding the Network Box of TN-S and TN-C-S Power Distribution Systems**





- In the case of the TN-C-S and TN-S AC power distribution systems, you are advised to use the PE wire of the AC power cable for the ONU grounding connection. The PE wire of the AC power cable for the corridor of the building is already grounded properly.
- Connect the ground bar and all the internal devices using the ground cable (the cross-sectional area of the ground cable must be greater than or equal to 6 mm<sup>2</sup>), and the ground bar to the network box in an equipotential manner through a metallic structure.
- Connect the grounding point of the strength member of the optical fiber to the ground bar through a ground cable, or connect this grounding point to the network box in an equipotential manner through a metallic structure.
- When the PE line of the AC power cable in the corridor of the building does not meet the grounding requirement, ground the network box through an external ground cable (PGND cable) and ensure that the strength member of the optical fiber is disconnected from the device ground point.
- Decouple the surge protector from the ONU power source using a power cable of 3 - 5 m.

● **Guide for Grounding the Network Box of the TT Power Distribution System**



- In the case of the TT power distribution system, you are advised to use an external ground device. For example, use a grounding device dedicated for buildings (such as the ground flat steel, ground stud, and ground bar) or the base steel bar of the reinforcement concrete of the building, or deploy a new ground grid.
- Use the ground cable (the cross-sectional area of the ground cable must be greater than or equal to 6 mm<sup>2</sup>) to connect the ground bar and all the internal devices, and

the ground bar to the network box in an equipotential manner through a metallic structure.

- Connect the external ground cable (PGND cable) of the network box to the external ground device. As specified by the grounding standard, the cross-sectional area of the external ground cable must be greater than or equal to 16 mm<sup>2</sup>.

● **Guide to Ground the Strength Member**

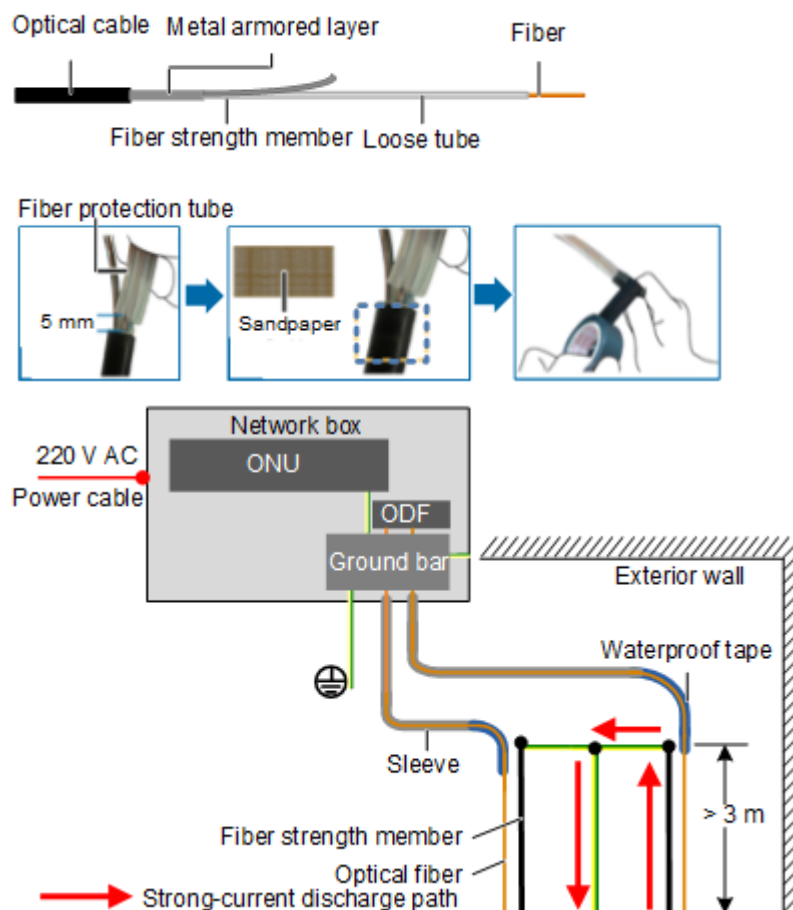
**Table 2-1 Engineering Responsibilities**

Optical Cable Provider	Engineering Party	Recommended Solution	Remarks
Huawei	Huawei	Solution 1 is preferred. If solution 1 fails to implement, Huawei is required to communicate with the customer about engineering risks and sign a memorandum with the customer before using solution 2.	If solution 1 is used, the engineering quality must strictly comply with engineering specifications. If solution 2 is used, the network box must be securely grounded. In addition, a metal protective cover must be installed between the fiber strength member and network box fixing points, preventing sparks from spreading if the fiber strength member connects to a heavy-current power line.
	Customer	Solution 1	If the engineering does not comply with solution 1, the customer must take consequences.
Customer	Huawei	Requirements: During engineering, do not route the fiber strength member into the network box. In addition, ground the fiber strength member and the network box separately. Install the network box and ONU based on the instructions provided in this document.	The customer must ensure that the fiber strength member is not be routed inside the network box. Otherwise, the customer must take consequences.

a. **Grounding solution 1: The fiber strength member is isolated from the network box and grounded outside the network box.**

This solution prevents the introduction of sudden heavy currents into the network box, thereby protecting the device inside the network box against heavy currents. (A long-distance armored optical cable may introduce sudden heavy currents into the network box if the outer insulation layer is broken and connects to a heavy-current power line.) Solution 1 is implemented as follows:

- i. Strip the outer insulation layer and armored tube from the fiber strength member at the ground point. Then, clean bare optical fibers and use a protection tube to protect them. (Use outdoor tubes in outdoor scenarios and common tubes in indoor or corridor scenarios. Use waterproof tape produced by 3M or COTRAN.)
- ii. Use a piece of sandpaper to polish burrs at the stripped position of the optical cable. Then, use insulation tape to wrap the stripped optical cable. When wrapping the waterproof tape, ensure that fiber cores are force-free.
- iii. Cut excess fiber strength member for grounding.



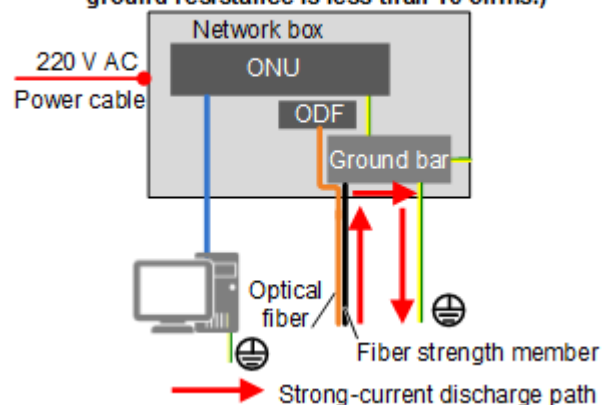
**NOTICE**

- During onsite operations, ensure that optical fibers are force-free and the bend radius is greater than 40 mm. Otherwise, services may become abnormal or even fail due to degraded signal transmission.
- The fiber strength member must be securely grounded. In addition, the ground point of the fiber strength member must be at least 3 meters above the ground (which prevents manual touching), and no combustible materials are around the ground point within a distance of 0.3 m. If the fiber strength member fails to be securely grounded, it must be insulated. Otherwise, the fiber strength member may introduce heavy currents if it connects to a heavy-current power line, threatening human safety.

b. **Grounding solution 2: The fiber strength member is grounded inside a network box.**

The fiber strength member must be connected to a ground bar at the ground point using a ground cable. The ground point can connect to the network box using a metal in an equipotential manner. When the fiber strength member connects to a heavy-current power line, heavy currents may be discharged inside the network box using the ground bar. If this happens, sparks may occur at the contact point between the fiber strength member and the ground bar, which may burn the device and the network box. To prevent this issue from occurring, use solution 1.

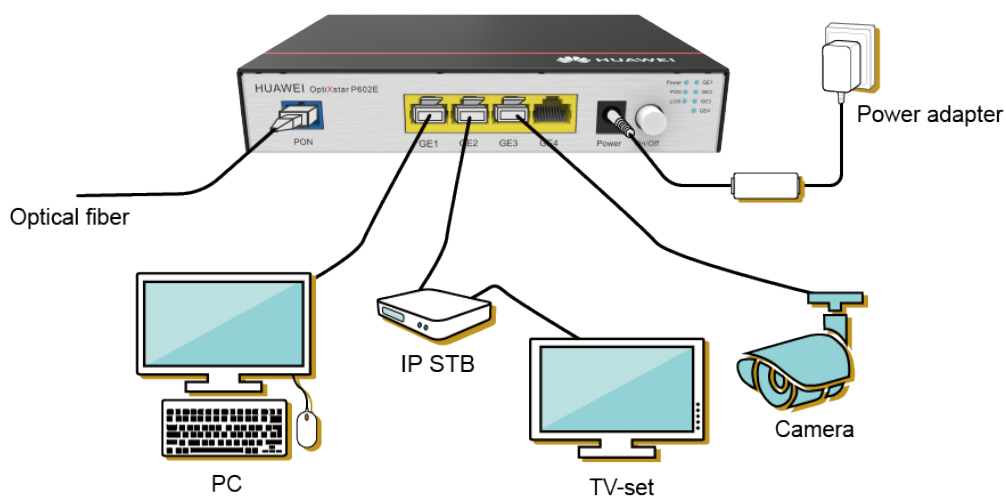
**Secure grounding of the network box and the device (The ground resistance is less than 10 ohms.)**



**NOTICE**

If the ground bar of the network cabinet fails to securely ground, ensure that the fiber strength member is disconnected from the ground bar and that the fiber strength member is properly insulated. Otherwise, heavy currents may be discharged using the network ports on the local and peer devices, which may damage these network ports.

# 3 Connecting Cables



Ports and buttons	Description
PON	Supports GPON uplink access, the port type is SC/UPC.
GE1-GE4	Connect to a PC, IP STB or camera to support 10Mbit/s or 100Mbit/s or 1000Mbit/s interface rate adaptation.
Power	Connects to a power adapter.
On/Off	Powers the ONU on or off.

# 4 Description of Indicator

**Table 4-1** Indicator status description 1

Indicator	Status	Description
Power	Steady on	Indicates that the power is on and working properly.
	Off	Indicates that the power is off or faulty.
PON	See the following table.	
LOS	See the following table.	
GE1-GE4	Steady on	The Ethernet connection is in the normal state.
	Green blinking	Data is being transmitted over the Ethernet port.
	Off	The Ethernet connection is not set up.

The status of PON and LOS reflects the connection between ONU and the optical line terminal (OLT). The following table describes the status of the PON and LOS LEDs.

**Table 4-2** Indicator status description 2

Status No.	PON Status	LOS Status	Description
1	Off	Off	The ONT is prohibited by the upper-layer device or blinks abnormally. Contact the service provider for help.
2	Blinks twice a second	Blinks twice a second	
3	Blinks twice a second	Off	The ONT attempts to set up a connection with its upper-layer device.
4	Steady on	Off	A connection is set up between the ONT and its upper-layer device.

<b>Stat us No.</b>	<b>PON Status</b>	<b>LOS Status</b>	<b>Description</b>
5	Off	Blinks once every 2 seconds	The ONT is not connected to fibers or does not receive optical signals.
6	Blinks once every 2 seconds	Blinks once every 2 seconds	The hardware is faulty.

# 5 Technical Specifications

Item	Specifications
Dimensions(WxDxH)	160 mm x 110 mm x 30 mm (Without floor mat)
Weight	About 480 g
Power adapter input	11V to 14V (typical 12 V), 1A
System power supply	100V to 240V AC, 50/60Hz
Maximum system power consumption	5 W
Operating temperature	-40°C to +55°C
Operating humidity	5%RH to 95%RH (non-condensing)



# 6 FAQs

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## How to log in to the web page?

**Step 1** Configure the IP address of the PC to be in the same subnet as the LAN IP address. For example:

- IP address: 192.168.18.100
- Subnet mask: 255.255.255.0

### NOTE

ONU factory default values of managed IP address and subnet mask:

- IP address: 192.168.18.1
- Subnet mask: 255.255.255.0

**Step 2** Enter the LAN IP address in the address bar of the Internet Explorer (IE), and then press Enter to display the login page.

**Step 3** On the login page, enter the user name and default password that referring to the product nameplate. Then click Login and wait. After the password passes the authentication, the web page is displayed.

- If no operations are performed within 5 minutes after logging in to the web page, the system times out and the system automatically returns to the login state.
- Enter the wrong user name and password 3 times consecutively, the system will be locked and automatically unlocked after one minute.
- After logging in to the web page using the initial user name and password, please change the password in time.

----End

## The LOS indicator blinks.

- If the LOS indicator blinks once every 2 seconds, check whether the pigtail fiber is properly connected and the connector is clean.
- If the LOS indicator blinks twice a second, the ONU is prohibited by the upper-layer device or blinks abnormally. Contact the service provider for help.

### **The PON indicator is off.**

- Check whether the optical port and optical fiber is properly connected.
- The ONU fails to register with the upper-layer device. Contact the service provider for help.