RRU3908 V1
V100R003

Installation Guide

Issue: 02
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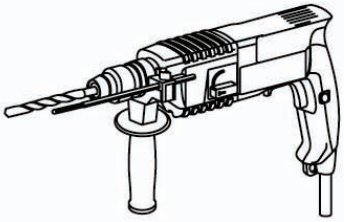
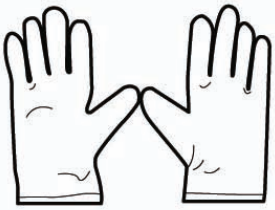
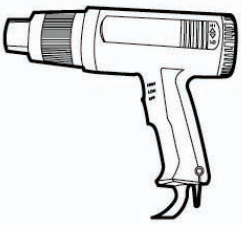
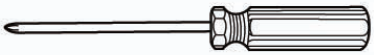
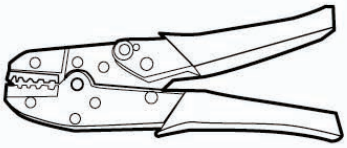
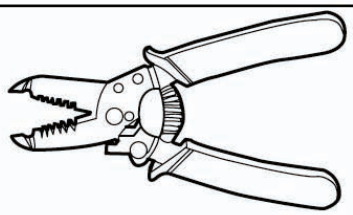
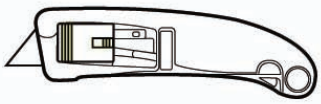
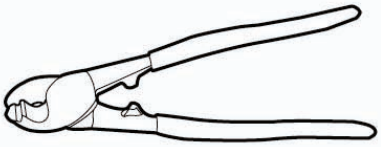
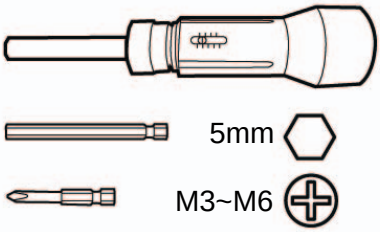
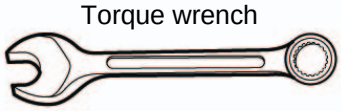
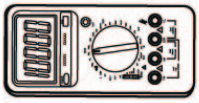
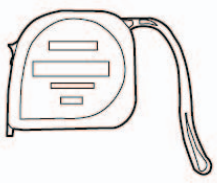
HUAWEI TECHNOLOGIES Co., Ltd.

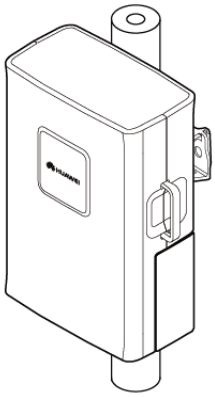
Contents

Installation Tools

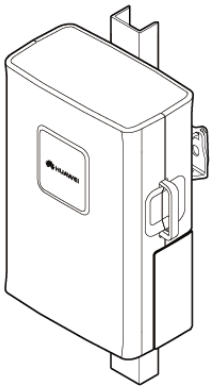
 Hammer drill (with bit 14)	 ESD gloves	 Vacuum cleaner
 Heat gun	 Phillips screwdriver (M3~M6)	 Flat-head screwdriver (M3~M6)
 Rubber hammer	 Crimping pliers	 Wire stripper
 Guarded blade utility knife	 Wire cutter	 Adjustable wrench (with the diameter of at least 32 mm)
 Level	 Torque screwdriver	 Torque wrench  Combination wrench (21mm~21mm) for pole installation (17mm~17mm) for wall installation
 Multimeter	 Marking pen (with the diameter of no more than 10 mm)	 Measuring tape

Installing the DC RRU

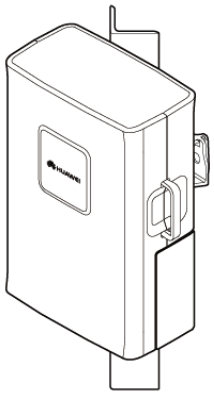
a Installation Modes



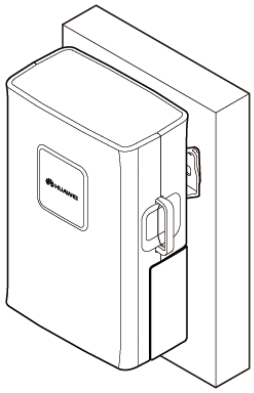
On a metal pole



On a U-steel

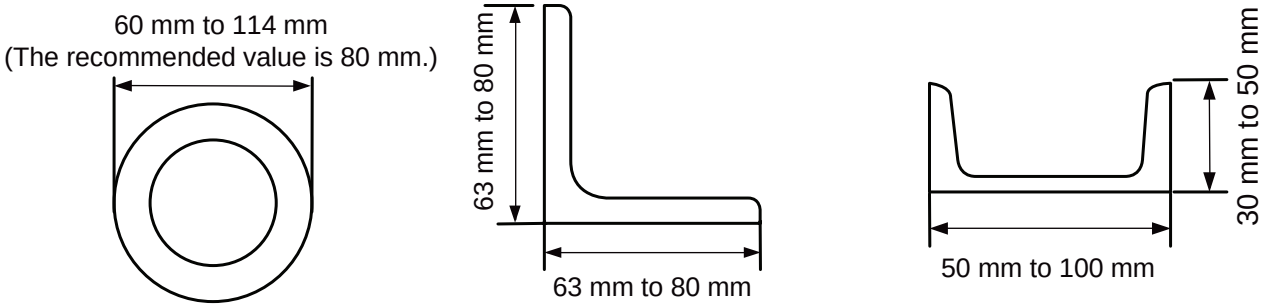


On an angle steel

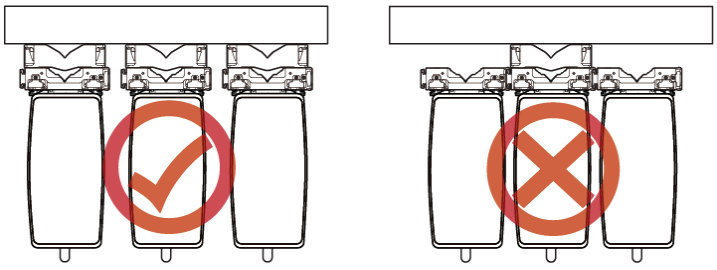


On a wall

The following figure describes the specifications for the metal pole, angle steel, and U-steel where the RRU is installed.

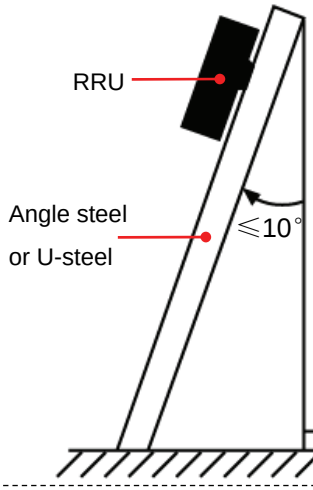


Metal pole | Angle steel | U-steel



WARNING

The brackets cannot be combined when the RRUs are installed on the wall.



The angle between the vertical and the angle steel or U-steel or angle steel where the RRU is installed must be less than or equal to 10 degree.

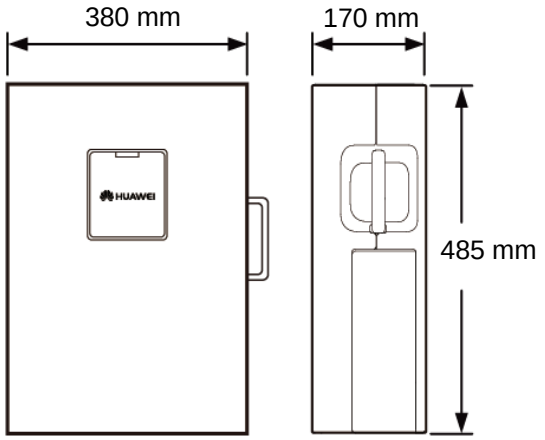
WARNING

- A maximum of two RRUs can be installed on a metal pole with the diameter of 60 mm to 76 mm, and the RRUs must be installed on the back.
- Only one RRU can be installed on a U-steel or an angle steel at the back.
- When installed on a tower, only one RRU can be installed in standard mode or reverse mode, and two RRUs cannot be installed in back-to-back mode, or the brackets cannot be combined when the RRUs are installed on the tower.
- A single DC RRU can be bound and lifted to a tower. For details, see page 34 "Binding the RRU and Installation Components."

Installing the DC RRU

b Dimensions and Installation Clearance

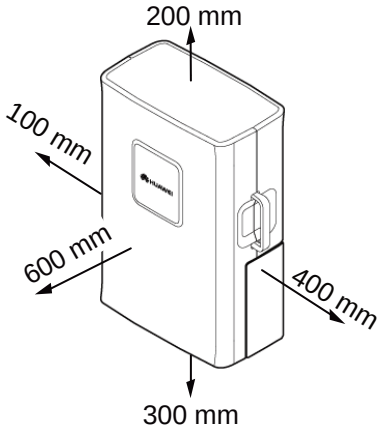
RRU Dimensions



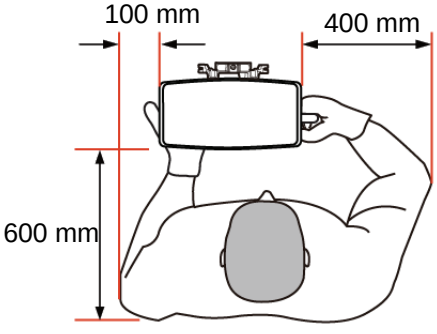
Minimum Clearance for a Single RRU

NOTE

The minimum installation clearance meets the requirements of the equipment for normal running and heat dissipation, but does not meet the requirements for Operation and Maintenance (OM) such as checking the status of the LEDs and opening the maintenance cavity. When the installation space is restricted, the minimum installation clearance can be adopted.



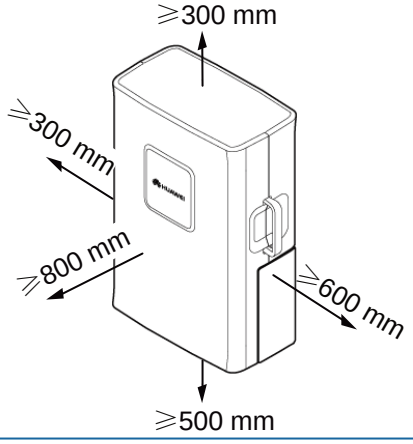
Top view



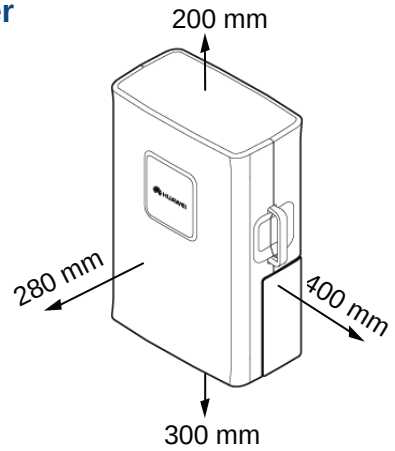
Recommended Clearance for a Single RRU

NOTE

The recommended installation clearance meets the requirements of the equipment for normal running and OM. When the installation space is sufficient, the recommended installation clearance can be adopted.

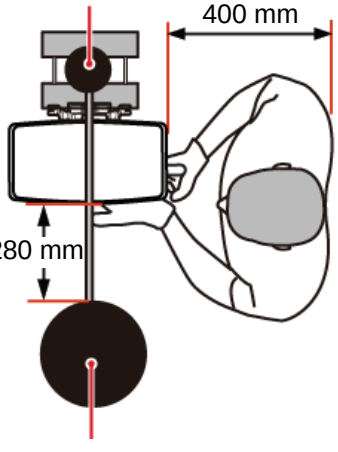


Minimum clearance for the RRU installed on a tower

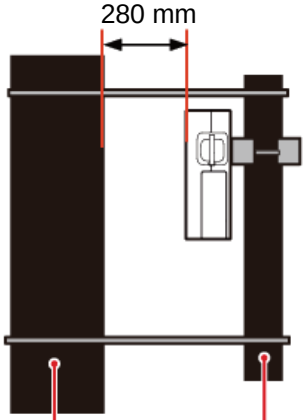


Top view

Auxiliary metal pole



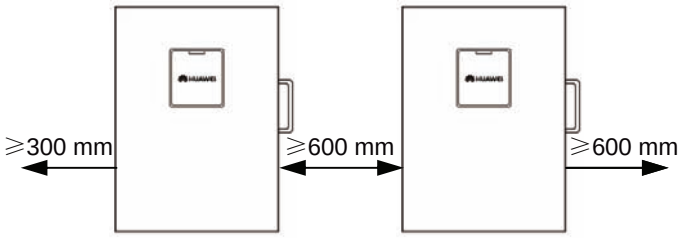
Side view



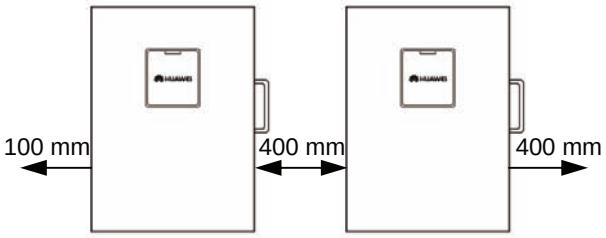
Installing the DC RRU

b Dimensions and Installation Clearance

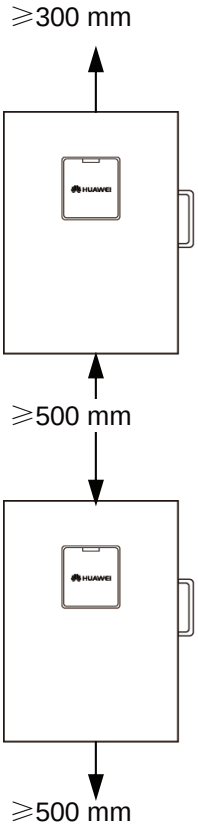
Recommended Horizontal Spacing for Two RRUs Installed in Parallel



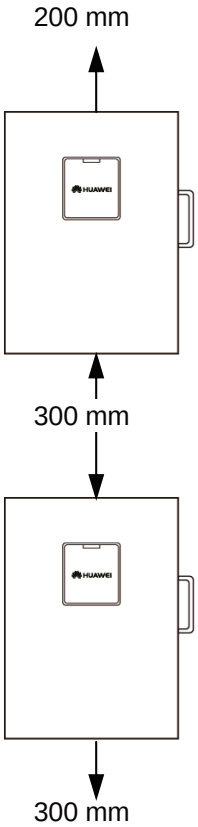
Minimum Horizontal Spacing for Two RRUs Installed in Parallel



Recommended Vertical Spacing for Two RRUs Installed in Parallel

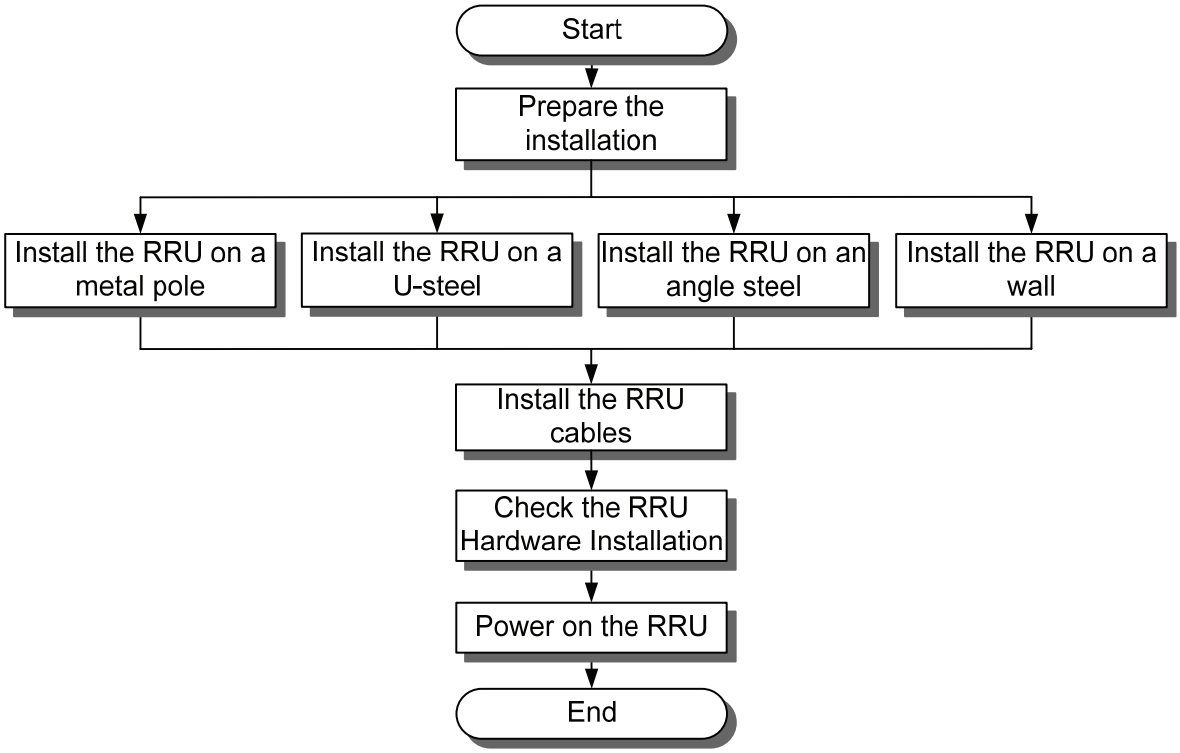


Minimum Vertical Spacing for Two RRUs Installed in Parallel

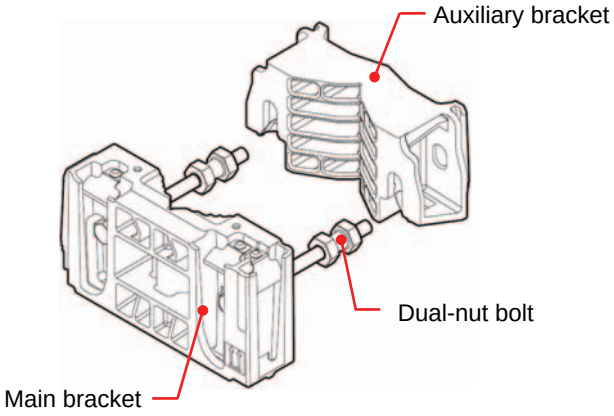


Installing the DC RRU

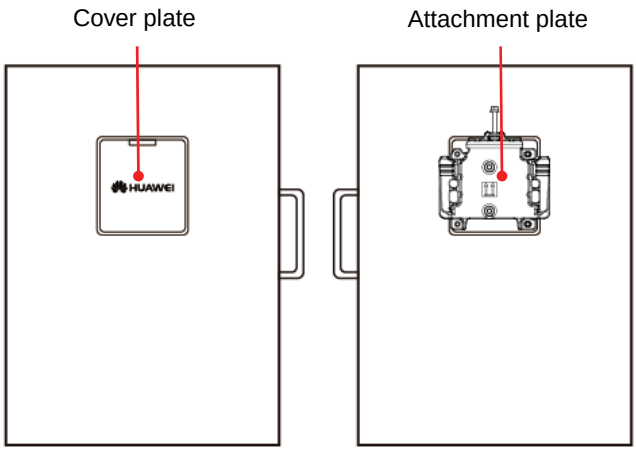
c Installation Procedure



d Preparing for the Installation



Main and auxiliary brackets for the RRU



Front Back

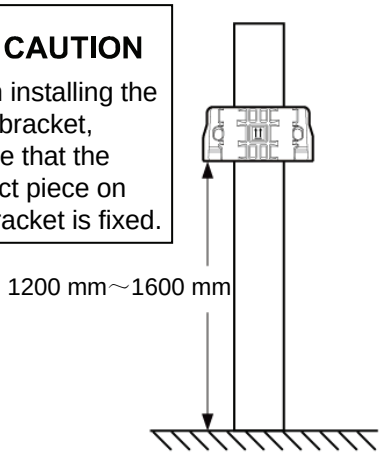
Installing the DC RRU

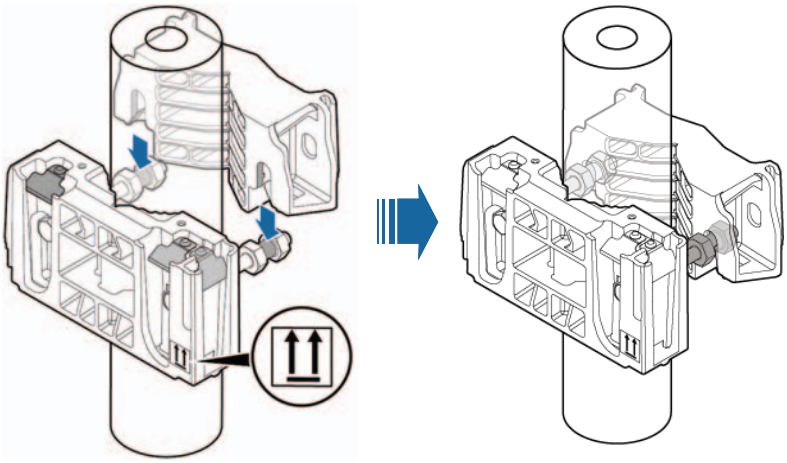
e Installing a Single RRU on a Metal Pole

1. Install the main bracket.

CAUTION

When installing the main bracket, ensure that the contact piece on the bracket is fixed.

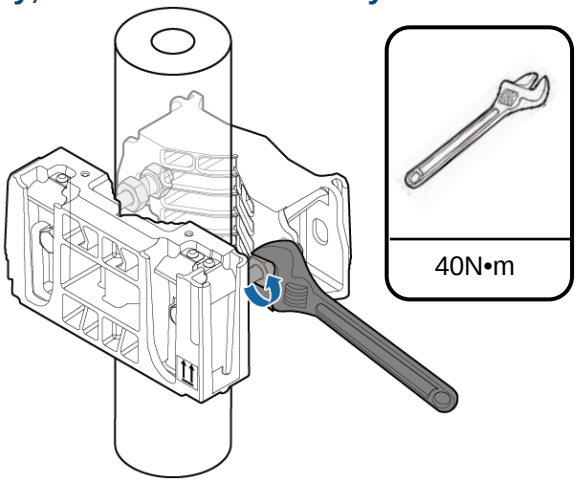




TIP

You may fit one end of the auxiliary bracket on one dual-nut bolt assembly and then the other end on the other dual-nut bolt assembly during the installation.

2. Use an adjustable wrench to tighten the nut until the fastening torque is 40 N·m. In this way, the main and auxiliary brackets are secured on the pole.



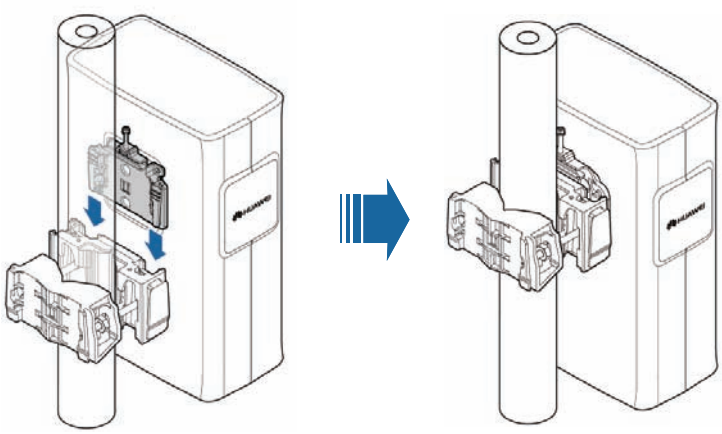
CAUTION

Fasten the two dual-nut bolt assemblies alternatively. After the brackets are secure, use a tape to measure the spacing between the main bracket and the auxiliary bracket at the two sides and ensure that the spacing is the same.

3. Install the RRU on the main bracket. When you hear click sound, you can infer that the RRU is in position.

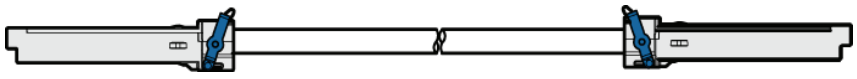
CAUTION

- The weight-bearing capacity of the RF ports at the bottom of the RRU is low. Do not place the RRU at its bottom.
- During the operation, place the foam pad or cardboard under the RRU to prevent any damage to the housing of the RRU.



Installing the DC RRU

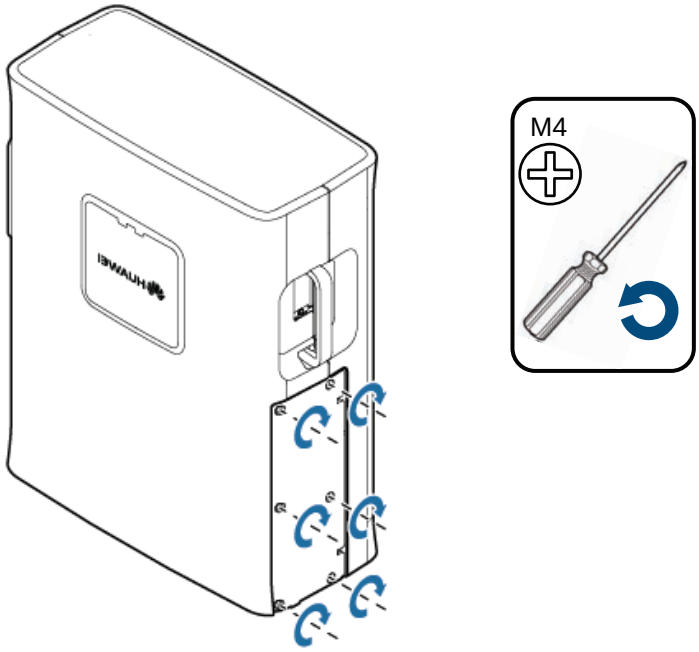
Cable List

Cable	Connector Type	Connected to···
AISG multi-wire cable between the RRU and the RCU	Waterproof DB9 connector	Port labeled RET on the RRU
	Standard AISG female connector	Standard AISG male connector of the AISG extension cable or RCU
		
AISG extended cable between the RRU and the RCU	Standard AISG male connector	Standard AISG female connector of the AISG multi-wire cable
	Standard AISG female connector	Standard AISG male connector of the RCU
		
RF cable between RRUs	2W2 connector	Port labeled RX_IN/OUT on the upper-level RRU
	2W2 connector	Port labeled RX_IN/OUT on the lower-level RRU
		
DC RRU alarm cable	DB15 male connector	Port labeled EXT_ALM in the RRU cabling cavity
	Eight cord end terminals	External alarm devices
		
SFP high-speed cable for cascading	SFP200 male connector	the CPRI_E port on the upper-level RRU
	SFP200 male connector	the CPRI_W port on the lower-level RRU
		

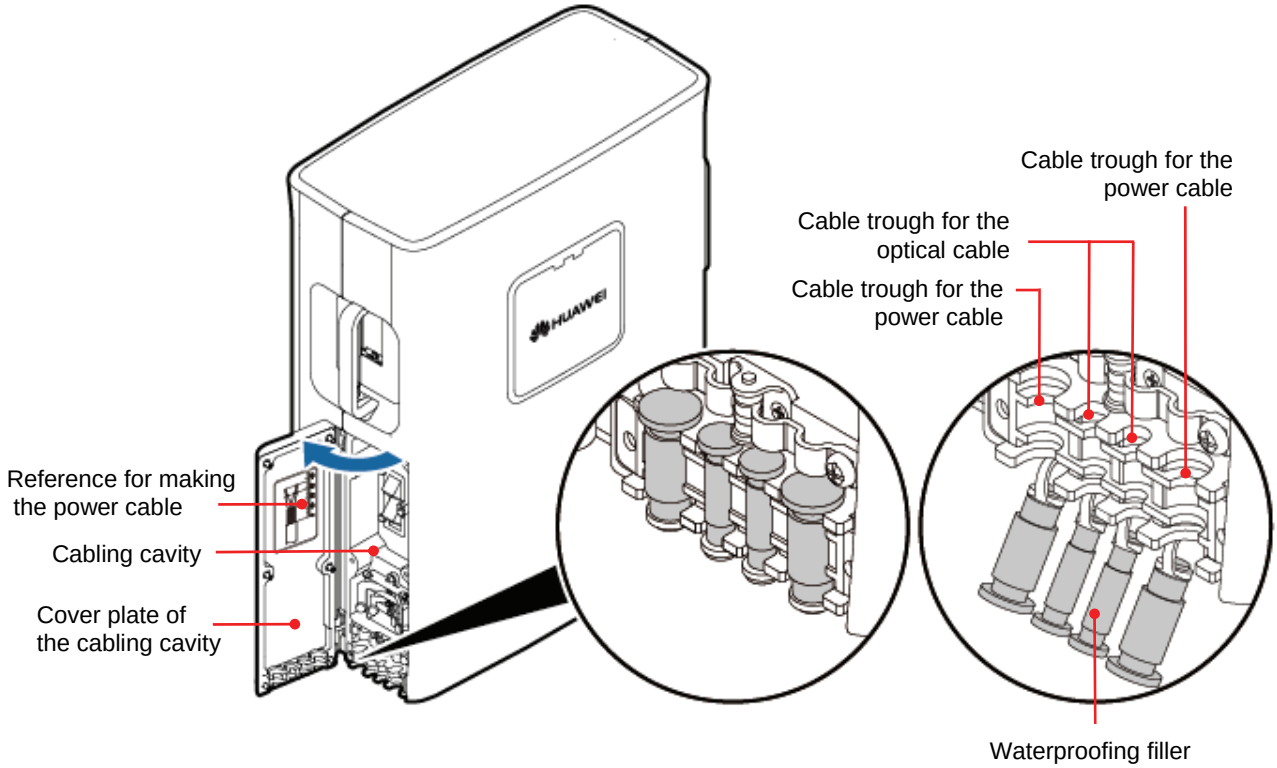
Installing the DC RRU

m Installing the RRU Cables

1. Opening the Cover Plate of the RRU Cabling Cavity



2. The Cabling Cavity of the RRU

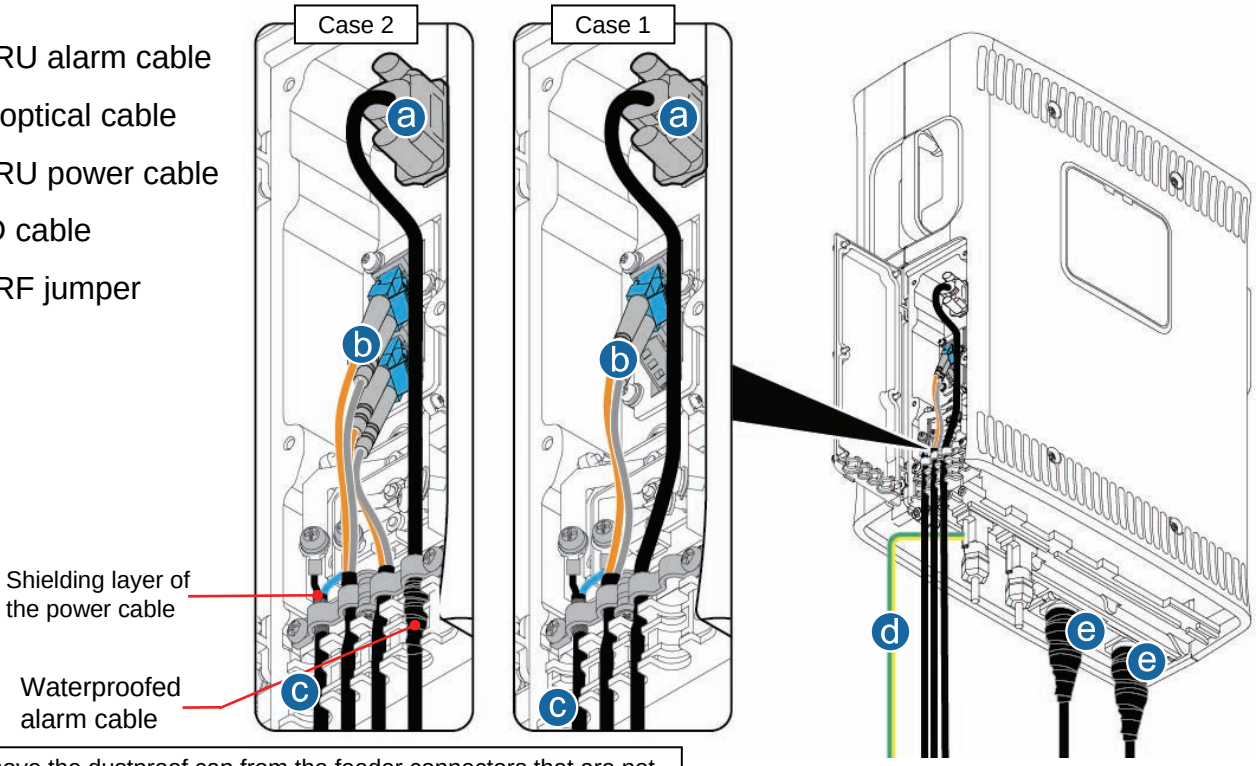


Installing the DC RRU

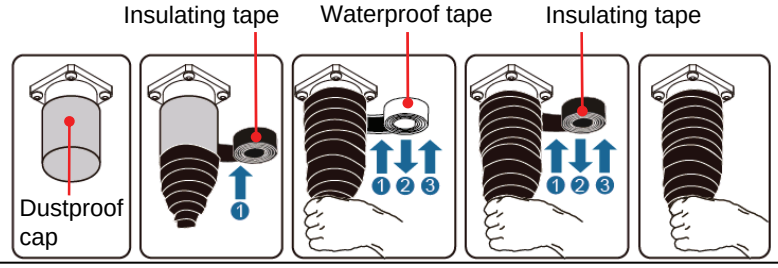
n Installing the RRU Cables

3. Cable Connections of RRU

- a DC RRU alarm cable
- b CPRI optical cable
- c DC RRU power cable
- d PGND cable
- e RRU RF jumper



Do not remove the dustproof cap from the feeder connectors that are not in use. In addition, protection measures against damp, dust, and salt mist must be taken. If the RRU is installed outdoors, you also need to wrap the joint with waterproof tape, as shown in the following figures.



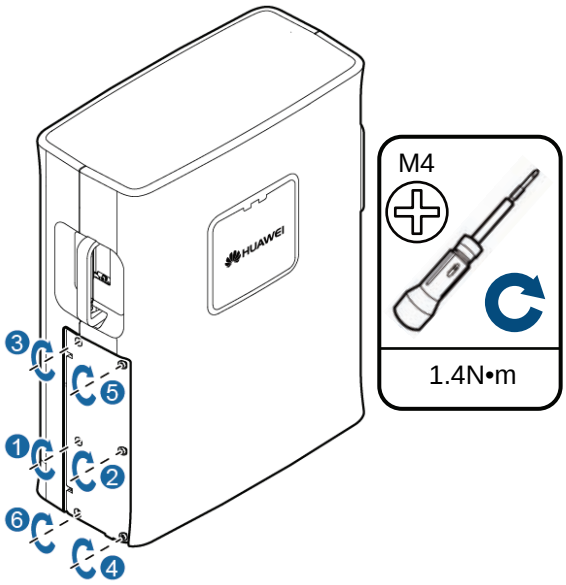
CAUTION

- Press the strap on the exposed shielding layer of the power cable tightly. Ensure that the lower edge of the exposed shield layer does not exceed the position shown in the figure.
- The alarm cable is preferably led out of the RRU from the narrower cable trough in the middle of the cabling cavity. If the cable trough is used by the CPRI optical cable, the alarm cable is led from the wider cable trough near the middle one. In this case, the alarm cable must be wrapped with 10 to 17 layers of waterproof tape so that the diameter of the cable reaches 10 mm to 12 mm.
- To avoid sharp bending, the optical cable must be pressed by the strap next to the power cable during the optical cable installation.
- Waterproof fillers should be installed in the unused cable trough.

NOTE

- The tape is wrapped spirally upwards, downwards, and then upwards again in three layers. For every two adjacent tape layers, the tape on the upper layer overlaps about half the width of the tape on the lower layer.
- For details on how to add the OT terminals to the DC RRU power cable, see page 36.

4. Closing the Cover Plate of the RRU Cabling Cavity.



CAUTION

- The screw on the cover plate is tightened until the fastening torque is 14 kgf•cm.
- The screws on the cover plate are tightened in the order shown in the preceding figure.

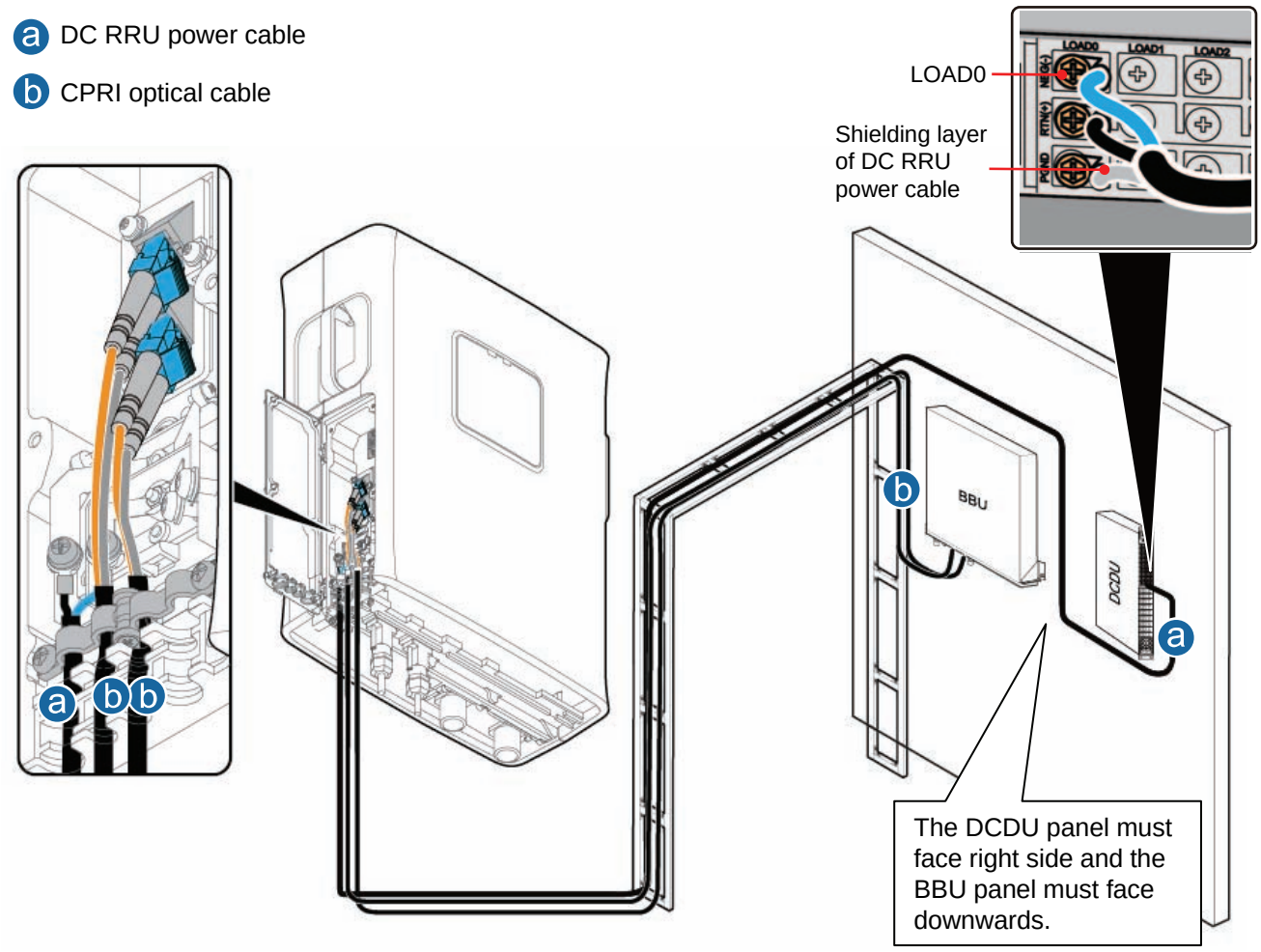
Installing the DC RRU

0 RRU Cable Installation Scenarios

RRU+Wall-Mounted BBU

ⓐ DC RRU power cable

ⓑ CPRI optical cable



NOTE

- When connecting the DC RRU power cable to the DCDU-03B, you must add an OT terminal to the shielding layer. Then, fix the OT terminal to the corresponding PGND terminal of the DCDU-03B. For details on how to add an OT terminal, see page 37.
- The DC RRU power cable is connected to one of the LOAD0 to LOAD5 terminals of the DCDU-03B.

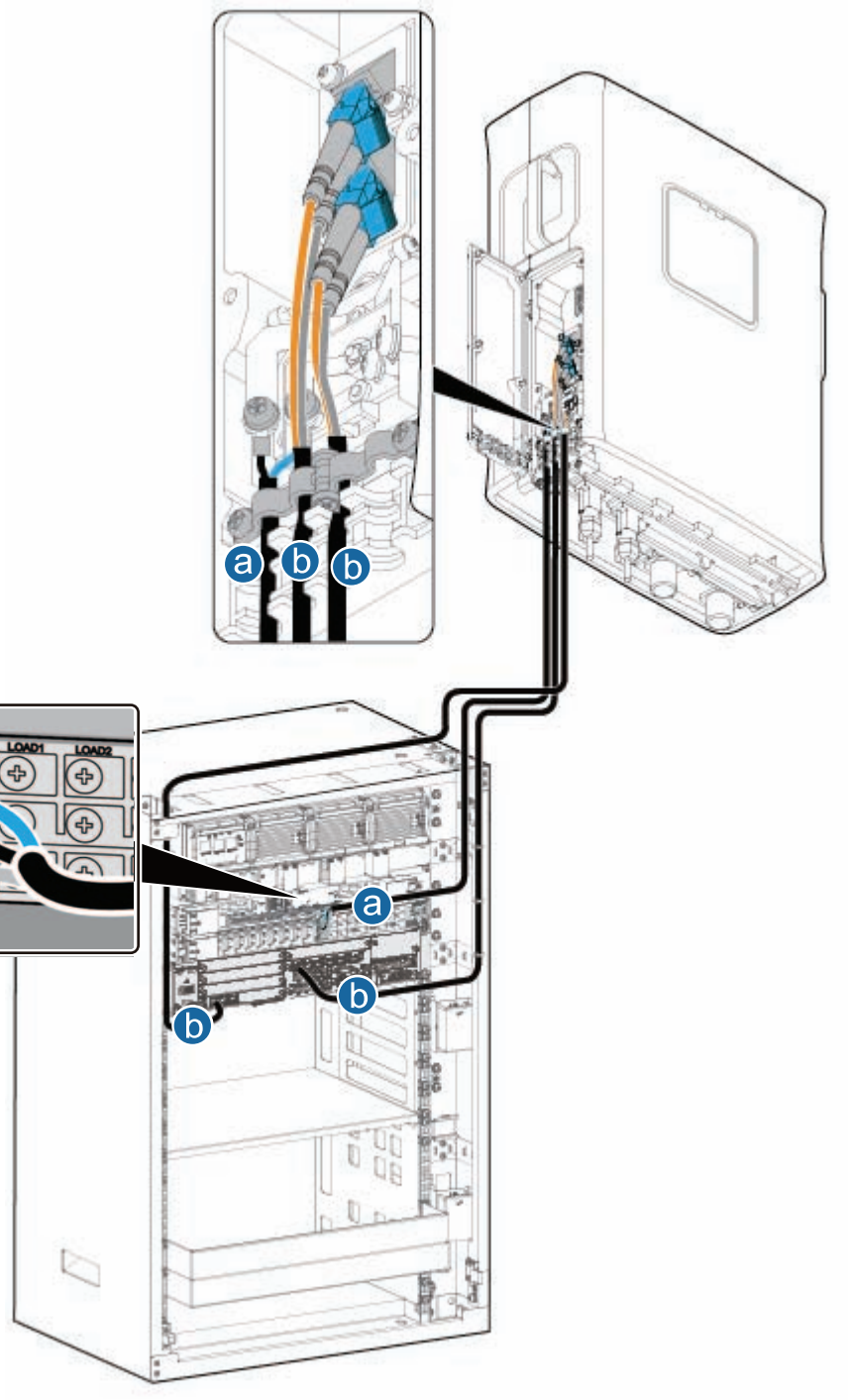
Installing the DC RRU

0 RRU Cable Installation Scenarios

RRU+PS4890

ⓐ DC RRU power cable

ⓑ CPRI optical cable



NOTE

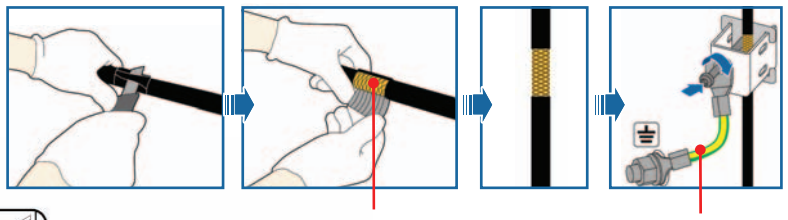
- When connecting the DC RRU power cable to the DCDU-03B, you must add an OT terminal to the shielding layer. Then, fix the OT terminal to the corresponding PGND terminal of the DCDU-03B. For details on how to add an OT terminal, see page 37.
- The DC RRU power cable is connected to one of the LOAD0 to LOAD5 terminals of the DCDU-03B.

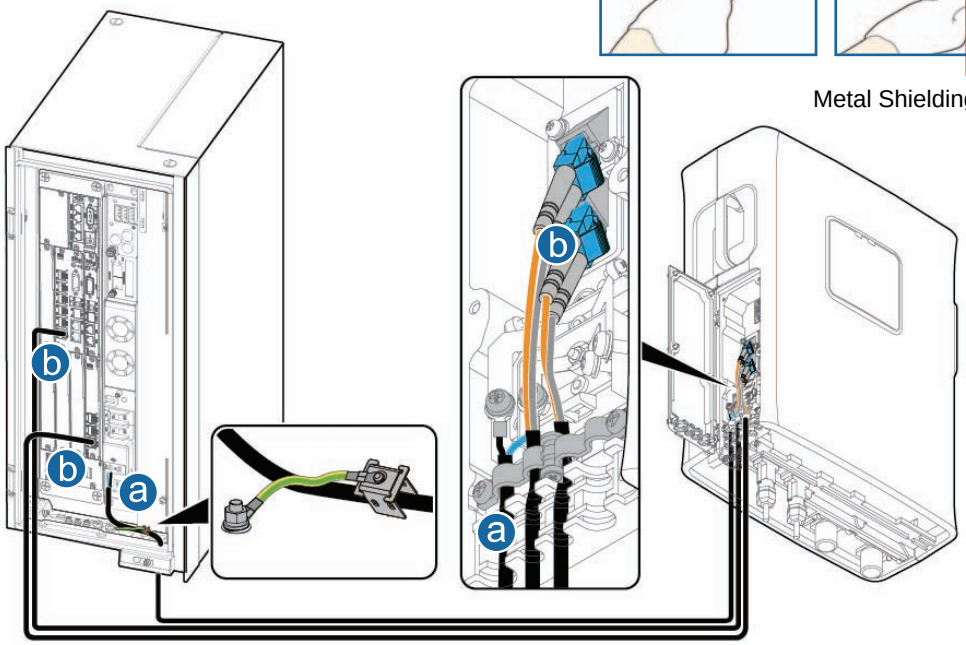
Installing the DC RRU

o RRU Cable Installation Scenarios

220 V AC input (4815 installed in the OMB cabinet).

Grounding the shielding layer of the power cable:





NOTE

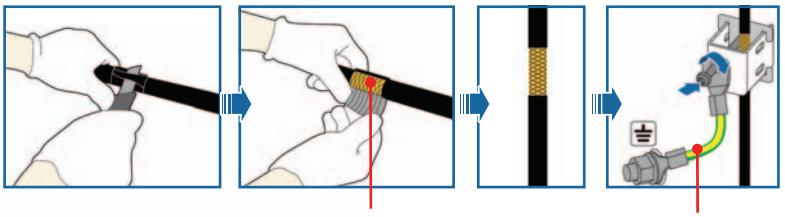
The DC RRU power cable is connected to terminals of the 4815 power system for RRU.

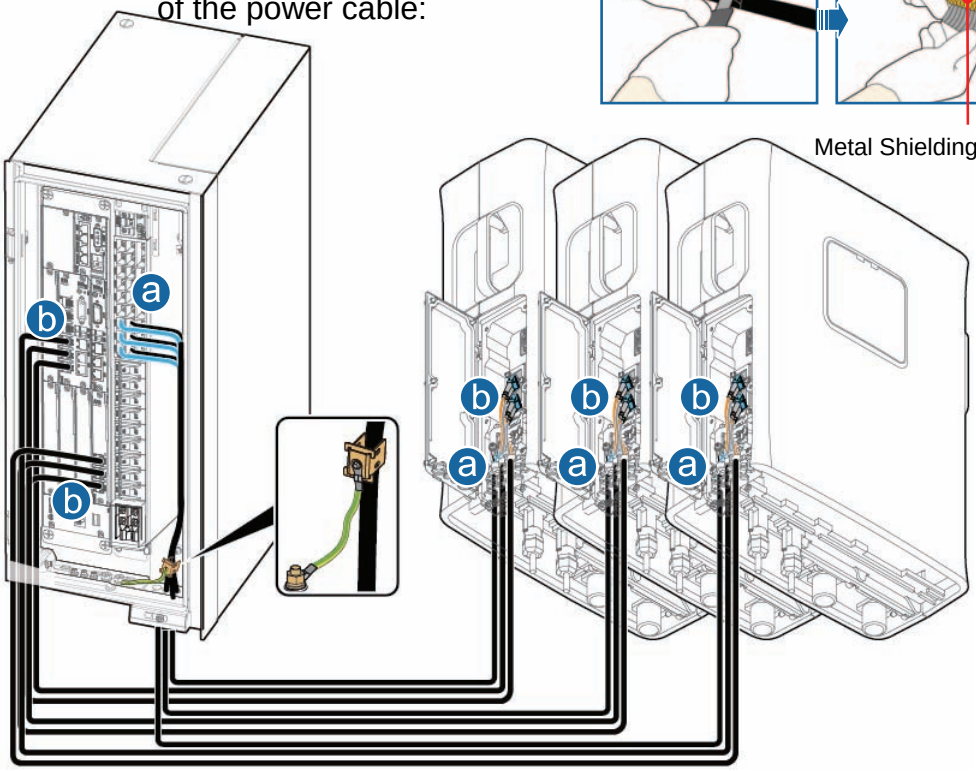
a DC RRU power cable

b CPRI optical cable

–48 V DC input (DCDU-03C installed in the OMB cabinet).

Grounding the shielding layer of the power cable:





NOTE

The DC RRU power cable is connected to one of the LOAD0 to LOAD5 terminals of the DCDU-03B.

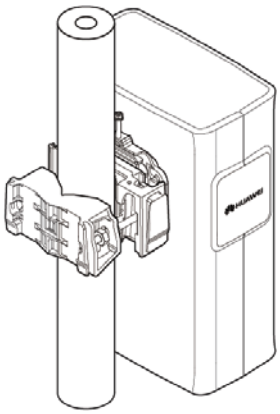
a DC RRU power cable

b CPRI optical cable

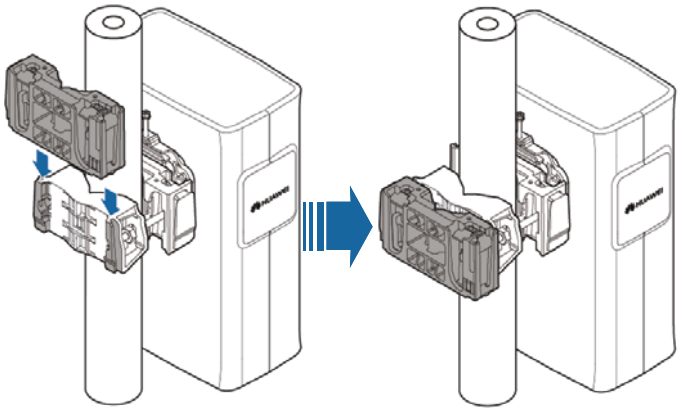
Installing the DC RRU

f Installing Two RRUs Back-To-Back on a Metal Pole

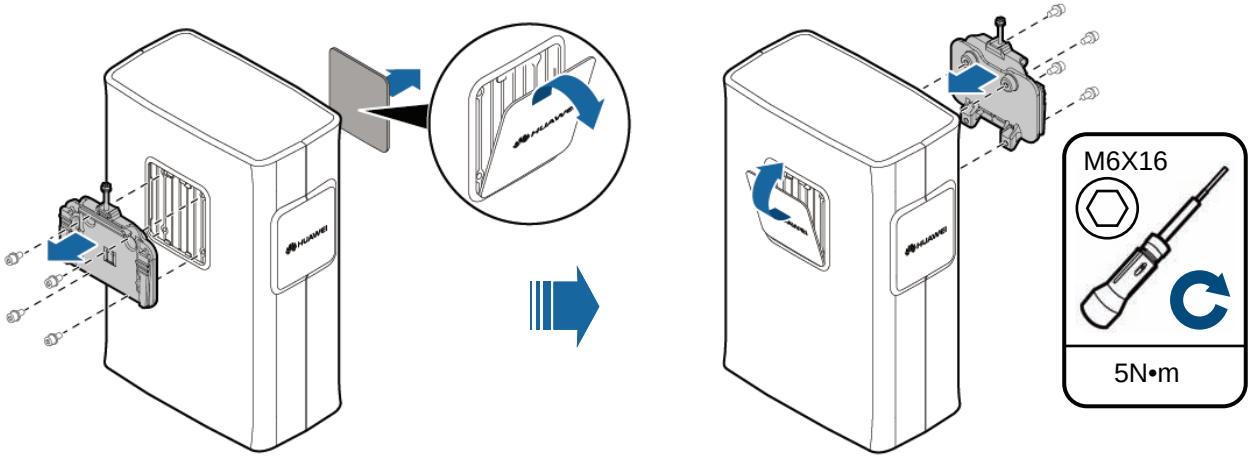
1. Install an RRU. For details, see page 6 Installing a Single RRU on a Metal Pole.



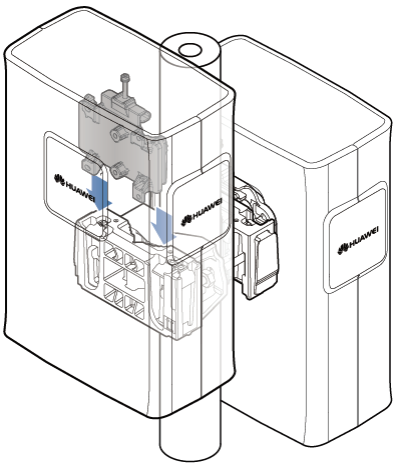
2. Install the main fixture for another RRU.



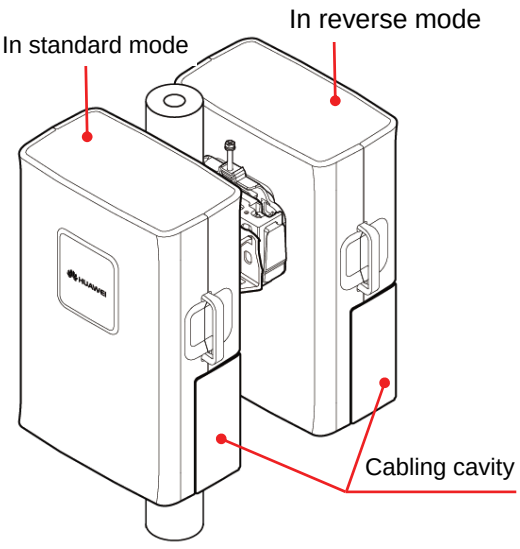
3. Reinstall the attachment plate and cover plate on the second RRU by interchanging their positions.



4. Install the second RRU on the main bracket.

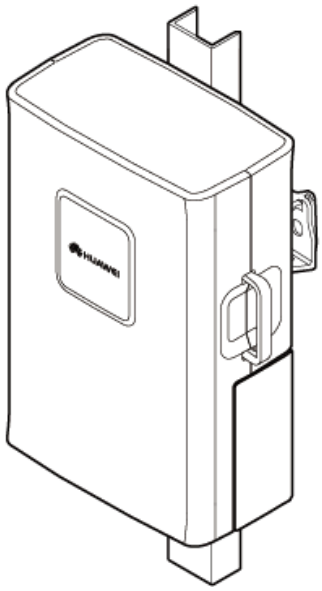


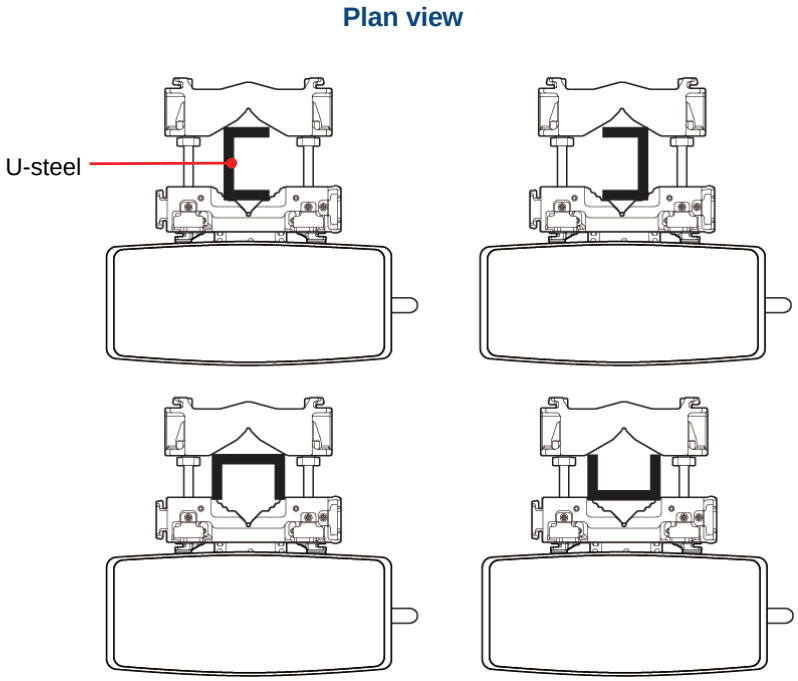
CAUTION
Ensure that the cabling cavities of the two RRUs face the same direction when installing the RRUs.



Installing the DC RRU

g Installing the RRU on a U-Steel

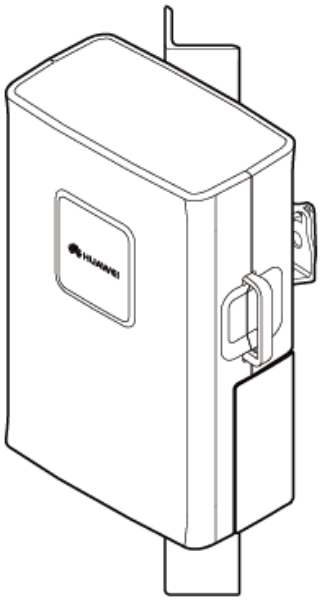


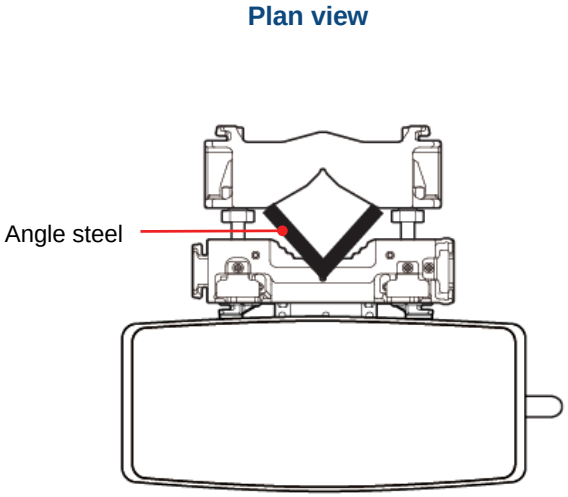


CAUTION

- The procedure for installing the RRU on a U-steel is the same as that on a metal pole.
- Only one RRU can be installed on a U-steel.

h Installing the RRU on an Angle Steel





CAUTION

- The procedure for installing the RRU on an angle steel is the same as that on a metal pole.
- Only one RRU can be installed on an angle steel.

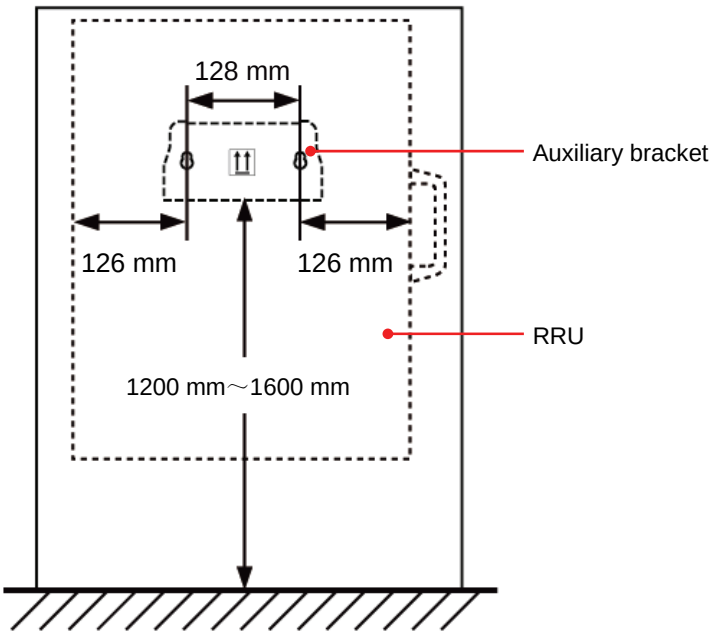
Installing the DC RRU

i Installing the RRU on a Wall

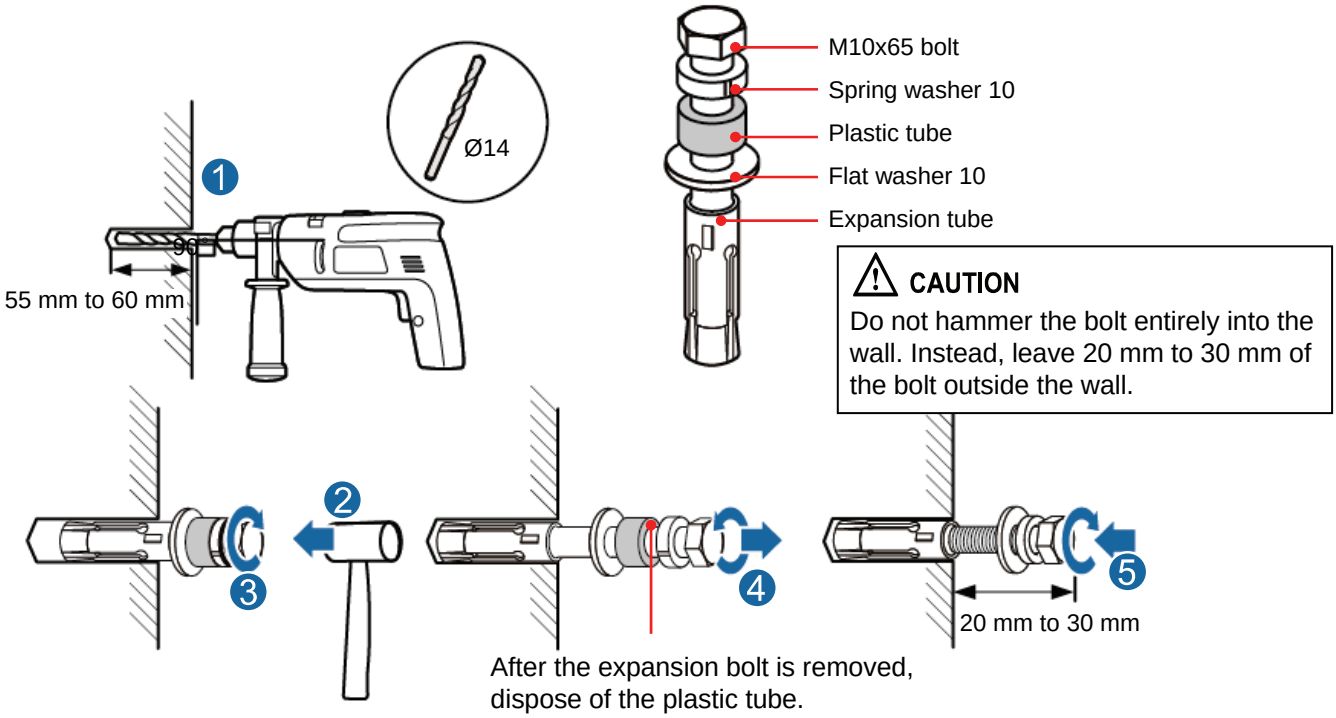
1. Place the auxiliary fixture on the wall at the installation position and then mark the anchor points by using a marking pen.

NOTE

- It is recommended that the auxiliary bracket be 1,200 mm to 1,600 mm above the ground.
- The RRUs cannot installed on a wall in centralized mode. Therefore, expansion bolt assemblies should be prepared for each RRU.



2. Drill holes at the anchor points and then install the expansion bolt assemblies.



CAUTION

Do not hammer the bolt entirely into the wall. Instead, leave 20 mm to 30 mm of the bolt outside the wall.

NOTE

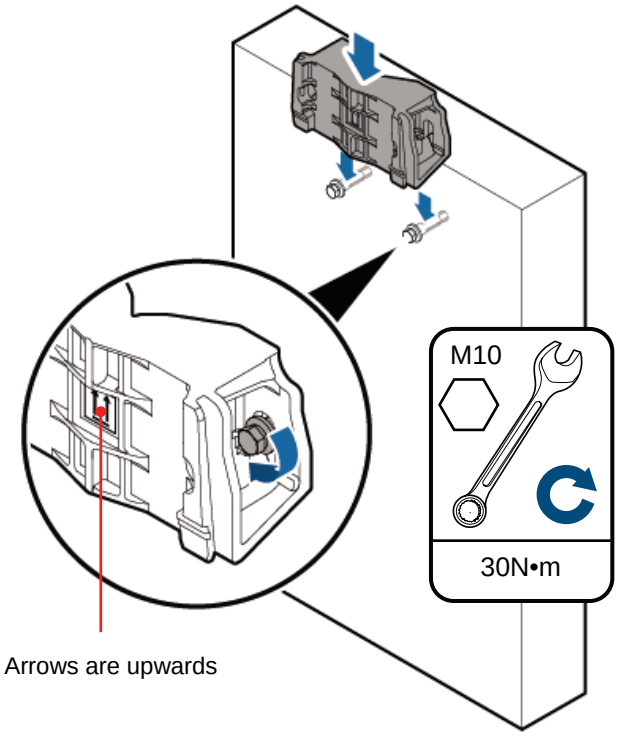
When the RRU is installed on a wall, the requirements are as follows:

- For one RRU, the wall has a weight-bearing capacity of 92 kg.
- The fastening torque of the expansion bolt reaches 30 N·m, the expansion bolt works properly, and no damages such as cracks are on the wall.

Installing the DC RRU

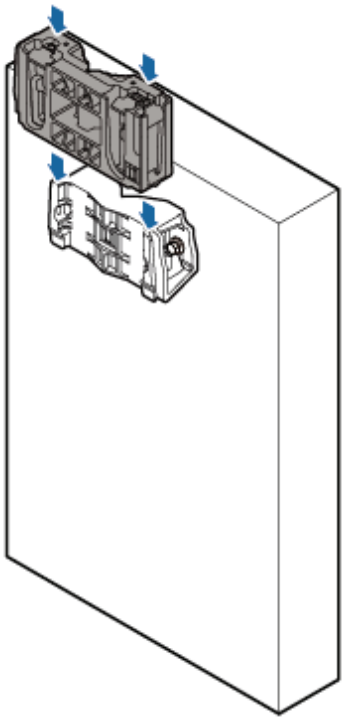
Installing the RRU on a Wall

3. Fit the auxiliary bracket on the expansion bolts downward, and then tighten the bolts by using a combination wrench 17 mm.

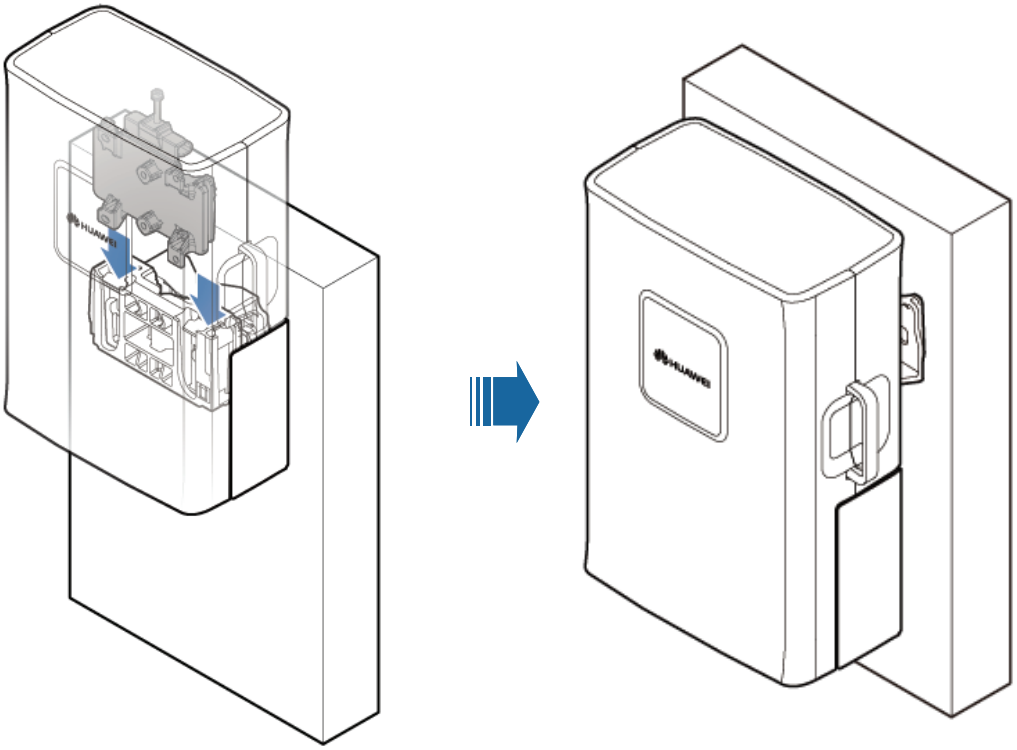


Arrows are upwards

4. Install the main bracket.

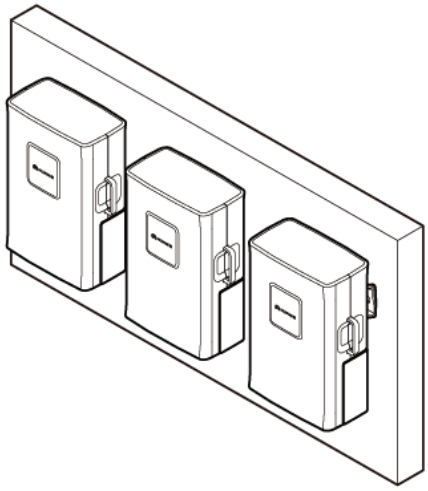


5. Install the RRU.

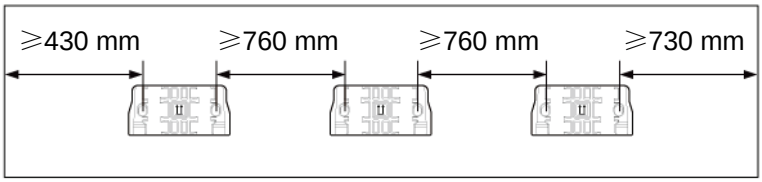


i Installing the RRU on a Wall

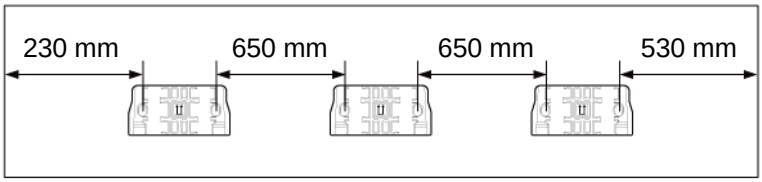
6. Install multiple RRUs.

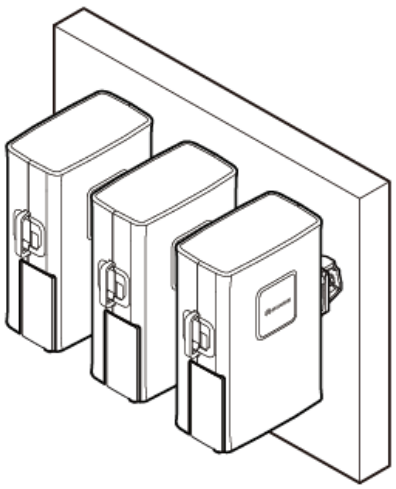


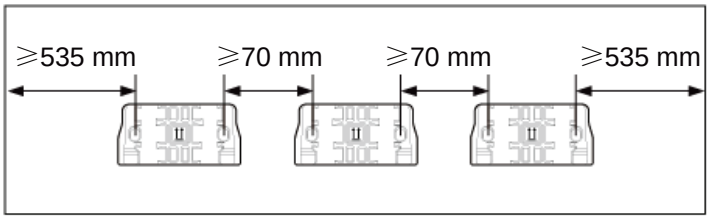
Recommended Clearance :



Minimum Clearance:



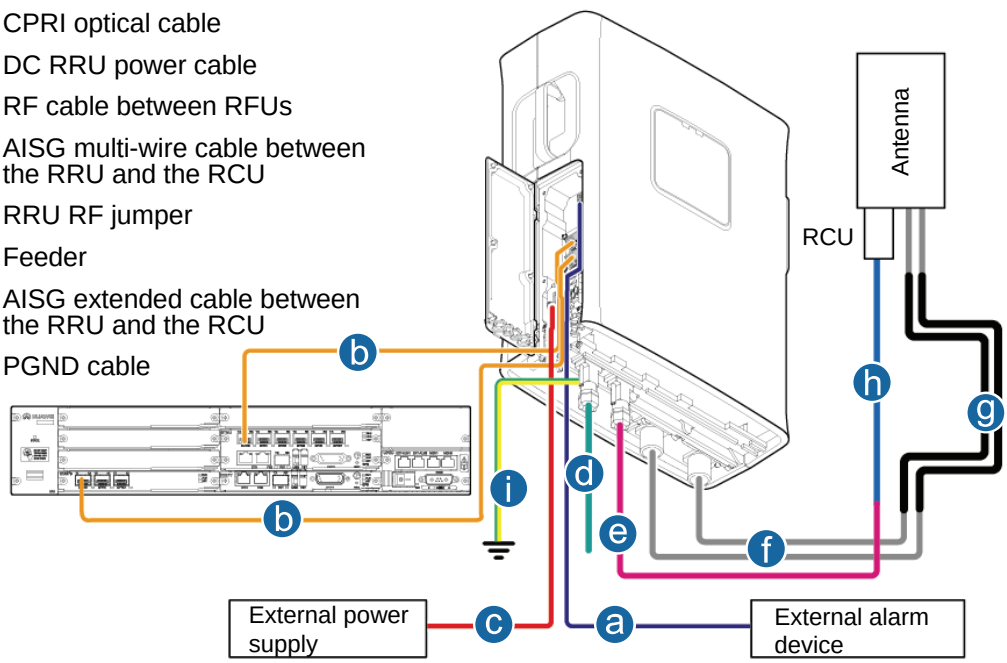




Installing the DC RRU

j Cable Connections of a Single RRU

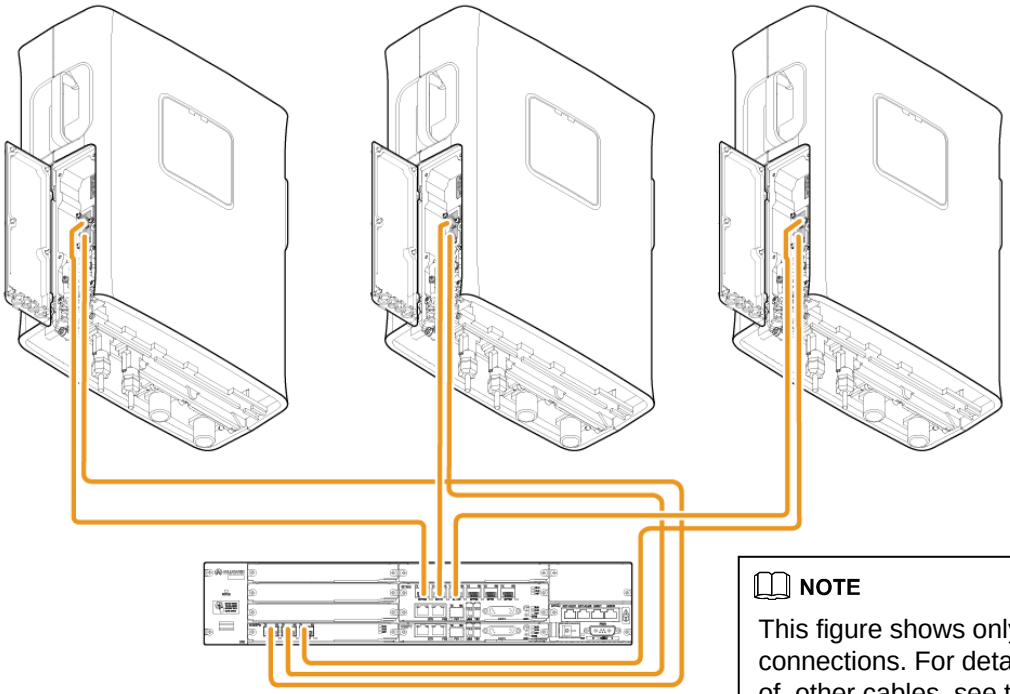
a DC RRU alarm cable
b CPRI optical cable
c DC RRU power cable
d RF cable between RFUs
e AISG multi-wire cable between the RRU and the RCU
f RRU RF jumper
g Feeder
h AISG extended cable between the RRU and the RCU
i PGND cable



Install the PGND cable
Install the RF jumper (RF cable between RFUs is optional)
Install the DC RRU power cable
Install the CPRI optical cable
Install the DC RRU alarm cable(optional)
Install the AISG multi-wire cable between the RRU and the RCU (optional)
Install the AISG multi-wire cable between the RRU and the RCU (optional)

CAUTION
When a dual-polarized antenna is shared by two RRUs in the same sector, the two RRUs are connected through an RF cable between RFUs. The connections of three RRUs in the same sector are not supported.

k Cable Connections of Multiple RRUs



NOTE
This figure shows only the CPRI optical cable connections. For details on the connections of other cables, see the cable connections for a single RRU.

Installing the DC RRU

Cable List

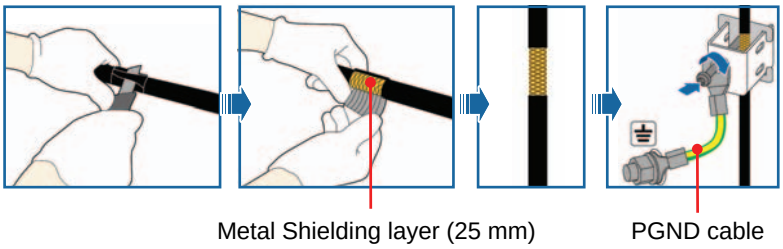
Cable	Connector Type	Connected to···
PGND cable (16 mm²)	OT terminal (M6)	Grounding bolt on the RRU
	OT terminal (M8)	Nearest grounding bar
		
RRU RF jumper	DIN male connector	Ports labeled ANT-A and ANT-B on the RRU
	DIN male connector	Feeder or antenna
		
DC RRU power cable (North American standard: 2AWG European standard: 4 mm²)	Two OT terminals (M4)	● North American standard: The OT terminal on the blue wire is connected to the NEG(-) port on the cabling cavity of the RRU. The OT terminal on the black wire is connected to the RTN(+) port on the cabling cavity of the RRU ● European standard: The OT terminal on the blue wire is connected to the NEG(-) port on the cabling cavity of the RRU. The OT terminal on the brown wire is connected to the RTN(+) port on the cabling cavity of the RRU
North American standard: European standard:	Bare wire	External power supply
	North American standard: 	
	European standard: 	
CPRI optical cable	DLC connector	Connect the fiber tails labeled 1A and 1B to the CPRI_W port on the RRU
	DLC connector	Connect the fiber tails labeled 2A and 2B to one of the CPRI0 to CPRI5 ports on the WBBP or GTMU
		

Installing the DC RRU

0 RRU Cable Installation Scenarios

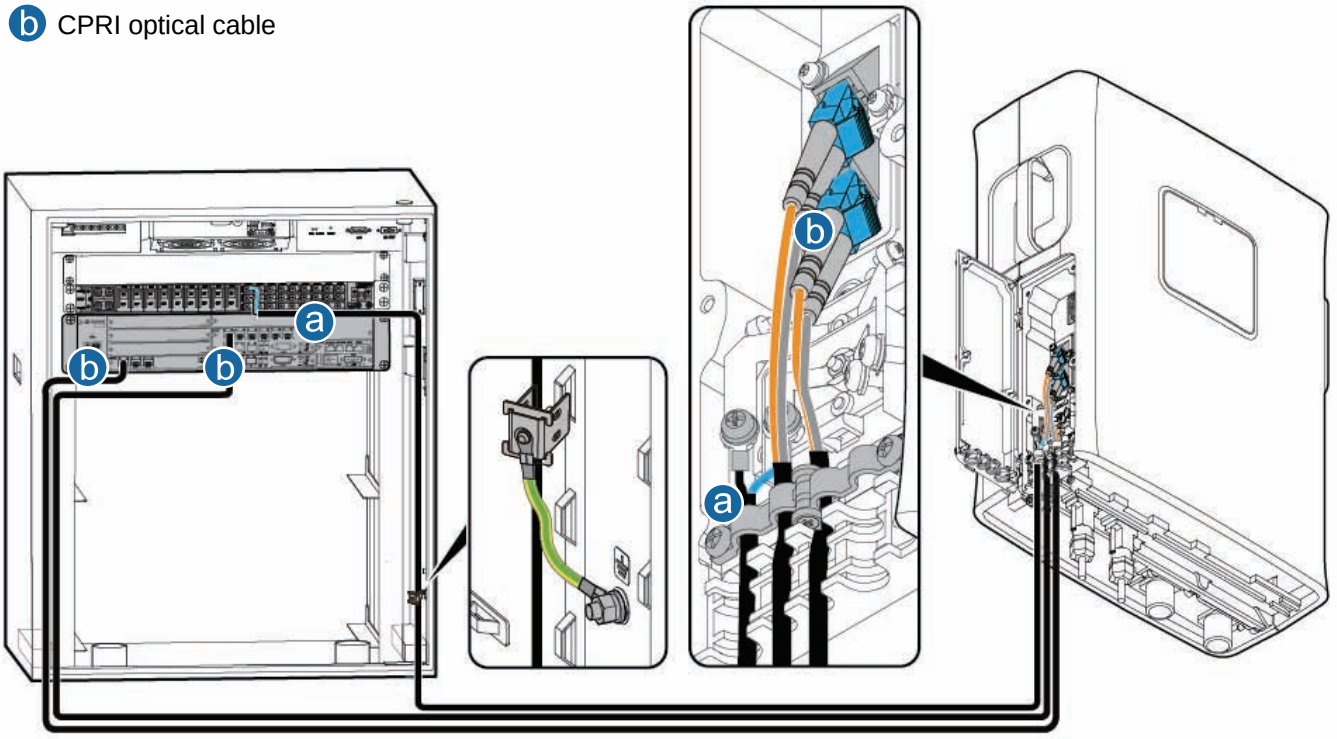
RRU+TMC

Grounding the shielding layer of the power cable:



a DC RRU power cable

b CPRI optical cable

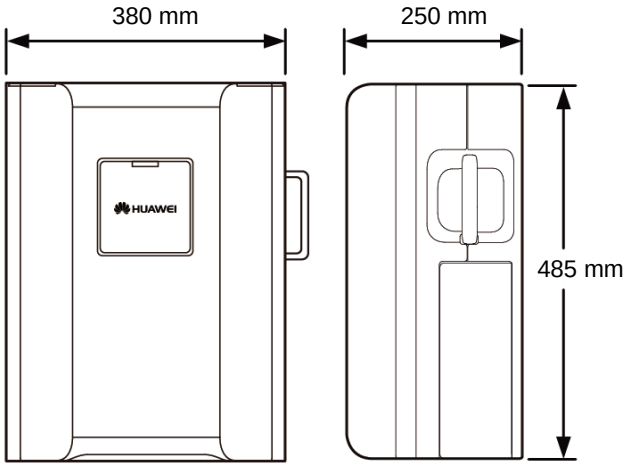


NOTE

- When connecting the DC RRU power cable to the DCDU-03B, you must add an OT terminal to the shielding layer. Then, fix the OT terminal to the corresponding PGND terminal of the DCDU-03B. For details on how to add an OT terminal, see page 37.
- The DC RRU power cable is connected to one of the LOAD0 to LOAD5 terminals of the DCDU-03B.
- Three power cables can be led through each ground clip.

Installing the AC RRU

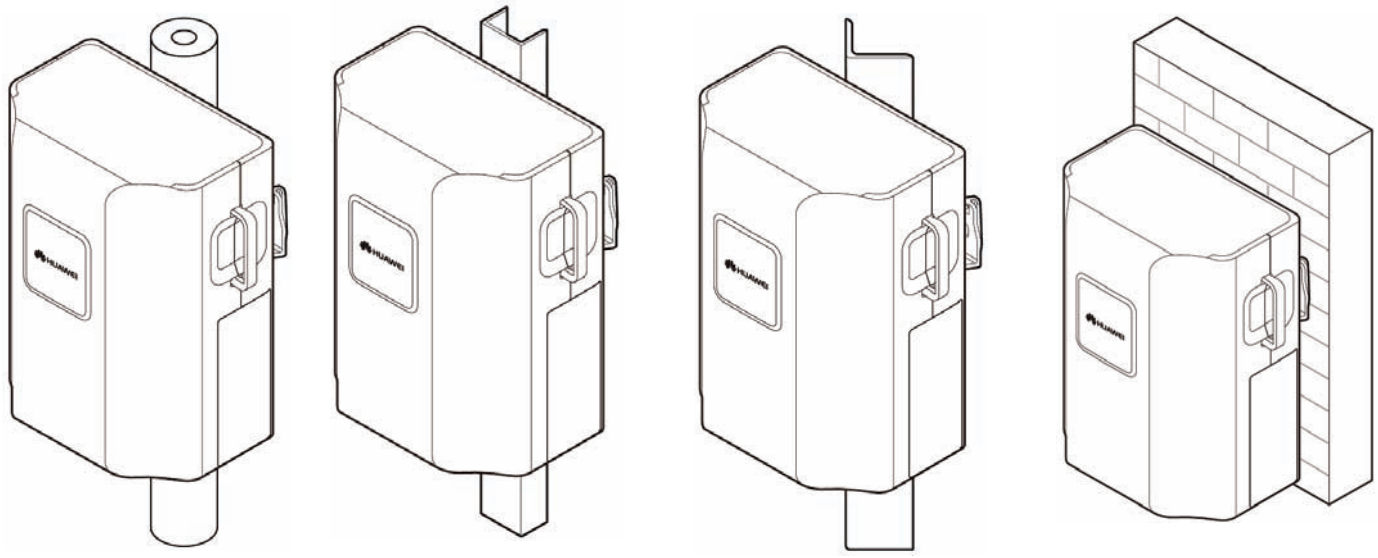
a Space Requirements



NOTE

The recommended/minimal clearance for the AC RRU/clearance for Two Combined RRUs is the same as that for the DC RRU. For details, see page 4 and page 5.

b Installation Modes



On a metal pole | On a U-steel | On an angle steel | On a wall

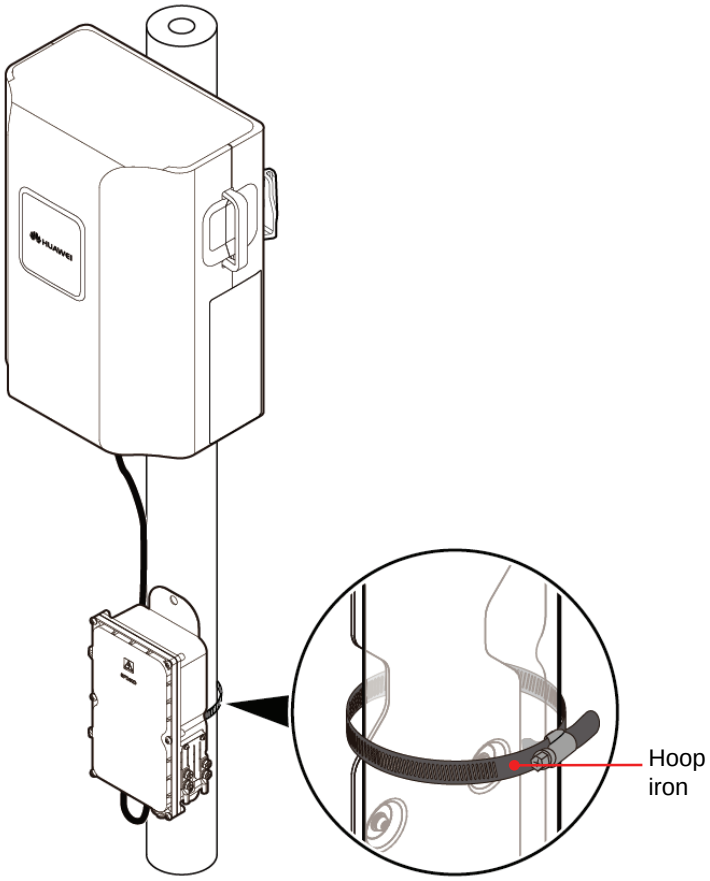
NOTE

The AC RRU cannot be installed at the side. When it is installed in other modes, the procedure is the same as that of the DC RRU.
For details, see page 6.

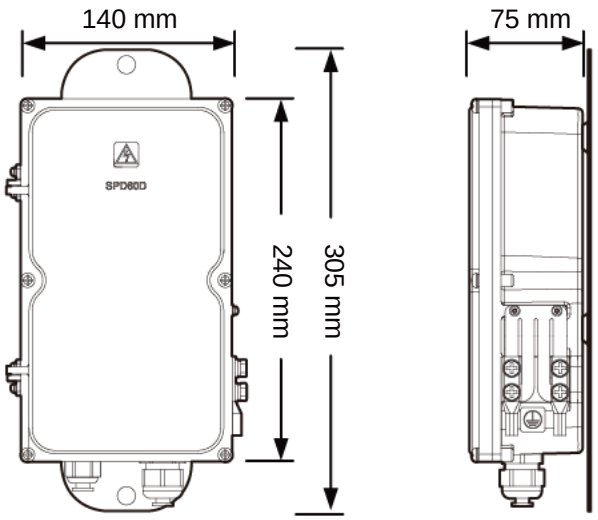
Installing the AC RRU

C Installing the Surge Protection Box (for Outdoor Scenarios)

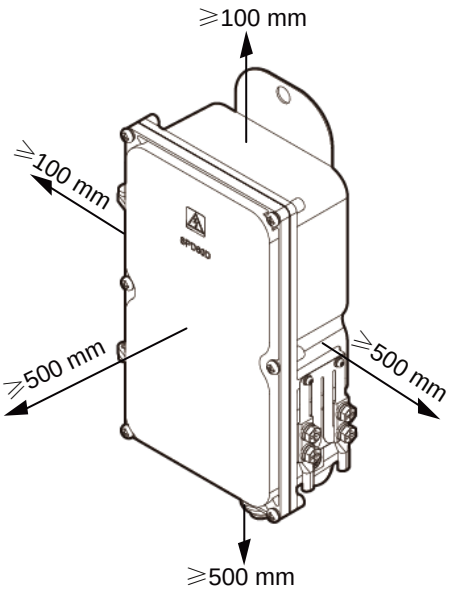
Installation of the surge protection box.



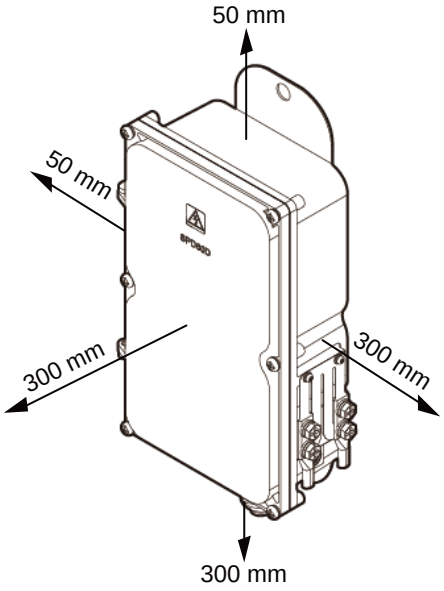
Dimensions of the surge protection box.



Recommended clearance for the surge protection box.



Minimal clearance for the surge protection box.

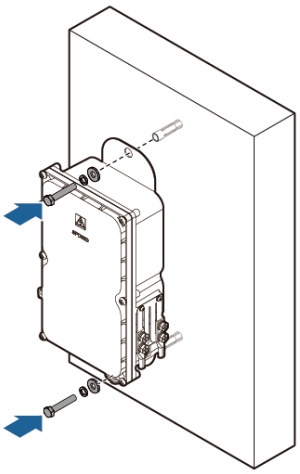


C Installing the Surge Protection Box (for Outdoor Scenarios)

1. Install the surge protection box on the metal pole.

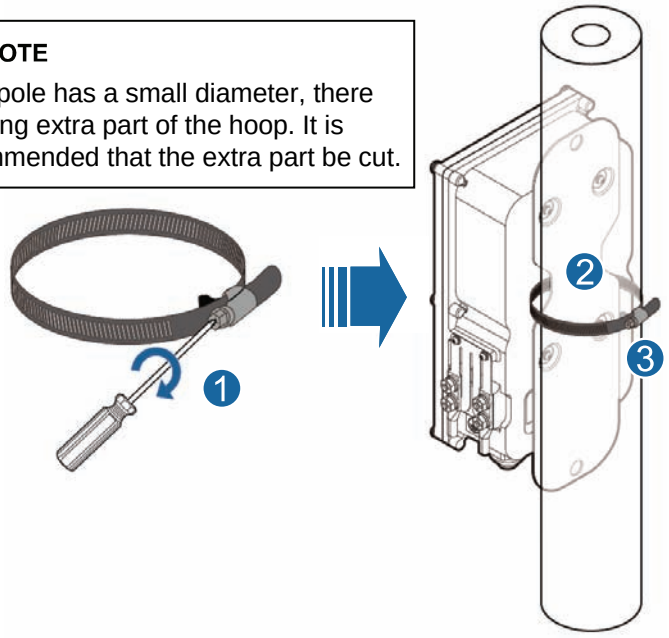
1. As shown in the figure, unfasten the screw on the loop iron with the torque of 4.8 N•m.
2. Lead the loop iron through the opening between the back plate of the surge protection box and the surge protection box.
3. Circle the loop iron around the metal pole, and then tighten the screw on the loop iron.

Installing the surge protection box on the wall



NOTE

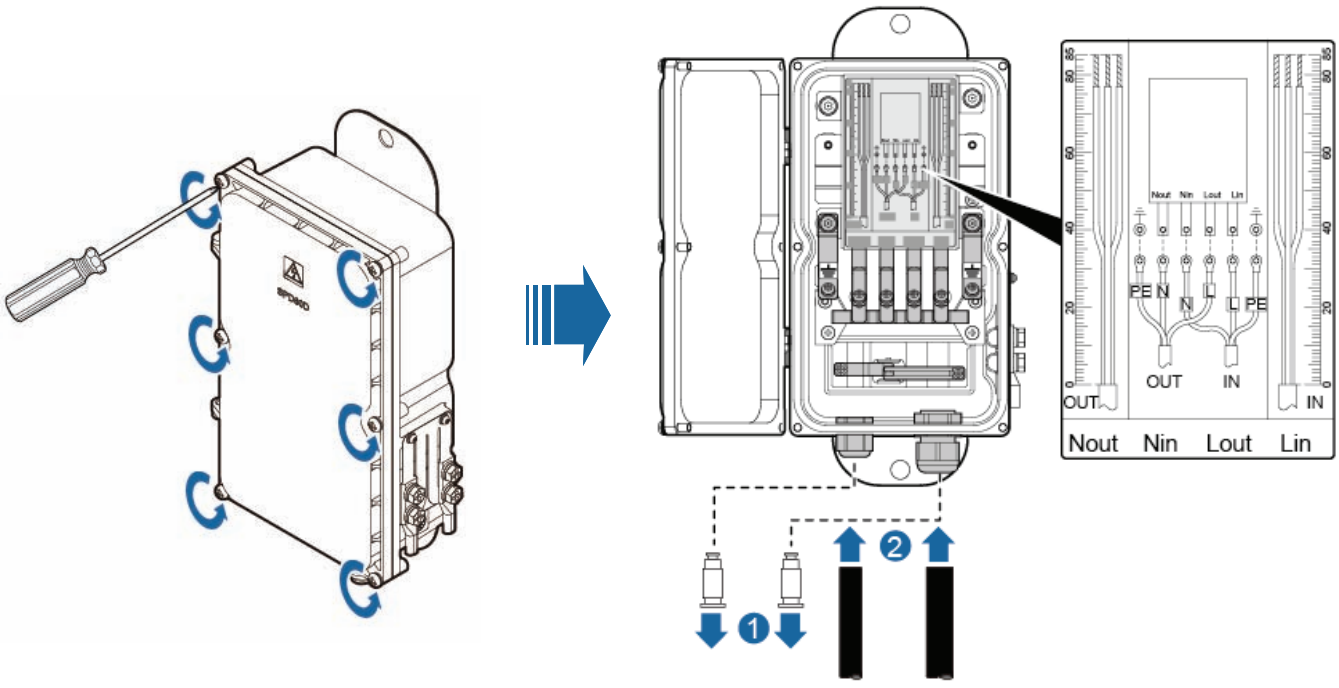
If the pole has a small diameter, there is a long extra part of the hoop. It is recommended that the extra part be cut.



NOTE

- when installing the surge protection box, you need to dispose of the plastic tube on the expansion bolt.
- The procedure for installing the surge protection box on the wall is the same as that for installing the RRU on the wall. For details, see page 10.

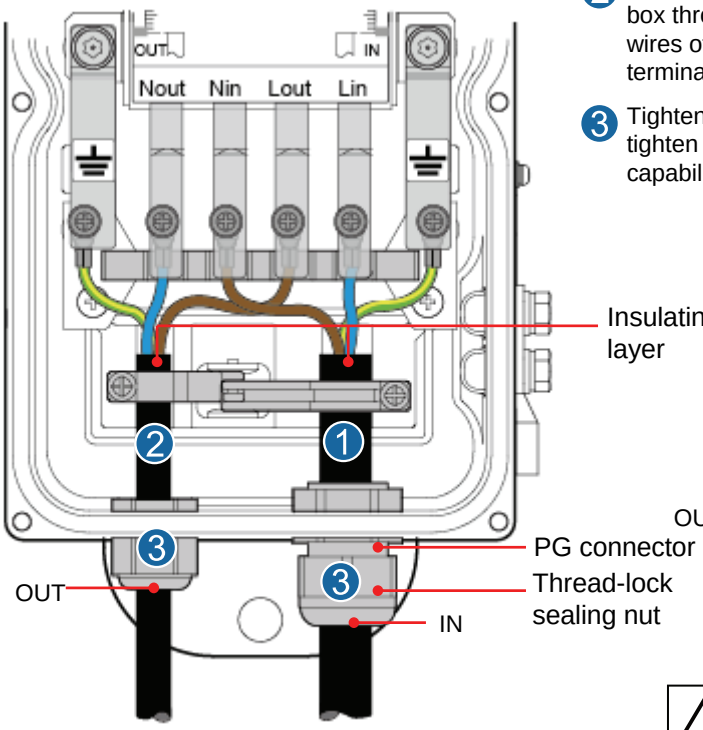
2. Open the cover of the surge protection box.



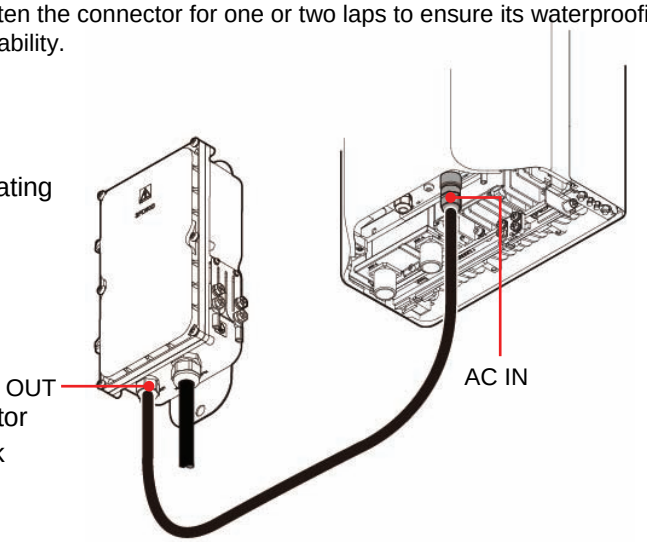
Installing the AC RRU

C Installing the Surge Protection Box (for Outdoor Scenarios)

3. Connect the power cable between the surge protection box and the RRU.



1. Lead the external AC power cable through the PG connector labeled IN. The L, N, and PE wires of the power cable are connected to the Lin, Nin, and PE terminals on the surge protection box.
2. Lead the power cable between the RRU and the surge protection box through the PG connector labeled OUT. The Lin, Nin, and PE wires of the power cable are connected to the Lout, Nout, and PE terminals on the surge protection box.
3. Tighten the thread-lock sealing nut, and then use a wrench to further tighten the connector for one or two laps to ensure its waterproofing capability.



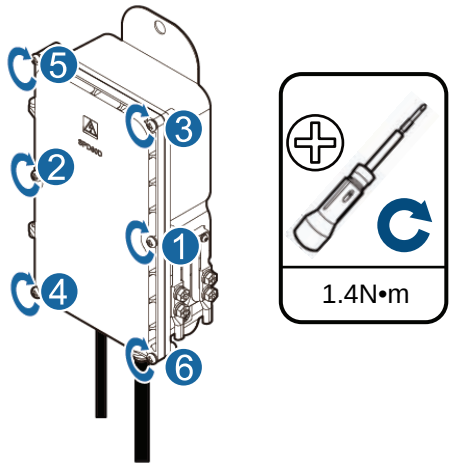
NOTE

- The cable led through the PG connector labeled OUT is the power cable between the RRU and the surge protection box, and the cable led through the PG connector labeled IN is the external AC power cable.
- Install the corrugated pipes for the AC power cables before installing the AC RRU power cables. For details, see page 39.

CAUTION

- Lead the cable through the removed thread-lock sealing nut of the PG connector, and then lead the cable through the PG connector.
- The removed thread-lock sealing nut of the PG connector cannot be replaced with the thread-lock sealing nuts of other surge protection boxes.
- Ensure that the case of the cable insulating layer is tightly pressed by the strap.

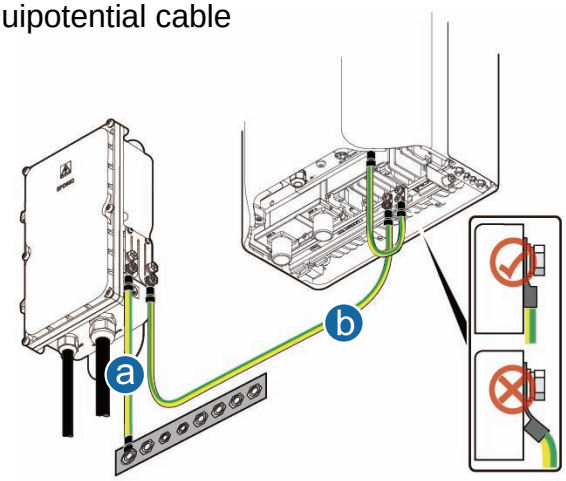
4. Close the cover of the surge protection box.



5. Connect the PGND cable.

a PGND cable

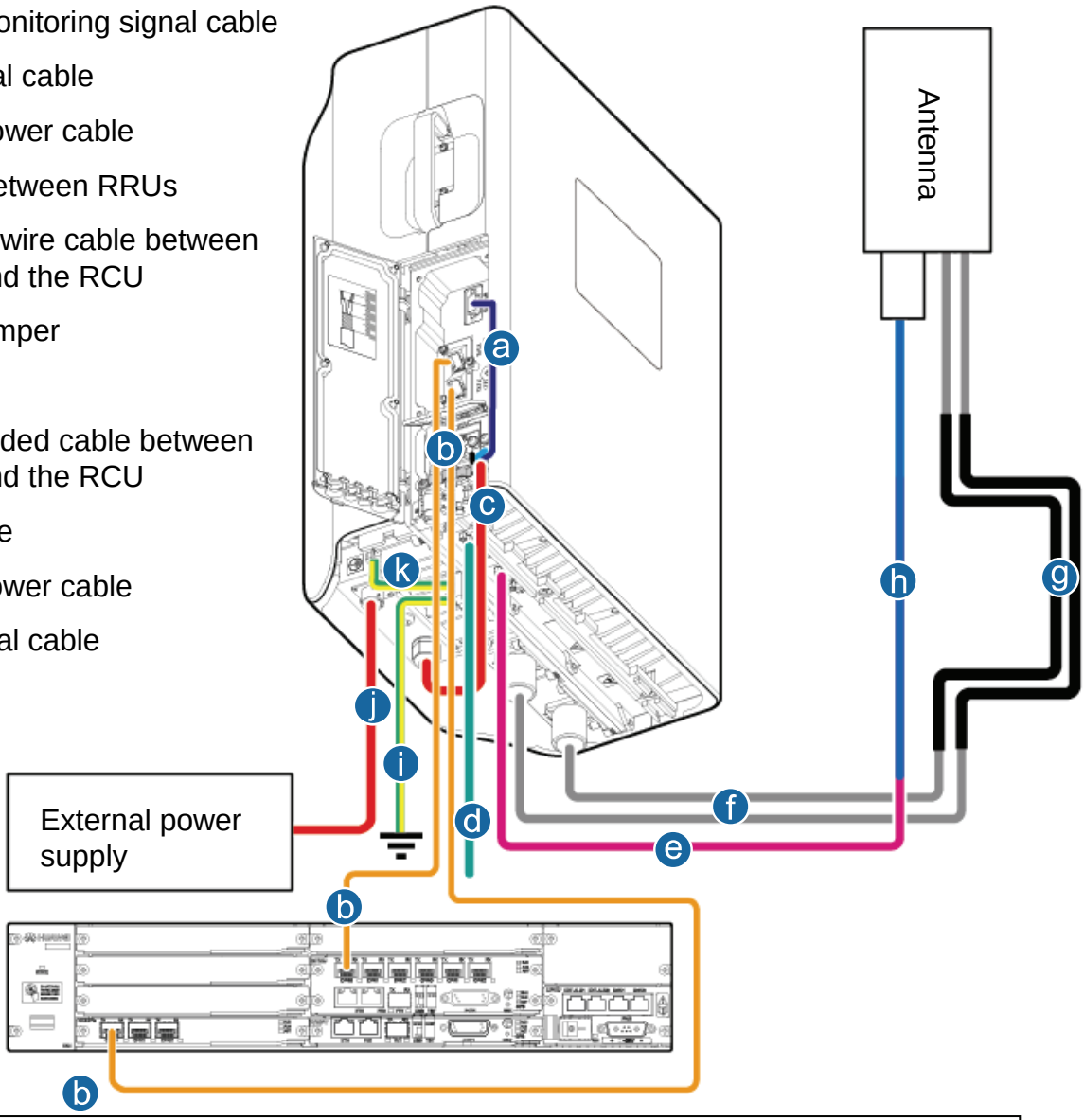
b Equipotential cable



Installing the AC RRU

d Cable Connections of a Single RRU

- a AC RRU monitoring signal cable
- b CPRI optical cable
- c DC RRU power cable
- d RF cable between RRUs
- e AISG multi-wire cable between the RRU and the RCU
- f RRU RF jumper
- g Feeder
- h AISG extended cable between the RRU and the RCU
- i PGND cable
- j AC RRU power cable
- k Equipotential cable



NOTE

The AC RRU monitoring signal cable, DC RRU power cable, equipotential cable between the power module and the RRU are installed before delivery.

Sequence of Installing the Cables： PGND cable → RRU RF jumper → AC RRU power cable→ CPRI optical cable → AISG multi-wire cable between the RRU and the RCU (optional) →AISG extended cable between the RRU and the RCU (optional)

e Cable Connections of Multiple RRUs

NOTE

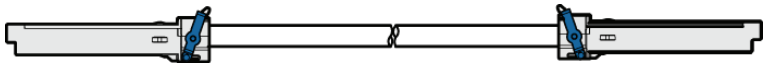
The cable connections for multiple AC-powered RRUs and multiple DC-powered RRUs are the same. For details, see page13.

f List of Cables (No Surge Protection Box Configured)

Cable	Connector Type	Connected to…
PGND cable (16 mm²)	OT terminal (M6)	Grounding bolt on the RRU
	OT terminal (M8)	Nearest grounding bar
		
RRU RF jumper	DIN male connector	Ports labeled ANT-A and ANT-B on the RRU
	DIN male connector	Feeder or antenna
		
AC RRU power cable (1.5mm²)	Round connector	Port labeled AC_in on the RRU
	To be made depending on field requirements	External power supply
		
CPRI optical cable	DLC connector	Connect the fiber tails labeled 1A and 1B to the CPRI_W port on the RRU
	DLC connector	Connect the fiber tails labeled 2A and 2B to one of the CPRI0 to CPRI5 ports on the WBBP or GTMU
		
AISG multi-wire cable between the RRU and the RCU	Waterproof DB9 connector	Port labeled RET on the RRU
	Standard AISG female connector	Standard AISG male connector of the AISG extension cable or RCU
		

Installing the AC RRU

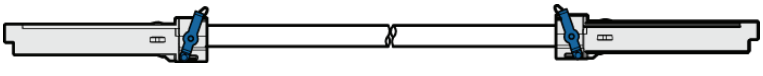
f List of Cables (No Surge Protection Box Configured)

Cable	Connector Type	Connected to…
AISG extended cable between the RRU and the RCU	Standard AISG male connector	Standard AISG female connector of the AISG multi-wire cable
	Standard AISG female connector	Standard AISG male connector of the RCU
		
RF cable between RRUs	2W2 connector	Port labeled RX_IN/OUT on the RRU
	2W2 connector	Port labeled RX_IN/OUT on the RRU
		
SFP high-speed cable for cascaded RRUs	SFP200 male connector	the CPRI_E port on the upper-level RRU
	SFP200 male connector	the CPRI_W port on the lower-level RRU
		

g List of Cables (Surge protection box Configured)

Cable	Connector Type	Connected to…
PGND cable (16 mm²)	OT terminal (M6)	Grounding bolt on the surge protection box
	OT terminal (M8)	Nearest grounding bar
		
CPRI optical cable	DLC connector	Connect the fiber tails labeled 1A and 1B to the CPRI_W port on the RRU
	DLC connector	Connect the fiber tails labeled 2A and 2B to one of the CPRI0 to CPRI5 ports on the GTMU
		
RRU RF jumper	DIN male connector	Ports labeled ANT-A and ANT-B on the RRU
	DIN male connector	Feeder or antenna
		

g List of Cables (Surge protection box Configured)

Cable	Connector Type	Connected to…
Power cable between RRU and the surge protection box (1.5 mm²)	Round connector	Port labeled AC IN on the RRU
	OT terminal	The Lout, Nout, and PE terminals on the surge protection box
		
External AC input power cable (4 mm²)	OT terminal	The Lin, Nin, and PE terminals on the surge protection box
	To be made depending on field requirements	External power supply
		
AISG extended cable between the RRU and the RCU	Standard AISG male connector	Standard AISG female connector of the AISG multi-wire cable
	Standard AISG female connector	Standard AISG male connector of the RCU
		
RF cable between RRUs	2W2 connector	Port labeled RX_IN/OUT on the upper-level RRU
	2W2 connector	Port labeled RX_IN/OUT on the lower-level RRU
		
AISG multi-wire cable between the RRU and the RCU	Waterproof DB9 connector	Port labeled RET/PWR_SRXU on the RRU
	Standard AISG female connector	Standard AISG male connector of the AISG extension cable or RCU
		
SFP high-speed cable for cascaded RRUs	SFP200 male connector	the CPRI_W port on the upper-level RRU
	SFP200 male connector	the CPRI_E port on the lower-level RRU
		

Installing the AC RRU

h Installing the RRU Cables

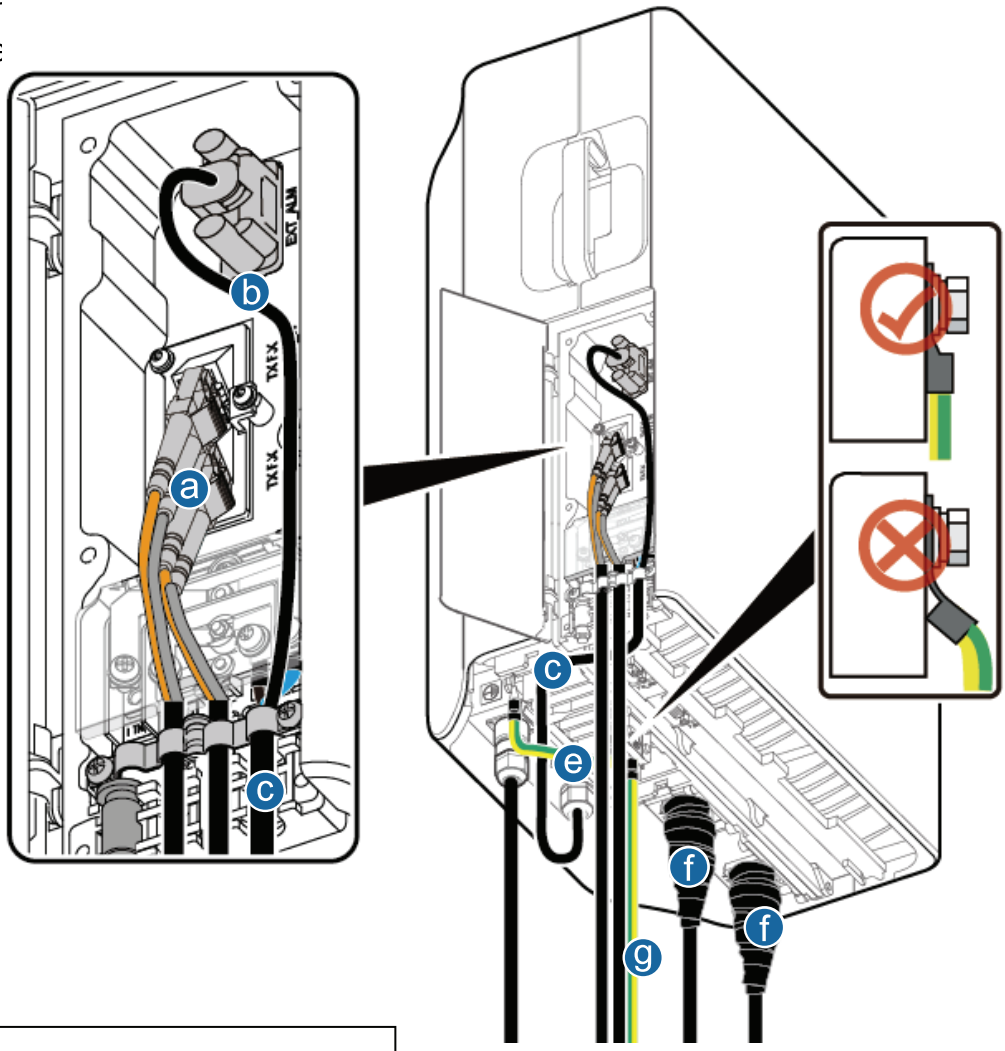
NOTE

The cabling cavity of the AC RRU is the same as that of the DC RRU.

The procedures for opening and closing the cover for the cabling cavity of the AC RRU are the same as those for opening and closing the cover for the cabling cavity of the DC RRU.

Cable Connections of RRU

a CPRI optical cable
b AC RRU monitoring signal cable
c DC RRU power cable
d AC RRU power cable
e Equipotential cable
f RRU RF jumper
g PGND cable



NOTE

Wrap the RF jumper for the RRU with the waterproof tape, and then wrap it with the PVC insulating tape.

Installing the AC RRU

h Installing the RRU Cables

a CPRI optical cable

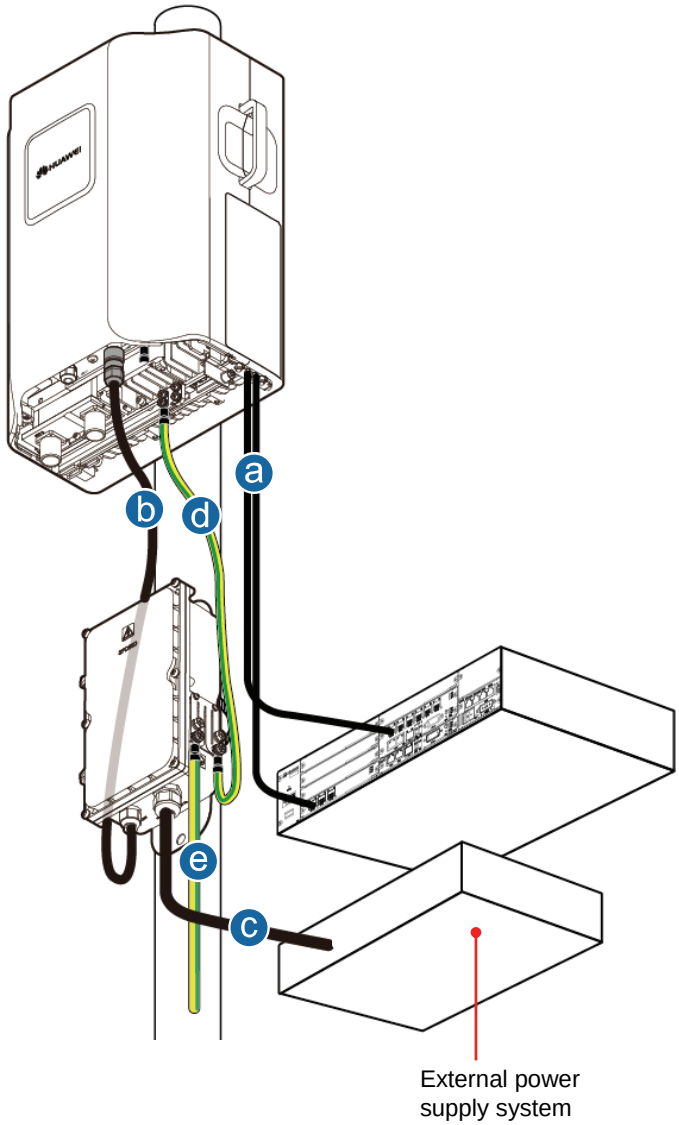
b Power cable between RRU and the surge protection box

c External AC input power cable

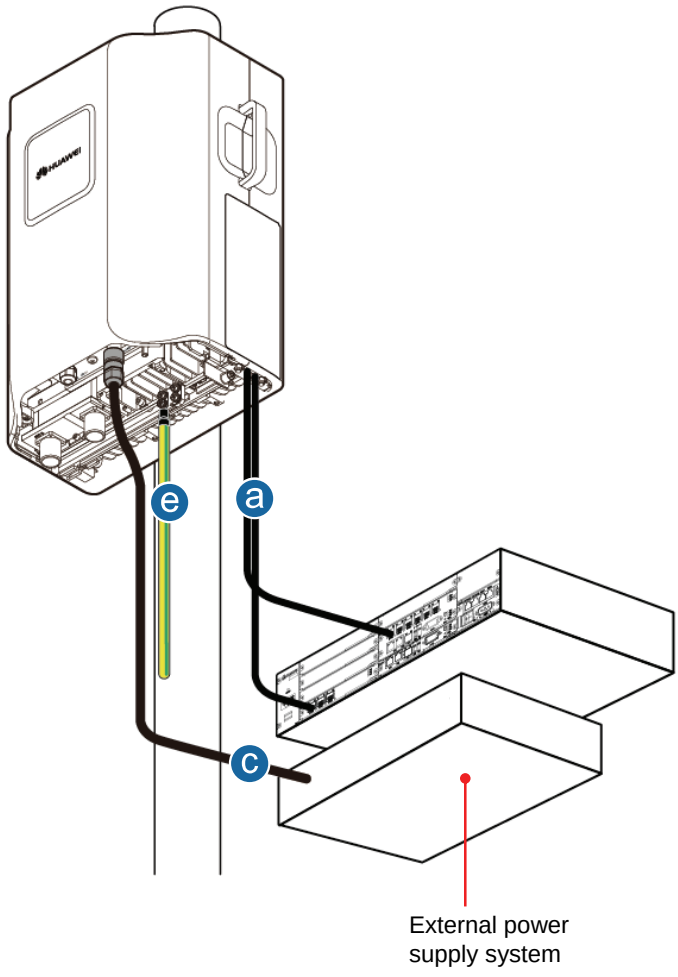
d Equipotential cable

e PGND cable

- **for Outdoor Scenarios**



- **for Indoor Scenarios**



NOTE

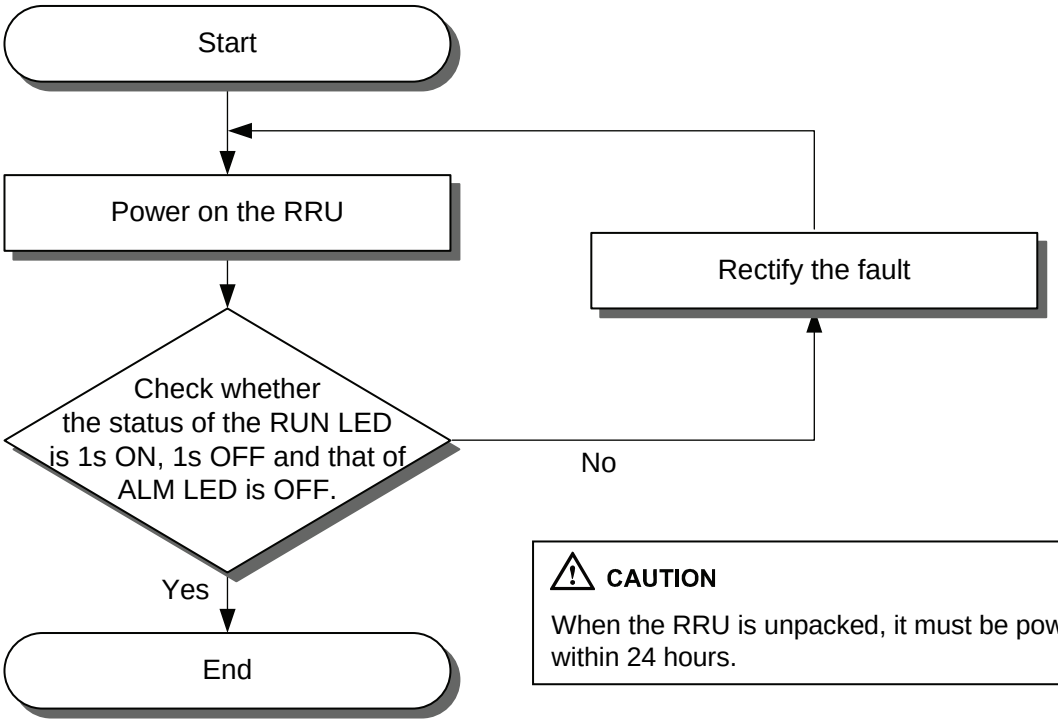
The maximum length of the external AC input power cable is 70 m for the 110 V AC single-phase power cable and 100m for the 220 V AC single-phase power cable.

Installing the AC RRU

Installation Checklist

1. The PG connectors labeled IN and OUT on the surge protection box are securely installed and cannot be rotated with the cables.
2. The waterproof gaskets on the door of the cabling cavity of the surge protection box are not stripped or broken.
3. The OT terminals of the cables connected to the surge protection box are securely linked. The jackets of the cables are not damaged, and there are no uneven edges on the cables.
4. The PG connectors are tightened, and the waterproof rings are secure.
5. The six screws on the cabling cavity of the surge protection are tightened according to the required fastening torque.
6. The axis for the door of the cabling cavity of the surge protection box is not broken, and the surface of the protection box is not scratched.
7. The cables in the surge protection box are correctly connected by referring to the operation guide. The OT terminals are tight linked before the door of the cabling cavity is closed.
8. The power supply to the surge protection box is cut off before installation and maintenance.
9. The installation and maintenance of the surge protection box is not performed in rainy or damp weather.

Powering On the RRU



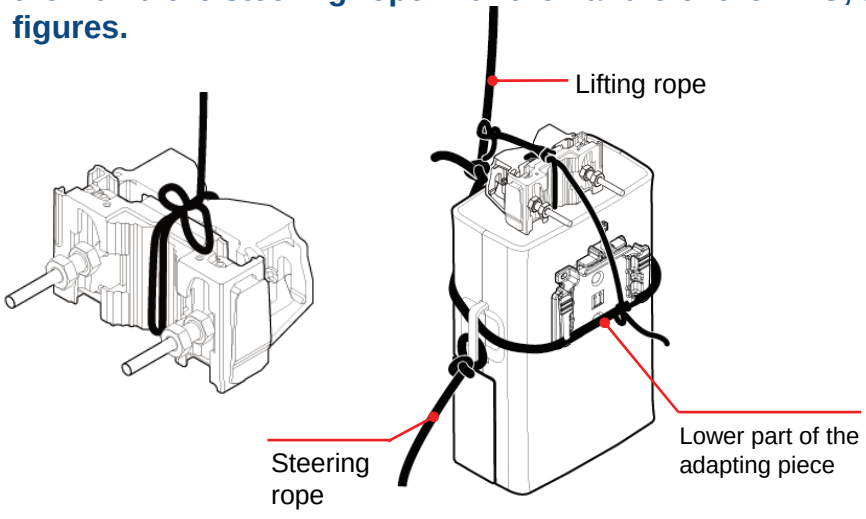
CAUTION

When the RRU is unpacked, it must be powered on within 24 hours.

Appendix

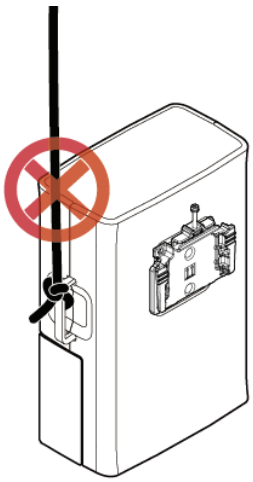
a Binding the RRU and Installation Components

1. Bind the RRU by leading the lifting rope along the lower part of the adapting piece and through the handle, bind the main and auxiliary brackets with the lifting rope, and then bind the steering rope with the handle of the RRU, as shown in the following figures.



CAUTION

- When lifting the RRU and installation components to the tower, prevent the RRU from colliding with the tower.
- The cross-sectional area of the lifting rope and steering rope is around 20 mm, not more than 25 mm. In addition, the ropes can bear the weight four times more than that of the RRU.



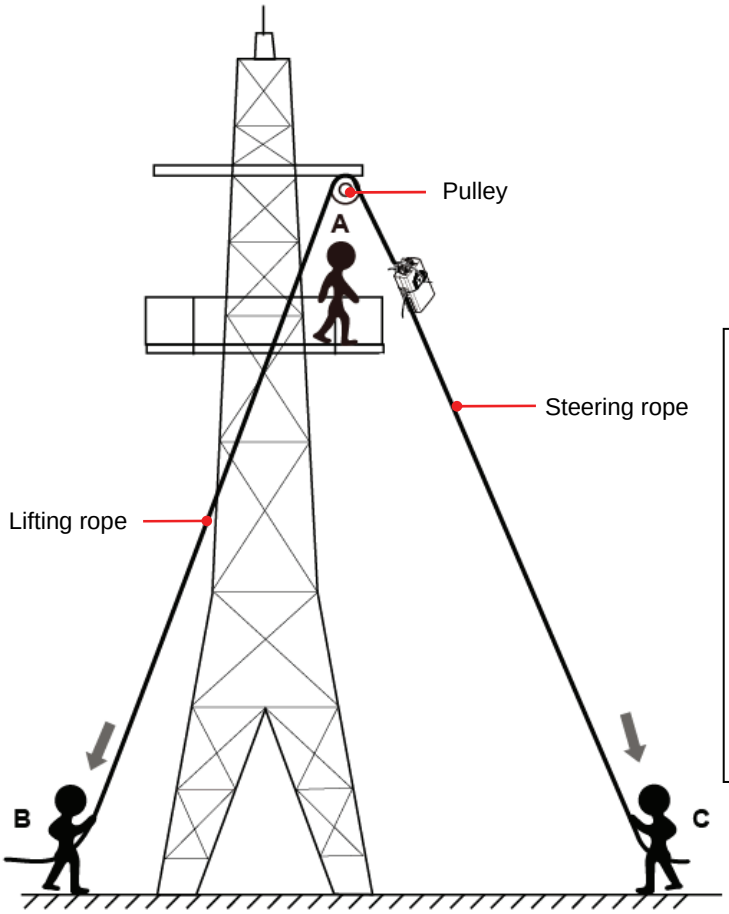
CAUTION

Do not bind the lifting rope only on the handle when lifting the RRU.

Appendix

a Binding the RRU and Installation Components

2. Lifting the RRU and Installation Components to the Tower

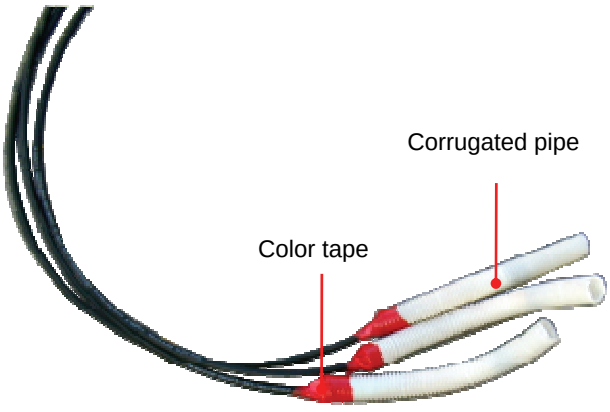


NOTE

- Installer A climbs onto the tower. Then, installer A fixes the pulley to the support of the tower platform and leads the lifting rope through the pulley.
- Installer C uses a lifting rope to bind the RRU and installation components as shown in the preceding figure and then ties a knot in the steering rope at the handle of the RRU.
- Installer B pulls the lifting rope, and at the same time, installer C pulls the steering rope away from the tower to prevent the RRU and installation components from colliding with the tower.
- Installer A holds the RRU and installation components and untie the ropes.

3. Lifting the CPRI Optical Cable up to the Tower

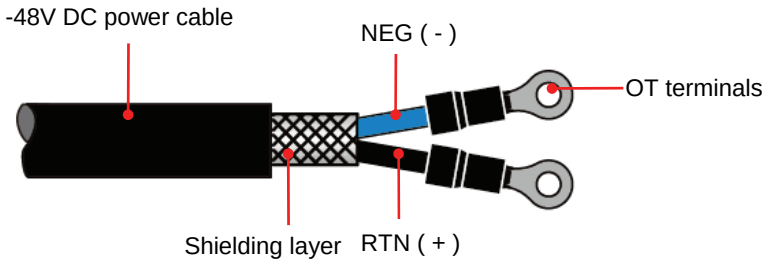
- Cut off a 200 mm long corrugated pipe with the diameter of 25 mm.
- Lead the fiber tails labeled 1A and 1B of the optical cable into the corrugated pipe by 160 mm.
- Wrap up the corrugated pipe and optical cable with the color tape.
- For the tower made of steel pipes, tie the black jacket to the corrugated pipe at the position 150 mm away from the color tape, and then lift the optical cable up to the tower.
- For the tower made of angle steel girders, carry the optical cable onto the tower when climbing up to the tower.
- After the optical cable is lifted up to the tower, remove the color tape and corrugated pipe before installing the optical cable.

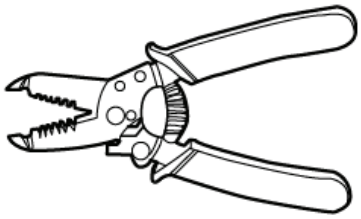


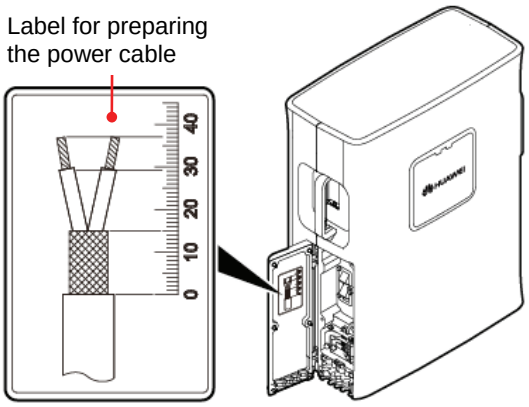
Appendix

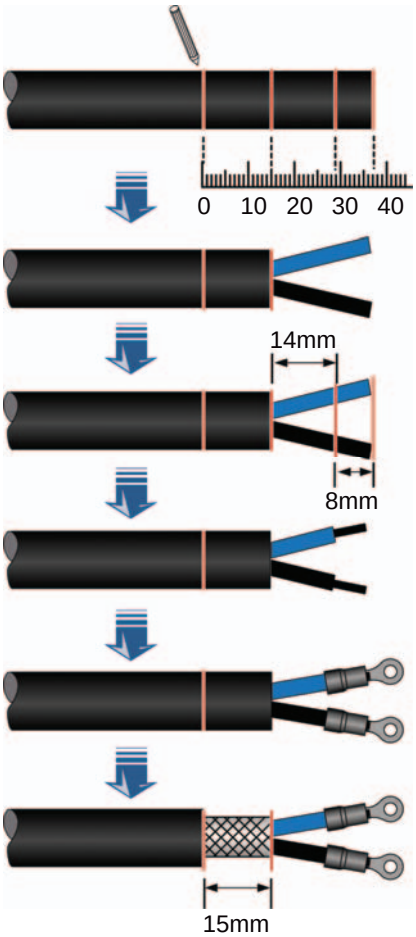
b Making OT Terminals by Using a Cable Peeler (Recommended)

Add two OT terminals to the end of the power cable connecting to the RRU.









Determine lengths of power cables for different operations according to the scales on the inner side of the cover plate of the cabling cavity.

Based on the determined length, remove the jacket and shielding layer off the power cable.

Remove the jacket from each wire.

Add an OT terminal to each wire.

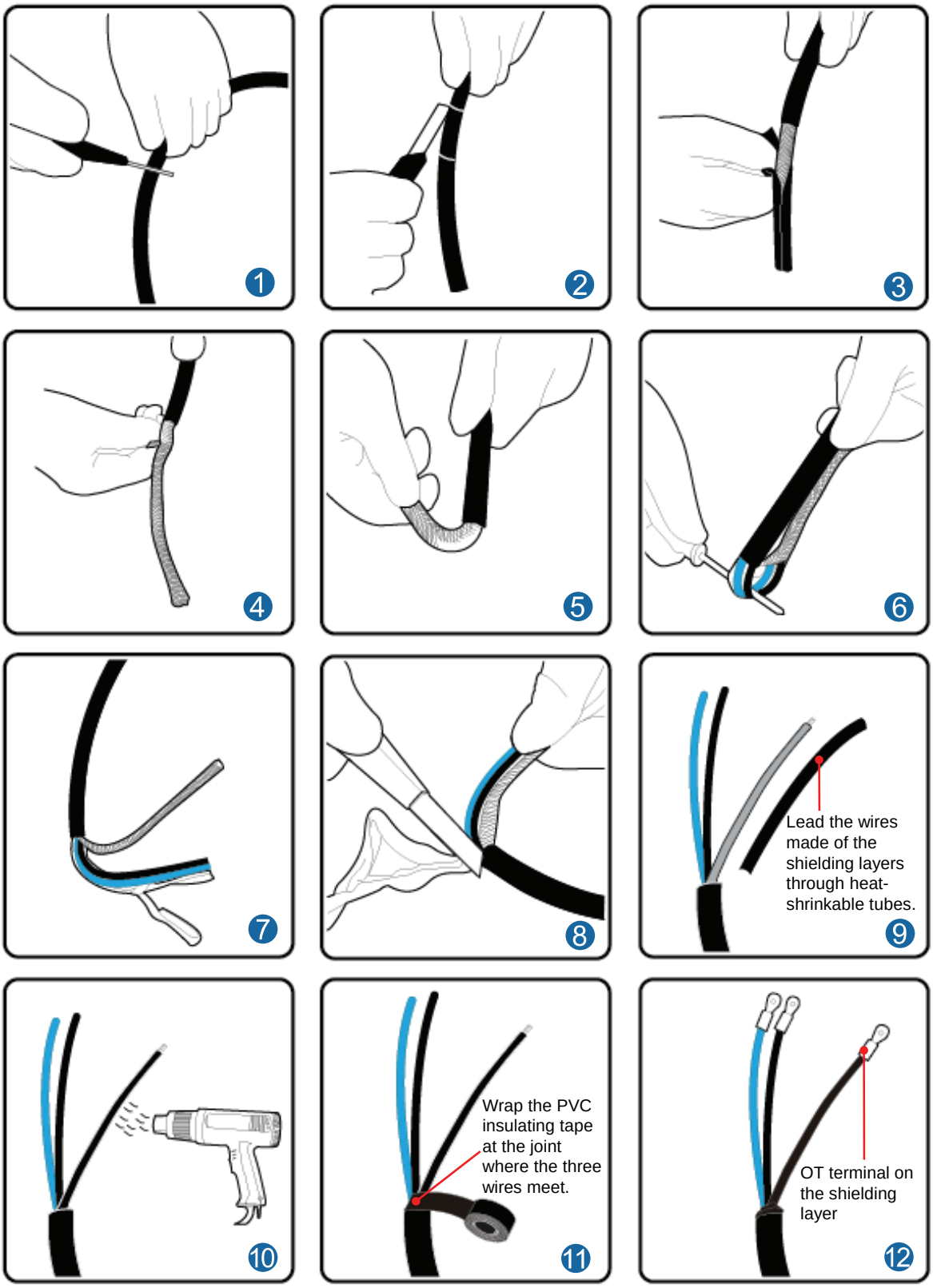
Strip a 15 mm jacket off the power cable to reveal the shielding layer of the power cable

NOTE

The assembling of OT terminals to the power cable must be complete before the RRU is installed on a metal pole.

Appendix

C Adding OT Terminals to the Power Cable on the DCDU side



WARNING

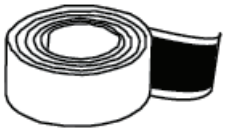
Do not damage the shielding layer of the power cable when cutting around the jacket.

Appendix

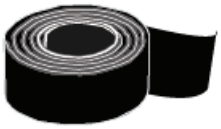
d Waterproofing Outdoor Cables

⚠ CAUTION

- The waterproof tape should be wrapped for an extra length of 20 mm away from the connectors at both ends.
- The tapes should be wrapped around the connector from the lower part to the upper part. When wrapped for another layer, the tapes may not be cut.
- When wrapping the waterproof tape, apply even force to extend the tape until the width of the tape is 1/2 of the original width.
- When wrapping the waterproof tape, ensure that the upper layer of the tape covers at least 50% of the lower layer.
- The insulating tape should be wrapped for an extra length of 20 mm away from the connectors at both ends.
- The last layer of the waterproof tape should be wrapped from the lower part to the upper part to prevent rainwater from infiltrating into the tape.

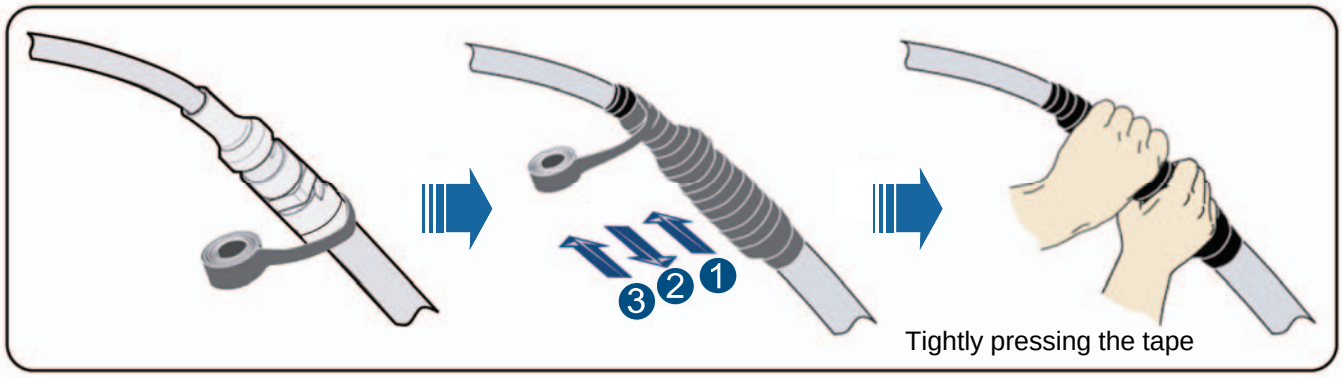


Waterproof tape

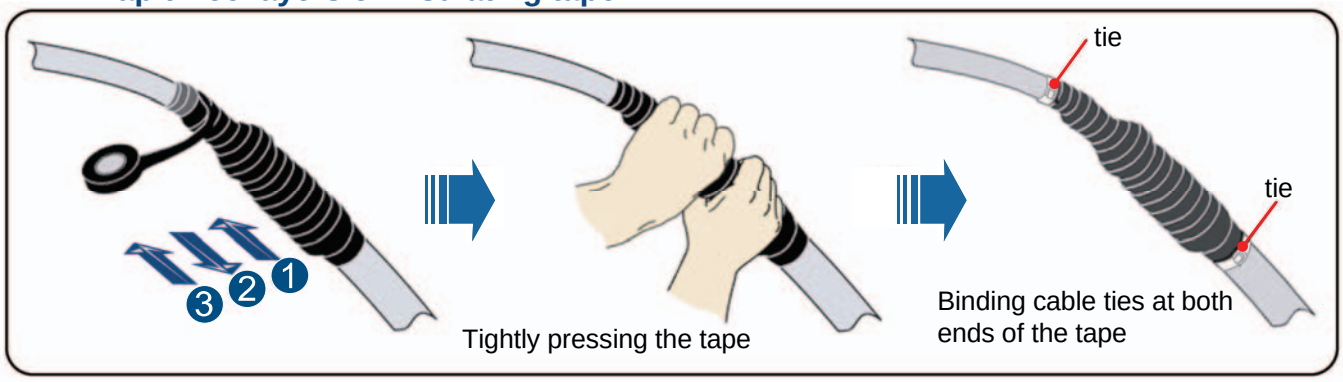


Insulating tape

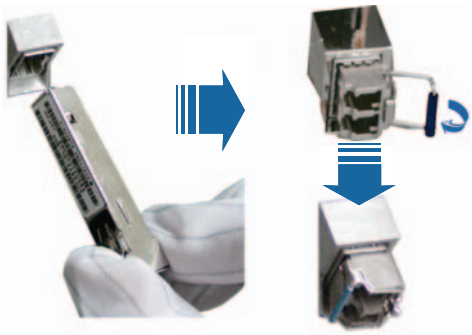
1. Wrap three layers of waterproof tape.



2. Wrap three layers of insulating tape.



e Installing the Optical Module

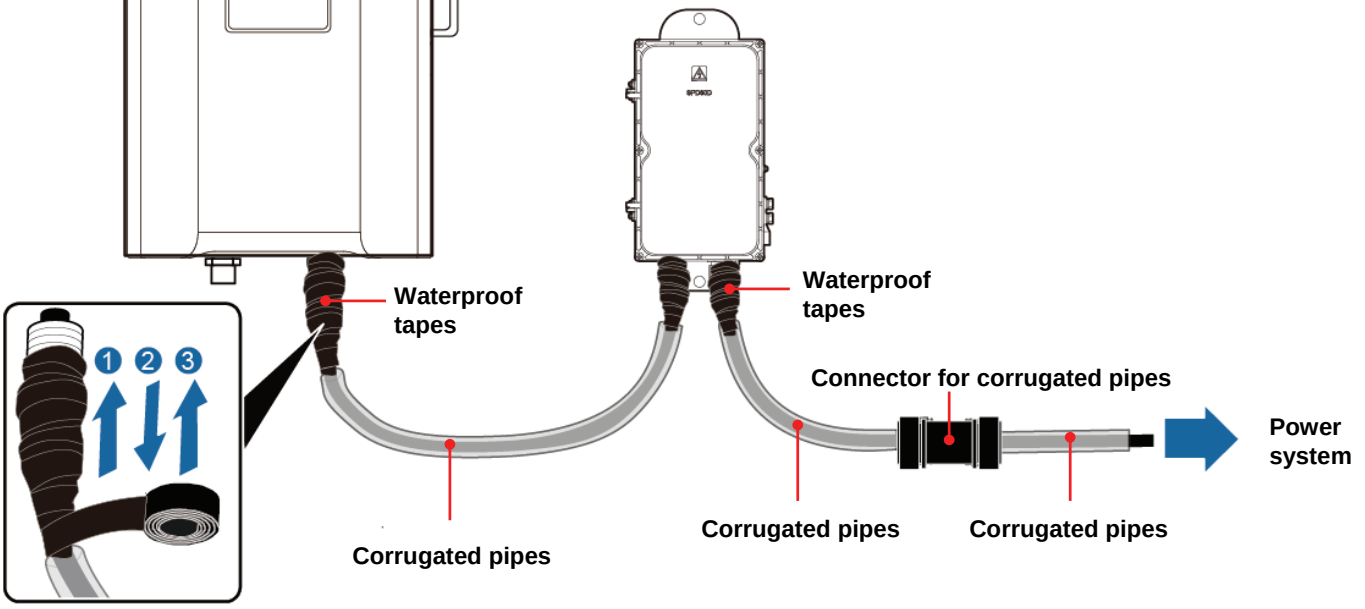


Appendix

f Installing the corrugated pipes of AC power cable

NOTE

- After the corrugated pipe is installed, wrap both ends of the power cable with waterproof tapes by referring to the following figure.
- Wrap the joint spirally upward, downward, and then upward again. That is, the joint is wrapped by three layers of the tape. Ensure that two adjacent layers overlap with each other about half the width of the tape.



g Pin Assignment for the Wires of the RRU Alarm Cable (DC)

DB15 connector	Signal name of DB15 connector	Cord End Terminal	Wire Color	Wire Type	Label
X1.2	SWITCH_INPUT0+	X2	White/blue	Twisted pair	SWITCH_INPUT 0+
X1.3	GND	X3	Blue		GND
X1.6	SWITCH_INPUT1+	X4	White/orange	Twisted pair	SWITCH_INPUT 1+
X1.7	GND	X5	Orange		GND
X1.10	RX485_TX-	X6	White/ green	Twisted pair	APM RX-
X1.11	RX485_TX+	X7	Green		APM RX+
X1.13	RX485_RX-	X8	White/ brown	Twisted pair	APM TX-
X1.14	RX485_RX+	X9	Brown		APM TX+

Changes History

This page describes the changes in the *RRU3908 V1 Installation Guide*.

●02 (2010-07-20)
This is the first commercial release.
Compared with (2010-05-04), the figure of the minimum clearance for RRU are optimized, and the minimum clearance for the RRU installed on a tower requirements is added.

●01 (2010-05-04)
This is the draft release.

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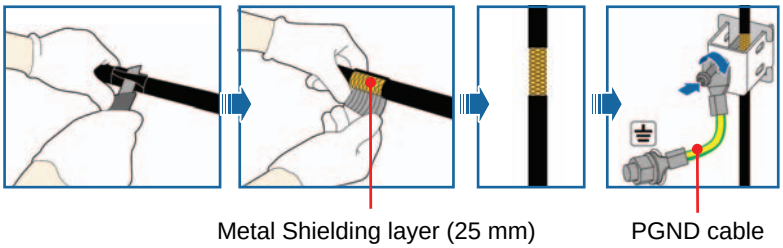
Installing the DC RRU

o RRU Cable Installation Scenarios

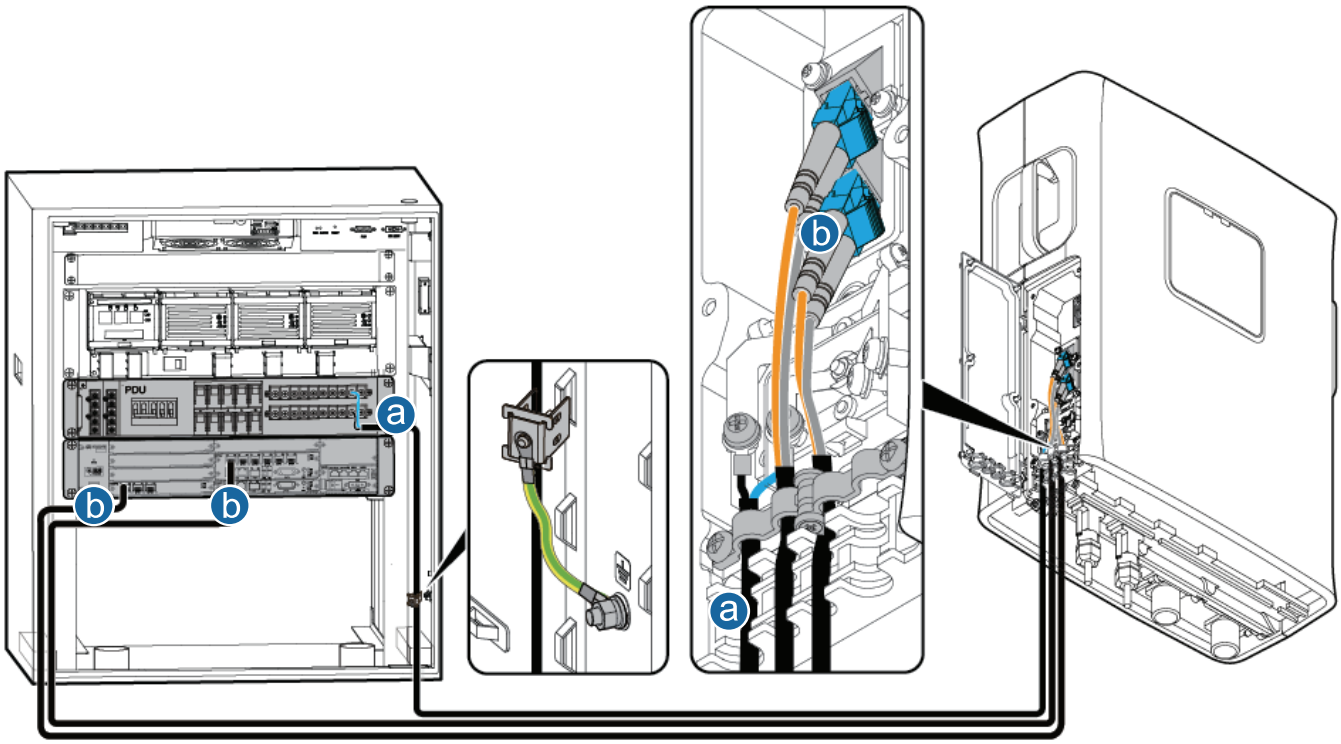
RRU+APM30/APM30H

Grounding the shielding layer of the power cable:



ⓐ DC RRU power cable

ⓑ CPRI optical cable



NOTE

- The DC RRU power cable is connected to one of the LOAD4 to LOAD9 terminals of the PDU.
- Strip the jacket of the DC RRU power cable for a small part, press the exposed shielding layer on the strap, and then connect the PGND cable on the strap to the nearest grounding bolt on the side in the APM30/APM30H.
- Three power cables can be led through each ground clip.