Ruijie Reyee RG-EG105GW(T) Wireless Router

Installation Guide

Document Version: V1.3

Date: October 27, 2025

Copyright

Disclaimer

The products, services, or features you purchase are subject to commercial contracts and terms, and some or all of the products, services, or features described in this document may not be available for you to purchase or use. Except for the agreement in the contract, Ruijie Networks makes no explicit or implicit statements or warranties with respect to the content of this document.

The names, links, descriptions, screenshots, and any other information regarding third-party software mentioned in this document are provided for your reference only. Ruijie Networks does not explicitly or implicitly endorse or recommend the use of any third-party software and does not make any assurances or guarantees concerning the applicability, security, or legality of such software. You should choose and use third-party software based on your business requirements and obtain proper authorization. Ruijie Networks assumes no liability for any risks or damages arising from your use of third-party software.

The content of this document will be updated from time to time due to product version upgrades or other reasons, Ruijie Networks reserves the right to modify the content of the document without any notice or prompt.

This manual is designed merely as a user guide. Ruijie Networks has tried its best to ensure the accuracy and reliability of the content when compiling this manual, but it does not guarantee that the content of the manual is completely free of errors or omissions, and all the information in this manual does not constitute any explicit or implicit warranties.

Preface

Intended Audience

This document is intended for:

- Network engineers
- Technical support and servicing engineers
- Network administrators

Technical Support

- Ruijie Reyee website: https://reyee.ruijie.com
- Online support center: https://reyee.ruijie.com/en-global/support
- Case portal: https://www.ruijie.com/support/caseportal
- Community: https://community.ruijie.com
- Email support: service_rj@ruijie.com
- Live chat: https://reyee.ruijie.com/en-global/rita

Conventions

1. Signs

The signs used in this document are described as below:

Danger

An alert that calls attention to safety operation instructions that if not understood or followed when operating the device can result in physical injury.

Warning

An alert that calls attention to important rules and information that if not understood or followed can result in data loss or equipment damage.

Caution

An alert that calls attention to essential information that if not understood or followed can result in function failure or performance degradation.

Note

An alert that contains additional or supplementary information that if not understood or followed will not lead to serious consequences.

Specification

An alert that contains a description of product or version support.

2. Note

This manual provides installation steps, troubleshooting, technical specifications, and usage guidelines for cables and connectors. It is intended for users who want to understand the above and have extensive experience in network deployment and management, and assume that users are familiar with related terms and concepts.

Contents

1 Product Overview

The RG-EG105GW(T) is an AC1300M Wi-Fi 5 router developed by Ruijie Networks for enterprises. The device can be used as an AP. The software system of RG-EG105GW(T) supports enterprise-class application control and access authentication. The device also supports the expansion of four wired RJ45 interfaces and allows the access of wireless clients.

RG-EG105GW(T) adopts a flexible design that can be mounted on a workbench or wall to effectively save the space. The router is applicable to offices, cafes, restaurants and stores.

1.1 Package Contents

Table 1-1 Package Contents

No.	Item	Quantity
1	RG-EG105GW(T) router	1
2	User Manual	1
3	Power adapter	1
4	Warranty Card	1
5	Mounting bracket (with four rubber pads)	1
6	CA3 x 24 mm bolts	2
7	Expansion anchors	2

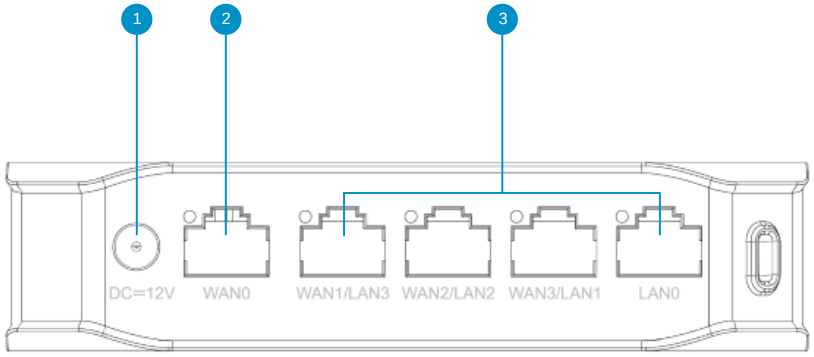
Note

The package contents generally contain the above items. The actual delivery is subject to the order contract. And please check your goods carefully against the order contract. If you have any questions, please contact the distributor.

1.2 Product Appearance

1.2.1 RG-EG105GW(T)

Figure 1-1 Appearance of a RG-EG105GW(T) Router



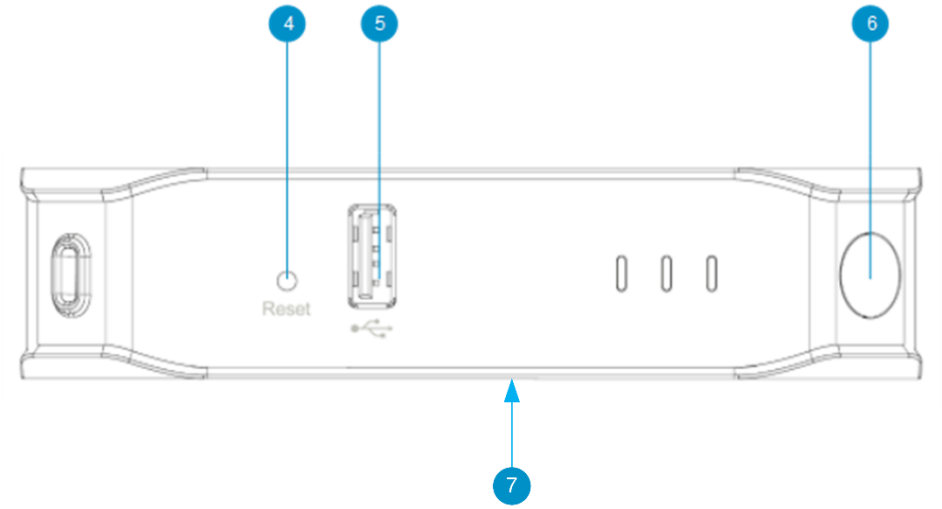


Table 1-2 Panel Specifications

No.	Description
1	DC⎓12V: Power plug
2	WAN0: Configure the WAN0 port to establish an Internet connection.
3	LAN0-LAN3: Connect the LAN0-LAN3 ports to the switch, the access point or other network devices with an Ethernet cable. Note: If the LAN port is connected to the AP directly, a power supply module needs to be installed on the AP.
4	Reset Button: Press the Reset button for less than 2 seconds to restart the device. Press the Reset button for over 5 seconds to restore the router to factory settings. (Release the button when the system status LED blinks).
5	USB2.0 Port
6	Mesh Button: Press the Mesh button for less than 2 seconds to perform Mesh pairing.
7	Nameplate: Nameplate on the bottom of the device

1.2.2 LED

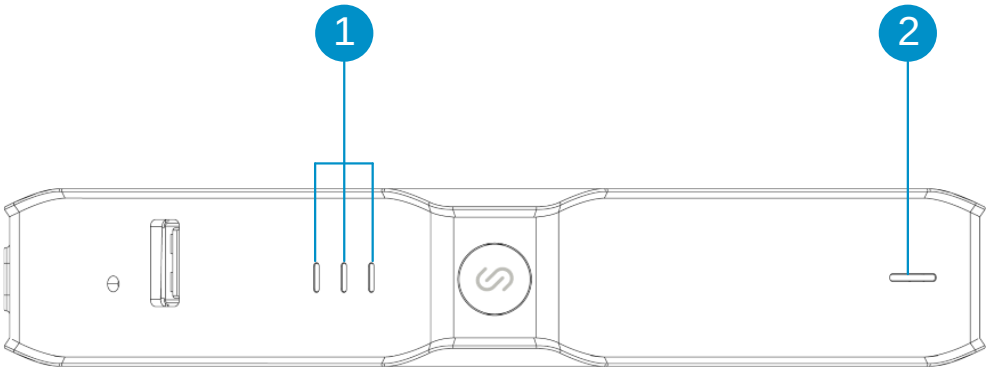


Table 1-3 LED Specifications

No.	LED	Status	Description
1	MESH LED (White)	Off	1. Mesh pairing is not implemented. 2. Wireless relay is not set up.
		Flashing alternately	Mesh pairing is in progress.
		Three bars on	1. The Mesh signal strength is high. 2. The wireless relay signal strength is high.
		Two bars on	1. The Mesh signal strength is medium. 2. The wireless relay signal strength is medium.
		One bar on	1. The Mesh signal strength is low. 2. The wireless relay signal strength is low.
2	SYS LED (Blue)	Flashing	● Fast flashing (at 8 Hz): The router is starting up. ● Slow flashing (at 0.5 Hz): The network is unreachable. ● One long flash followed by three short flashes (at 0.8 Hz): The router is faulty. ● Flashing twice in succession (at 0.8 Hz): 1. The router is restoring factory settings. 2. The router is upgrading the software. Note: Do not power off the router in this case.
		Solid on	The router is functioning properly.
		Off	The router is not powered on.

1.2.3 Power Supply

The RG-EG105GW(T) router adopts the power adapter (12 V/1.5 A) delivered with the device.

1.3 Technical Specifications

Table 1-4 Technical Specifications

System Specifications	CPU	Dual-core processor, 880 MHz clock frequency
	Flash memory	32 MB SPI NOR Flash
	RAM	256 MB DDR3
Wi-Fi Radio	Wi-Fi standard	Wi-Fi 5 (IEEE 802.11ac) standard, compatible with IEEE 802.11a/b/g/n standards
	2.4 GHz Wi-Fi	Wi-Fi 4 (IEEE 802.11b/g/n)
	5 GHz Wi-Fi	Wi-Fi 4 (IEEE 802.11a/n) Wi-Fi 5 (IEEE 802.11ac)
	Maximum wireless data rate	1266 Mbps
	2.4 GHz wireless data rate	400 Mbps
	5 GHz wireless data rate	866 Mbps
	Operating band	IEEE 802.11b/g/n, 2.400 GHz to 2.4835 GHz IEEE 802.11a/n/ac, 5.150 GHz to 5.350 GHz, 5.470 GHz to 5.725 GHz, 5.725 GHz to 5.850 GHz Note: Available bands vary with countries and regions. To use the preceding frequency bands, ensure that your country or region supports these frequency bands.
	Coverage range	115 ㎡ (1237.85 square ft.) Note: The data is obtained in an ideal environment without obstruction. The signal coverage radius depends on client performance and environmental interference.
	2.4 GHz channel width	Auto/20/40 MHz
	5 GHz channel width	Auto/20/40/80 MHz
	Radio design	Dual-radio 4 spatial streams

		● 2.4 GHz: 2 x 2, MIMO ● 5 GHz: 2 x 2, MIMO
	Maximum transmit power (2.4 GHz)	Combined power: 29 dBm (single-stream power: 26 dBm) Note: The transmit power varies according to regulations in different countries and regions.
	Maximum transmit power (5 GHz)	Combined power: 29 dBm (single-stream power: 26 dBm) Note: The transmit power varies according to regulations in different countries and regions.
	Modulation	OFDM: BPSK@6/9 Mbps, QPSK@12/18 Mbps, 16QAM@24 Mbps, 64QAM@48/54 Mbps DSSS: DBPSK@1 Mbps, DQPSK@2 Mbps, and CCK@5.5/11 Mbps MIMO-OFDM: BPSK, QPSK, 16QAM , 64QAM, 256QAM
	Receive sensitivity	11b: –91 dBm (1Mbps)，–88 dBm (5.5Mbps)，–85 dBm (11Mbps) 11a/g: –89 dBm (6Mbps)，–80 dBm (24Mbps)，–76 dBm (36Mbps)，–71 dBm (54Mbps) 11n: –83 dBm (MCS0)，–65 dBm (MCS7)，–83 dBm (MCS8)，–65 dBm (MCS15) 11ac: 20MHz: –83 dBm (MCS0), –57 dBm (MCS9) 11ac: 40MHz: –79 dBm (MCS0), –57 dBm (MCS9) 11ac: 80MHz: –76 dBm (MCS0), –51 dBm (MCS9)
Antenna	Antenna	Integrated 2.4 GHz and 5 GHz: 2 built-in omnidirectional antennas
	Antenna gain (2.4 GHz)	3.00 dBi
	Antenna gain (5 GHz)	4.00 dBi
Port Specifications	USB port	1 x USB 2.0 port
	Number of fixed WAN ports	1

	Number of fixed LAN ports	1
	Maximum number of WAN ports	4
	Maximum number of LAN ports	4
	Number of LAN/WAN ports	3
	Number of 10/100/1000BASE-T ports	5
	Total number of RJ45 ports	5
	LEDs	1 x system status LED 3 x mesh LEDs
	Reset button	1
	Buttons	1 x mesh button
Power Supply and Consumption	Power supply	DC power adapter
	Power input	DC adapter: ● Rated input voltage: 100 V AC to 240 V AC, 50/60 Hz Output: ● Rated output voltage: 12 V DC ● Maximum output current: 1.5 A
	Maximum power consumption	15 W
	Dimensions of the DC connector	Outer diameter: 5.5 mm (0.22 in.) Inner diameter: 2.1 mm (0.08 in.) Depth: 10 mm (0.39 in.)
Dimensions and Weight	Product dimensions (W x D x H)	120 mm x 28 mm x 120 mm (4.72 in. x 1.1 in. x 4.72 in.) (excluding the mounting bracket)
	Package dimensions (W x D x H)	180 mm x 130 mm x 86 mm (7.09 in. x 5.12 in. x 3.39 in.)
	Weight	0.251 kg (0.55 lbs.) (without packaging materials)
	Shipping weight	0.56 kg (1.23 lbs)
Environment and Reliability	Cooling	Natural cooling
	Fan	Fanless design

	Operating temperature	0°C to 40°C (32°F to 104°F)
	Storage temperature	–40°C to +70°C (–40°F to +158°F)
	Operating humidity	5% RH to 95% RH (non-condensing)
	Storage humidity	5% RH to 95% RH (non-condensing)
	Mounting options	Desk, wall
	IP rating	IP30
	Surge protection	Service port: ±2 kV for common mode Power connector: ±4 kV for common mode and ±2 kV for differential mode (level R PASS)
	MTBF	400,000 hours

Warning

Operation of this equipment in a residential environment could cause radio interference.

2 Preparing for Installation

2.1 Safety Precautions

Caution

- To avoid personal injury and device damage, carefully read the safety precautions before you install the device.
- The following safety precautions may not cover all possible dangers.

2.2 General Safety Precautions

- Do not expose the device to high temperature, dusts, or harmful gases. Do not install the device in an inflammable or explosive environment. Keep the device away from EMI sources such as large radar stations, radio stations, and substations. Do not subject the router to unstable voltage, vibration, and noises.
- The installation site should remain dry. Keep the device at least 500 m (0.31 mile) away from the ocean and do not face it towards the sea breeze.
- The installation site should be free from water flooding, seepage, dripping, or condensation. The installation site should be selected subject to the features of network planning and communication equipment, taking into consideration the climate, hydrology, geology, earthquake, electrical power, and transportation.

Note

Please follow the procedures described in the user manual to install and remove the device.

2.3 Electric Safety

- Observe local regulations and specifications during electric operations. Only personnel with relevant qualifications can perform such operations.
- Check whether there are potential risks in the work area. For example, check whether the power supply is grounded, whether the grounding is reliable, and whether the ground is wet.
- Learn about the position of the indoor emergency power switch before installation. Cut off the power switch in case of accidents.
- Make sure that the device is powered off when you cut off the power supply.
- Do not place the device in a damp/wet location. Do not let any liquid enter the chassis.
- Keep the device far away from grounding or lightning protection devices for power equipment.
- Keep the device away from radio stations, radar stations, high-frequency high-current devices, and microwave ovens.

Caution

Improper or incorrect electric operations may cause a fire, electric shock, and other accidents, and lead to severe and fatal personal injury and device damage.

Direct or indirect contact with high voltage or mains power supply through wet objects may cause fatal dangers.

2.4 Installation Environment Requirements

The RG-EG105GW(T) router must be used indoors. To ensure normal operation and prolong the service life of the device, the installation site must meet the following requirements.

2.4.1 Installation Requirements

- Install the device into an open environment. If the device is installed into a closed environment, ensure that the cabinet has proper ventilation and heat dissipation.
- Make sure that the installation site is sturdy enough to bear the weight of the device and its accessories.
- You are advised to install the device on a standard workbench and maintain a proper clearance around the air vents for heat dissipation.

2.4.2 Ventilation Requirements

The RG-EG105GW(T) router adopts natural cooling. Reserve sufficient space around the device to ensure normal heat dissipation.

2.4.3 Temperature and Humidity Requirements

To ensure the normal operation and prolonged service life of the device, maintain an appropriate temperature and humidity in the equipment room. The equipment room with too high or too low temperature and humidity for a long period may damage the device.

- In an environment with high humidity, the insulating material may have poor insulation or even leak electricity. Sometimes it is also prone to changes in the mechanical properties and causes rusting of metal parts.
- In an environment with low relative humidity, static electricity is prone to occur and damage the internal circuits of the device.
- Too high temperatures can accelerate the aging of insulation materials, greatly reducing the reliability of the device and severely affecting its service life.

Table 2-1 Temperature and Humidity Requirements

Operating Temperature	Operating Humidity
0ºC to 40ºC (32ºF to 104ºF)	5% to 95% RH (non-condensing)

2.4.4 Cleanliness Requirements

Dust poses a major threat to the device. The indoor dust takes on a positive or negative static electric charge when falling on the device, causing poor contact of the metallic joint. Such electrostatic adhesion may occur

more easily when the relative humidity is low, not only affecting the service life of the device, but also causing communication faults. The following table describes the requirements for the dust content and granularity in the equipment room.

Table 2-2 Requirements for Dust

Max Diameter of Dust Particle (μm)	0.5	1	3	5
Max Content (Particles/m^3)	1.4×10^7	7×10^5	2.4×10^5	1.3×10^5

Apart from dust, the salt, acid, and sulfide in the air in the server room must meet strict requirements. These harmful substances will accelerate metal corrosion and component aging. Therefore, the equipment room should be properly protected against the intrusion of harmful gases, such as sulfur dioxide, hydrogen sulfide, nitrogen dioxide, ammonia and chlorine gas. The following table lists limit values for harmful gases.

Table 2-3 Requirements for Gases

Gas	**Average (mg/m^3)**	**Maximum (mg/m^3)**
Sulfur dioxide (SO_2)	0.2	1.5
Hydrogen sulfide (H_2S)	0.006	0.03
Nitrogen dioxide (NO_2)	0.04	0.15
Ammonia (NH_3)	0.05	0.15
Chlorine gas (Cl_2)	0.01	0.3

2.4.5 EMI Requirements

- Keep the device away from the grounding equipment or lightning and grounding equipment of the power device as much as possible.
- Keep the device far away from radio stations, radar stations, high-frequency high-current devices, and microwave ovens.

2.5 Tools

Table 2-4 Tools

Common Tools	Phillips screwdrivers, power cords, Ethernet cables, fastening bolts, diagonal pliers, and binding straps
Special Tools	Antistatic gloves, wire stripper, crimping pliers, crystal connector crimping pliers, and wire cutter
Meter	Multimeter, and bit error rate tester (BERT)

Note

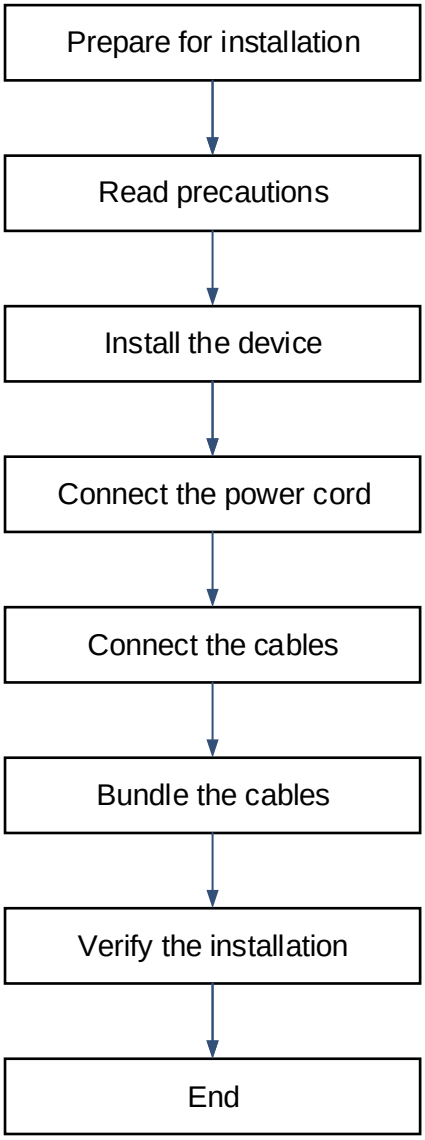
The router is delivered without a tool kit. The tool kit is customer-supplied.

3 Installing the Router

The RG-EG105GW(T) router must be installed indoors.

3.1 Installation Procedure

To avoid damage to the router, please follow the steps for installation.



3.2 Before You Begin

Please confirm that you have read Chapter 2 carefully and that the requirements described in Chapter 2 are all met.

3.2.1 Pre-installation Checklist

Carefully plan and arrange the installation position, networking mode, power supply, and cabling before installation. Confirm the following requirements before installation:

- The installation site provides sufficient space for heat dissipation.
- The installation site meets the temperature and humidity requirements of the device.
- The power supply and required current are available in the installation site.
- The selected power supply meets the system power requirements.
- The installation site meets the cabling requirements of the device.
- The installation site meets the site requirements of the device.
- The custom device meets the requirements of the user.

3.2.2 Precautions

To ensure the normal operation and prolonged service life of the device, please observe the following precautions:

- Do not power on the device during installation.
- Install the device in a well-ventilated location.
- Do not subject the device to high temperatures.
- Keep away from high voltage cables.
- Install the device indoors.
- Do not expose the device in a thunderstorm or strong electric field.
- Keep the device clean and dust-free.
- Cut off the power switch before cleaning the device.
- Do not wipe the device with a damp cloth.
- Do not wash the device with liquid.
- Do not open the enclosure when the device is working.
- Fasten the device tightly.

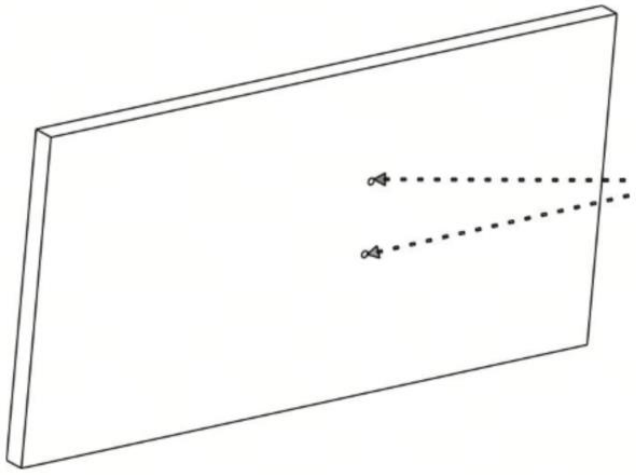
3.3 Installing the Router

Note

- You are advised to install the device where you can get the optimal coverage. Keep the front panel of the device facing the coverage area.
- The installation guide is for reference only. The actual product shall prevail.
- Make sure that the power socket is available around the device subject to the power cord length of the adapter.

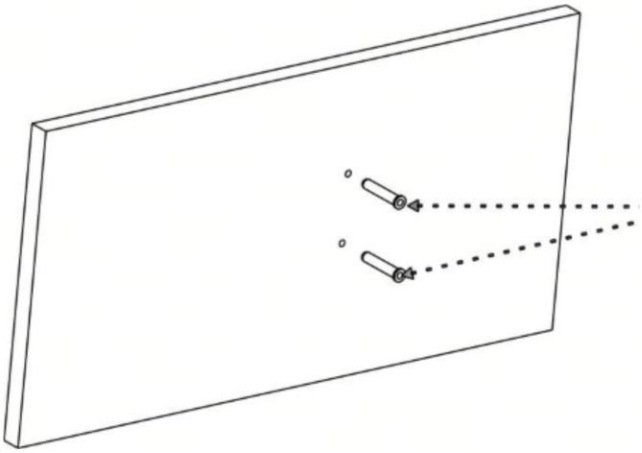
3.3.1 Installing the Router on a Wall

(1) Drill two holes on the wall. The holes should be level with each other and their centers should be 30 mm (1.18 in.) to 38 mm (1.50 in.) apart.



Drill two holes on the wall with the center-to-center distance of 30 mm (1.18 in.) to 38 mm (1.50 in.).

(2) Tap the two expansion anchors into the holes and make the outer edge of the anchors flush with the wall.

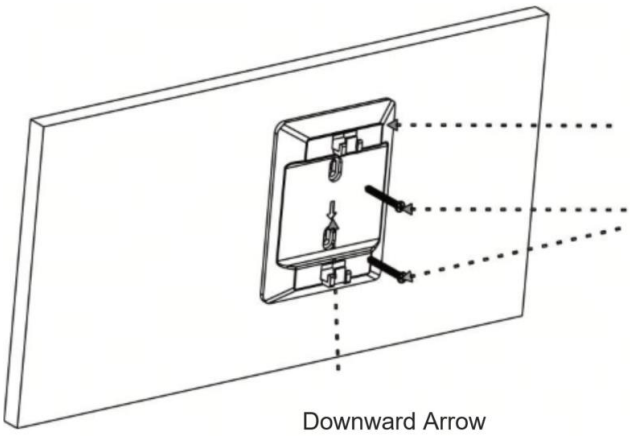


Tap the expansion anchors into the holes.

(3) Attach the mounting bracket to the wall with its two holes aligned to the expansion anchors. Drive two screws into the expansion anchors to secure the bracket on the wall.

Note

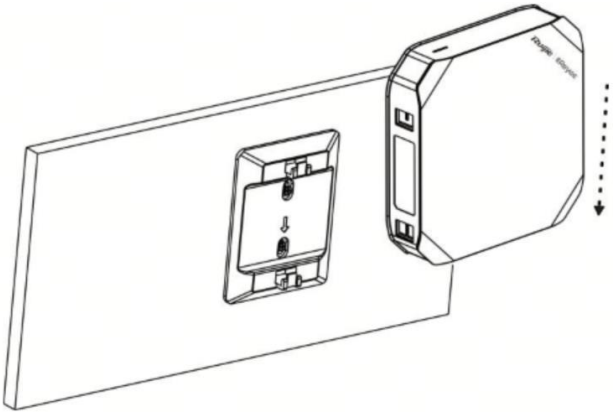
Ensure that the arrow symbol on the bracket should point downwards (↓) when installing the bracket.



Attach the mounting bracket to the wall with its two holes aligned to the expansion anchors.

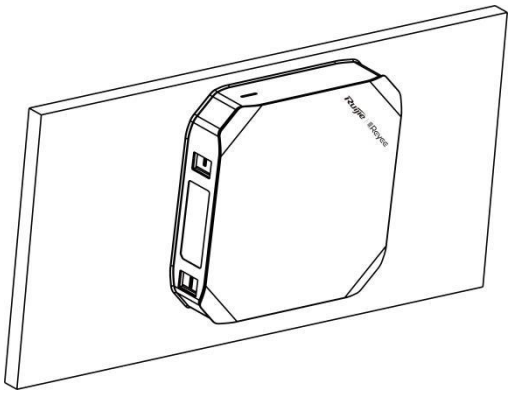
Drive two screws into the anchors to secure the bracket on the wall.

(4) Gently slide the router onto the mounting bracket until it clicks into place.



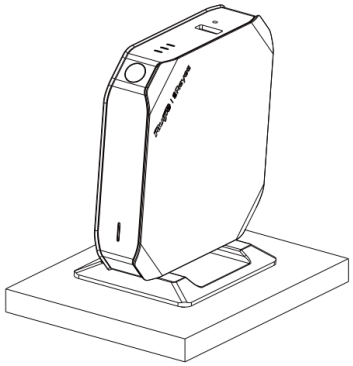
Gently slide the router onto the mounting bracket until it clicks into place.

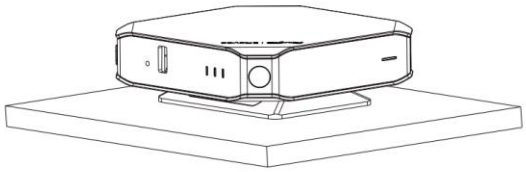
(5) Secure the router on the mounting bracket.



3.3.2 Installing the Router on a Workbench

The router can be also installed on a workbench vertically and horizontally, as shown in the following figures.





Note

- Connect the Ethernet cables to the router after installation.
- Slide the router onto the mounting bracket in the orientation of the arrow on the bracket until it clicks into place. Do not forcibly slide the router onto the mounting bracket.
- Verify that the router is properly secured on the bracket after installation.

3.4 Connecting the Power Cord

The delivered power adapter adopts the AC power supply: 100 V AC to 240 V AC, 50/60 Hz. Ensure that the power supply meets the requirements.

Please connect the power cord based on the following steps:

(1) Connect the delivered DC adapter connector to the DC input plug on the router.

(2) Connect the other end of the DC adapter to the AC power socket.

Caution

- Learn about the position of the power switch before installation. Cut off the power switch in case of accidents.
- Verify that the external power supply is cut off before the router is powered on.

3.5 Connecting the Ethernet Cables

For cable pairs, please refer to Appendix A.

- WAN port: Connect the WAN port to the Internet with an Ethernet cable.
- LAN port:
  - Connect the AP to the LAN port on the router with an Ethernet cable. After power-on, the router will broadcast the SSID @Ruijie-XXXXX.
  - Connect the PC to the LAN port of the router with an Ethernet cable. Enable **Automatic (DHCP)** on the PC to obtain an IP address automatically.

Caution

Avoid a small bend radius at the connector.

3.6 Bundling the Cables

Pay attention to the following precautions when bundling the cables:

- The power cords and other Ethernet cables should be bundled in a visually pleasing way.
- When you bundle twisted pairs, make sure that the twisted pairs at the connectors have natural bends or bends of large radius.
- Do not bundle twisted pairs too tightly, as this may press hard the cables and affect their service life and transmission performance

3.7 Checking after Installation

3.7.1 Checking Cable Connection

- Verify that the UTP/STP cable matches with the interface type.
- Verify that cables are properly bundled.

3.7.2 Checking Power Supply

Verify that the power cord is properly connected and compliant with safety requirements.

4 Configuring the Router

4.1 Powering on the Router

4.1.1 Checklist before Power-on

Before power-on, check the following items:

- Check whether the power cord is properly connected.
- Check whether the power supply voltage meets the requirement.
- Check whether the Ethernet cable is properly connected, whether the client (like a PC) is started, and whether configuration parameters are configured.

Note

Learn about the position of the power switch before power-on. Cut off the power switch in case of accidents.

4.1.2 Powering on the Router

Turn on the power switch of the external power supply and then the device starts up.

4.1.3 Checklist after Power-on

After power-on, check the following items:

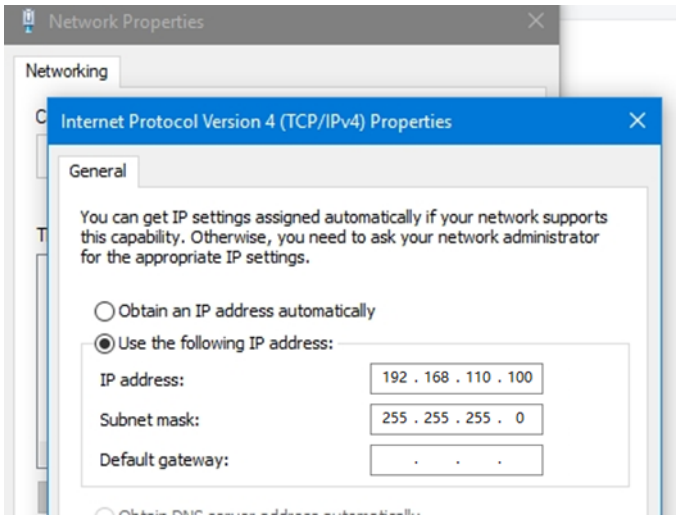
- Check whether the LEDs function properly.

  For details, see Section1.2.2 LED.
- Check whether the Web management system of the device is available.

  Please visit http://192.168.110.1 by default to perform configuration on the Web management system.

4.2 Log In to the Web Interface

(1) Start up the PC and configure the local connection attribute on the PC. Change the static IP address of the PC to 192.168.110.XXX (2–254).



(2) Open a browser, enter 192.168.110.1 into the address bar of the browser, and press **Enter**.

Caution

Use the default password "admin" to log in to the switch for the first time. To ensure security, you are advised to change the password after login, and update the password regularly.

4.3 Configuring the Router

To better use the router, please configure the device on the Web management system subject to specific needs. Please refer to the corresponding configuration guide.

4.4 Setting up a Mesh Network

(1) Connect the first router to the network and configure it as the primary device.

(2) Place the second router 2 m (6.56 ft) away from the first router. Power on the second router.

The system status LED of the second router blinks for 2 to 3 minutes. When the system status LED is solid on, the second router is started up.

(3) Press the MESH button on the first router to perform mesh pairing automatically.

The MESH LEDs on both routers are blinking for about 2 minutes. When the MESH LEDs stop blinking and turn solid white, mesh pairing succeeds.

(4) Place the second router where you want to have Wi-Fi coverage and then power on the router.

Wait for 3 to 5 minutes until the MESH LED turns solid on. Mesh networking succeeds and you can access the Internet by connecting to the new Wi-Fi network.

Note

- Make sure that the new router is around the primary router and there are not too many obstacles between them.
- If three or more routers are added for mesh networking, repeat with step 2 to 4. You can add eight devices in batch at one time.

5 Installation Troubleshooting

5.1 Power Troubleshooting

You can check whether the power supply is faulty by observing the LEDs on the router. For the LED status, see Chapter 1. If a fault occurs, check the following items:

- Check whether the power cord is connected properly.
- Check whether the power supply meets the requirements.

Caution

Do not attempt hot swapping of the power cord. If the steps above did not solve your problem, contact your local distributor or technical support personnel.

5.2 System Troubleshooting

If the router is operational after power-on, you can visit the Web management system.

If you fails to log in to the Web management system, check the following items:

- Check whether the power supply works normally.
- Check whether the Ethernet cable is connected properly.
- Check whether **Automatic (DHCP)** is enabled on the PC.

6 Monitoring and Maintenance

6.1 Monitoring

When the router is running, you can monitor the device by observing the LED.

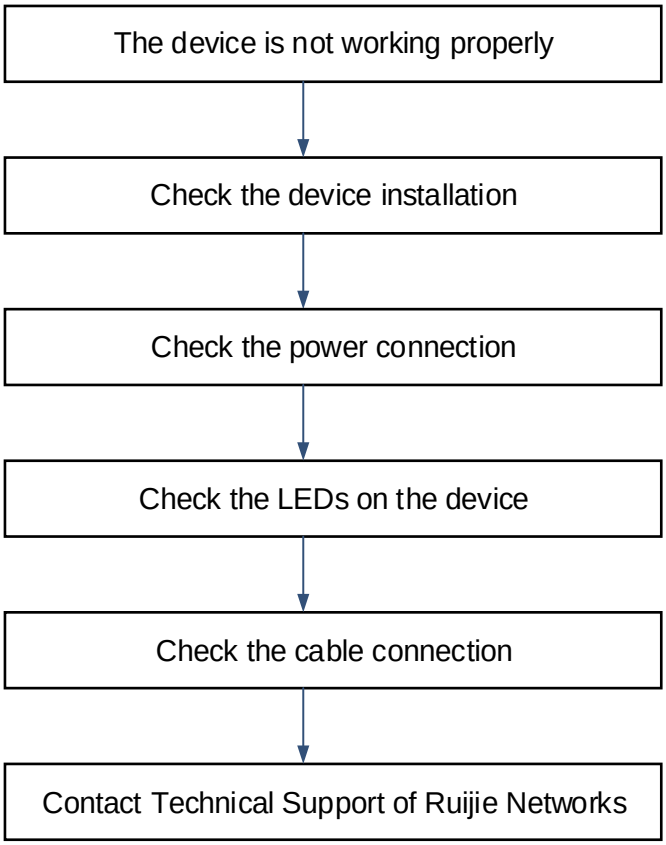
6.2 Hardware Maintenance

If the hardware is faulty, please contact our Technical Assistance Center (TAC) for help.

7 Common Troubleshooting

7.1 General Troubleshooting Procedures

If the router is not operational after power-on, follow the procedures for troubleshooting.



7.2 Common Faults

7.2.1 Fault 1: The LED is still off after the router is powered on.

(1) Verify that the adapter has power input.

(2) Verify that the adapter is functioning properly,

7.2.2 Fault 2: The Ethernet port does not work after the Ethernet cable is plugged in.

(1) Verify that the peer device (switch, AP or other client) is working properly.

(2) Verify that the Ethernet cable is capable of providing the required data rate and is properly connected.

7.2.3 Fault 3: The client cannot find the router.

(1) Verify that the device is properly powered.

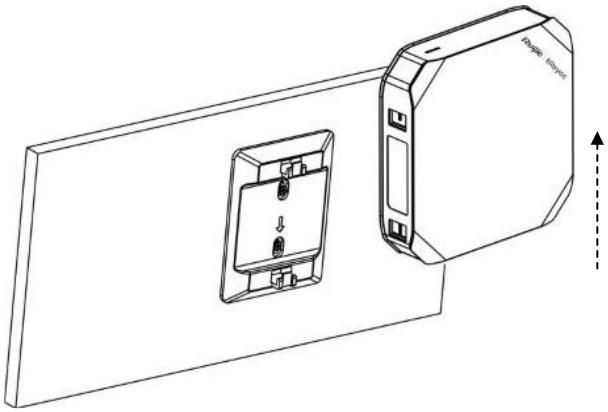
(2) Verify that the Ethernet port is correctly connected.

(3) Verify that the router is correctly configured.

(4) Move the client endpoint to adjust the distance between the client and the router.

7.2.4 Fault 4: The router cannot be removed.

Hold the router with your hands and push it upward and away from the bracket in the opposite orientation of the arrow on the bracket.



8 Appendix

8.1 Connectors and Media

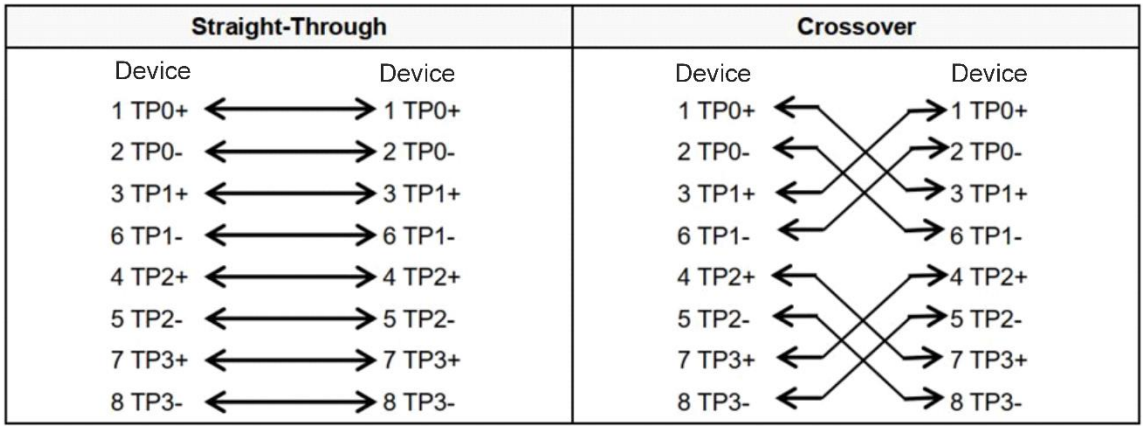
1000BASE-T/100BASE-TX/10BASE-T

The 1000BASE-T/100BASE-TX/10BASE-T is a 10/100/1000 Mbps self-adaptive port that supports auto MDI/MDIX Crossover.

Compliant with IEEE 802.3ab, 1000BASE-T requires Category 5e 100-ohm UTP or STP (STP is recommended) with a maximum distance of 100 meters (328 feet).

The 1000BASE-T port requires all four pairs of wires be connected for data transmission.

Figure 8-1 1000BASE-T Connection



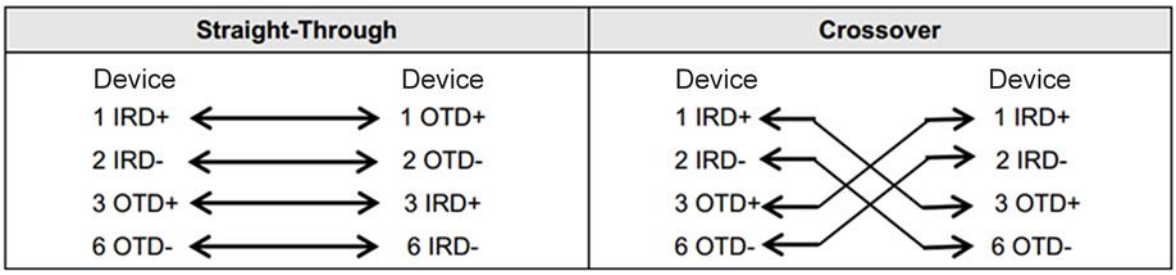
10BASE-T uses Category 3, 4, 5 100-ohm UTP/STP and 1000BASE-T uses Category 5 100-ohm UTP/STP for connections. Both support a maximum length of 100 meters (328 feet). The following table shows 100BASE-TX/10BASE-T pin assignments.

Table 8-1 100BASE-TX/10BASE-T Pin Assignments

Pin	Socket	Plug
1	Input Receive Data+	Output Transmit Data+
2	Input Receive Data-	Output Transmit Data-
3	Output Transmit Data+	Input Receive Data+
6	Output Transmit Data-	Input Receive Data-
4, 5, 7, 8	Not Used	Not Used

The following figure shows the wiring of straight-through and crossover cables for 100BASE-TX/10BASE-T.

Figure 8-2 100BASE-TX/10BASE-T Twisted Pair Connection



8.2 Cabling Recommendations in Installation

When the device is installed in standard 19-inch cabinets, the cables are tied in the binding rack on the cabinet by the cabling rack, and top cabling or bottom cabling is adopted according to the actual situation in the equipment room. All cable connectors should be placed at the bottom of the cabinet in an orderly manner instead of outside the cabinet easy to touch. Power cables are routed beside the cabinet, and top cabling or bottom cabling is adopted according to the actual situation in the equipment room, such as the position of the DC power distribution box, AC socket, or lightning protection box.

8.2.1 Requirement for the minimum cable bend radius

- The bend radius of a power cord, communication cable, and flat cable should be greater than five times their respective diameters. The bend radius of these cables that often bend or suffer removal/insertion should be greater than seven times their respective diameters.
- The bend radius of a common coaxial cable should be greater than seven times its diameter. The bend radius of this type of cables that often bend or suffer removal/insertion should be greater than 10 times its diameter.
- The bend radius of a high-speed cable (SFP cable, for example) should be greater than five times its diameter. The bend radius of this type of cables that often bend or suffer removal/insertion should be greater than 10 times its diameter.

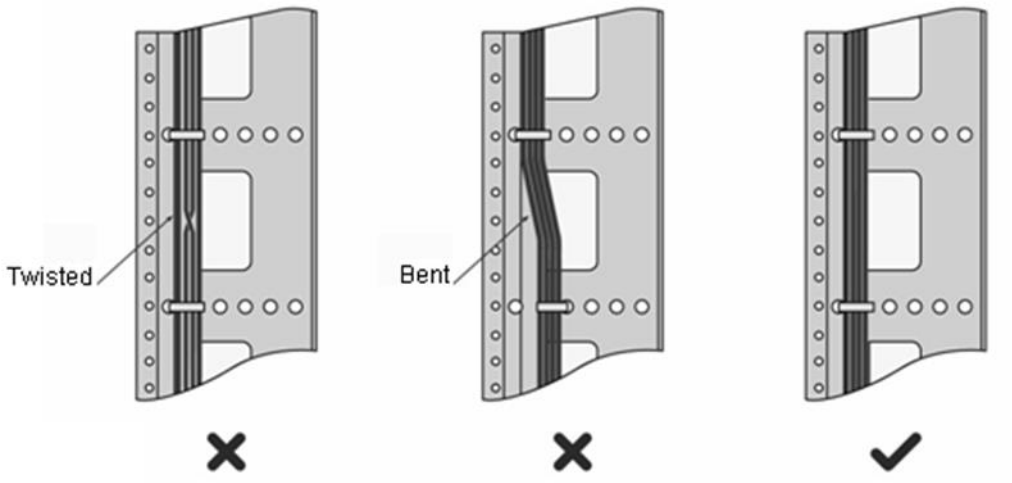
8.2.2 Requirement for the minimum fiber bend radius

- The diameter of a fiber tray to hold fibers cannot be less than 25 times the diameter of the fiber.
- When moving an optical fiber, the bend radius of the fiber should be equal to or greater than 20 times the diameter of the fiber.
- During cabling of an optical fiber, the bend radius of the fiber should be equal to or greater than 10 times the diameter of the fiber.

8.2.3 Precautions for Bundling up Cables

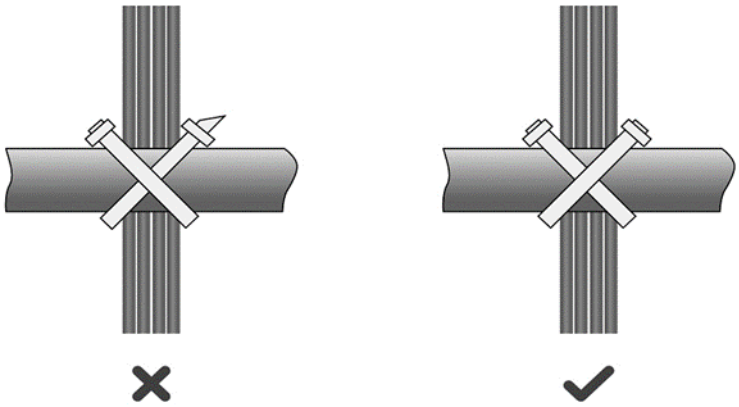
- Before bundling cables, correctly mark labels and stick the labels to cables where appropriate.
- Cables should be neatly and properly bundled, as shown in Figure 8-3.

Figure 8-3 Bundling Up Cables (1)



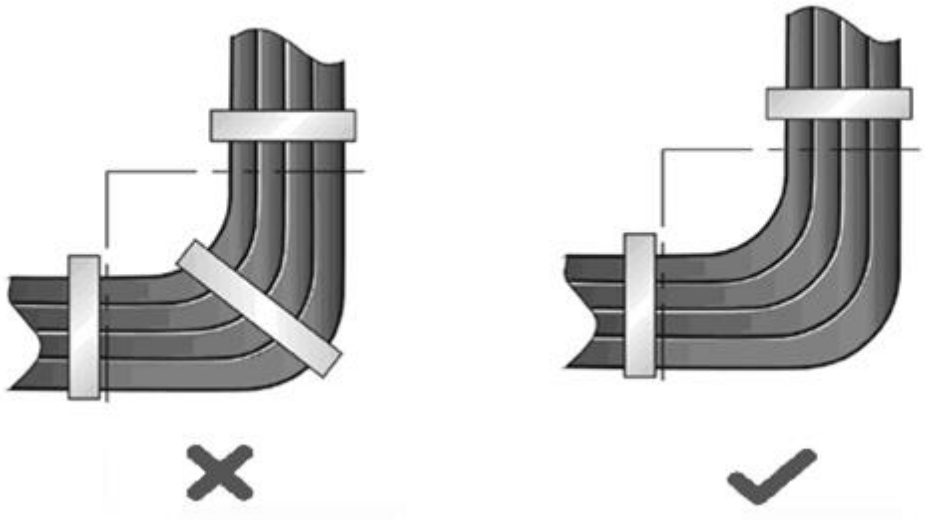
- Cables of different types (such as power cords, signal cables, and grounding cables) should be separated in cabling and bundling. When they are close, crossover cabling can be adopted. In the case of parallel cabling, power cords and signal cables should maintain a space equal to or greater than 30 mm.
- The binding rack and cabling slot inside and outside the cabinet should be smooth, without sharp corners.
- The metal hole traversed by cables should have a smooth and fully rounding surface or an insulated lining.
- Proper buckles should be selected to bundle up cables. It is forbidden to connect two or more buckles to bundle up cables.
- After bundling up cables with buckles, you should cut off the remaining part. The cut should be smooth and trim, without sharp corners, as shown in Figure 8-4.

Figure 8-4 Bundling Up Cables (2)



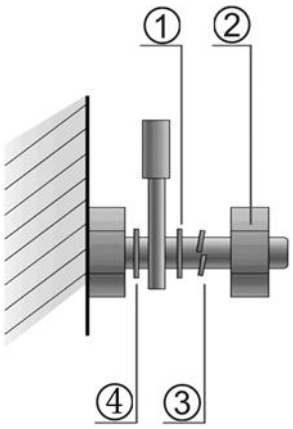
- When cables need to bend, you should first bundle them up. However, the buckle cannot be bundled within the bend area. Otherwise, significant stress may be generated in cables, breaking cable cores. As shown in Figure 8-5.

Figure 8-5 Bundling Up Cables (3)



- Cables not to be assembled or remaining parts of cables should be folded and placed in a proper position of the cabinet or cabling slot. The proper position indicates a position that will not affect device running or cause device damage or cable damage during commissioning.
- The power cords cannot be bundled on the guide rails of moving parts.
- The power cables connecting moving parts such as door grounding wires should be reserved with some access after assembled. When the moving part reaches the installation position, the remaining part should not touch heat sources, sharp corners, or sharp edges. If heat sources cannot be avoided, high-temperature cables should be used.
- When using screw threads to fasten cable terminals, the bolt or screw must be tightly fastened, and anti-loosening measures should be taken, as shown in Figure 8-6.

Figure 8-6 Cable Fastening



	Flat Washer	Spring Washer
	Nut	Flat Washer

- The hard power cable should be fastened by the terminal connection area to prevent stress.
- Do not use self-tapping screws to fasten terminals.
- Power cables of the same type and in the same cabling direction should be bundled up into cable bunches, with cables in cable bunches clean and straight.
- Binding by using buckles should be performed according to the table.

Cable Bunch Diameter	Distance between Every Binding Point
10 mm (0.39 in.)	80 mm to 150 mm (3.15 in. to 5.91 in.)
10 mm to 30 mm (0.39 in. to 1.18 in.)	150 mm to 200 mm (5.91 in. to 7.87 in.)
30 mm (1.18 in.)	200 mm to 300 mm (7.87 in. to 11.81 in.)

- No knot is allowed in cabling or bundling.
- For solder-less terminal blocks (such as air switches) of the cold pressing terminal type, the metal part of the cold pressing terminal should not be exposed outside the terminal block when assembled.