We appreciate your business. Your satisfaction is our goal. We will provide you with comprehensive technical support and after-sales service. Please contact your local sales representative, service representative or distributor for any help needed at the contact information shown below.

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1 Installation Procedure

Warning

Laser Safety

To prevent laser radiation from injuring eyes, do not look into the end face of the fiber or fiber connector directly with naked eyes.

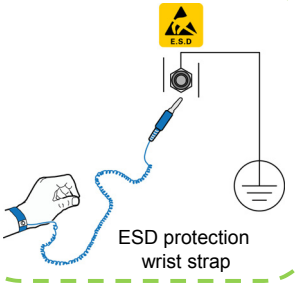
Laser class identifier

Caution

ESD Protection

Do not touch any component or wires on the equipment or metal conductors in sockets. ESD protection measures should be taken if it is necessary to touch the equipment during maintenance.


ESD protection gloves



ESD protection wrist strap

Caution

Grounding Requirements

Before the equipment is powered on, the cabinet protection earth ground cable and subrack protection earth ground cable should be well grounded. Check and ensure that the insulation resistance and ground resistance meet the specification.

Caution

Binding Cables

- Different types of cables at the installation site should be laid out independently and bound separately. Please note that optical fibers should be bound with dedicated fiber binding straps.
- Exercise care if you must bend fibers. If bends are necessary, the fiber bending radius should never be less than 30 mm.
- The cables are bound with proper and equal spacing between them. The cable binders are arranged in good order. The extra parts of the binders are cut from the root without leaving sharp points.

Caution

Inspection Prior to Installation

Prior to equipment installation, please inspect the equipment room, cabinet, power supply, cables (especially the earth ground cable), and supporting facilities. After confirming that the conditions for installation are satisfactory, start the work following the project designing documents. Please refer to *Installation Reference* for more details.

3 Installation Tools


Ladder


Vacuum cleaner


Electric drill (including the drilling bit)


Marker pen


Long tape


Knife


Spirit level


Claw hammer (insulated)


Cross screwdriver (insulated)


Flat screwdriver (insulated)


Crimping pliers


Hydraulic pliers


Wire clipper


Sharp nose pliers


Diagonal pliers


Wire stripper


Combination wrench (insulated)


M6 to M12 socket wrench (insulated)


Torque wrench (insulated)


Insulation gloves


Multimeter


Optical power meter


ESD protection gloves


ESD protection wrist strap


Fiber puller

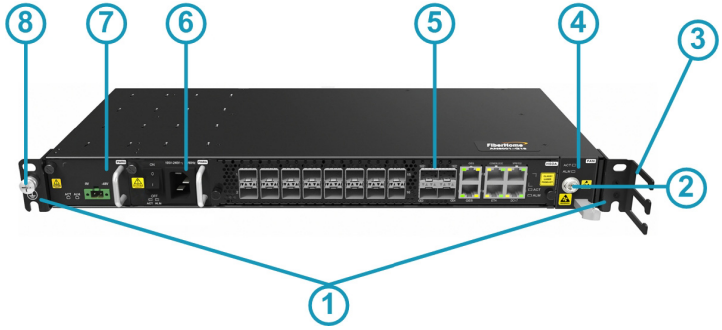

Insulating tape

Fiber binding strap

4 Equipment Appearance and Structure

Equipment Structure

The figure below illustrates the components of the AN6001-G16. Here the AC-DC hybrid power supply scheme is used as an example.



No.	Description	Function
①	Mounting ear	Secures the equipment in the cabinet.
②	ESD protection fastener	Connects to the ESD protection device.
③	Fiber passage unit	Facilitates routing and arranging of fibers and cables.
④	Fan card	Facilitates air cooling for the equipment.
⑤	Core switch service card	Provides access to GPON services; provides GE / 10GE uplink ports, and interfaces for management, monitoring and debugging.
⑥	AC power card	Inducts 110 V / 220 V AC power supply. Here it can be replaced by a DC power module to provide 1 + 1 DC power protection.
⑦	DC power card	Inducts -48 V DC power supply. Here it can be replaced by an AC power module to provide 1+1 AC power protection.
⑧	Equipment earth ground point	Connects with the equipment earth ground cable.

Equipment Dimensions

Description	Dimensions (H × W × D)
Equipment without mounting ears	44.4 mm × 443 mm × 220 mm
Equipment with mounting ears for a 19-inch cabinet	44.4 mm × 480 mm × 225 mm
Equipment with mounting ears for a 21-inch cabinet	44.4 mm × 530 mm × 233 mm

5 Installing Equipment

5.1 Equipment Layout

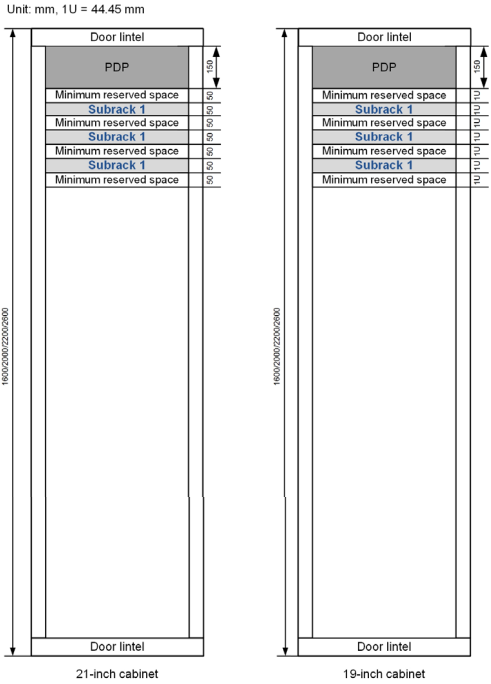
Rules for Arranging the Equipment

Instruction

The AN6001-G16 can be installed in a 19-inch cabinet (4102596 to 4102599) or a 21-inch cabinet (404000068 to 404000071 and 404000596 to 404000599).

- A cabinet can house three AN6001-G16s at most.
- Keep a distance of 50 mm between two equipment sets when they are installed in a 21-inch cabinet or a distance of 1 U when they are installed in a 19-inch cabinet. Keep a distance of more than 100 mm between the equipment bottom and the cabinet bottom lintel, so that the cabinet can be mounted on a cement floor or an ESD protection raised floor in the equipment room.
- The equipment is mounted on the front vertical mounting flanges in both 19-inch and 21-inch cabinets.
- The distance between every three mounting holes on the front vertical mounting flange in a 19-inch cabinet is 1 U (44.45 mm).
- The distance between every two mounting holes on the front vertical mounting flange in a 21-inch cabinet is 1 SU (25 mm).

Equipment Layout



Instruction

The minimum reserved space can be equipped with an external fiber guide slot.

5.2 Installing the Equipment in a 19-inch Cabinet

Tool

Marker pen	Flat screwdriver	Cross screwdriver	Panel screw	Screw
			M6	M3

Component

Fiber guide unit (806000069)

Fiber guide slot for a 19-inch cabinet (801000976)

Fiber guide slot for a 21-inch cabinet (801000932)

Mounting the Equipment in a Cabinet

The equipment can be mounted in a cabinet in three ways as illustrated below: install the fiber guide unit and then mount the equipment; install the fiber guide slot and then mount the equipment; directly mount the equipment in the cabinet.

1 Install the fiber guide unit (optional).

M3×4 screw

2 Install the fiber guide slot in the cabinet (optional).

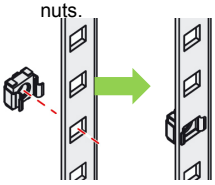
M3×4 screw

3 Mount the equipment in the cabinet directly.

M3×4 screw

Procedure

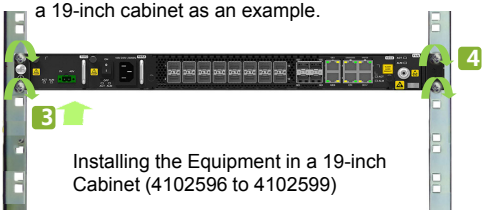
1 Mark the mounting holes for the equipment, and install the floating nuts.



2 Add adapter mounting ears when installing the equipment in a 21-inch cabinet.

3 Place the equipment horizontally into the cabinet.

4 Install the panel screws to secure the equipment. The figure below illustrates how to install the equipment in a 19-inch cabinet as an example.



Installing the Equipment in a 19-inch Cabinet (4102596 to 4102599)

Correct Way to Install Screws

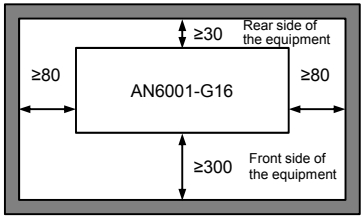
1 Insert the cable plug completely into the desired interface so that the end face of the plug aligns with the panel surface.

2 Make sure that the screw threads can get a good grip (the resistance encountered is small), and tighten the screw with care.

6 Mounting the Equipment on the Wall

Instruction

To facilitate air cooling of the equipment and users' operation on it, provide the required installation spaces as indicated in the figure below (in this example, the front side of the equipment faces downward) when mounting the equipment on the wall.



Unit: mm

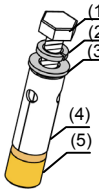
Note

The equipment room should be dry and clean with good ventilation as required.

Component

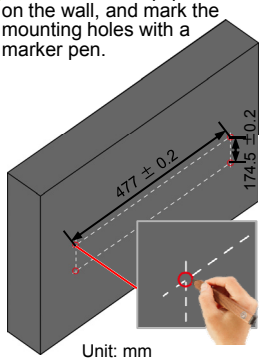
Wall mounting ears

Assembly of the Expansion Bolt



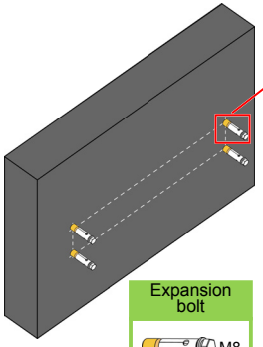
(1) Hex machine screw M8 x 60
(2) Spring washer
(3) Flat washer
(4) Expansion sleeve
(5) Expansion nut

1 Determine the position and direction of the equipment on the wall, and mark the mounting holes with a marker pen.

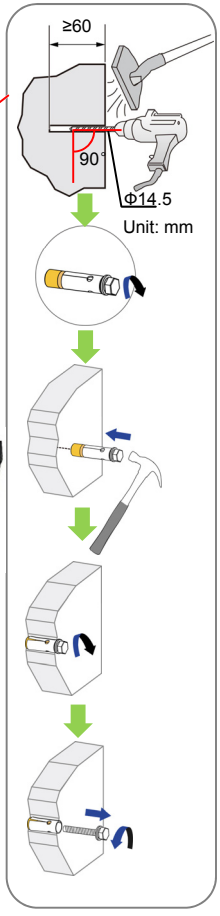


Unit: mm

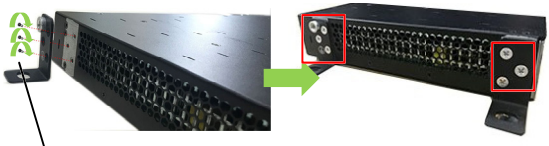
2 Install the expansion bolt.



Expansion bolt

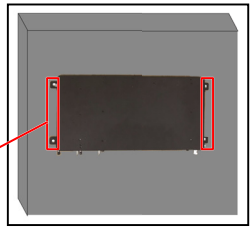


3 Install the wall mounting ears.



M4 screw

4 Tighten the bolts with a socket wrench.



Long tape

Marker pen

Electric drill

Drilling bit

Vacuum cleaner

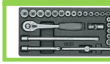
Claw hammer

Cross screwdriver

Screw

M4

Socket wrench



7 Requirements for Installing the Equipment in a Third-party Cabinet

Instruction

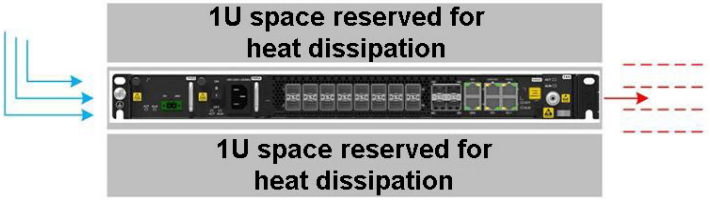
If you want to install the AN60001-G16 in a third-party cabinet, make sure the cabinet meets the following requirements.

Space Requirement

- Cabinet space requirement: The cabinet depth is no less than 300 mm .
- Requirement for closing the cabinet door: When the cabinet door is closed, the equipment wiring space, fiber passage unit and the door will not interfere with each other.

Heat Dissipation Requirement

- The AN6001-G16 is designed with a heat dissipation system based on air cooling, with the air forced into the equipment from the left and out of the equipment from the right. Enough space should be reserved on both sides of the equipment to allow air flow. The cabinet door should have ventilation holes with good ventilation. The hole fraction of the cabinet door should be no less than 60%.
- When the cabinet is installed with multiple AN6001-G16s or an AN6001-G16 together with other devices, a 1U space should be reserved on the upper and lower sides of each device for heat dissipation.



Power Supply Requirement

The third-party cabinet should be equipped with a Class C AC lightning protection module (20 KA in general).

Dust Prevention Requirement

The AN6001-G16 is not designed with an anti-dust screen. Therefore, the cabinet housing the equipment should be dustproof and compliant with the IP2X dust prevention requirement.

8 Replacing a Module

Caution

- When replacement of a module is required onsite, check the module connector on the backplane before the replacement.
- If resistance is encountered when you are plugging a module, pull out the module and check whether the mounting direction, slot position, and module type are correct. Do not force in a module in such a case.
- Do not contact a module with bare hands. Always wear ESD protection gloves or ESD protection wrist strap when operating on a module.
- If a module is not to be installed immediately, pack it with its original ESD protection bag and put it in a dry and cool place, keeping it away from sunlight and strong electromagnetic radiation sources.

ESD protection gloves / wrist strap	
	

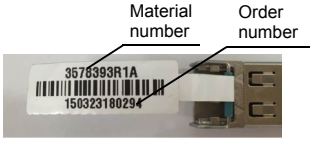
Cross screwdriver	Captive screw
	M3

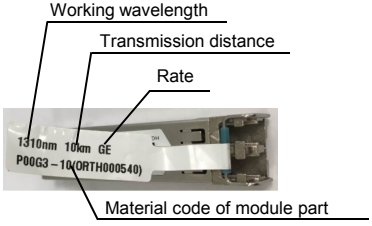
1 Align the left and right edges of the module with the slide rails in the target slot (with the component side of the module facing upward) and slowly push the module in along the slide rails.

2 Push the module to its position, and tighten the captive screws on the panel of the module to lock it.

9 Operation Rules for Plugging / Unplugging Optical Modules

9.1 Plugging the Optical Module





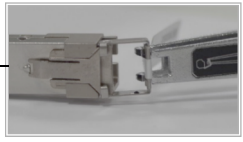
1 Hold the optical module, and plug it into the equipment along the EMI cage.

9.2 Unplugging the Optical Module

1 Grab the pull-ring of the optical module with the hook end of the fiber puller, and draw it out to detach the optical module from the EMI cage.

Fiber puller

Pulling the optical module (hook end)



Pulling the optical fiber

Caution

While pulling the optical module, hold the fiber puller tightly so that the module will not fall down. If the fiber puller is not available, pull the optical module by its pull-ring.

Instruction

- For the connection and layout of wires and cables inside an outdoor cabinet, please refer to the corresponding outdoor cabinet user manual.
- The installers can choose the top access wiring mode or the floor access wiring mode according to the equipment room and the installation site conditions (here the top access wiring mode is used as an example).
- The AN6001-G16 can use the following PDPs. Please refer to *Product Overview* for the rules of choosing a PDP.
  - PDP260B (3000063)
  - PDP296B (3000068)

Note

- Before laying out wires and cables, you need to remove the front panel of the PDP. If space is limited for operations, remove the baffle at the bottom of the PDP.
- After you have completed layout of wires and cables, restore the front panel and baffle to their original places.

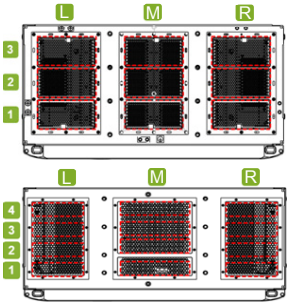
Preparing Wiring Holes on the Cabinet

Instruction

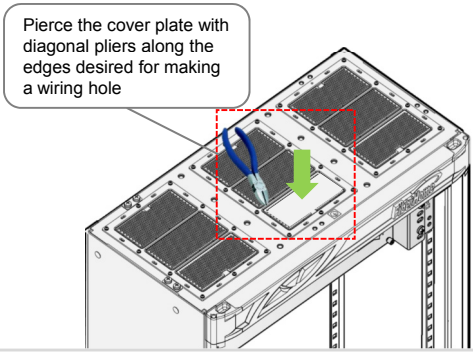
- For a cabinet equipped with mouseproof hop-pockets on the top, fasten the mouseproof hop-pockets after external wires and cables are led into the cabinet and well arranged.
- For a cabinet equipped with a cover plate on the top or bottom of the cabinet, determine the position, size and number of wiring holes according to the wiring plan. Pierce the cover plate with diagonal pliers at desired positions to make wiring holes. The following introduces how to make wiring holes on the top of the cabinet.
  - Prepare the holes from near to far in sequence.
  - Polish the raw edges of holes so that they will not cut hands or cables.

Fastening the mouseproof hop-pockets on the top of the cabinet

Recommended Areas and Sequence for Making Wiring Holes

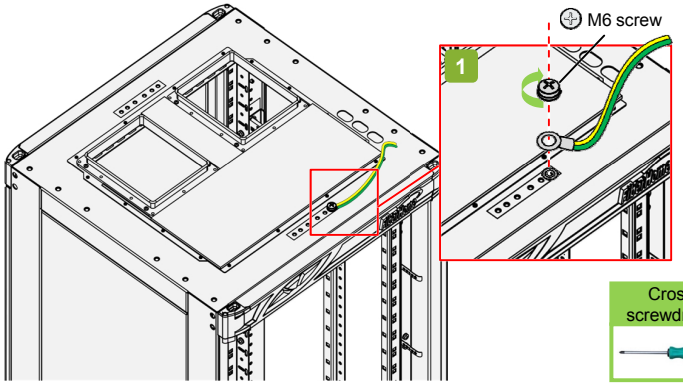


Making a Wiring Hole



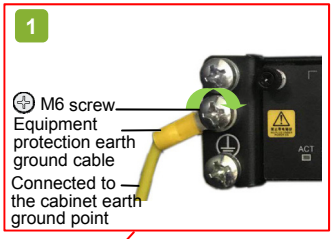
11 Connecting Protection Earth Ground Cables

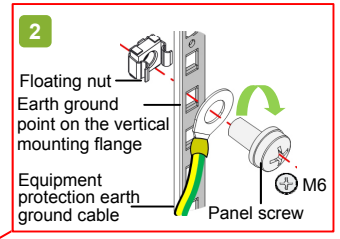
11.1 Connecting the Cabinet Protection Earth Ground Cable

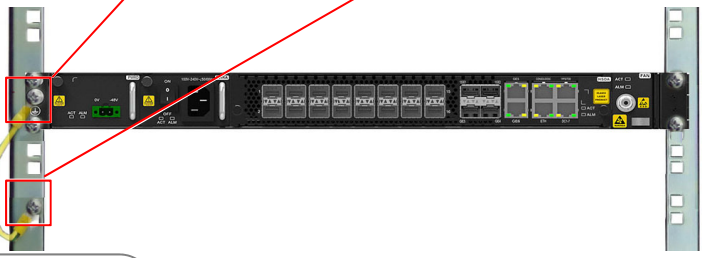


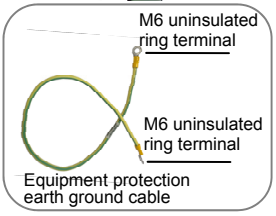
Cross screwdriver	Screw
	M6

11.2 Connecting the Equipment Protection Earth Ground Cable









Marker pen	Flat screwdriver	Cross screwdriver	Panel screw	Screw
			M6	M6

12 Connecting Power Cables

12.1 Connecting External Power Cables

Warning

- Make sure the external power supply is shut off before connecting the external power cables. Do not connect the power cables when they are powered.
- Make sure the DC power input is cut off, and identify the switches to be used.
- Never expose the joining parts of the power cables and the power connectors unless necessary.
- If the bonding resistance between the equipment ground cable and the ground bar is larger than 0.1 ohm, the ground cable should be re-arranged.

Caution

- With the premise that the cables must be arranged in compliance with the route, the external power cables should be processed on site according to the “shortest” route principle.
- The power cables should be made of a continuous segment of copper core with no intermediate connections.

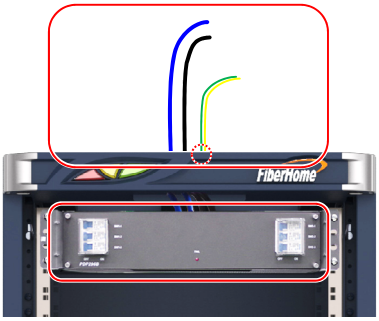
Connection

PDP End		Cable Type[Note 1]	Opposite End
PDP260B (3000063)	**PDP296B (3000068)**		
-48V1 terminal (active) -48V2 terminal (standby)	-48V_A terminal (active) -48V_B terminal (standby)	-48 V power cable (blue) 	External -48 V terminal
GND1 terminal (active) GND2 terminal (standby)	0V_A terminal (active) 0V_B terminal (standby)	0 V power cable (black) 	External 0 V terminal
PE terminal	PE terminal	PDP protection earth ground cable (yellow-/green) PDP260B (3000063):  PDP296B (3000068): 	Earth ground point on the top of cabinet

Note 1: Different PDPs use different types of external power cables. Please refer to the chapter on cables in *Product Overview* for the model numbers of the power cables.

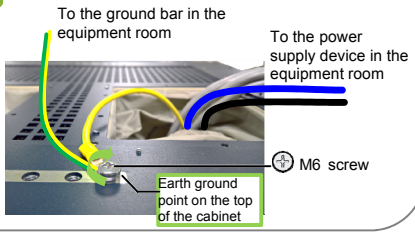
Instruction

The following introduces how to connect the external power cables when the PDP296B (3000068) is used. The protection earth ground cable for the PDP has been connected to the PE terminal before delivery of the PDP; users need only to connect the other end of the cable to the earth ground point on the top of the cabinet.



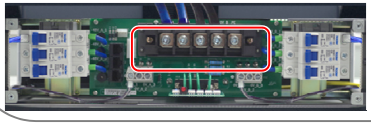
1 Connect the PDP protection earth ground cable to the earth ground point of the cabinet.

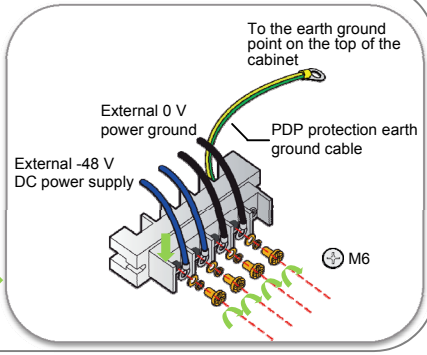
2 Thread the -48 V and 0 V power cables into the cabinet.



3 Remove the front panel of the PDP. M3

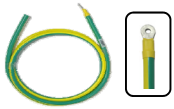
4 Connect the power cables to the PDP and the external power supply device respectively.






-48 V power cable


0 V power cable


Protection earth ground cable

Screw/bolt	Captive screw
M6	M3

Socket wrench	Cross screwdriver
	

Processing External Power Cables

"Cut-Wrap-Crimp-Insulate"

1 Measure the power cable and cut an appropriate length of it as needed with a wire clipper on site.

2 Wrap the bare end of the cable with an insulating tape to prevent short circuit during cable layout.

3 After leading the cable to the desired position, remove the insulating tape, strip the cable end with stripping pliers, install the copper terminal onto the cable end, and then crimp it with hydraulic pliers.

4 Insulate the terminal with an insulating tape or a heat-shrinkable tube.


1


2

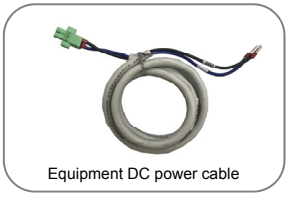
12.2 Connecting the DC Power Cable for the Equipment

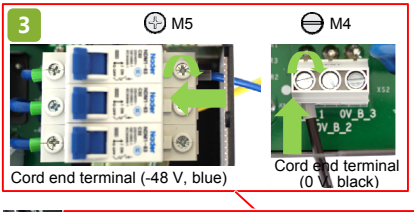
Caution

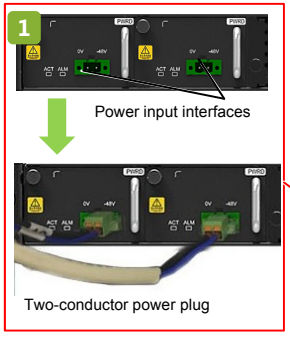
- Before connecting the DC power cable for the equipment, make sure that the power control switch for the equipment on the PDP is placed in the **OFF** position.
- Completely insert the cord end terminals into the terminal blocks on the PDP. To ensure good connection, the metal part exposed should not exceed one sixth of the overall metal length. The length of exposed insulation covering or metal part of the terminals in the same row or batch should be equal whenever possible.
- Do not press the insulation covering of the cord end terminals, which may result in poor electrical connection.
- Make sure the side with a larger area of the cord end terminal contacts with the terminal block.
- After you have completed connection of the power cable, attach a label indicating the cable information to both ends of each cable, 1 cm to 2 cm away from the connector on each end.

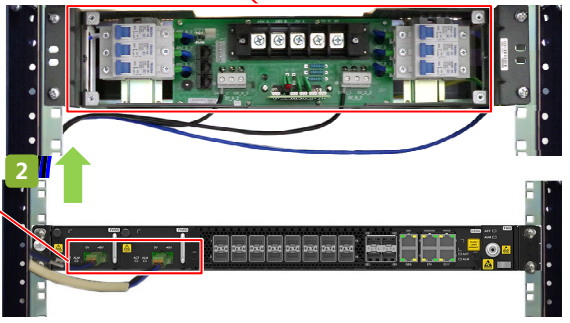
Instruction

Connection of the DC power cables for the AN6001-G16 on the PDP side may vary with the PDP used. Please refer to the table below for details. The following introduces how to connect the DC power cable for the equipment when the PDP296B (3000068) is used.









Connection

Cable Connector	Connected to	
	PDP260B (3000063)	PDP296B (3000068)
Cord end terminal (-48 V, blue) 	-48 V branch power rail output terminal (P1 is the active one and P2 the standby one)	-48V_A_1 to -48V_A_3 terminals (active) -48V_B_1 to -48V_B_3 terminals (standby)
Cord end terminal (0 V, black) 	0 V branch power rail output terminal	0V_A_1 to 0V_A_3 terminals (active) 0V_B_1 to 0V_B_3 terminals (standby)
Two-conductor power plug 	Connected to the power input interface on the DC power module (PWRD) of the AN6001-G16.	

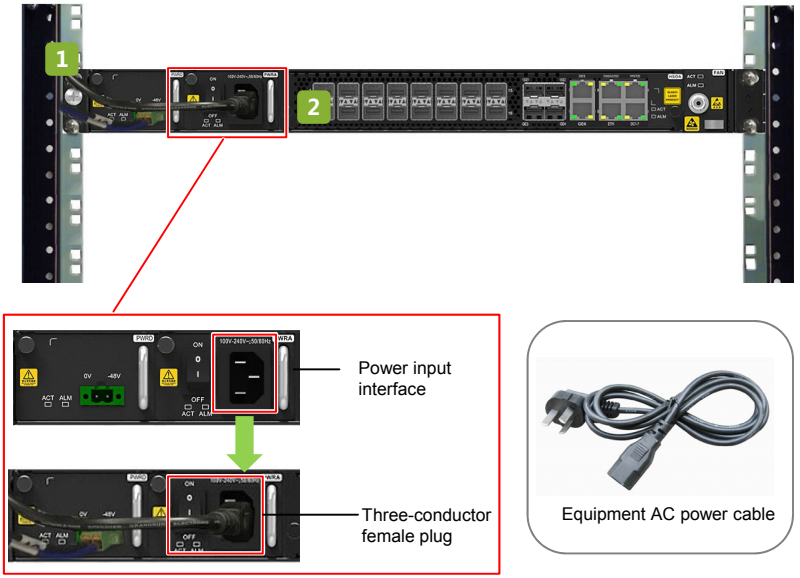
12.3 Connecting the AC Power Cable for the Equipment

Warning

- The AC voltage is high. Make sure the AC power supply is cut off before connecting the AC power cable to prevent electric shock.
- Make sure the power switch on the AC power card is placed in the **OFF** position before connecting the AC power cable. After completing and checking the cable connection, turn on the switch to supply power for the equipment.

Instruction

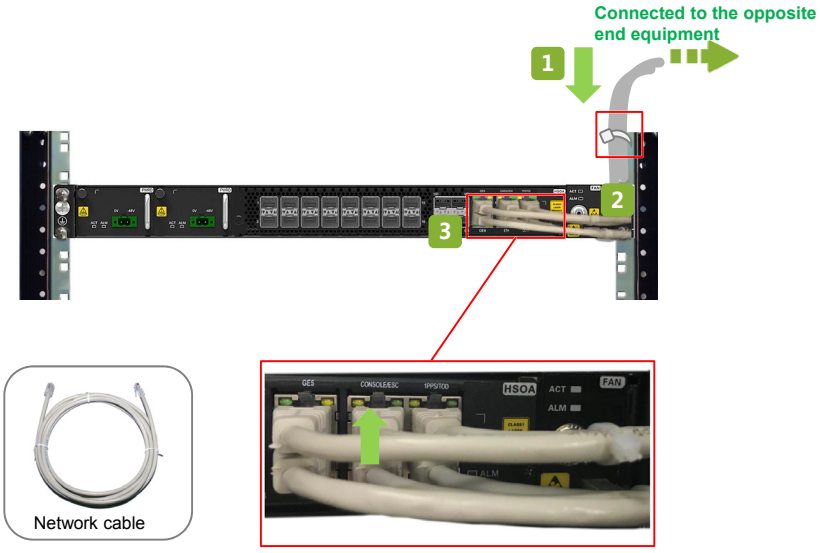
When the AC-DC hybrid power supply scheme or dual-AC power supply scheme is applied to the equipment, the AC power cable needs to be connected. The figure below illustrates the cable connection, using the AC-DC hybrid power scheme as an example.



Connection

Cable Connector	Connected to
Three-conductor male plug 	External power supply unit
Three-conductor female plug 	Power input interface of the AC power card (PWRA)

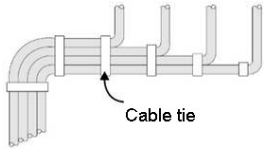
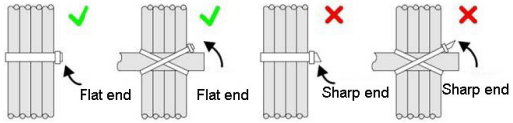
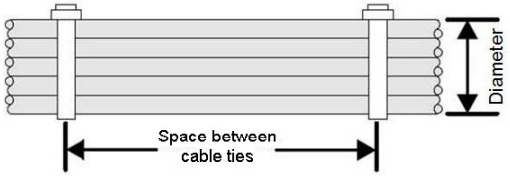
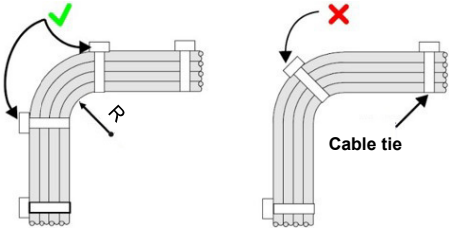
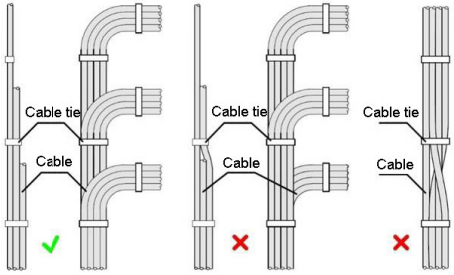
13 Connecting the Network Cable



Connection

Equipment End (RJ-45)	Opposite End (RJ-45 / Bare Wire)
GE5, GE6, ETH, and 1PPS/TOD interfaces of the HSOA card	Connected to the uplink equipment, out-of-band network management system, time synchronization equipment, and so on.
DC1-7 interface of the HSOA card	Connected to the dry contact equipment. Note 1
CONSOLE/ESC interface of the HSOA card	Connected to the external environment monitoring equipment to report the environment monitoring status to the network management system.
Note 1: The cable has bare wire on this end.	

Rules for Binding Cables

Rules for Binding Cables	Illustration
• Keep the bound cables neat. The horizontal cables should be bound with proper and equal spacing between the cable ties.	
• Do not join several cable ties to make a longer one and bind cables with it, which may reduce the binding force. • The cable ties should be arranged in good order. The extra parts of the binders should be cut from the root without leaving sharp points.	
When binding cables, abide by the following rules for the space between cable ties: • When the diameter of the cable bunch is less than 10 mm, the space between cable ties should be 150 mm; • When the diameter of the cable bunch is between 10 mm and 30 mm, the space between cable ties should be 200 mm; • When the diameter of the cable bunch is equal to or larger than 30 mm, the space between cable ties should be 300 mm.	
• When binding the bent cables, do not bind them midway through the bend; otherwise, the cores inside the cables may be broken. • The bend radius of the cables (R) shall meet the following requirements (D refers to the cable diameter): ‣ Cables for general use: R≥2D ‣ RF cables: R ≥ 15D in common conditions; R ≥ 10D in extreme conditions.	
• The cables inside the cabinet should be arranged from far to near. That is, lay the cables to the farthermost end first, putting them on the bottom layer in the wiring area. • Do not cross or twist the cables whenever possible.	

14 Connecting the Optical Fiber Jumper

Instruction

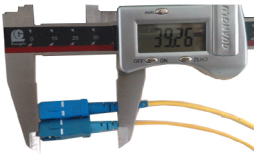
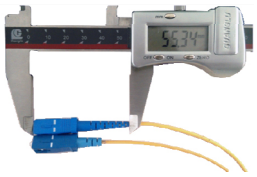
Select the right type of the optical fiber jumper according to the type of the optical interfaces on the local equipment and opposite end equipment. The optical interfaces on the AN6001-G16 correspond to two types of optical fiber connectors: LC/PC and SC/PC.

LC/PC Optical Fiber Connector

SC/PC Optical Fiber Connector

Caution

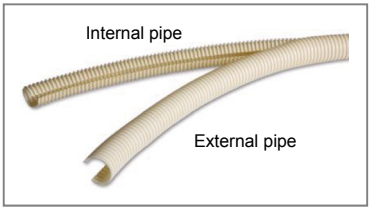
See the table below for the major specifications and appearance of the commonly used LC/PC and SC/PC optical fiber connectors. When the equipment is mounted in a cabinet, it is advisable to use the short optical fiber connectors.

Type	Short Optical Fiber Connector	Long Optical Fiber Connector
LC/PC	31 mm 	48 mm 
SC/PC	39 mm 	55 mm 

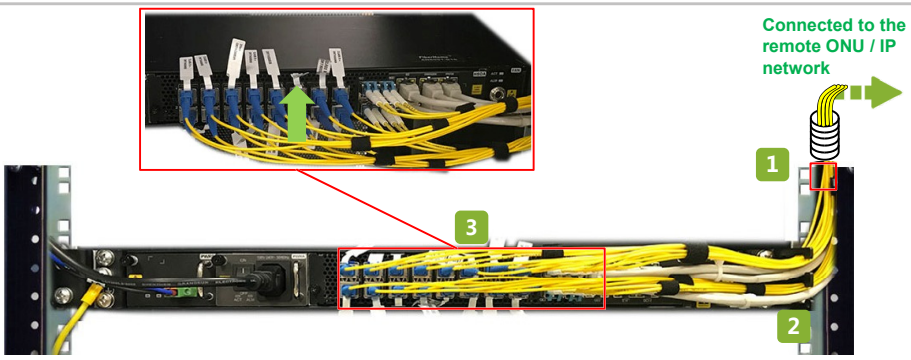
14.1 Connecting the External Optical Fibers

Caution

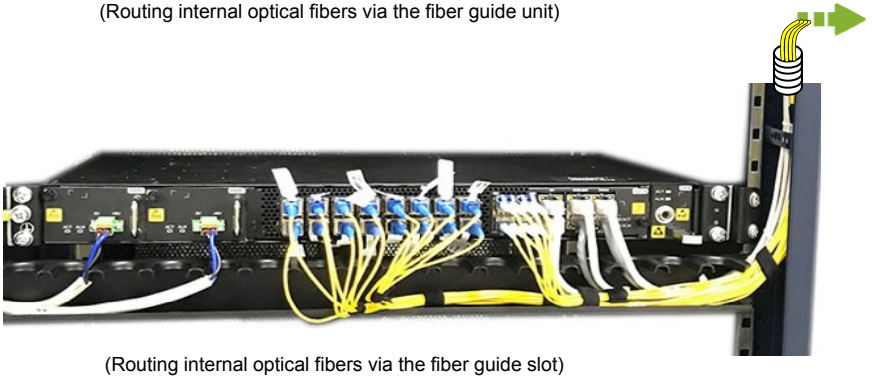
- The open corrugated pipes should not be overloaded with optical fibers. An open corrugated pipe with the diameter of 32 mm should carry no more than 60 optical fibers with the diameter of 2 mm.
- It is recommended that the corrugated pipe inside the cabinet should be about 10 cm long.
- Arrange the corrugated pipe outside the cabinet according to the conditions of the equipment room.



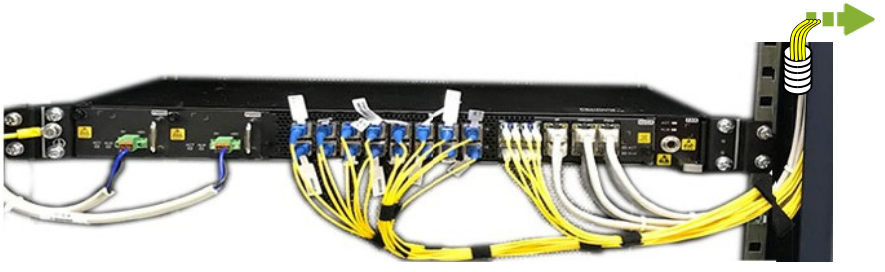
14.2 Connecting the Internal Optical Fibers



(Routing internal optical fibers via the fiber guide unit)



(Routing internal optical fibers via the fiber guide slot)



(Routing internal optical fibers directly)

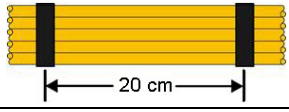
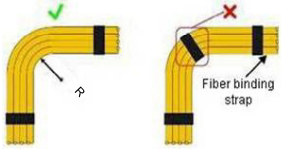
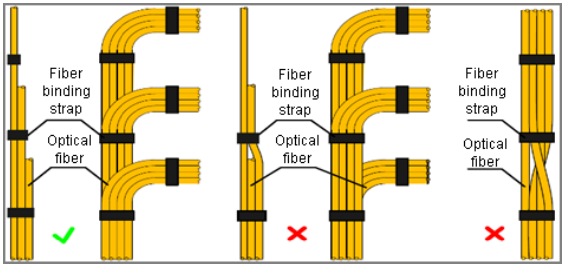
Connection

Connector	Equipment End	Opposite End
SC/PC connector	Ports 1 to 16 of the HSOA card	Connected to the remote ONUs to provide the GPON downlink channels.
LC/PC connector	10GE1 and 10GE2 ports of the HSOA card	Connected to the IP network to provide the GE and 10GE optical channels.
	GE3 and GE4 ports of the HSOA card	

14.3 Arrangement after Layout

1. After the connection of the optical fibers is completed, installers should bind the optical fibers between the cabinet entrance and fiber passage area with dedicated fiber binding straps to secure them.
2. Connect the optical fibers on the ODF side.
3. Remove the temporary labels; make project labels and attach them to both ends of the optical fibers.
4. The optical interfaces not connected with fiber pigtails should be covered with anti-dust caps. The fiber pigtails not connected with optical interfaces should be covered with pigtail caps.

Rules for Binding Optical Fibers

Rules for Binding Optical Fibers	Illustration
● When binding a bunch of optical fibers, keep a distance of 20 cm between the fiber binding straps.	
● Do not twist, bend, stretch or squeeze optical fibers when connecting them. ● The bend radius (R) of the optical cable should not be smaller than 10 times the optical cable's diameter, and should not be smaller than 30 mm.	
● The optical fibers should contact the loop side of the fiber binding strap and should not contact the hook side. ● Tidy up the optical fibers before binding them. ● Bind the optical fibers with fiber binding straps with appropriate tightness. ● Do not cross or twist the optical fibers whenever possible.	

15 Post-installation Inspection

15.1 Checking the Connection and Layout of Wires and Cables

Caution

When the connection and layout of the cables and wires are completed, installers should conduct the connectivity test and ensure that the signals are transmitted normally.

No.	Items to Check	Means
1	The specifications, routes, cross-sectional areas, and positions of the cables arranged are compliant with the construction plan drawing. The cables are arranged in good order, without damage to their sheath.	Visual inspection
2	The plugs of the cables are clean and intact; and the plugs made onsite are up to standard. The plugs are all connected correctly and firmly.	Visual inspection
3	When cables are arranged upward along the cabinet to the cabling rack, the distance between the cabling rack and the ventilation holes on the top of the cabinet should be no less than 10 cm. If the distance is larger than 0.8 m, a cabling ladder should be set up.	Visual inspection
4	Layout of the fiber pigtails: ● The fiber pigtails are not arranged too closely to each other or intertwined at the turning points. The paired fiber pigtails are bound after being arranged in order. Do not bind with too much force and leave pressure marks on the fiber pigtails. ● Fiber pigtails can move forward or backward freely in the fiber fastener but cannot bend in right angle. ● After the fiber pigtails are well arranged, do not put any cables or other objects on them.	Visual inspection

15.2 Checking Before Power-on

Caution

The AN6001-G16 supports three power supply schemes: dual-AC power supply, dual-DC power supply, and AC-DC hybrid power supply. The allowed DC voltage range is -40 V to – 57 V, and the allowed AC voltage range is 100 V to 240 V.

Before powering on the equipment, check and confirm the following items:

1. Confirm that the external power cables are correctly connected with the external power supply equipment.
2. Confirm that all the wires and cables are connected correctly.
3. Place all the power switches on the PDP in the OFF position.

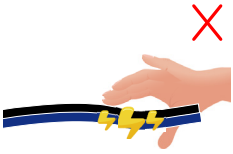
15.3 Power-on Test

1. Measure the voltage between the -48 V and the 0 V connectors in the external power input area of the PDP. The normal value range is -40 V to -57 V.
2. Place all the branch output switches on the PDP in the ON position.
3. Confirm that the equipment has no abnormal sound or smell.
4. Check whether the indicator LEDs on the equipment are in normal working status.
   ① Check whether the ACT indicator LED on the equipment is illuminated, which indicates normal power-on.
   ② Check whether the alarm indicator LED on the equipment is extinguished, which indicates no alarm.

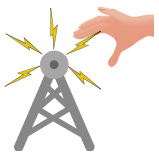
Instruction

The power-off procedures for the AN6001-G16 are reverse to those of power-on.

Do not install / operate the equipment or lay cables during a lightning storm.

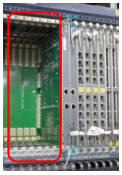


Do not connect or remove the power cable while it is powered.

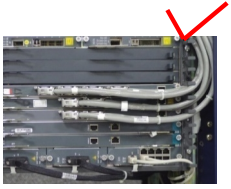


Direct or indirect contact (through damp objects) with high voltage power supply can cause bodily harm and should be avoided.

Promptly report any conditions that may lead to security problems.



The vacant slots should be covered with dummy panels to prevent foreign objects from entering the equipment and ensure normal air circulation.

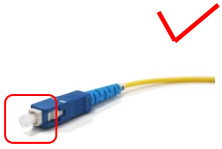


The power cables should be separated from signal cables.

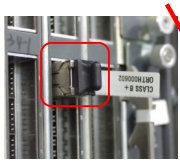
Do not bind optical fibers with cable ties. Use the black fiber binding strap instead.

Tidy up big bundles of cables, and avoid crossing or twisting them whenever possible.

When plugging / unplugging a card, exercise care and align it with the slide rails.



Put an anti-dust cap on an unused optical fiber.



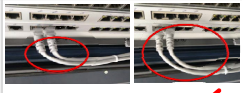
Put an anti-dust cap on an unused optical module.

Do not twist, bend, stretch or squeeze optical fibers during installation. The bending radius of the optical fibers should be no smaller than 30 mm.

Install rat guards at the top and bottom of the cabinet or fasten the mouseproof hop-pockets after connection of the cables is completed.

Keep the cabinet door closed in daily operations.

Do not place the labels between two cards, which may affect the electrical conductivity between the cards.



Reserve proper margins between cable connectors and the first binding points, so that the cables can be easily plugged or unplugged and stress will not be produced at the connecting points.