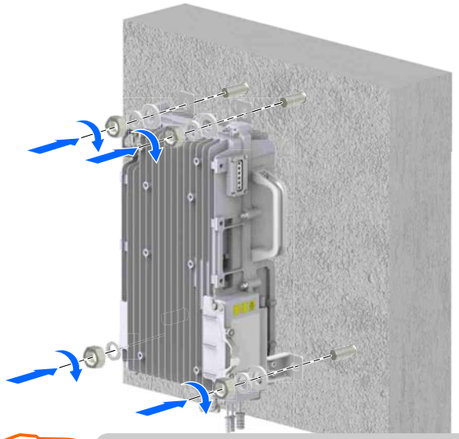
2 Use four M10x80 expansion bolts to mount the RRU (with the simple part just installed) onto the wall.



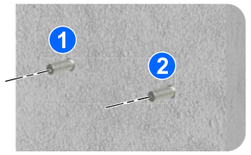
3 Use the adjustable wrench to fix the nuts. The adjustable RRU wall mounting is completed.

Note: Install the four expansion bolts and then mount the RRU onto the top two expansion bolts. Adjust the hole positions of the bottom two parts, align them with the expansion bolts, and then fix all the four expansion bolts.

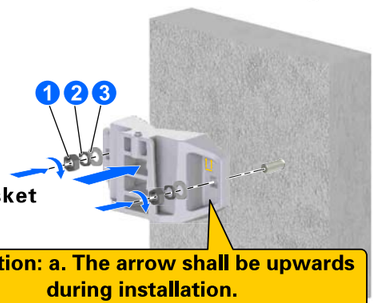
Simple Installation Part–Wall Mounting

Steps

1 Follow the procedure of expansion bolt installation to install the M10x80 expansion bolts.



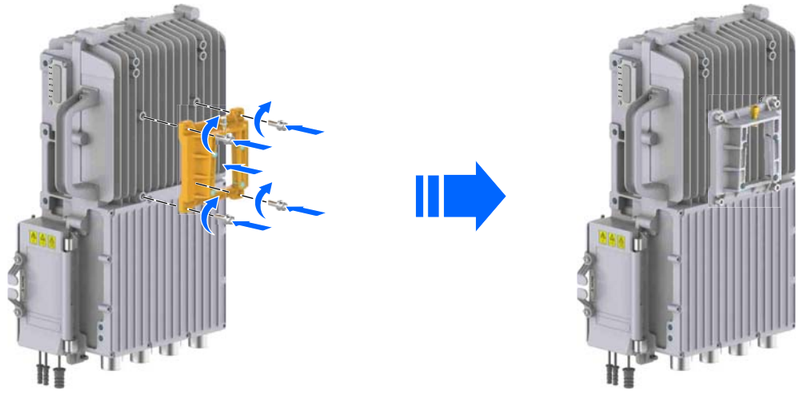
2 Follow the installation diagram to install the pole fixture or mounting fixture onto the wall by using a wrench.



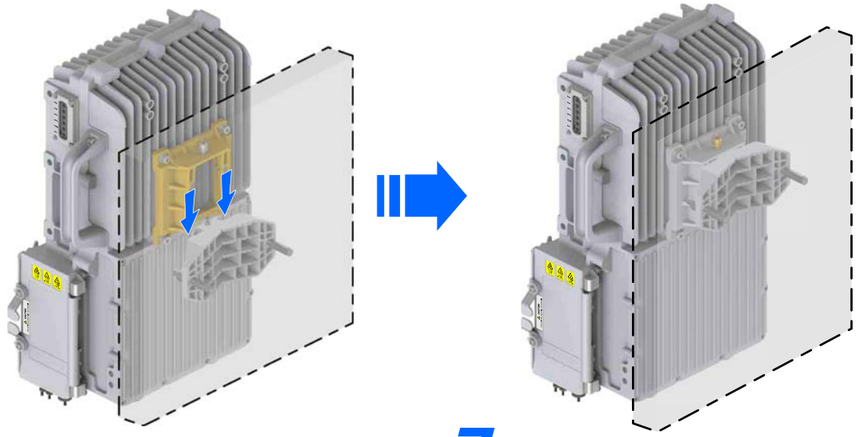
Caution: a. The arrow shall be upwards during installation.
b. Use an adjustable wrench to fix screws.

3 The installation of pole fixture or mounting fixture is completed.

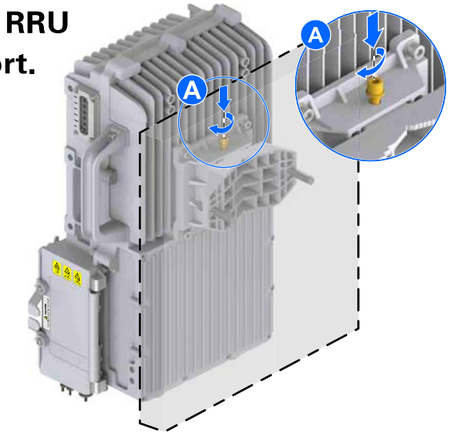
4 Install the RRU support onto the back of the RRU.



5 Fix the RRU onto the pole fixture or mounting fixture.



6 Use the M6 hexagonal wrench to fix the spring screws on the top of the RRU support.



7 The RRU wall mounting is completed.

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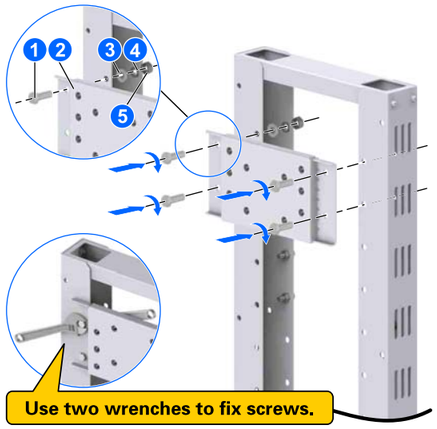
Small Gantry Installation

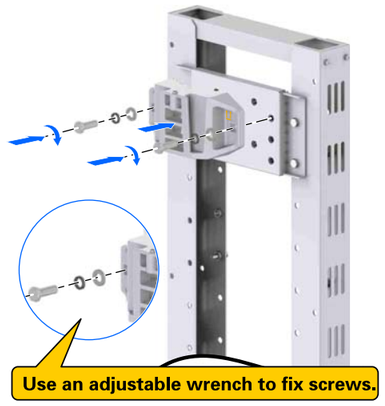
Installation Tools

Operation	Tool
Install a patch board.	Adjustable wrench x 2
Install the pole fixture or mounting fixture for a simple installation part.	Adjustable wrench
Install an RRU support.	M6 hexagonal wrench

1 Install the patch board to the small gantry.

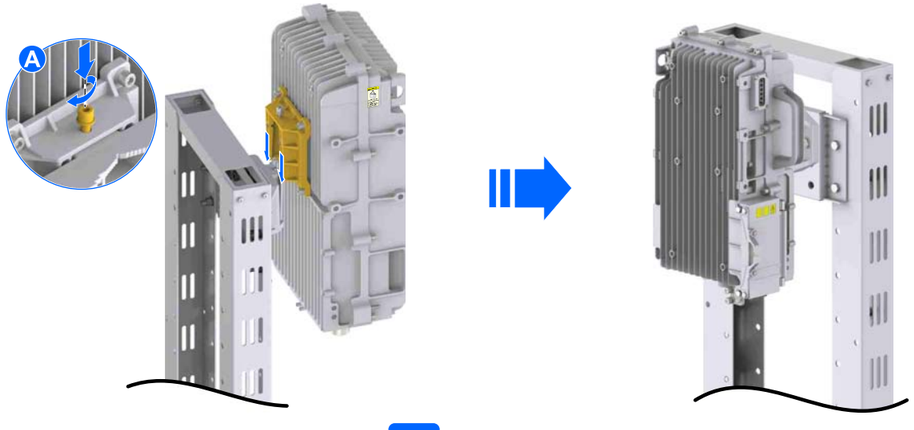


2 Install the pole fixture or mounting fixture to the patch board.



1 Bolt 2 Patch board (for simple installation part)
3 Flat gasket 4 Spring gasket 5 Nut

3 Fix the RRU to the pole fixture or mounting fixture. Use the M6 hexagonal wrench to fix the spring screws on the top of the RRU support. The small gantry installation is completed.

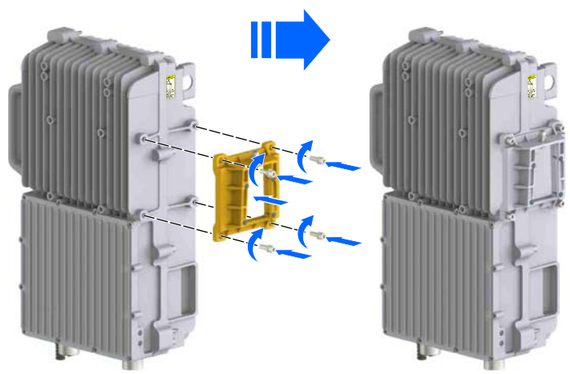


L–Shape Support Installation

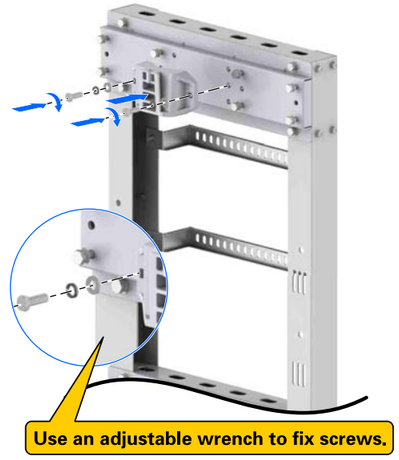
Installation Tools

Operation	Tool
Fix the pole fixture or mounting fixture for the simple installation part.	Adjustable wrench
Install an RRU support.	M6 hexagonal wrench

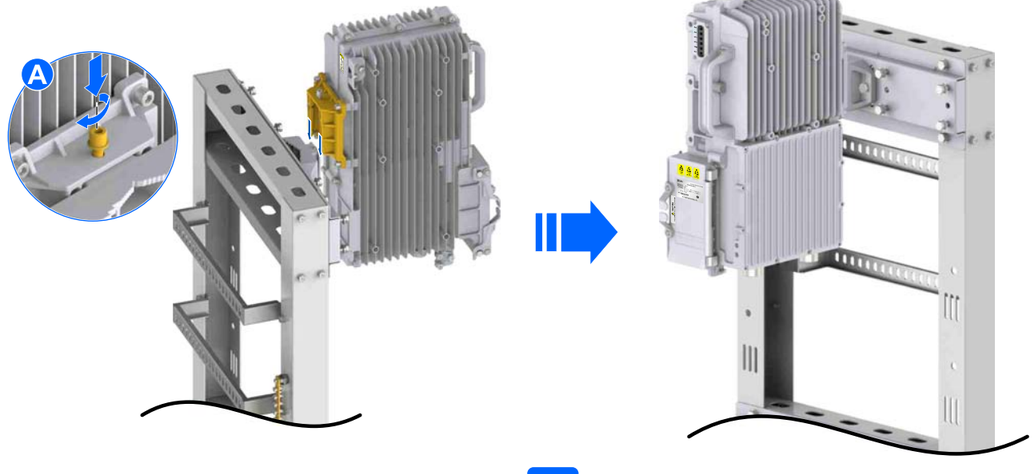
1 Install the RRU support to the side of RRU.



2 Install the pole fixture or mounting fixture to the patch board.



3 Fix the RRU to the pole fixture or mounting fixture. Use the M6 hexagonal wrench to fix the spring screws on the top of the RRU support. The L–shape support installation is completed.



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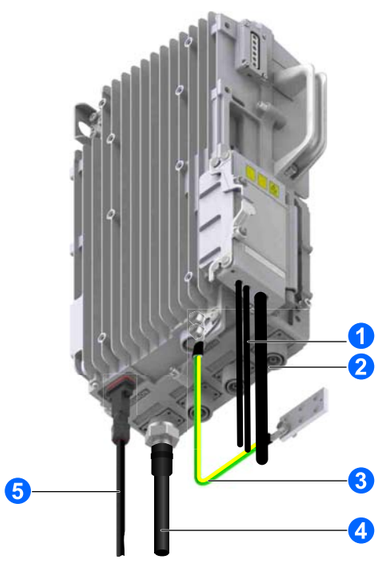
Cable List

Item		Local Equipment	Interconnected Equipment
Grounding Cable	Connector Type	OT terminal	OT terminal
	Interconnected Port	Local grounding terminal of RRU	Grounding bar
	External View		
Power Cable	Connector Type	Tubular terminal	Cold-pressed terminal
	Interconnected Port	Local power terminal of RRU, made on site	Used to connect Lighting Protection Box, made on site
	External View		
Optical Cable	Connector Type	DLC, LC	DLC, FC x 2, LC, SC
	Interconnected Port	Cable's RRU end connected to OPT1 and OPT2 ports	Cable's BBU end connected to the BBU
	External View		
RF Cable	Connector Type	Din-type male connector	Din-type male connector
	Interconnected Port	ANT1, ANT2	Antenna's RF port
	External View		
AISG Cable	Connector Type	DB15 connector	DB15 connector
	Interconnected Port	Local AISG/MON port of RRU	AISG cable to the antenna, and MON cable to the external device
	External View		

Cable Connection Diagram

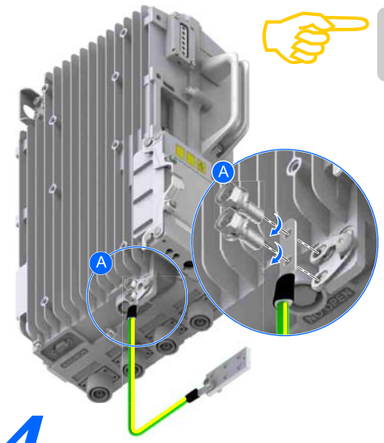
Legends

1. Optical cable
2. DC/AC power cable
3. Grounding cable
4. RF cable
5. AISG/MON cable



Installing the Protective Grounding Cable

Operation	Tool
To crimp the OT terminal	Crimping pliers
To fix the protective grounding cable	Crosshead screwdriver
	Adjustable spanner



Note: The grounding cable is a yellow-green cable with a sectional area of 16 mm².

Installation Steps

1. **Crimp an OT terminal at each end of the grounding cable.**
2. **Pass one end of the crimped grounding cable round the grounding screw of the chassis and tighten the grounding screw.**
3. **Remove the rust from the grounding bar. Connect the other end of the grounding cable to the grounding bar and tighten the grounding screw. Apply antirust paint around the grounding screw.**
4. **Label the grounding cable with plastic.The grounding cable installation is completed.**

Installing the DC Power Cable

Operation	Tool
To cut cables	Ruler
	Cable stripper/Paper knife
To crimp tubular terminals	Crimping pliers for tubular terminals
To fix the cable clamp	Crosshead screwdriver
To remove the cable from the DC power connector	Straight screwdriver
To insulate the shielding layer	Black insulating tape
To fix the power cable to the chassis	Black tie
To cut black ties	Diagonal pliers

The following example is based on the installation of the outdoor braided shielding power cable with a cross-sectional area of 2 × 6 mm².

Installation Steps

1. **Confirm the polarity of the power connector's socket connected to the power cable.**

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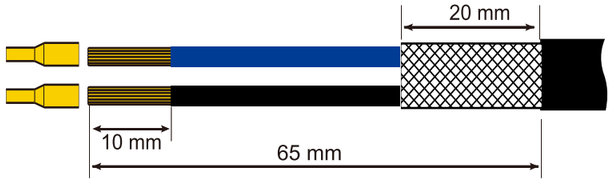
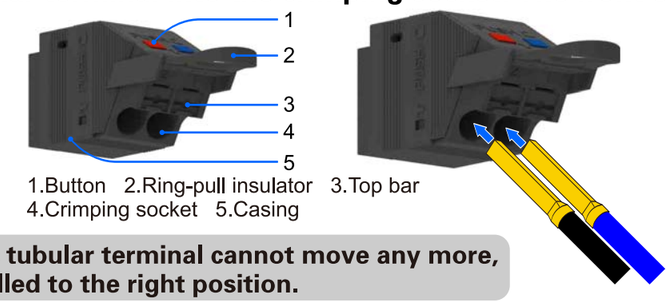
2 Trim the cable with the lengths of the shielding layer, sub–wire, and bare copper core as shown in the figure. Pass the tubular terminal round the trimmed bare copper core and crimp the tubular terminal with the crimping pliers.



3 Press the top bar with the screwdriver until the top bar cannot spring back. Insert the crimped tubular terminal into the crimping socket. The front end of the wire must be completely inserted into the socket and against the bottom of the connector plug.



Note: When the tubular terminal cannot move any more, it is installed to the right position.

4 Press the red and blue buttons with an appropriate tool, for example, the handle of a screwdriver. The top bar ejects itself. Do not hammer the buttons with heavy objects (for example, a hammer) to avoid damaging the plug. Pull the cable by hand. If the cable cannot be pulled out, the cable is installed securely.

5 Insert the assembled plug into the power socket in the maintenance window until the plug clicks. Shake the plug casing. Do not pull the ring–pull of the plug. If the plug does not loosen or come off, the plug is inserted to the right position and locked.

6 Wrap the upper part of the bare shielding layer of the power cable with black insulating tape. Secure the bare part of the shielding layer with a cable clamp and ensure they fully contact with each other.

⚠ Caution: The upper edge of the power cable's black sheath should be flush with the lower edge of the cable clamp, and not lower than the upper edge of the slot.

7 Connect the other end of the power cable to the DC power unit and secure the cable with black ties.

8 Label the power cable. The power cable installation is completed.

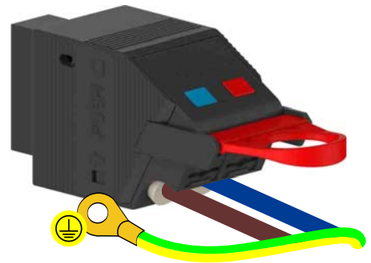
Installing the AC Power Cable

Installation Tools

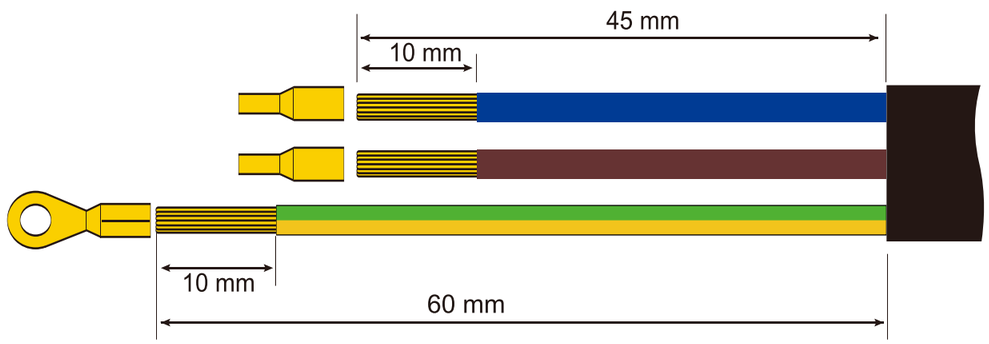
Operation	Tool
To cut cables	Ruler
	Cable stripper/paper knife
To crimp tubular terminals and ring bare terminals	Crimping pliers for tubular terminals
To fix the power cable clamp	Crosshead screwdriver
To remove the cable from the two-core AC socket	Straight screwdriver
To insulate the shielding layer	Black insulating tape
To fix the power cable to the chassis	Black tie
To cut black ties	Diagonal pliers

Installation Steps

1 Confirm the polarity of the power connector's socket connected to the power cable.



2 Trim the cable with the lengths of the sub–wire and bare copper core as shown in the figure. Pass the tubular terminal or ring bare terminal round the trimmed bare copper core and crimp the terminal with the tubular crimping pliers.



Note: The blue–brown wire is crimped with tubular terminals and the yellow–green wire (grounding wire) with ring bare terminals.

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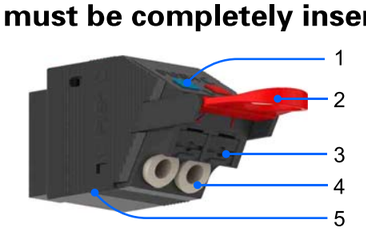
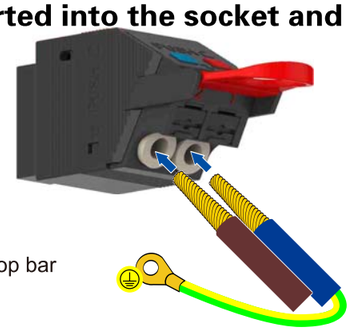
3 Press the top bar with the screwdriver until the top bar cannot spring back. Insert the crimped tubular terminal into the crimping socket. The front end of the wire must be completely inserted into the socket and against the bottom of the connector plug.

Note: When the tubular terminal cannot move any more, it is installed to the right position.



1. Button 2. Ring-pull insulator 3. Top bar
4. Crimping socket 5. Casing



4 (Optional) If the outer diameter of the tubular terminal is larger than the inner diameter of the rubber sheath, the tubular terminal can be installed without the rubber sheath. In that case, the tubular terminal must be installed against the bottom.

5 Press the red and blue buttons with an appropriate tool, for example, the handle of a screwdriver. The top bar ejects itself. Do not hammer the buttons with heavy objects (for example, a hammer) to avoid damaging the plug. Pull the cable by hand. If the cable cannot be pulled out, the cable is installed securely.

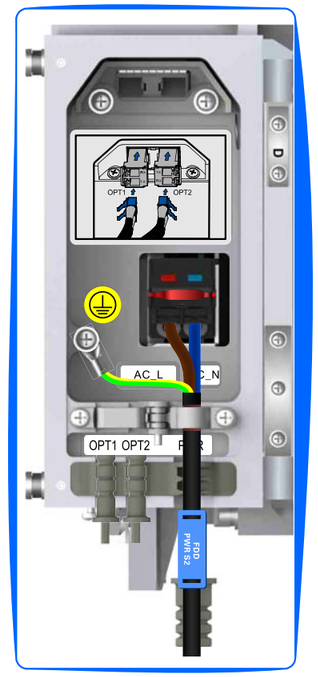
6 Insert the assembled plug into the power socket in the maintenance window until the plug clicks. Shake the plug casing. Do not pull the ring–pull of the plug. If the plug does not loosen or come off, the plug is inserted to the right position and locked.

7 Connect the ring bare terminal of the AC grounding cable to the grounding point.

8 Secure the power cable with the cable clamp.

9 Connect the other end of the power cable to the AC power unit and secure the cable with black ties.

10 Label the power cable with plastic. The power cable installation is completed.

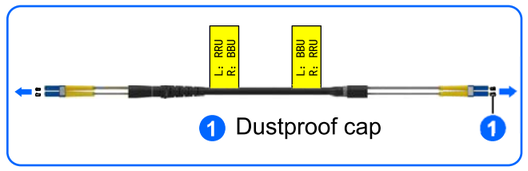


Installing the Optical Fiber

Operation	Tool
To fix the optical fiber	Crosshead screwdriver
To remove the bellows	Diagonal pliers

Installation Steps

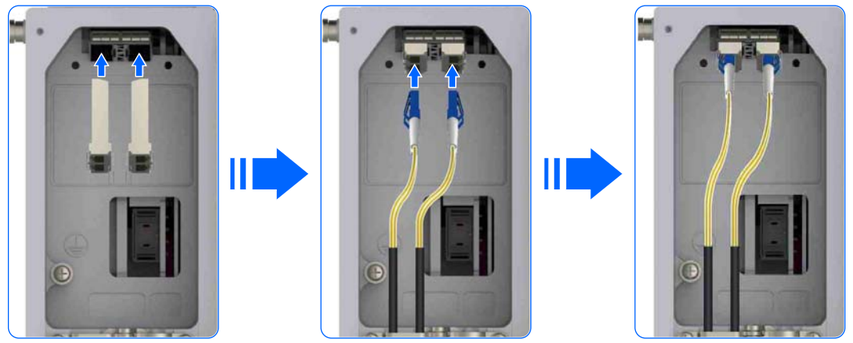
1 Remove the cable tie at the RRU–labeled end of the bellows with the diagonal pliers.



2 Remove the white dustproof caps from the fiber connectors.

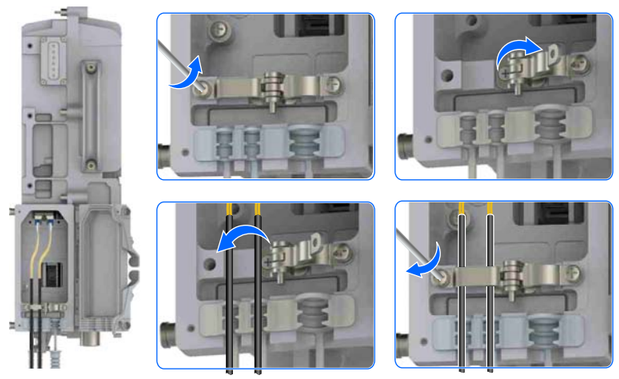
Caution: Before installation, never remove the dustproof caps during storage and transportation.
1.Insert the optical module into the OPT1 and OPT2 interfaces of the distribution chamber.
2.Insert the fiber connector into the optical module until a click is heard.

Caution: The handle of the optical module must point in the same direction as the blue clip of the fiber connector.



3 Fix the fiber to the fiber clamp in the distribution chamber.

Note: The bending radius between the optical fiber connector and optical fiber should be more than 40 mm in the distribution chamber.If only one optical fiber is installed, it should be installed in the outlet trough on the right side. The other outlet trough should be blocked with a waterproof plug.



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4 Remove the cable tie at the BBU–labeled end of the bellows with the diagonal pliers and connect this end to the fiber junction box/BBU.

5 The outdoor optical fiber should be laid vertically at least 200 mm from the lower edge of the device when it is led out from the bottom of the RRU chassis. The optical fiber should not be bent. If the outdoor optical fiber is too long, the excess part should not be reserved in the equipment room but at the RRU side instead. Coil the excess part of the optical fiber in a diameter of 300 mm to 400 mm and then bind the fiber coil to the pole with black cable ties.

6 Label the optical fiber with plastic. The optical fiber installation is completed.

Installing the Feeder

Operation	Tool
To fasten feeder connectors	Crosshead screwdriver
	Torque spanner

1 Connect the feeder to the antenna feeder interface of the RRU chassis.

2 Fasten the feeder connector clockwise with a torque spanner (fastening torque: 1.7 N × m).

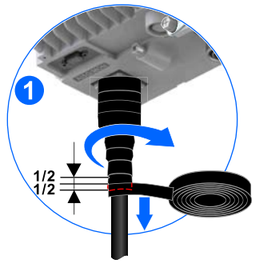
3 Take waterproof measures for interfaces. Install the shrink sleeve. For the installation of the shrink sleeve, refer to the DIN Shrink Sleeve Engineering Installation Specifications.

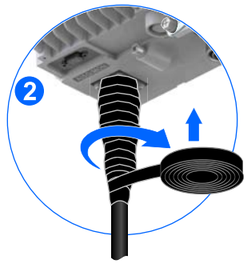
4 Connect the other end of the feeder to the ANT interface on the antenna. Take waterproof measures.

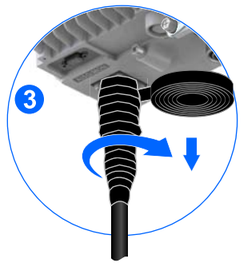
5 The feeder should be laid vertically at least 200 mm from the lower edge of the device when it is led out from the bottom of the RRU chassis. It should not be bent. Coil the excess part of the feeder into the "S" or "8" shape, and then bind the coil on both sides of the pole or on the back (N–type connector) of the RRU chassis. The minimum bending radius of the feeder should not be less than 20 times the feeder's radius. It is prohibited to coil the feeder.

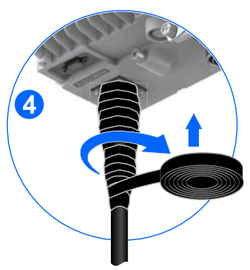
6 Label the feeder with plastic. The feeder installation is completed.

Cable Waterproofing









Steps

1 Clean the sundries like dust and stain on the cable connector.

2 Wrap a layer of electric insulation tape, as shown in Figure 1.

After installing the cable connector, apply another layer of insulation tape from the top down. The upper–layer insulation tape covers 1/2 of the lower–layer insulation tape.

⚠ **Caution: The second layer of insulation tape shall completely cover the whole feeder connector.**

3 Wrap three layers of waterproof tape, as shown in Figure 2, Figure 3, and Figure 4.

Evenly pull the waterproof tape so that its width is 75% to 50% of the original width. The three layers of waterproof tape shall be applied from the bottom up, top down, and bottom up respectively. The upper –layer tape shall cover 1/2 of the lower–layer tape.

⚠ **Caution: The horizontal wrapping direction refers to the direction towards which the connector is screwed tightly. Do not apply the tape in the reverse direction. The vertical wrapping direction is from the connector's bottom towards the connector.**

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4 Wrap the cable with three layers of electrical tape, see Figure 2, Figure 3, and Figure 4

The wrapping method is the same as that for the waterproof tape. The only difference is that the electrical tape should be applied with moderate force.

⚠ **Caution: The outermost layer of tape shall be applied from the bottom up to avoid water penetration.**

5 Secure the tape's two ends, as shown in Figure 5.

After applying the tape, use black ultraviolet–proof ties to securely bundle the tape's two ends. Use the diagonal pliers to cut off the excessive ties and reserve a section of 3 mm at the mouth. This avoids tape expansion under high temperature.

Installing the AISG/MON Interface Cable

Operation	Tool
To fasten the AISG/MON interface cable connector	Crosshead screwdriver

Installation Steps

1 Connect one end of the AISG/MON interface cable to the debugging in terface of the ZXSDR R8862A and fasten the screws.

2 Wrap the AISG/MON interface cable connector with PVC tape in the same way as the feeder is wrapped for waterproof.

3 Label the AISG/MON interface cable with plastic. The AISG/MON interface cable installation is completed.

Installation Check

Category	SN	Requirement
Equipment Installation	1	The pole should be equipped with a lightning rod. Make sure that the device is within the protection scope of 45 degrees and grounded reliably.
	2	The mounting components are installed in proper order, and the main device is fastened securely without swaying.
Grounding and Waterproof Requirement	3	The outdoor power cable and feeder are grounded in line with relevant specifications.
	4	The grounding kit and grounding cable should be laid in the direction of the downward direction of the cable. The angle between the outlet of the grounding cable and the feeder should be no more than 15 degrees. Rust and stains on the grounding terminal of the protective grounding cable should be removed before connection.
Cabling	5	The RRU connector and antenna connector should be laid vertically at least 20 cm. All unused interfaces of the RRU must be protected with protective caps.
	6	Coil the excess antenna jumper into the “S” or “8” shape instead of a circle.
	7	Before routed into the equipment room, outdoor cables must be curved for dropping water, and the lowest point of the curve must be 10 cm to 20 cm lower than the lowest edge of the feeder inlet.
	8	Black ties are used to bind outdoor cables and should be 35 mm longer than the expected length. All necessary outdoor tags are provided in correct format.

AC Lightning Protection Box (PIMAC)

External View

Configuration Principle

When the device is powered by AC supply, it is necessary to configure the AC lightning protection box (PIMAC).

Installation Completed

Installing the Lightning Protection Box

Required installation components: mounting board for the lightning protection box

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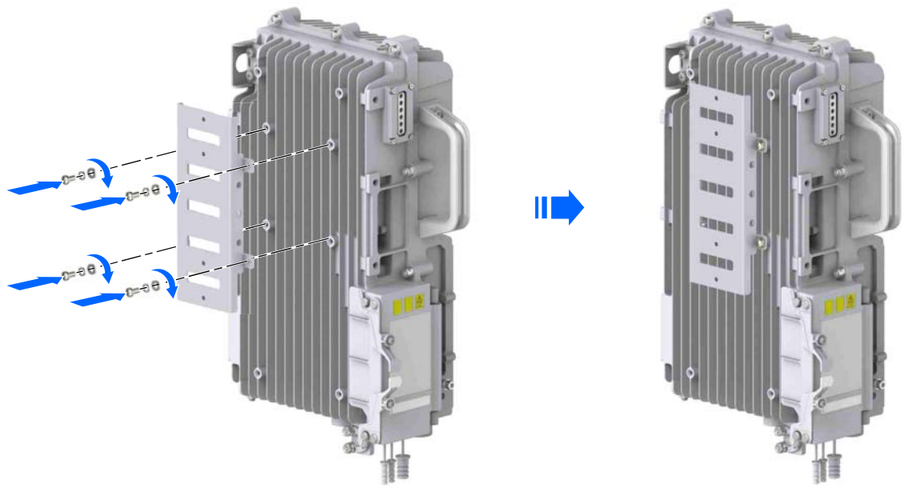
Installation Tools

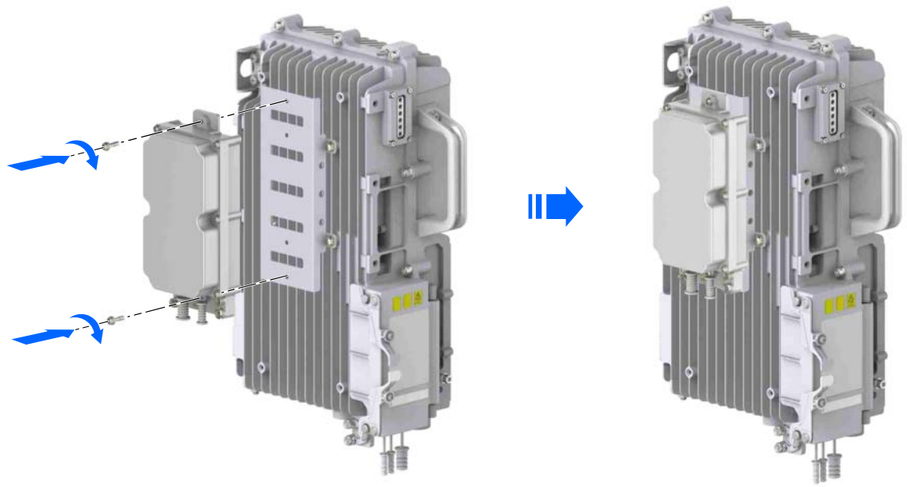
Operation	Tool
To fix the mounting board for the lightning protection box to the RRU chassis	Crosshead screwdriver
To fix the lightning protection box to the RRU chassis bracket	Anti-theft screw

Installation Steps

1 Fix the mounting board for the lightning protection box to the RRU chassis.



2 Fix the lightning protection box to the mounting board.



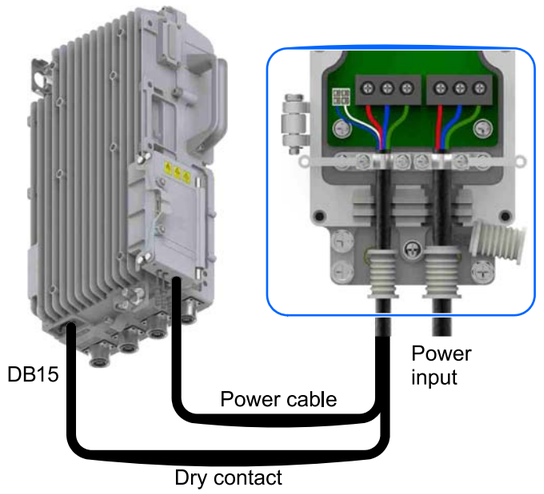
Installing the Cables of the Lightning Protection Box

Operation	Tool
To open the cover of the lightning protection box	M5 Allen hex wrench
To fix the power cable	Crosshead screwdriver
To fix the cable clamp	Crosshead screwdriver

Open the cover of the lightning protection box.

Caution: For side–or wall–mounted installation, make sure that the cover of the junction box can be opened to 90 degrees at least for easy maintenance.

Cable Connection Diagram (AC Lightning Protection Box)



Installing the Junction Box

Configuration Principle

In case of DC power supply, if the DC power cable with a cross–sectional area of 2 × 10 mm² is used, the junction box is used for cable diameter conversion.

Installation

The junction box is similar to the lightning protection box in appearance. For the installation of the junction box, refer to the installation of the lightning protection box.

Cable Connection

Operation	Tool
To open the cover of the junction box	M5 Allen hex wrench
To fix the power cable	Crosshead screwdriver
To fix the cable clamp	Crosshead screwdriver

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Caution: For side– or wall–mounted installation, make sure that the cover of the junction box can be opened to 90 degrees at least for easy maintenance.

Open the cover of the junction box.

Caution: Tighten the screws securely to avoid water penetration.

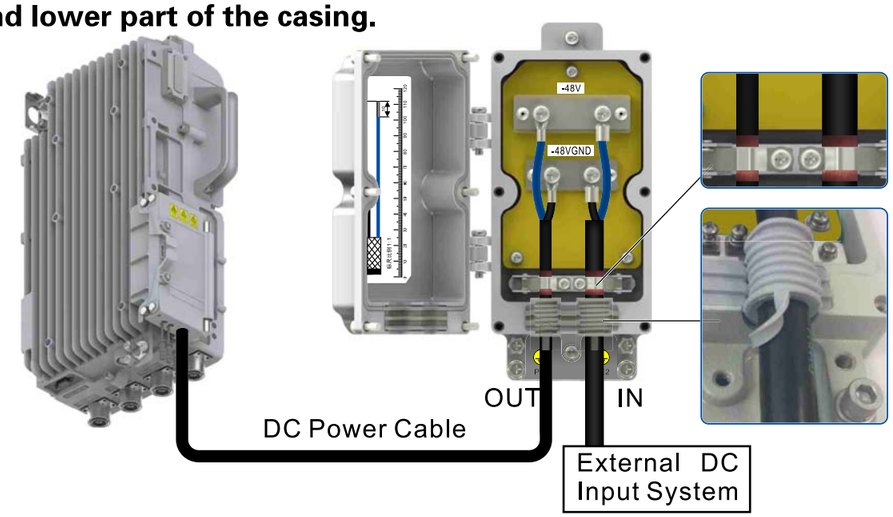
Cable Connection Diagram

Cable Connection of the Junction Box

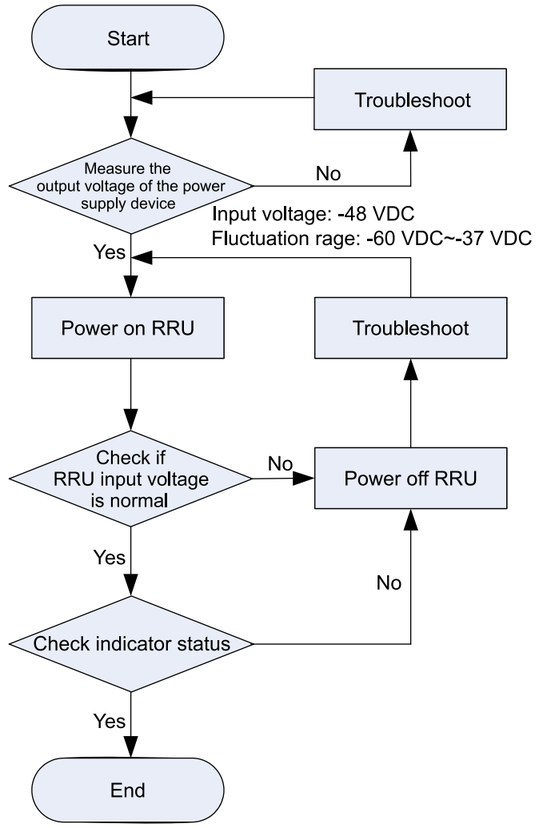
The sealing at the power cable inlet is applicable to the power cable with a cross–sectional area of 2 × 10 mm². The sealing at the power cable outlet is applicable to the power cable with a cross–sectional area of 2 × 4 mm² or 2 × 6 mm².

When the 2 × 4 mm² or 2 × 10 mm² cable is used, the cable must go through the rubber sheath and be pressed tightly between the upper and lower part of the casing.

When the 2 × 6 mm² cable is used, the cable is pressed tightly between the upper and lower part of the casing.



Power–on Flow



Device Power–on

Power–On

1. **Connect the power supply equipme nt to the junction box, and switch on the air circuit breaker of the lightning protection box.**
2. **Power the device on at 30–second intervals in order of cells to avoid current surge. Check whether the optical cables in a cell are connected properly through the indicators on the BBU.**

Device Power–off

Power–off

1. **Cut off the power supply of the sectors supplied by the junction box or the lighting protection box.**
2. **Switch off the power supply of the junction box or the lightning protection box supplied by the power supply equipment in the equipment room.**

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