RG-ES0,ES1 Series Unmanaged Switches

Cookbook

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Preface

Intended Audience

This document is intended for:

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

Technical Support

- The official website of Ruijie Reyee: https://www.ruijienetworks.com/products/reyee
- Technical Support Website: https://www.ruijienetworks.com/support
- Case Portal: https://www.ruijienetworks.com/support/caseportal
- Community: https://community.ruijienetworks.com
- Technical Support Email: service_rj@ruijienetworks.com
- Online Robot/Live Chat: https://ruijienetworks.com/rita

Conventions

The signs used in this document are described as follows:

1. Signs

Danger

An alert that contains important safety instructions. Before you work on any equipment, be aware of the hazards involved and be familiar with standard practices in case of accidents.

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. Notes

This manual presents installation instructions, troubleshooting techniques, technical specifications, cable and connector requirements, and usage guidelines. It is intended for users who want to gain insight into the above content and have some experience in installing and maintaining network hardware. It is assumed that users are already familiar with relevant terms and concepts.

Contents

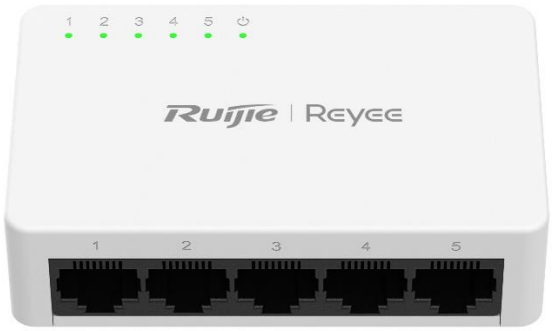
1 Hardware Description

1.1 RG-ES05F

1.1.1 Appearance

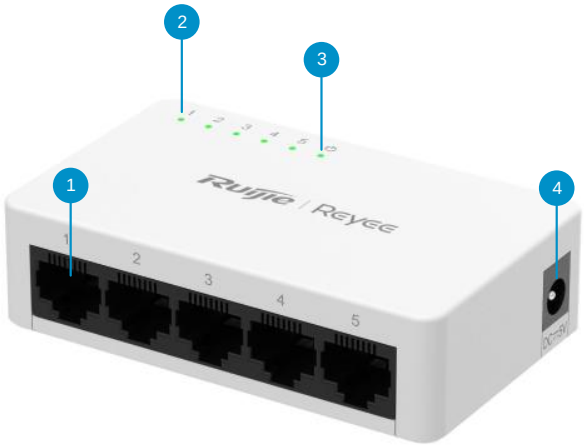
On the front panel, the RG-ES05F switch provides five 10/100Base-T Ethernet ports and one DC power connector.

Figure 1-1 Appearance of RG-ES05F



Front Panel

Figure 1-2 Front Panel of RG-ES05F



Note:	1. 10/100Base-T Ethernet port 2. Port status LED 3. System status LED 4. DC power connector

1.1.2 Technical Specifications

Table 1-1 Technical Specifications

Model	RG-ES05F
Ports	5 x 10/100Base-T Ethernet ports with auto-negotiation
Power Supply	AC input: Rated voltage range: 100 VAC to 240 VAC Maximum voltage range: 90 VAC to 264 VAC Frequency: 50/60 Hz Rated current: 0.3 A Adapter output: Rated voltage: 5 VDC Rated current: 1 A.
EEE	Not supported
PoE	Not supported
Power Consumption	1.4 W
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	10% to 90% RH (non-condensing)
Storage Humidity	5% to 90% RH (non-condensing)
Fan	Not supported
Over-temperature Alarm	Not supported
Optical Transceiver Module	Not supported
EMC Standards	IEC55032 IEC61000-6-4 IEC61000-4-11 IEC61000-4-4 IEC61000-4-2 IEC61000-3-3 IEC61000-3-2 IEC61000-4-3

	IEC61000-4-5
Security Standards	NE62386-1
Earth Leakage Current	≤ 1.5 mA
Dimensions (W x D x H)	85 mm x 52 mm x 23.5 mm (3.35 in. x 2.05 in. x 0.93 in.)
Weight	50 g (0.11 lbs.) (excluding packaging)

Caution

The RG-ES05F switch is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

1.1.3 Cooling

The RG-ES05F switch adopts a natural cooling design to ensure normal functioning of the device. A minimum clearance of 100 mm (3.94 in.) must be maintained around the device for cooling. It is recommended to clean the device once every 3 months to avoid dust from blocking vents.

1.1.4 LEDs

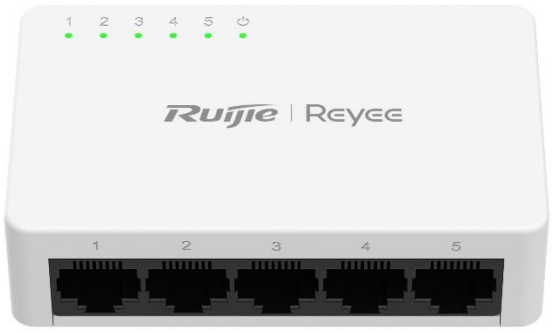
LED	Label	State	Description
System status LED		Off	The switch is powered off.
		Solid on	The switch is operating.
Port status LED	1-5	Off	The port is not connected.
		Solid on	The port is connected at 10/100 Mbps.
		Blinking	The port is receiving or sending traffic at 10/100 Mbps.

1.2 RG-ES05G-L

1.2.1 Appearance

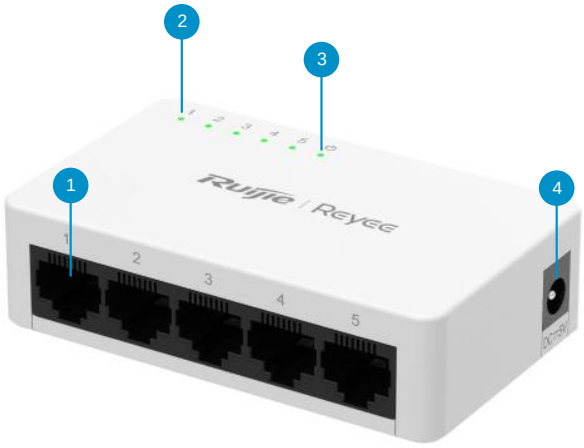
On the front panel, the RG-ES05G-L switch provides five 10/100/1000Base-T Ethernet ports and one DC power connector.

Figure 1-3 Appearance of RG-ES05G-L



Front Panel

Figure 1-4 Front Panel of RG-ES05G-L



Note:	1. 10/100/1000Base-T Ethernet port 2. Port status LED 3. System status LED 4. DC power connector

1.2.2 Technical Specifications

Table 1-2 Technical Specifications

Model	RG-ES05G-L
Ports	5 x 10/100/1000Base-T Ethernet ports with auto-negotiation
Power Supply	AC input: Rated voltage range: 100 VAC to 240 VAC Maximum voltage range: 90 VAC to 264 VAC Frequency: 50/60 Hz Rated current: 0.3 A

	Adapter output: Rated voltage: 5 VDC Rated current: 1 A
EEE	Not supported
PoE	Not supported
Power Consumption	2.1W
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	10% to 90% RH (non-condensing)
Storage Humidity	5% to 90% RH (non-condensing)
Fan	Not supported
Over-temperature Alarm	Not supported
Optical Transceiver Module	Not supported
EMC Standards	IEC55032 IEC61000-6-4 IEC61000-4-11 IEC61000-4-4 IEC61000-4-2 IEC61000-3-3 IEC61000-3-2 IEC61000-4-3 IEC61000-4-5
Security Standards	NE62386-1
Earth Leakage Current	≤ 1.5 mA
Dimensions (W x D x H)	85 mm x 52 mm x 23.5 mm (3.35 in. x 2.05 in. x 0.93 in.)
Weight	59 g (0.13 lbs.) (excluding packaging)

⚠ Caution

The RG-ES05G-L switch is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

1.2.3 Cooling

The RG-ES05G-L switch adopts a natural cooling design to ensure normal functioning of the device. A minimum clearance of 100 mm (3.94 in.) must be maintained around the device for cooling. It is recommended to clean the device once every 3 months to avoid dust from blocking vents.

1.2.4 LEDs

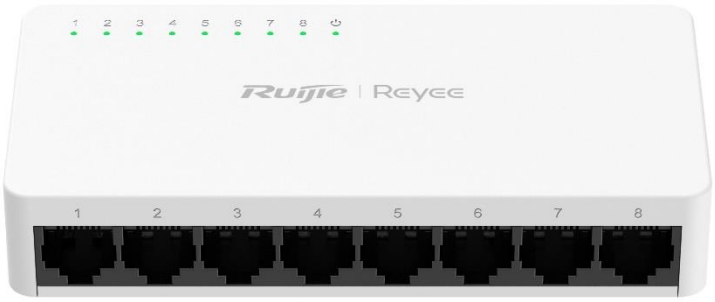
LED	Label	State	Description
System status LED	⏻	Off	The switch is powered off.
		Solid on	The switch is operating.
Port status LED	1-5	Off	The port is not connected.
		Solid on	The port is connected at 10/100 Mbps.
		Blinking	The port is receiving or sending traffic at 10/100 Mbps.

1.3 RG-ES08F

1.3.1 Appearance

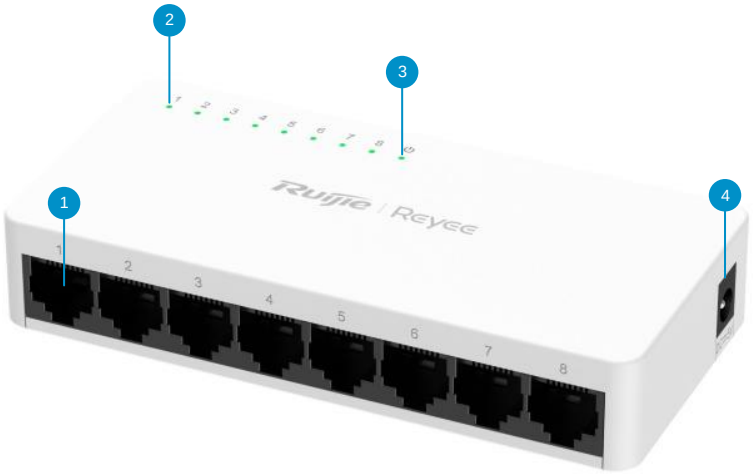
On the front panel, the RG-ES08F switch provides eight 10/100Base-TX Ethernet ports and one DC power connector.

Figure 1-5 Appearance of RG-ES08F



Front Panel

Figure 1-6 Front Panel of RG-ES08F



Note:	1. 10/100Base-TX Ethernet port 2. Port status LED 3. System status LED 4. DC power connector

1.3.2 Technical Specifications

Table 1-3 Technical Specifications

Model	RG-ES08F
Ports	8 x 10/100Base-T Ethernet ports with auto-negotiation
Power Supply	AC input: Rated voltage range: 100 VAC to 240 VAC Maximum voltage range: 90 VAC to 264 VAC Frequency: 50/60 Hz Rated current: 0.3 A Adapter output: Rated voltage: 5 VDC Rated current: 1 A
EEE	Not supported
PoE	Not supported
Power Consumption	2.3 W
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	10% to 90% RH (non-condensing)
Storage Humidity	5% to 90% RH (non-condensing)
Fan	Not supported
Over-temperature Alarm	Not supported
Optical Transceiver Module	Not supported
EMC Standards	IEC55032 IEC61000-6-4 IEC61000-4-11 IEC61000-4-4 IEC61000-4-2 IEC61000-3-3 IEC61000-3-2 IEC61000-4-3 IEC61000-4-5
Security Standards	EN62638-1
Earth Leakage Current	≤ 1.5 mA
Dimensions (W x D x H)	124 mm x 60 mm x 24 mm (4.88 in. x 2.36 in. x 0.94 in.)
Weight	82 g (0.18 lbs.) (excluding packaging)

⚠ Caution

The RG-ES08F switch is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

1.3.3 Cooling

The RG-ES08F switch adopts a natural cooling design to ensure normal functioning of the device. A minimum clearance of 100 mm (3.94 in.) must be maintained around the device for cooling. It is recommended to clean the device once every 3 months to avoid dust from blocking vents.

1.3.4 LEDs

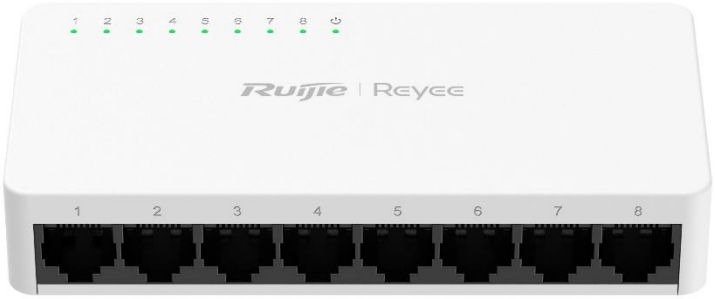
LED	Label	State	Description
System status LED	⏻	Off	The switch is powered off.
		Solid on	The switch is operating.
Port status LED	1-8	Off	The port is not connected.
		Solid on	The port is connected at 10/100 Mbps.
		Blinking	The port is receiving or sending traffic at 10/100 Mbps.

1.4 RG-ES08G-L

1.4.1 Appearance

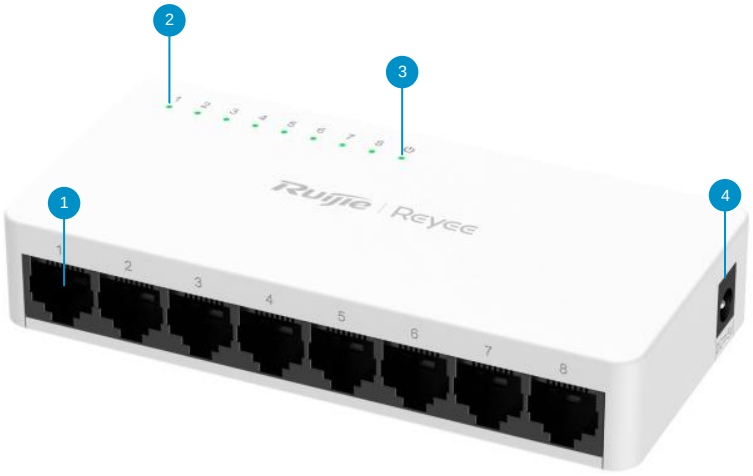
On the front panel, the RG-ES08G-L switch provides eight 10/100/1000Base-T Ethernet ports and one DC power connector.

Figure 1-7 Appearance of RG-ES08G-L



Front Panel

Figure 1-8 Front Panel of RG-ES08G-L



Note:	1. 10/100/1000Base-T Ethernet port 2. Port status LED 3. System status LED 4. DC power connector

1.4.2 Technical Specifications

Table 1-4 Technical Specifications

Model	RG-ES08G-L
Ports	8 x 10/100/1000Base-T Ethernet ports with auto-negotiation
Power Supply	AC input: Rated voltage range: 100 VAC to 240 VAC Maximum voltage range: 90 VAC to 264 VAC Frequency: 50/60 Hz Rated current: 0.3 A Adapter output: Rated voltage: 5 VDC Rated current: 1A
EEE	Not supported
PoE	Not supported
Power Consumption	3.47 W

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	10% to 95% RH (non-condensing)
Storage Humidity	5% to 90% RH (non-condensing)
Fan	Not supported
Over-temperature Alarm	Not supported
Optical Transceiver Module	Not supported
EMC Standards	IEC55032 IEC61000-6-4 IEC61000-4-11 IEC61000-4-4 IEC61000-4-2 IEC61000-3-3 IEC61000-3-2 IEC61000-4-3 IEC61000-4-5
Security Standards	NE62386-1
Earth Leakage Current	≤ 1.5 mA
Dimensions (W x D x H)	124 mm x 60 mm x 24 mm (4.88 in. x 2.36 in. x 0.94 in.)
Weight	105.5 g (0.23 lbs.) (excluding packaging)

Caution

The RG-ES08G-L switch is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

1.4.3 Cooling

The RG-ES08G-L switch adopts a natural cooling design to ensure normal functioning of the device. A minimum clearance of 100 mm (3.94 in.) must be maintained around the device for cooling. It is recommended to clean the device once every 3 months to avoid dust from blocking vents.

1.4.4 LEDs

LED	Label	State	Description
System status LED		Off	The switch is powered off.
		Solid on	The switch is operating.
Port status LED	1-8	Off	The port is not connected.
		Solid on	The port is connected at 10/100/1000 Mbps.
		Blinking	The port is receiving or sending traffic at 10/100/1000 Mbps.

1.5 RG-ES106F-P

1.5.1 Package Contents

Table 1-5 Package Contents

Item	Quantity
RG-ES106F-P Switch	1
Power Cord (1 m/3.28 ft.)	1
KA3 x 25 mm Screw	2
Expansion Anchor	2
User Manual	1
Warranty Card	1

Note

The package contents are subject to the purchase contract, and actual delivery may vary. Please check the items carefully against the package contents or purchase contract. If you have any questions or notice any errors, please contact your distributor.

1.5.2 Appearance

The RG-ES106F-P switch provides six 10/100Base-T ports with auto-negotiation, one DIP switch, one system LED and other LEDs on the front panel, and one AC power connector and one grounding stud on the rear panel.

Figure 1-9 Appearance of a RG-ES106F-P Switch

1. Front Panel

Figure 1-10 Front Panel of a RG-ES106F-P Switch

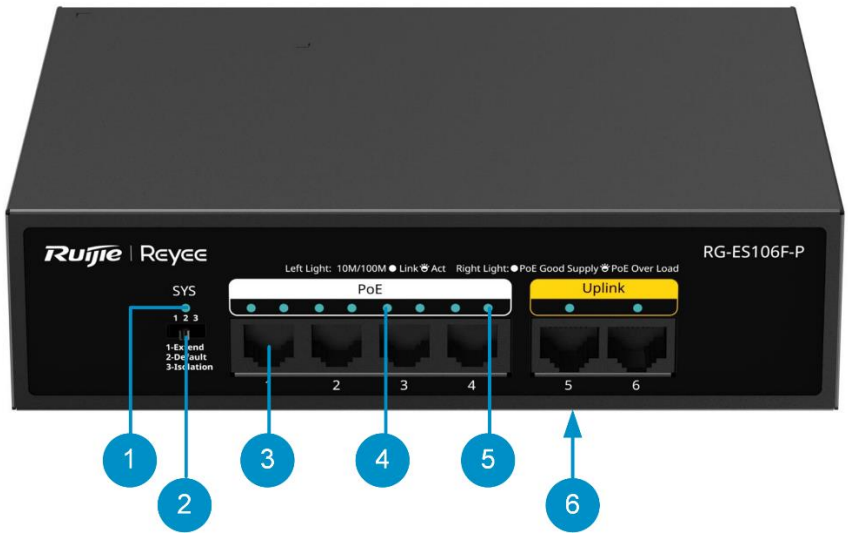


Table 1-6 Front Panel Components

No.	Component	Description
1	System LED	Off: The device is not powered on. Solid on: The device is powered on.

2	DIP switch	The DIP switch is used to adjust the switch's working mode. Default mode: All ports can communicate with each other. Extend mode: The rate of ports 1 to 4 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). Isolation mode: Ports 1 to 4 cannot communicate with each other, but they can communicate with ports 5 and 6.
3	10/100Base-T Ethernet port with auto-negotiation	Six 10/100 Mbps Ethernet ports with auto-negotiation. Ports 1-4 are PoE-capable.
4	10/100Base-T Link/Act LED (1-6)	Solid green: A 10/100 Mbps link is established on the port. Blinking green: The port is sending and receiving traffic at 10/100 Mbps. Off: No link is established on the port.
5	PoE LED	Solid green: PoE is enabled. Blinking green: PoE overload occurs. Off: PoE is disabled.
6	Nameplate	On the bottom of the device

2. Rear Panel

Figure 1-11 Rear Panel of a RG-ES106F-P Switch

Table 1-7 Rear Panel Components

No.	Component	Description
1	AC power connector	Connect the AC power cord to the AC power connector to supply power to the switch.
2	Grounding stud	Connect to the protective ground through the grounding wire to provide grounding protection.

1.5.3 Technical Specifications

Table 1-8 Technical Specifications of a RG-ES106F-P Switch

Model	RG-ES106F-P
Ports	Six 10/100 Mbps Ethernet ports with auto-negotiation Ports 1-4 are PoE-capable.
Power Supply	AC input: Rated voltage range: 100-240 V AC Maximum voltage range: 90-264 V AC Maximum input current: 2 A Frequency: 50/60 Hz
EEE	Not supported
PoE	Compliant with IEEE 802.af/at Ports 1-4 are PoE/PoE+ capable. Maximum PoE+ output power per port: 30 W Maximum PoE/PoE+ output power per device: 54 W
PoE Power Cable Pairs	Mode A (1-2, 3-6 pairs)
Maximum Power Consumption	54 W (full PoE load) 6 W (no PoE load)
Working Mode	Default mode: All ports can communicate with each other. Extend mode: The rate of ports 1 to 4 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). Isolation mode: Ports 1 to 4 cannot communicate with each other, but they can communicate with ports 5 and 6.
Operating Temperature	0ºC to 45ºC (32ºF to 113 ºF)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Operating Humidity	10% to 90% RH (non-condensing)
Storage Humidity	5% to 95% RH (non-condensing)
Lightning Protection (Port Surge)	6 KV
Fan	Fanless design
Certification	CE

Ground Leakage Current	≤ 3.5 mA
Dimensions (W x D x H)	166 mm x 132.6 mm x 43 mm (6.54 in. x 5.22 in. x 1.69 in.)
Weight	0.98 kg (2.16 lbs., with packaging materials)

Warning

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

1.5.4 Cooling

The RG-ES106F-P switch adopts the passive cooling design. A minimum clearance of 100 mm (3.94 in.) must be maintained around the device to ensure heat dissipation. Dust the device every three months to prevent vents from getting blocked.

1.6 RG-ES110FG-P

1.6.1 Package Contents

Table 1-9 Package Contents

Item	Quantity
RG-ES110FG-P Switch	1
Power Cord (1 m/3.28 ft.)	1
Warranty Card	1
User Manual	1

Note

The package contents are subject to the purchase contract, and actual delivery may vary. Please check the items carefully against the package contents or purchase contract. If you have any questions or notice any errors, please contact your distributor.

1.6.2 Appearance

The RG-ES110FG-P switch provides eight 10/100Base-T ports and two 1000Base-T ports with auto-negotiation, one DIP switch, one system LED and other LEDs on the front panel, and one AC power connector and one grounding stud on the rear panel.

Figure 1-12 Appearance of a RG-ES110FG-P Switch

1. Front Panel

Figure 1-13 Front Panel of a RG-ES110FG-P Switch

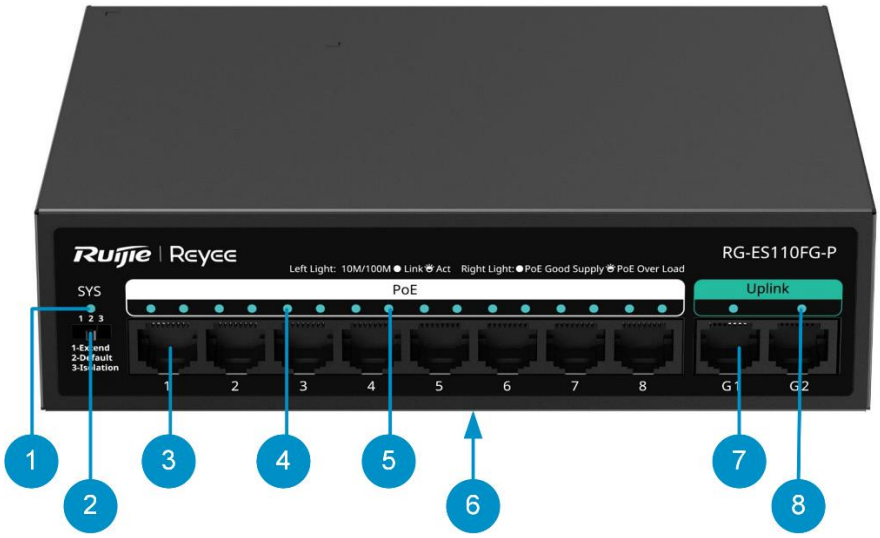


Table 1-10 Front Panel Components

No.	Component	Description
1	System LED	Off: The device is not powered on. Solid on: The device is powered on.
2	DIP switch	The DIP switch is used to adjust the switch's working mode. Default mode: All ports can communicate with each other. Extend mode: The rate of ports 1 to 8 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). Isolation mode: Ports 1 to 8 cannot communicate with each other, but they can communicate with ports G1 and G2.
3	10/100Base-T Ethernet port with auto-negotiation	Eight 10/100 Mbps Ethernet ports with auto-negotiation. Ports 1-8 are PoE-capable.
4	10/100Base-T Link/Act LED (1-8)	Solid green: A 10/100 Mbps link is established on the port. Blinking green: The port is sending and receiving traffic at 10/100 Mbps. Off: No link is established on the port.
5	PoE LED	Solid green: PoE is enabled. Blinking green: PoE overload occurs. Off: PoE is disabled.
6	Nameplate	On the bottom of the device
7	10/100/1000Base-T Ethernet port with auto-negotiation	Two 1000 Mbps Ethernet ports with auto-negotiation.

8	10/100/1000Base-T auto-sensing Ethernet port(G1,G2)	Solid green: A 10/100/1000 Mbps link is established on the port. Blinking green: The port is sending and receiving traffic at 10/100 Mbps. Off: No link is established on the port.

2. Rear Panel

Figure 1-14 Rear Panel of a RG-ES110FG-P Switch

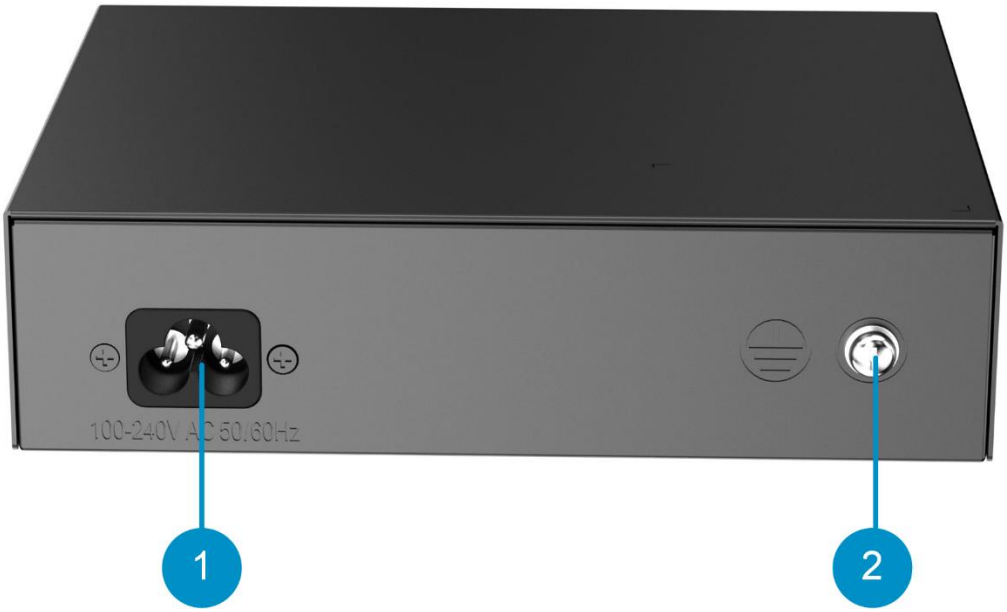


Table 1-11 Rear Panel Components

No.	Component	Description
1	AC power connector	Connect the AC power cord to the AC power connector to supply power to the switch.
2	Grounding stud	Connect to the protective ground through the grounding wire to provide grounding protection.

1.6.3 Technical Specifications

Table 1-12 Technical Specifications of a RG-ES110FG-P Switch

Model	RG-ES110FG-P
Ports	Eight 10/100 Mbps Ethernet ports with auto-negotiation. Ports 1-8 are PoE-capable. Two 10/100/1000 Mbps Ethernet ports with auto-negotiation
Power Supply	AC input: Rated voltage range: 100-240 V AC

	Maximum voltage range: 90-264 V AC Maximum input current: 3 A Frequency: 50/60 Hz
EEE	Not supported
PoE	Compliant with IEEE 802.af/at Ports 1-8 are PoE/PoE+ capable. Maximum PoE+ output power per port: 30 W Maximum PoE/PoE+ output power per device: 110 W
PoE Power Cable Pairs	Mode A (1-2, 3-6 pairs)
Maximum Power Consumption	110 W (full PoE load) 10 W (no PoE load)
Working Mode	Default mode: All ports can communicate with each other. Extend mode: The rate of ports 1 to 8 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). Isolation mode: Ports 1 to 8 cannot communicate with each other, but they can communicate with ports G1 and G2.
Operating Temperature	0ºC to 45ºC (32ºF to 113 ºF)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Operating Humidity	10% to 90% RH (non-condensing)
Storage Humidity	5% to 95% RH (non-condensing)
Lightning Protection (Port Surge)	6 kV
Fan	Fanless design
Certification	CE
Ground Leakage Current	≤ 3.5 mA
Dimensions (W x D x H)	166 mm x 132.6 mm x 43 mm (6.54 in. x 5.22 in. x 1.69 in.)
Weight	1.2 kg (2.65 lbs., with packaging materials)

Warning

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

1.6.4 Cooling

The RG-ES110FG-P switch adopts the passive cooling design. A minimum clearance of 100 mm (3.94 in.) must be maintained around the device to ensure heat dissipation. Dust the device every three months to prevent vents from getting blocked.

1.7 RG-ES110F-P

1.7.1 Package Contents

Table 1-13 Package Contents

Item	Quantity
RG-ES110F-P Switch	1
Power Cord (1 m/3.28 ft.)	1
Warranty Card	1
User Manual	1

Note

The package contents are subject to the purchase contract, and actual delivery may vary. Please check the items carefully against the package contents or purchase contract. If you have any questions or notice any errors, please contact your distributor.

1.7.2 Appearance

The RG-ES110F-P switch provides ten 10/100Base-T ports with auto-negotiation, one DIP switch, one system LED and other LEDs on the front panel, and one AC power connector and one grounding stud on the rear panel.

Figure 1-15 Appearance of a RG-ES110F-P Switch

1. Front Panel

Figure 1-16 Front Panel of a RG-ES110F-P Switch

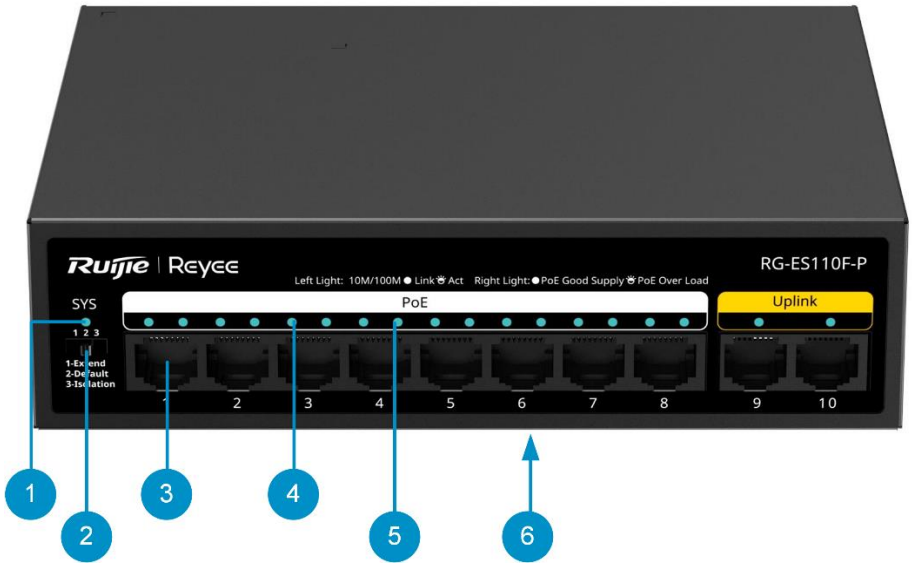


Table 1-14 Front Panel Components

No.	Component	Description
1	System LED	● Off: The device is not powered on. ● Solid on: The device is powered on.
2	DIP switch	● The DIP switch is used to adjust the switch's working mode. ● Default mode: All ports can communicate with each other. ● Extend mode: The rate of ports 1 to 8 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). ● Isolation mode: Ports 1 to 8 cannot communicate with each other, but they can communicate with ports 9 and 10.
3	10/100Base-T Ethernet port with auto-negotiation	Ten 10/100 Mbps Ethernet ports with auto-negotiation. Ports 1-8 are PoE-capable.
4	10/100Base-T Link/Act LED (1-10)	● Solid green: A 10/100 Mbps link is established on the port. ● Blinking green: The port is sending and receiving traffic at 10/100 Mbps. ● Off: No link is established on the port.
5	PoE LED	● Solid green: PoE is enabled. ● Blinking green: PoE overload occurs. ● Off: PoE is disabled.
6	Nameplate	On the bottom of the device

1. Rear Panel

Figure 1-17 Rear Panel of a RG-ES110F-P Switch

Table 1-15 Rear Panel Components

No.	Component	Description
1	AC power connector	Connect the AC power cord to the AC power connector to supply power to the switch.
2	Grounding stud	Connect to the protective ground through the grounding wire to provide grounding protection.

1.7.3 Technical Specifications

Table 1-16 Technical Specifications of a RG-ES110F-P Switch

Model	RG-ES110F-P
Ports	● Ten 10/100 Mbps Ethernet ports with auto-negotiation ● Ports 1-8 are PoE-capable.
Power Supply	AC input: ● Rated voltage range: 100-240 V AC ● Maximum voltage range: 90-264 V AC ● Maximum input current: 3 A ● Frequency: 50/60 Hz
EEE	Not supported
PoE	● Compliant with IEEE 802.af/at ● Ports 1-8 are PoE/PoE+ capable. ● Maximum PoE+ output power per port: 30 W ● Maximum PoE/PoE+ output power per device: 110 W

PoE Power Cable Pairs	Mode A (1-2, 3-6 pairs)
Maximum Power Consumption	110 W (full PoE load) 10 W (no PoE load)
Working Mode	● Default mode: All ports can communicate with each other. ● Extend mode: The rate of ports 1 to 8 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). ● Isolation mode: Ports 1 to 8 cannot communicate with each other, but they can communicate with ports 9 and 10.
Operating Temperature	0ºC to 45ºC (32ºF to 113 ºF)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Operating Humidity	10% to 90% RH (non-condensing)
Storage Humidity	5% to 95% RH (non-condensing)
Lightning Protection (Port Surge)	6 kV
Fan	Fanless design
Certification	CE
Ground Leakage Current	≤ 3.5 mA
Dimensions (W x D x H)	166 mm x 132.6 mm x 43 mm (6.54 in. x 5.22 in. x 1.69 in.)
Weight	1.2 kg (2.65 lbs., with packaging materials)

Warning

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

1.7.4 Cooling

The RG-ES110F-P switch adopts the passive cooling design. A minimum clearance of 100 mm (3.94 in.) must be maintained around the device to ensure heat dissipation. Dust the device every three months to prevent vents from getting blocked.

1.8 RG-ES110GS-P-L

1.8.1 Package Contents

Table 1-17 Package Contents

Item	Quantity
RG-ES110GS-P-L Switch	1
Power Cord (1 m/3.28 ft.)	1
Warranty Card	1
User Manual	1

Note

The package contents are subject to the purchase contract, and actual delivery may vary. Please check the items carefully against the package contents or purchase contract. If you have any questions or notice any errors, please contact your distributor.

1.8.2 Appearance

The RG-ES110GS-P-L switch provides nine 1000Base-T ports with auto-negotiation and one 1000 Mbps SFP port, one DIP switch, one system LED and other LEDs on the front panel, and one AC power connector and one grounding stud on the rear panel.

Figure 1-18 Appearance of a RG-ES110GS-P-L Switch

2. Front Panel

Figure 1-19 Front Panel of a RG-ES110GS-P-L Switch

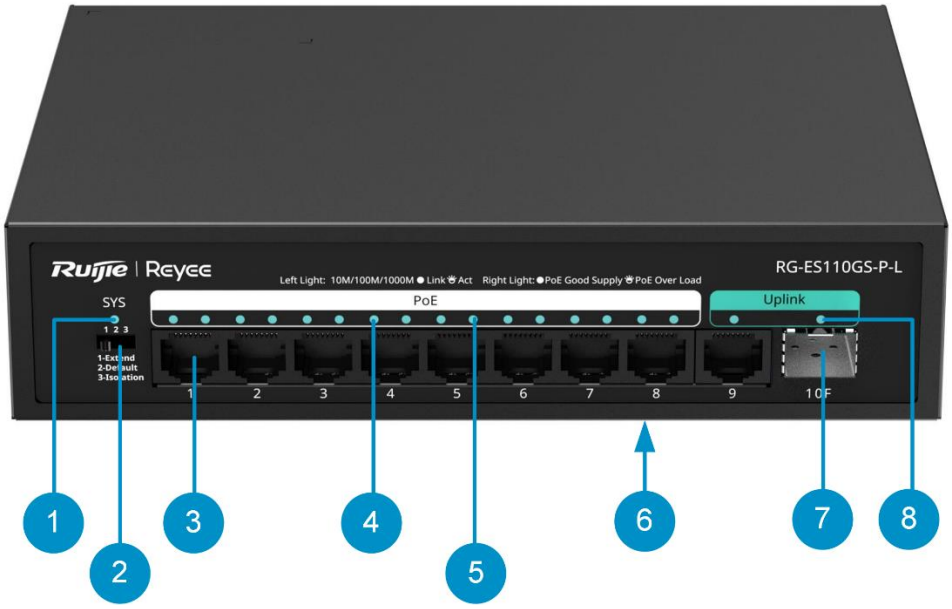


Figure 1-20 Front Panel Components

No.	Component	Description
1	System LED	● Off: The device is not powered on. ● Solid on: The device is powered on.
2	DIP switch	● The DIP switch is used to adjust the switch's working mode. ● Default mode: All ports can communicate with each other. ● Extend mode: The rate of ports 1 to 8 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). ● Isolation mode: Ports 1 to 8 cannot communicate with each other, but they can communicate with ports 9 and 10.
3	1000Base-T Ethernet port with auto-negotiation	Nine 1000 Mbps Ethernet ports with auto-negotiation. Ports 1-8 are PoE-capable.
4	10/100/1000Base-T Link/Act LED (1-9)	● Solid green: A 10/100/1000 Mbps link is established on the port. ● Blinking green: The port is sending and receiving traffic at 10/100/1000 Mbps. ● Off: No link is established on the port.
5	PoE LED	● Solid green: PoE is enabled. ● Blinking green: PoE overload occurs. ● Off: PoE is disabled.
6	Nameplate	On the bottom of the device

7	100/1000M SFP Ethernet Port	The 1000M self-adaptive Ethernet SFP port.
8	100/1000Base-T SFP port Link/Act LED (10F)	● Solid green: The port is sending and receiving traffic at 100/1000 Mbps. ● Blinking green: The port is sending and receiving traffic at 100/1000 Mbps. ● Off: No link is established on the port.

3. Rear Panel

Figure 1-21 Rear Panel of a RG-ES110GS-P-L Switch

Figure 1-22 Rear Panel Components

No.	Component	Description
1	AC power connector	Connect the AC power cord to the AC power connector to supply power to the switch.
2	Grounding stud	Connect to the protective ground through the grounding wire to provide grounding protection.

1.8.3 Technical Specifications

Table 1-18 Technical Specifications of a RG-ES110GS-P-L Switch

Model	RG-ES110GS-P-L
Ports	Nine 1000 Mbps Ethernet ports with auto-negotiation. Ports 1-8 are PoE-capable. One 1000M self-adaptive Ethernet SFP port.

Power Supply	AC input: ● Rated voltage range: 110-240 V AC ● Maximum voltage range: 100-264 V AC ● Maximum input current: 3 A ● Frequency: 50/60 Hz
EEE	Not supported
PoE	● Compliant with IEEE 802.af/at ● Ports 1-8 are PoE/PoE+ capable. ● Maximum PoE+ output power per port: 30 W ● Maximum PoE/PoE+ output power per device: 120 W
PoE Power Cable Pairs	Mode A (1-2, 3-6 pairs)
Maximum Power Consumption	120 W (full PoE load) 10 W (no PoE load)
Working Mode	● Default mode: All ports can communicate with each other. ● Extend mode: The rate of ports 1 to 8 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). ● Isolation mode: Ports 1 to 8 cannot communicate with each other, but they can communicate with ports 9 and 10.
Operating Temperature	0ºC to 45ºC (32ºF to 113 ºF)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Operating Humidity	10% to 90% RH (non-condensing)
Storage Humidity	5% to 95% RH (non-condensing)
Lightning Protection (Port Surge)	6 kV
Fan	Fanless design
Certification	CE
Ground Leakage Current	≤ 3.5 mA
Dimensions (W x D x H)	190 mm x 150 mm x 43mm (7.48 in. x 5.91 in. x 1.69 in.)
Weight	1.6 kg (3.53 lbs., with packaging materials)

Warning

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

1.8.4 Cooling

The RG-ES110GS-P-L switch adopts the passive cooling design. A minimum clearance of 100 mm (3.94 in.) must be maintained around the device to ensure heat dissipation. Dust the device every three months to prevent vents from getting blocked.

1.9 RG-ES116G-L

1.9.1 Package Contents

Table 1-19 Package Contents

No.	Name	Quantity	Remarks
1	RG-ES116G-L Switch	1	-
2	Rubber Feet	4	-
3	Mounting Brackets	2	-
4	Quick Installation Guide	1	-
5	M4 x 8 mm Phillips Countersunk Screws	6	-
6	Warranty Card	1	-
7	Power Cord	1	

Note

The package contents are subject to the purchase contract, and actual delivery may vary. Please check the items carefully against the package contents or purchase contract. If you have any questions or notice any errors, please contact your distributor.

1.9.2 Product Appearance

The RG-ES116G-L switch provides sixteen 10/100/1000Base-T Ethernet ports with auto-negotiation, one DIP switches, and a number of LEDs on the front panel. It provides one AC power connector and one grounding stud on the rear panel. The following figure shows the product appearance.

1. Front Panel

Figure 1-23 Front Panel

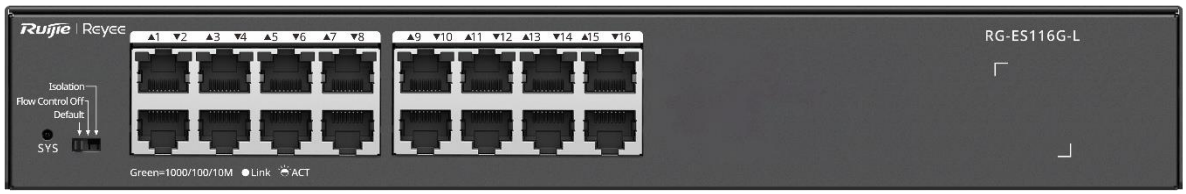


Table 1-20 Ports and Buttons on the Front Panel

ID	Interface information	Description
1	System status LED (SYS)	● Off: the switch is not powered on. ● Fast blinking green (10 hz): the switch is upgrading or starting up and cannot be used. ● Solid green: the switch is running properly.
2	Working mode switching button	● Move the dialing button to the leftmost position (default Mode): all ports can communicate with each other, and flow control is enabled on all ports. ● Intermediate (traffic control disabled): all ports can communicate with each other, and traffic control is disabled on all ports. ● Moved to the rightmost position (port isolation): 1–14 Ports cannot communicate with each other, but can communicate with port 15. 、16 Port communication; 15 、16 Enable flow control on all ports so that the ports can communicate with each other.
3	Status LED of the ethernet interface (1000M electrical port)	● Off: the port is not connected. ● Solid green: the port works at 1000 mbps/100 mbps/10 mbps and no data is being transmitted. ● Blinking green: the port works at the rate of 1000 mbps/100 mbps/10 mbps and data is being transmitted.
4	Ethernet port (1000M electrical port)	2500/1000/100/10Base-T ports with auto-negotiation, connected to cat5e cables.
5	Nameplate	At the bottom of the device

2. Rear Panel

Figure 1-24 Rear Panel

Table 1-21 Ports and Buttons on the Rear Panel

ID	Button and ports	Description
1	Power input connector	Connects to an external AC power supply.
2	Grounding screw	Secures the grounding lug to connect the chassis to earth ground.

1.9.3 Technical Specifications

Table 1-22 Technical Specifications

Model	RG-ES116G-L
Ports	16 10/100/1000 mbps auto-sensing ethernet ports (Auto MDI/MDIX)
Work Mode	Three working modes: ● Move the slider to the leftmost position (Standard): all ports can communicate with each other, and flow control is enabled on all ports. ● Intermediate (traffic control disabled): all ports can communicate with each other, and traffic control is disabled on all ports. ● Rightmost (port isolation): 1- 14 The port cannot communicate with other ports. It can only communicate with 15 、16 Port communication 15 、 16 Enable flow control on all ports so that the ports can communicate with each other.
Power Supply	AC input: ● Rated voltage range: 100 V AC to 240 V AC ● Maximum voltage range: 90 V AC to 264 V AC ● Frequency: 50 hz to 60 hz ● Rated current: 0. 6 A
PoE	Not supported
Max. Power Consumption	11 W
Operating Temperature	0°C to 45°C (32°F to 113°F)

Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Operating Humidity	10% to 90% RH (non-condensing)
Storage Humidity	5%~95% RH, no condensation
Fan Modules	Not supported
Safety Standard	CE
Dimensions (W X D X H) (Unit: Mm)	280mmx125mmx43.6mm
Switching Capacity	32Gbps
Lightning Protection	Power port: common mode: ±6 kv; differential mode: ±6 kv Communication port: common mode: ±6 kv
Weight	≤ 2. 5 kg (including the package)

Warning

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

1.9.4 Cooling

The RG-ES116G-L switch adopts the passive cooling design. A minimum clearance of 100 mm (3.94 in.) must be maintained around the device to ensure heat dissipation. Dust the device every three months to prevent vents from getting blocked.

1.10 RG-ES118FGS-LP

1.10.1 Package Contents

Table 1-23 Package Contents

Item	Quantity
RG-ES118FGS-LP Switch	1
Mounting Brackets	2
Power Cord	1
M4 x 8 mm Screw	6
User Manual	1
Warranty Card	1

Note

The package contents are subject to the purchase contract. The actual delivery prevails. Please check the items carefully against the package contents or purchase contract. If you have any questions or there are any errors, please contact your distributor.

1.10.2 Product Appearance

The RG-ES118FGS-LP switch provides 16 10/100 Base-TX self-adaptive Ethernet ports, two 1000 Base-X GE combo ports, one DIP switch, one system status LED, and other LEDs on the front panel. On the rear panel of the switch, there is an AC power plug and a grounding stud.

Figure 1-25 Appearance of a RG-ES118FGS-LP Switch

1. Front Panel

Figure 1-26 Front Panel of a RG-ES118FGS-LP Switch

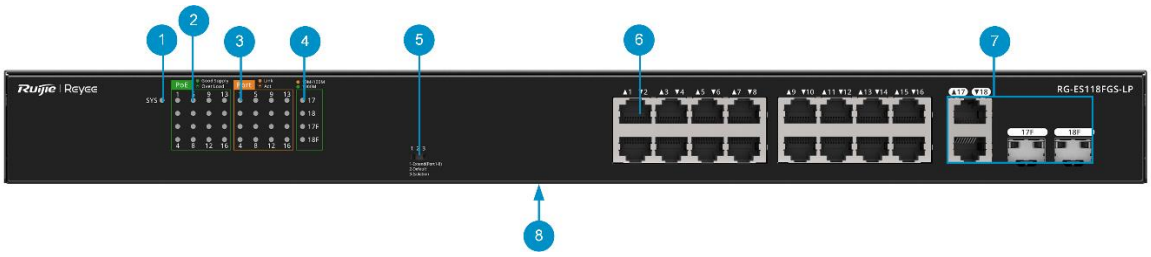


Table 1-24 Front Panel Specifications

No.	Item	Description
1	System Status LED	● Off: The switch is not powered on. ● Solid on: The switch is powered on.
2	PoE Status LED	● Solid green: PoE is enabled. ● Flashing green: PoE overload occurs. ● Off: PoE is disabled.
3	10/100 Base-TX Link/Act LED	● Solid orange: The port has made a successful 10/100 Mbps link. ● Flashing orange: The port is transmitting and receiving data at 10/100 Mbps. ● Off: The port is not connected.
4	10/100/1000 Base-X Combo Port LED	● Solid orange: The port has made a successful 10/100 Mbps link. ● Flashing orange: The port is transmitting and receiving data at 10/100 Mbps. ● Solid green: The port has made a successful 1000 Mbps link. ● Flashing green: The port is transmitting and receiving data at 1000 Mbps. ● Off: The port is not connected.
5	DIP Switch	● The DIP switch is used to switch the working mode of the device. ● Extend mode: The rate of ports 1 to 16 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). ● Default mode: Flow control is enabled and all ports can communicate with each other. ● Isolation mode: Ports 1 to 16 cannot communicate with each other but they can communicate with ports 17 and 18.

No.	Item	Description
6	10/100 Base-TX Self-adaptive Ethernet Ports	16 10/100 Mbps self-adaptive Ethernet RJ45 ports (Auto MDI/MDIX) support PoE power supply.
7	10/100/1000 Base-X Combo Port	Two 10/100/1000 Base-X combo port. The GE port and the copper port cannot be used at the same time.
8	Nameplate	On the bottom of the device

2. Rear Panel

Figure 1-27 Rear Panel of a RG-ES118FGS-LP Switch

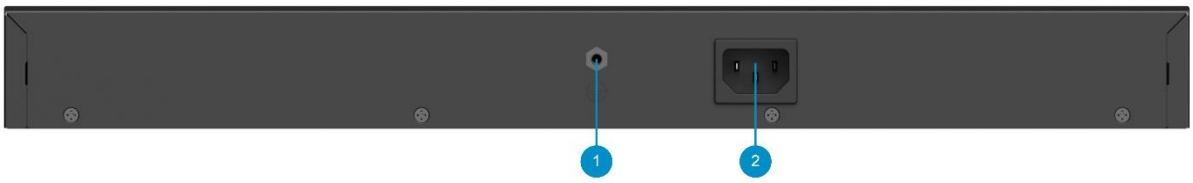


Table 1-25 Rear Panel Specifications

No.	Item	Description
1	Grounding Stud	Connect the grounding stud to the protection ground with the grounding cable to provide grounding protection.
2	AC Input Plug	Connect the power cord to the AC input plug to power on the switch.

1.10.3 Technical Specifications

Table 1-26 Technical Specifications of a RG-ES118FGS-LP Switch

Model	RG-ES118FGS-LP
Service Ports	● Sixteen 10/100 Base-TX auto-sensing Ethernet ports (auto MDI/MDIX), and PoE/PoE+ support ● Two 1000 Base-X GE combo ports
Power Supply	AC input: ● Rated voltage range: 100 V AC to 240 V AC ● Maximum voltage range: 90 V AC to 264 V AC ● Frequency: 50 Hz/60 Hz ● Rated current: 3 A
EEE	● Disabled by default

PoE	● IEEE 802.3af-compliant and 802.3at-compliant ● Ports 1-16 support PoE power supply. ● Maximum PoE output power per port: 30 W ● Maximum PoE output power per device: 120 W
PoE Power Cable Pairs	Mode A (1-2, 3-6 pairs)
Maximum Power Consumption	120 W (full PoE load) 10 W (no PoE load)
Working Mode	● Extend mode: The rate of ports 1 to 16 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). ● Default mode: Flow control is enabled and all ports can communicate with each other. ● Isolation mode: Ports 1 to 16 cannot communicate with each other but they can communicate with ports 17 and 18.
Operating Temperature	0°C to 45°C (32°F to 113°F)
Storage Temperature	–40ºC to 70ºC (–40ºF to 158ºF)
Operating Humidity	10% to 90% RH (non-condensing)
Storage Humidity	5% to 95% RH (non-condensing)
Lightning Protection (Port Surge)	6 kV
Fan	Two fans
Airflow Direction	Left-to-right airflow
Certification	CE, ROHS
Ground Leakage Current	≤ 3.5 mA
Dimensions (W x D x H)	440 mm x 214.9 mm x 44 mm(17.32 in. x 8.46 in. x 1.73 in.)
Weight	3.4 kg (7.50 lbs, with packaging materials)

Warning

- RG-ES118FGS-LP switch is a Class A product. The device may cause radio interference in the living environment. You are advised to take proper measures.

- You are advised to keep the device out of the reach of children.

1.10.4 Cooling

The RG-ES118FGS-LP switch adopts fan cooling design. To ensure the normal operation of the device, maintain a minimum clearance of 10 cm (3.94 in.) around the device. Dust the device every three months to avoid blocking the ventilation openings.

1.11 RG-ES118GS-P-L

1.11.1 Package Contents

Table 1-27 Package Contents

No.	Item	Quantity	Remarks
1	RG-ES118GS-P-L Switch	1	
2	Rubber Feet	4	
3	Mounting Brackets	2	
4	Quick Installation Guide	1	
5	M4 x 8 mm Phillips Countersunk Screws	6	
6	Warranty Card	1	
7	Power Cord	1	
8	Power Cord Retainer Clip	1	

Note

The package contents are subject to the purchase contract, and actual delivery may vary. Please check the items carefully against the package contents or purchase contract. If you have any questions or notice any errors, please contact your distributor.

1.11.2 Appearance

The RG-ES118GS-P-L switch provides sixteen 10/100/1000Base-T Ethernet ports with auto-negotiation, two 1000Base-X SFP ports, two DIP switches, and a number of LEDs on the front panel. It provides one AC power connector and one grounding stud on the rear panel. The following figure shows the product appearance.

1. Front Panel

Figure 1-28 Front Panel

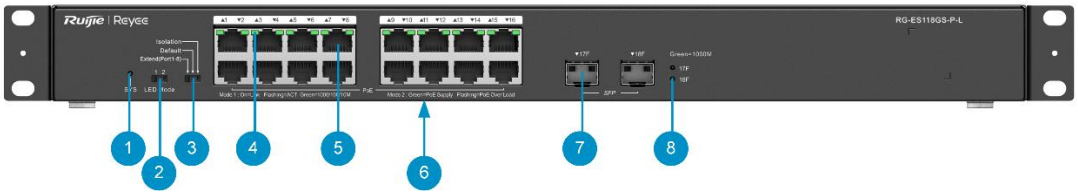


Table 1-28 Front Panel Components

No.	Component	Description
1	System LED (SYS)	● Off: The switch is not powered on. ● Slow blinking green (flash every two seconds): The switch is operating properly, but has insufficient power for PoE. ● Fast blinking green (10 flashes per second): The switch is upgrading or restarting. ● Blinking green (flash twice every 4 seconds, one long and one short): A loop has occurred, or the switch has insufficient power for PoE. ● Solid green: The switch is operating normally.
2	Port LED Mode switch	● LED Mode switch toggled to left (Mode 1): The port LED status indicates the status of traffic transmission. Solid green means that the port is connected, but is not sending and receiving data, while blinking green means that the port is connected, and is sending and receiving data. ● LED Mode switch toggled to right (Mode 2): The port LED status indicates the PoE status. Solid green means that the port is supplying power, while blinking green means that the port is in power overload state.
3	Work Mode Switch	● Toggle to the far left position (Extend mode):The rate of ports 1 to 16 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). ● Toggle to the middle position (Default mode): All ports can communicate with each other, and flow control is enabled on all ports. ● Toggle to the far right position (Port isolation mode): Ports 1 to 16 cannot communicate with each other and can only communicate with ports 17 and 18. Ports 17 and 18 can communicate with each other, and flow control is enabled on all ports.

4	1000 Mbps Ethernet port status LED	PoE status: ● Off: PoE is disabled. ● Solid green: PoE is enabled. ● Blinking green: PoE overload has occurred. ● Port status: ● Off: No link is established on the port. ● Solid green: The port is operating at 10/100/1000 Mbps, but is not receiving or sending data. ● Blinking green: The port is operating at 10/100/1000 Mbps, and is receiving or sending data.
5	1000 Mbps Ethernet port	10/100/1000Base-T ports with auto-negotiation, connected to Cat5e or above cables.
6	Label	Located at the bottom of the switch.
7	SFP port	1000 Mbps Base-X SFP port, backward compatible with 100Base-FX.
8	SFP port status LED	● Off: No link is established on the port. ● Solid green: The port is operating at 1000 Mbps, but is not receiving or sending data. ● Blinking green: The port is operating at 1000 Mbps, and is receiving or sending data.

2. Rear Panel

Figure 1-29 Rear Panel

Table 1-29 Rear Panel Components

No.	Component	Description
1	Power cord retention clip holder	Secures the power cord.
2	Power connector	Connects to an external AC power supply.
3	Grounding stud	Secures the grounding lug to connect the chassis to earth ground.

1.11.3 Technical Specifications

Table 1-30 Technical Specifications

Model	RG-ES118GS-P-L
Ports	● 16 x 10/100/1000Base-T ports with auto-negotiation ● 2 x 1000 Mbps SFP ports
Work Mode	Three work modes: ● Toggle to the far left position (Extend mode): The rate of ports 1 to 16 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). ● Toggle to the middle position (Default mode): All ports can communicate with each other, and flow control is enabled on all ports. ● Toggle to the far right position (Port isolation mode): Ports 1 to 16 cannot communicate with each other and can only communicate with ports 17 and 18. Ports 17 and 18 can communicate with each other, and flow control is enabled on all ports.
Power Supply	AC input: ● Rated voltage range: 100 V AC to 240 V AC ● Max. voltage range: 90 V AC to 264 V AC ● Frequency: 50 Hz or 60 Hz ● Rated current: 4.5 A
PoE	● Compliant with the IEEE 802.3af and IEEE 802.3at. standards ● Ports 1–16 are PoE/PoE+ ports, with each port supporting the maximum PoE+ power output up to 30 W. ● Maximum PoE/PoE+ output power: 247 W; PoE output voltage: 53.5 V
PoE Pinout	Mode A (1/2+, 3/6-)
Max. Power Consumption	247 W (full PoE load) 20 W (no PoE load)
Operating Temperature	0ºC to 45ºC (32ºF to 113ºF)
Storage Temperature	–40ºC to +70ºC (–40ºF to +158ºF)
Operating Humidity	10% to 90% RH (non-condensing)
Storage Humidity	5% to 95% RH (non-condensing)
Fan	Automatic fan speed regulation. When the ambient temperature is below 25ºC and PoE power is less than 123 W, the fan will stop operating.
Safety	CE
Dimensions (W x D x H)	440 mm x 214.9 mm x 44 mm (17.32 in. x 8.46 in. x 1.73 in.)
Switching Capacity	336 Gbps
Surge Protection	Power connector: common mode: ±6 kV; differential mode: ±6 kV

	Ports: common mode: ±6 kV
Weight	3.5 kg (7.72 lbs., with packaging)

Danger

Double pole/neutral fusing!

Electrical Hazard. The fuse, located on the neutral line of the power supply unit, should be disconnected to cut off the power supply to the conductors in each phase.

Warning

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

1.11.4 Cooling

The RG-ES118GS-P-L switch adopts the passive cooling design. A minimum clearance of 100 mm (3.94 in.) must be maintained around the device to ensure heat dissipation. Dust the device every three months to prevent vents from getting blocked.

1.12 RG-ES124G-L

1.12.1 Package Contents

Table 1-31 Package Contents

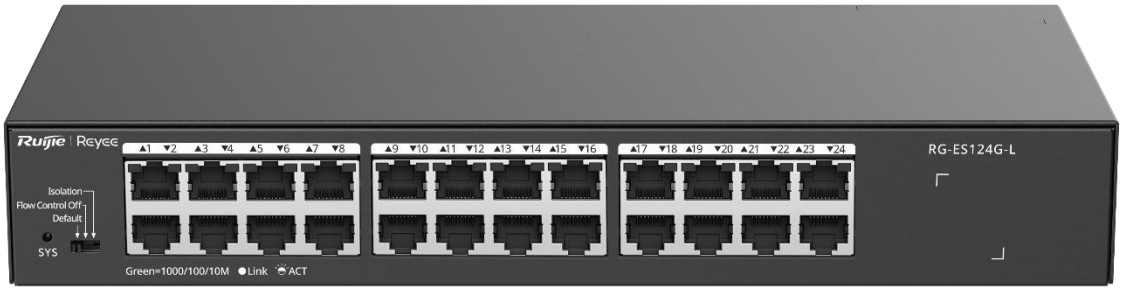
No.	Name	Quantity	Unit	Remarks
1	Main unit	1		-
2	Rubber pad	4		-
3	Mounting bracket	2		-
4	User manual	1	Certificates	-
5	M4 x 8 mm screw	6		-
6	Warranty card	1		
7	Power cord	1	Pcs	-

Note

The package contents above are intended to provide a general overview, and are subject to the terms of the order contract. Check your goods carefully against the order contract. If you have any questions, please contact the distributor.

1.12.2 Product Appearance

The RG-ES124G-L ethernet switch provides 24 1000M/100M/10M Base-T adaptive Ethernet ports, one toggle switch, and a series of LED indicators on the front panel. The rear panel provides an AC power input port and a ground pin. The following figures show the product appearance.



1. Front Panel

Figure 1-30 Front Panel

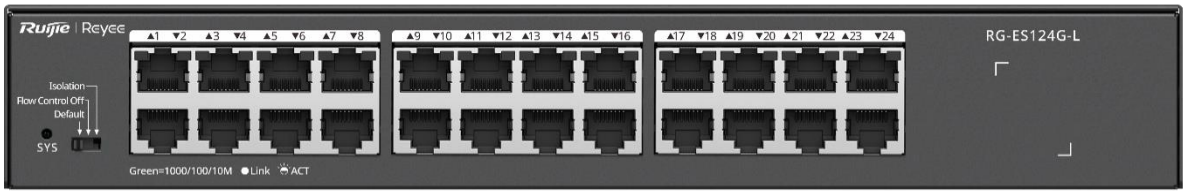


Table 1-32 Ports and Buttons on the Front Panel

ID	Interface information	Description
1	System status LED SYS)	● Off: the switch is not powered on. ● Fast blinking green (10 hz): the switch is upgrading or starting up and cannot be used. ● Solid green: the switch is running properly.
2	Working mode switching button	● Move to the leftmost position (default Mode): all ports can communicate with each other, and flow control is enabled on all ports. ● Intermediate (traffic control disabled): all ports can communicate with each other, and traffic control is disabled on all ports. ● Rightmost (port isolation): ports 1 to 22 cannot communicate with each other, but can communicate with ports 23 and 24. Ports 23 and 24 can communicate with each other. The flow control function is enabled for all ports.
3	Status LED of the ethernet interface (1000M electrical port)	● Off: the port is not connected. ● Solid green: the port works at 1000 mbps/100 mbps/10 mbps and no data is being transmitted. ● Blinking green: the port works at 1000 mbps/100 mbps/10 mbps and data is being transmitted.
4	Ethernet port (1000M electrical port)	2500/1000/100/10Base-T ports with auto-negotiation, connected to cat5e cables.

5	Nameplate	At the bottom of the device

2. Rear Panel

Figure 1-31 Rear Panel

Table 1-33 Ports and Buttons on the Rear Panel

ID	Button and ports	Description
1	Power input connector	Connects to an external AC power supply.
2	Grounding screw	Secures the grounding lug to connect the chassis to earth ground.

1.12.3 Technical Specifications

Table 1-34 Technical Specifications

Model	RG-ES124G-L
Ports	24 x 10/100/1000 mbps adaptive ethernet ports (Auto MDI/MDIX)
Work Mode	Three working modes: ● Move the slider to the leftmost position (Standard): all ports can communicate with each other, and flow control is enabled on all ports. ● Intermediate (traffic control disabled): all ports can communicate with each other, and traffic control is disabled on all ports. ● Rightmost (port isolation): 1- 22 cannot communicate with each other, but can communicate with 23、24 Port communication 23、 Enable flow control on all ports so that the 24 ports can communicate with each other.
Power Supply	AC input: ● Rated voltage range: 100 V AC to 240 V AC ● Maximum voltage range: 90 V AC to 264 V AC ● Frequency: 50 hz to 60 hz ● Rated current: 0. 6 A
PoE	Not supported

Max. Power Consumption	<14W
Operating Temperature	0ºC~45ºC
Storage Temperature	-40ºC~70ºC
Operating Humidity	10% to 90% RH (non-condensing)
Storage Humidity	5%~95% RH, no condensation
Fan Modules	Not supported
Safety Standard	CE
Dimensions (W X D X H) (Unit: Mm)	280mmx125mmx43.6mm
Switching Capacity	48Gbps
Lightning Protection	Power port: common mode: ±6 kv; differential mode: ±6 kv Communication port: common mode: ±6 kv
Weight	≤ 2. 5 kg (including the package)

Warning

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

1.12.4 Cooling

The RG-ES124G-L switch adopts the passive cooling design. A minimum clearance of 100 mm (3.94 in.) must be maintained around the device to ensure heat dissipation. Dust the device every three months to prevent vents from getting blocked.

1.13 RG-ES126FGS-LP

1.13.1 Package Contents

Table 1-35 Package Contents

Item	Quantity
RG-ES126FGS-LP Switch	1
Mounting Brackets	2

Power Cord	1
M4 x 8 mm Screw	6
User Manual	1
Warranty Card	1

Note

The package contents are subject to the purchase contract. The actual delivery prevails. Please check the items carefully against the package contents or purchase contract. If you have any questions or there are any errors, please contact your distributor.

1.13.2 Product Appearance

The RG-ES126FGS-LP switch provides 24 10/100 Base-TX self-adaptive Ethernet ports, one 10/100/1000 Base-TX GE port, one 10/100/1000 Base-TX combo port, one DIP switch, one system status LED, and other LEDs on the front panel. On the rear panel of the switch, there is an AC power plug and a grounding stud.

Figure 1-32 Appearance of a RG-ES126FGS-LP Switch

1. Front Panel

Figure 1-33 Front Panel of a RG-ES126FGS-LP Switch

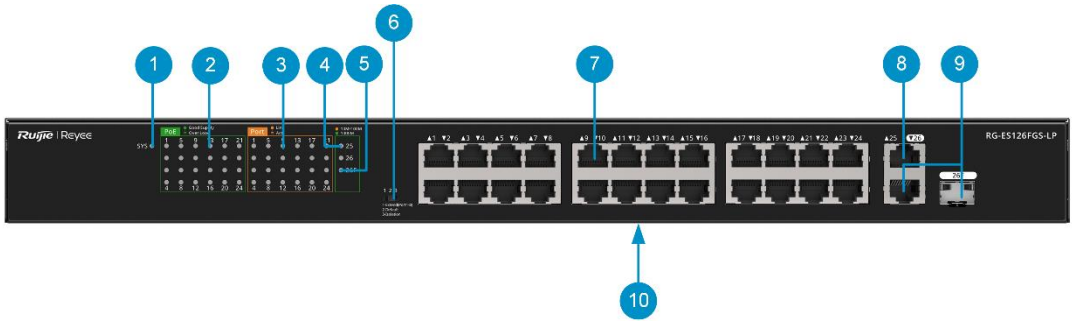


Table 1-36 Front Panel Specifications

No.	Item	Description
1	System Status LED	● Off: The switch is not powered on. ● Solid on: The switch is powered on.
2	PoE Status LED	● Solid green: PoE is enabled. ● Flashing green: PoE overload occurs. ● Off: PoE is disabled.
3	10/100 Base-TX Link/Act LED	● Solid orange: The port has made a successful 10/100 Mbps link. ● Flashing orange: The port is transmitting and receiving data at 10/100 Mbps. ● Off: The port is not connected.
4	10/100/1000 Base-TX GE Port LED	● Solid orange: The port has made a successful 10/100 Mbps link. ● Flashing orange: The port is transmitting and receiving data at 10/100 Mbps. ● Solid green: The port has made a successful 1000 Mbps link up. ● Flashing green: The port is transmitting and receiving data at 1000 Mbps. ● Off: The port is not connected.
5	10/100/1000 Base-TX Combo Port LED	● Solid orange: The port has made a successful 10/100 Mbps link. ● Flashing orange: The port is transmitting and receiving data at 10/100 Mbps. ● Solid green: The port has made a successful 1000 Mbps link. ● Flashing green: The port is transmitting and receiving data at 1000 Mbps. ● Off: The port is not connected.
6	DIP Switch	● The DIP switch is used to switch the working mode of the device. ● Extend mode: The rate of ports 1 to 24 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). ● Default mode: Flow control is enabled and all ports can communicate with each other. ● Isolation mode: Ports 1 to 24 cannot communicate with each other but they can communicate with ports 25 and 26.
7	10/100 Base-TX Self-adaptive Ethernet Ports	24 10/100 Mbps self-adaptive Ethernet RJ45 ports (Auto MDI/MDIX) support PoE power supply.
8	10/100/1000 Base-TX GE port	One 10/100/1000 Mbps self-adaptive Ethernet RJ45 port (Auto MDI/MDIX).

No.	Item	Description
9	10/100/1000 Base-X Combo Port	One 10/100/1000Base-T combo port. The GE port and the copper port cannot be used at the same time.
10	Nameplate	On the bottom of the device

2. Rear Panel

Figure 1-34 Rear Panel of a RG-ES126FGS-LP Switch

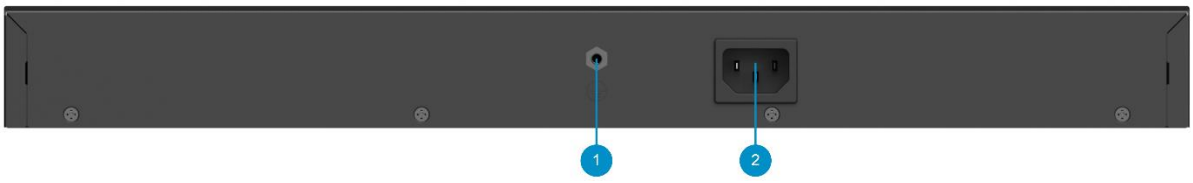


Table 1-37 Rear Panel Specifications

No.	Item	Description
1	Grounding Stud	Connect the grounding stud to the protection ground with the grounding cable to provide grounding protection.
2	AC Input Plug	Connect the power cord to the AC input plug to power on the switch.

1.13.3 Technical Specifications

Table 1-38 Technical Specifications of a RG-ES126FGS-LP Switch

Model	RG-ES126FGS-LP
Service Ports	● 24 10/100 Mbps self-adaptive Ethernet ports (supporting Auto MDI/MDIX); Ports 1-24 support PoE power supply. ● One 10/100/1000 Mbps self-adaptive Ethernet port (supporting Auto MDI/MDIX) ● One 10/100/1000 Mbps combo port
Power Supply	AC input: ● Rated voltage range: 100 V AC to 240 V AC ● Maximum voltage range: 90 V AC to 264 V AC ● Frequency: 50 Hz/60 Hz ● Rated current: 3.5 A
EEE	Disabled by default
PoE	● IEEE 802.3af-compliant and 802.3at-compliant

	● Ports 1-24 support PoE power supply. ● Maximum PoE output power per port: 30 W ● Maximum PoE output power per device: 180 W
PoE Power Cable Pairs	Mode A (1-2, 3-6 pairs)
Maximum Power Consumption	180 W (full PoE load) 20 W (no PoE load)
Working Mode	● Extend mode:The rate of ports 1 to 24 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). ● Default mode: Flow control is enabled and all ports can communicate with each other. ● Isolation mode: Ports 1 to 24 cannot communicate with each other but they can communicate with ports 25 and 26.
Operating Temperature	0°C to 45°C (32°F to 113°F)
Storage Temperature	–40ºC to 70ºC (–40ºF to 158ºF)
Operating Humidity	10% to 90% RH (non-condensing)
Storage Humidity	5% to 95% RH (non-condensing)
Lightning Protection (Port Surge)	6 kV
Fan	one fans
Airflow Direction	Left-to-right airflow
Certification	CE, ROHS
Ground Leakage Current	≤ 3.5 mA
Dimensions (W x D x H)	440 mm x 214.9 mm x 44 mm(17.32 in. x 8.46 in. x 1.73 in.)
Weight	3.35 kg (7.39 lbs, with packaging materials)

Warning

- RG-ES126FGS-LP switch is a Class A product. The device may cause radio interference in the living environment. You are advised to take proper measures.
- You are advised to keep the device out of the reach of children.

1.13.4 Cooling

The RG-ES126FGS-LP switch adopts fan cooling design. To ensure the normal operation of the device, maintain a minimum clearance of 10 cm (3.94 in.) around the device. Dust the device every three months to avoid blocking the ventilation openings.

1.14 RG-ES126FGS-P

1.14.1 Package Contents

Table 1-39 Package Contents

Item	Quantity
RG-ES126FGS-P Switch	1
Mounting Brackets	2
Power Cord	1
M4 x 8 mm Screw	6
User Manual	1
Warranty Card	1

Note

The package contents are subject to the purchase contract. The actual delivery prevails. Please check the items carefully against the package contents or purchase contract. If you have any questions or there are any errors, please contact your distributor.

1.14.2 Product Appearance

The RG-ES126FGS-P switch provides 24 10/100 Base-TX self-adaptive Ethernet ports, one 10/100/1000 Base-TX GE port, one 10/100/1000 Base-TX combo port, one DIP switch, one system status LED, and other LEDs on the front panel. On the rear panel of the switch, there is an AC power plug and a grounding stud.

Figure 1-35 Appearance of a RG-ES126FGS-P Switch

2. Front Panel

Figure 1-36 Front Panel of a RG-ES126FGS-P Switch

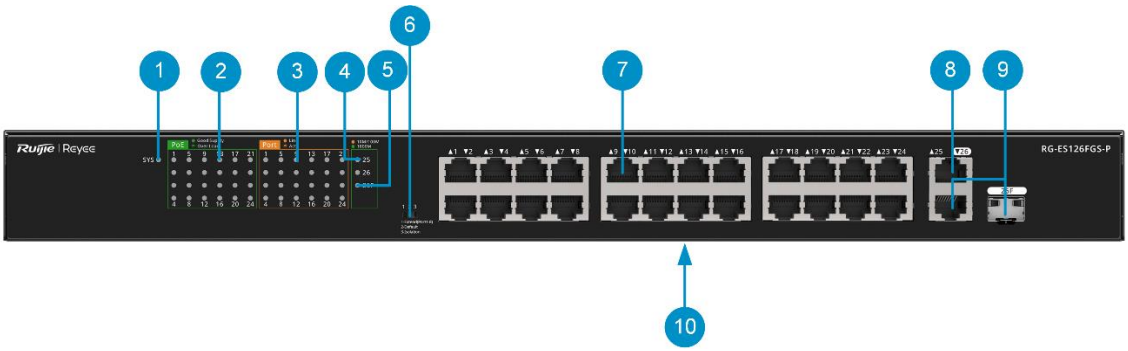


Table 1-40 Front Panel Specifications

No.	Item	Description
1	System Status LED	● Off: The switch is not powered on. ● Solid on: The switch is powered on.
2	PoE Status LED	● Solid green: PoE is enabled. ● Flashing green: PoE overload occurs. ● Off: PoE is disabled.
3	10/100 Base-TX Link/Act LED	● Solid orange: The port has made a successful 10/100 Mbps link. ● Flashing orange: The port is transmitting and receiving data at 10/100 Mbps. ● Off: The port is not connected.
4	10/100/1000 Base-TX GE Port LED	● Solid orange: The port has made a successful 10/100 Mbps link. ● Flashing orange: The port is transmitting and receiving data at 10/100 Mbps. ● Solid green: The port has made a successful 1000 Mbps link up. ● Flashing green: The port is transmitting and receiving data at 1000 Mbps. ● Off: The port is not connected.
5	10/100/1000 Base-TX Combo Port LED	● Solid orange: The port has made a successful 10/100 Mbps link. ● Flashing orange: The port is transmitting and receiving data at 10/100 Mbps. ● Solid green: The port has made a successful 1000 Mbps link. ● Flashing green: The port is transmitting and receiving data at 1000 Mbps. ● Off: The port is not connected.
6	DIP Switch	● The DIP switch is used to switch the working mode of the device. ● Extend mode: The rate of ports 1 to 24 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or

No.	Item	Description
		higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). ● Default mode: Flow control is enabled and all ports can communicate with each other. ● Isolation mode: Ports 1 to 24 cannot communicate with each other but they can communicate with ports 25 and 26.
7	10/100 Base-TX Self-adaptive Ethernet Ports	24 10/100 Mbps self-adaptive Ethernet RJ45 ports (Auto MDI/MDIX) support PoE power supply.
8	10/100/1000 Base-TX GE Port	One 10/100/1000 Mbps self-adaptive Ethernet RJ45 port (Auto MDI/MDIX).
9	10/100/1000 Base-TX Combo Port	One 10/100/1000 Base-T combo port. The GE port and the copper port cannot be used at the same time.
10	Nameplate	On the bottom of the device

3. Rear Panel

Figure 1-37 Rear Panel of a RG-ES126FGS-P Switch

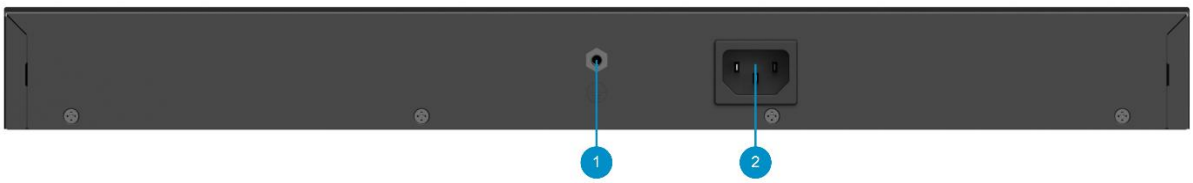


Table 1-41 Rear Panel Specifications

No.	Item	Description
1	Grounding Stud	Connect the grounding stud to the protection ground with the grounding cable to provide grounding protection.
2	AC Input Plug	Connect the power cord to the AC input plug to power on the switch.

1.14.3 Technical Specifications

Table 1-42 Technical Specifications of a RG-ES126FGS-P Switch

Model	RG-ES126FGS-P

Service Ports	● 24 10/100 Mbps self-adaptive Ethernet ports (supporting Auto MDI/MDIX). Ports 1-24 support PoE power supply. ● One 10/100/1000 Mbps self-adaptive Ethernet port (supporting Auto MDI/MDIX) ● One 10/100/1000 Mbps combo port
Power Supply	AC input: ● Rated voltage range: 100 V AC to 240 V AC ● Maximum voltage range: 90 V AC to 264 V AC ● Frequency: 50 Hz/60 Hz ● Rated current: 6 A
EEE	Disabled by default
PoE	● IEEE 802.3af-compliant and 802.3at-compliant ● Ports 1-24 support PoE power supply. ● Maximum PoE output power per port: 30 W ● Maximum PoE output power per device: 370 W
PoE Power Cable Pairs	Mode A (1-2, 3-6 pairs)
Maximum Power Consumption	370 W (full PoE load) 20 W (no PoE load)
Working Mode	● Extend mode: The rate of ports 1 to 24 is reduced to 10 Mbps. Typically, the transmission distance is 200 m (656.17 ft), which is up to 250 m (820.21 ft) in the laboratory environment with Cat5e cables or higher. In addition, factors such as cable quality, powered device performance, and ambient temperature may cause the transmission distance to be less than 250 m (820.21 ft). ● Default mode: Flow control is enabled and all ports can communicate with each other. ● Isolation mode: Ports 1 to 24 cannot communicate with each other but they can communicate with ports 25 and 26.
Operating Temperature	0°C to 45°C (32°F to 113°F)
Storage Temperature	–40ºC to 70ºC (–40ºF to 158ºF)
Operating Humidity	10% to 90% RH (non-condensing)
Storage Humidity	5% to 95% RH (non-condensing)
Lightning Protection (Port Surge)	6 kV
Fan	Two fans
Airflow Direction	Left-to-right airflow
Certification	CE, ROHS

Ground Leakage Current	≤ 3.5 mA
Dimensions (W x D x H)	440 mm x 214.9 mm x 44 mm(17.32 in. x 8.46 in. x 1.73 in.)
Weight	3.7 kg (8.16 lbs, with packaging materials)

Warning

- RG-ES126FGS-P switch is a Class A product. The device may cause radio interference in the living environment. You are advised to take proper measures.
- You are advised to keep the device out of the reach of children.

1.14.4 Cooling

The RG-ES126FGS-P switch adopts fan cooling design. To ensure the normal operation of the device, maintain a minimum clearance of 10 cm (3.94 in.) around the device. Dust the device every three months to avoid blocking the ventilation openings.

2 Getting Started

2.1 Preparing for Installation

2.1.1 Safety Precautions

Note

- To avoid device damage and physical injury, please read the safety precautions carefully before installing the device.
- The following safety precautions may not cover all possible dangers.

1. General Safety Precautions

- Install the device in a standard 19-inch cabinet.
- Do not place the device in a wet position, and keep the device away from liquid. Keep the chassis clean and dust-free.
- Place the device away from heat sources.
- Make sure that the cabinet and the power distribution system are properly grounded.
- Do not place the device in walking areas.
- Do not wear loose clothes, ornaments, or other items that may be hooked by the chassis during installation and maintenance.
- Keep the tools and components away from walking areas.

2. Handling Safety

- Avoid handling the device frequently after installation.
- Cut off all power supplies and unplug all power cords before moving and handling the device.
- Do not handle the device alone. At least two persons are needed. Keep balance and prevent personal injuries when handling the device.

3. Electric Safety

Warning

- 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 supply through wet objects may cause fatal dangers.

- Observe local rules and regulations when performing 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.

- Check the device carefully before shutting down the power supply.
- Select a correct leakage protector (also referred to as “leakage current switch” or “leakage current breaker”) for the power supply system. When there is a risk of leakage and electric shock, the power supply is automatically disconnected. A correct leakage protector should meet the following requirements:
  - The rated leakage action current of each leakage protector is greater than twice of the theoretical maximum leakage current of all the power supplies in the system. For example, if a system is equipped with16 identical power supplies, the leakage current of each power supply is equal to or less than 3.5 mA, and the leakage current of the system totals 56 mA. A leakage protector with 30 mA rated action current supports less than five power supplies (that is, Action current of the leakage protector/2/Maximum leakage current of each power supply = 30/2/3 .5 ≈ 4.28). In other words, the leakage protector with 30 mA rated action current supports no more than four power supplies. In this case, the 16 power supplies in the system require at least four leakage protectors with 30 mA rated action current and each leakage protector supports four power supplies.

    If power supplies in a system differ in models, the rated leakage action current of each leakage protector divided by two is greater than the sum of maximum leakage currents of all the power supplies.
  - The rated leakage non-action current of a leakage protector shall be 50% of the leakage action current. Take a leakage protector with 30 mA rated leakage action current as an example. The rated leakage non-action current shall be 15 mA. When the leakage current is below 15 mA, the protector shall not act.

⚠ Caution

To guarantee personal safety, the rated leakage action current of each leakage protector in the system must be equal to or less than 30 mA (human body safety current is 30 mA). When twice of the total leakage current of the system is greater than 30 mA, the system must be equipped with two or more leakage protectors.

4. Electrostatic Discharge Safety

- Ensure that the device is properly grounded.
- Keep the indoor installation environment free of dust.
- Maintain proper humidity conditions in the installation environment.
- Before installing various pluggable modules, please wear an anti-static wrist strap and ensure that the anti-static wrist strip is properly grounded.

2.1.2 Installation Environment Requirements

The device must be installed indoors. To ensure its normal operation and prolonged service life, the installation site must meet the following requirements.

1. Bearing Requirements

Evaluate the weight of the switch and its accessories (for example, the cabinet, chassis, and power supply modules), and ensure that the ground of the installation site meets the requirements.

2. Ventilation Requirements

Maintain a proper clearance around the device for air circulation and normal heat dissipation. After various cables are connected, bundle the cables or place them in the cable management bracket to avoid blocking air inlets.

3. Space Requirements

It is recommended that the width of the equipment room corridor be greater than 0.8 m (31.50 in.) to ensure enough space for chassis handling and module maintenance.

Please do not install the device against the wall. Instead, maintain a minimum clearance of 0.4 m (15.75 in.) around the device for heat dissipation and device maintenance.

4. Temperature/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 cause damage to the device.

- In an environment with high relative humidity, the insulating material may have poor insulation or even leak electricity.
- In an environment with low relative humidity, the insulating strip may dry and shrink, loosening screws.
- In a dry environment, 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.

Note

The ambient temperature and humidity of the device are measured at the point that is 1.5 m (59.06 in.) above the floor and 0.4 m (15.75 in.) before the device rack when there is no protective plate in front or at the back of the rack.

5. 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 server room.

Table 2-1 Requirements for Dust

Dust	Unit	Content
Dust particles (diameter ≥ 0.5 μm)	Particles/m^3	≤ 3.5×10^6
Dust particles (diameter ≥ 5 μm)	Particles/m^3	≤ 3.5×10^4

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, and chlorine gas. The following table lists limit values for harmful gases.

Table 2-2 Requirements for Gases

Gas	Average (mg/m^3)	Maximum (mg/m^3)
Sulfur dioxide (SO_2)	0.3	1.0
Hydrogen sulfide (H_2S)	0.1	0.5
Nitrogen dioxide (NO_2)	0.5	1.0
Chlorine gas (Cl_2)	0.1	0.3

Note

Average refers to the average value of harmful gases measured in one week. **Maximum** refers to the upper limit of harmful gases measured in one week, and the maximum value lasts up to 30 minutes every day.

6. Grounding Requirements

A proper grounding system is the basis for stable and reliable running and is indispensable for preventing lightning strikes and interference. Carefully check the grounding conditions at the installation site according to the grounding specifications, and complete grounding properly based on the actual situation.

- Safety Grounding

  Ensure that the cabinet and power distribution device are properly grounded when the device uses the AC power supply. Otherwise, electric shock may occur when the insulation resistance between the power supply inside the device and the chassis becomes small.

Caution

Please adopt protection grounding connections in buildings so that the device can be connected to the protection ground.

Check whether the AC socket is reliably connected to the protection ground of the building. If not, a protection ground wire should be used to connect the protection ground lug of the AC socket to the protection ground of the building.

The cross-sectional area of the protection ground cable should be at least 0.75 mm^2 (18 AWG).

- Lightning Grounding

  The lightning protection system of facilities is standalone, and is composed of a lightning rod, a lower conductor, and a connector connected to the grounding system. The grounding system is usually used for power reference grounding and safety grounding of the cabinet. Lightning grounding is required only for facilities and is not required for the device.

- EMC Grounding

Grounding required for electromagnetic compatibility (EMC) includes shielded grounding, filter grounding, noise and interference suppression, and level reference, which contribute to the overall grounding requirements. The grounding resistance should be less than 1 ohm, and the grounding lugs of the cabinet should be grounded before the running of the device.

7. Anti-interference Requirements

- Take interference prevention measures for the power supply system.
- 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 high-frequency current devices such as high-power radio transmitting station and radar transmitting station.
- Take electromagnetic shielding measures when necessary.

8. Lightning Protection Requirements

The device can guard against lightning strikes. As an electric device, it may still be damaged by strong lightning strikes. Take the following lightning protection measures:

- Ensure that the grounding cable of the rack is in good contact with the ground.
- Ensure that the neutral point of the AC power socket is in good contact with the ground.
- You are advised to install a power lightning arrester in front of the power input end to enhance the lightning prevention for the power supply.

9. Installation Site Requirement

Regardless of whether the device is installed into a rack or on a workbench, the following conditions must be met:

- Maintain a proper clearance around the air inlets and ventilation openings for heat dissipation.
- The device is equipped with two cooling fans. Cold air is drawn through the ventilation openings around the chassis and exhausted from the rear of the chassis through the fans. Thus, maintain a minimum clearance of 15 cm (5.90 in.) around the device to ensure normal heat dissipation. You are advised to install the device in a standard 19-inch rack. If not, you can place the device on a clean workbench. If the installation area is hot, air conditioning is recommended.
- Ensure that the rack and workbench have proper ventilation and heat dissipation.
- Ensure that the rack and workbench are sturdy enough to support the weight of the device and its accessories.
- Ensure that the rack and workbench are properly grounded.

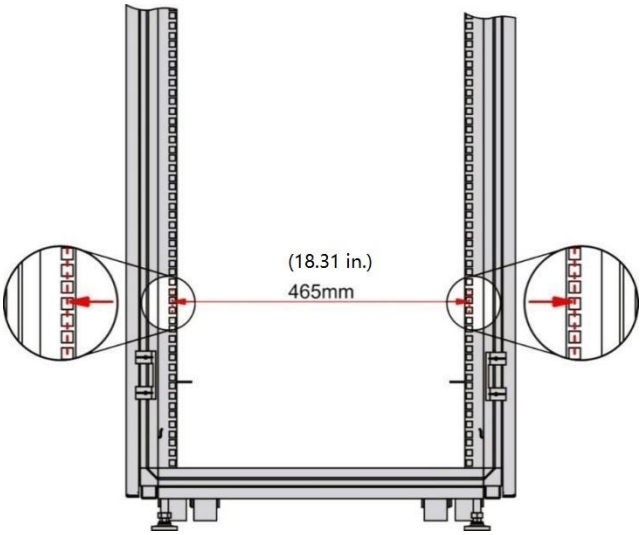
2.1.3 Rack Installation Requirements

If you want to install the device into a rack, confirm that the rack meets the following requirements.

(1) Please use a standard 19-inch rack with four columns.

(2) The distance between square hole strips on the left and right sides of the standard 19-inch rack is 465 mm (18.31 in.).

Figure 2-1 A Standard 19-inch Rack



(3) The distance between the square hole strip on the rack column and the outer side of the front cabinet door is greater than 180 mm (7.09 in.) and the thickness of the front cabinet door is less than 25 mm (0.98 in.). Therefore, the available space is greater than 155 mm (6.10 in.). The rack depth (the distance between the front and rear doors) is greater than 1000 mm (39.37 in.).

(4) The slide rails (or trays) of the rack meet the bearing requirements of the device.

(5) A grounding lug is installed properly on the rack to ensure that the device is fully grounded.

(6) The rack is well ventilated and the porosity of the front and rear panels is greater than 50%.

2.1.4 Tools

Table 2-3 Tools

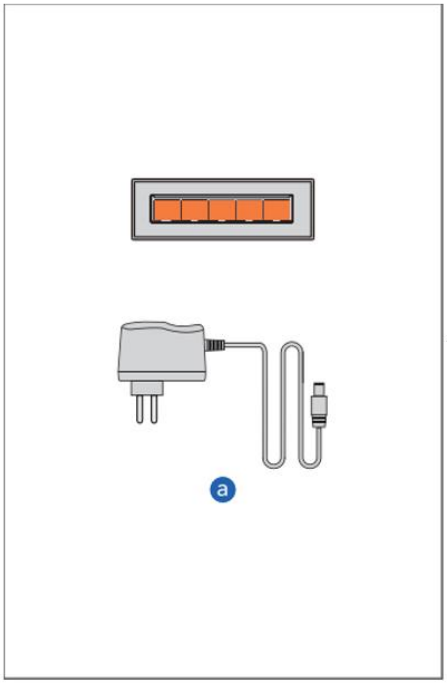
Common Tools	**Phillips screwdrivers, power cords, Ethernet cables, fastening bolts, diagonal pliers, and binding straps**
Special Tools	Antistatic gloves, wire stripper, crimping pliers, crystal connector crimping pliers, and wire cutter
Meter	Multimeter
Relevant Devices	PC, display, and keyboard

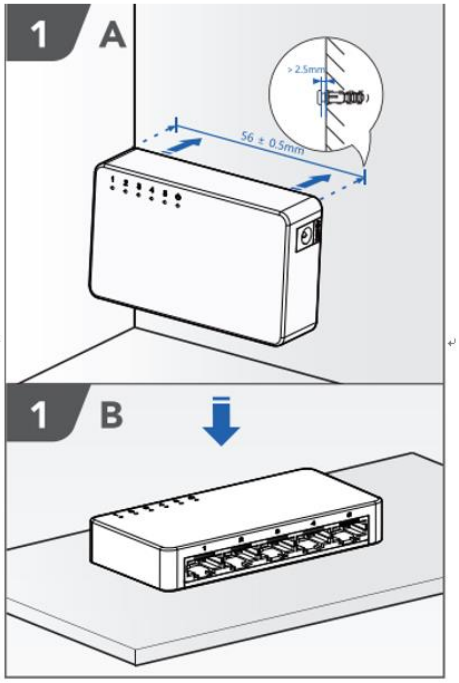
Note

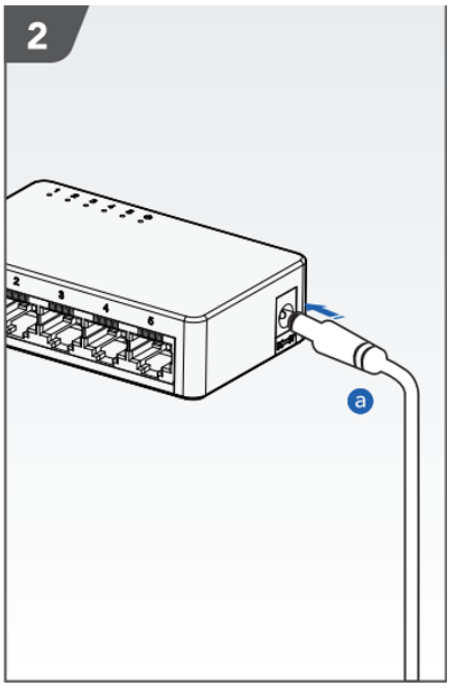
The RG-ES118FGS-LP switch is delivered without a tool kit. The tool kit is customer-supplied.

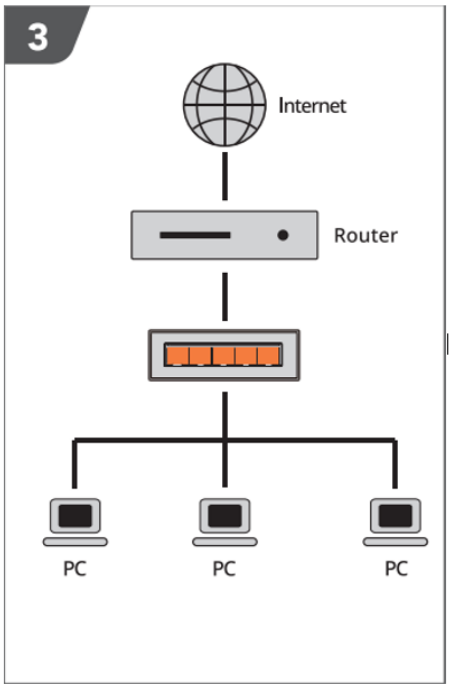
2.2 Installing the Switch

2.2.1 RG-ES05F/RG-ES05G-L

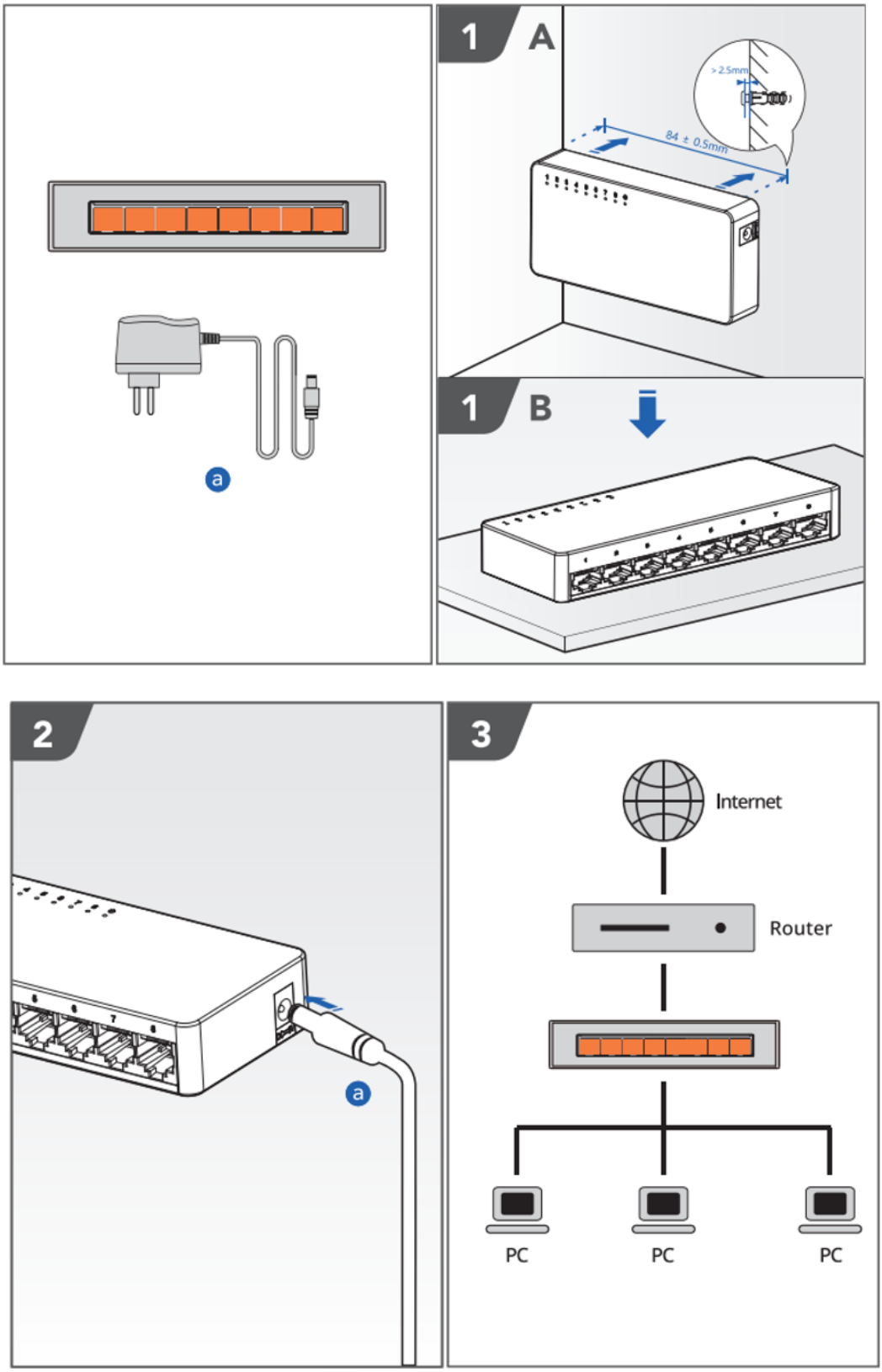




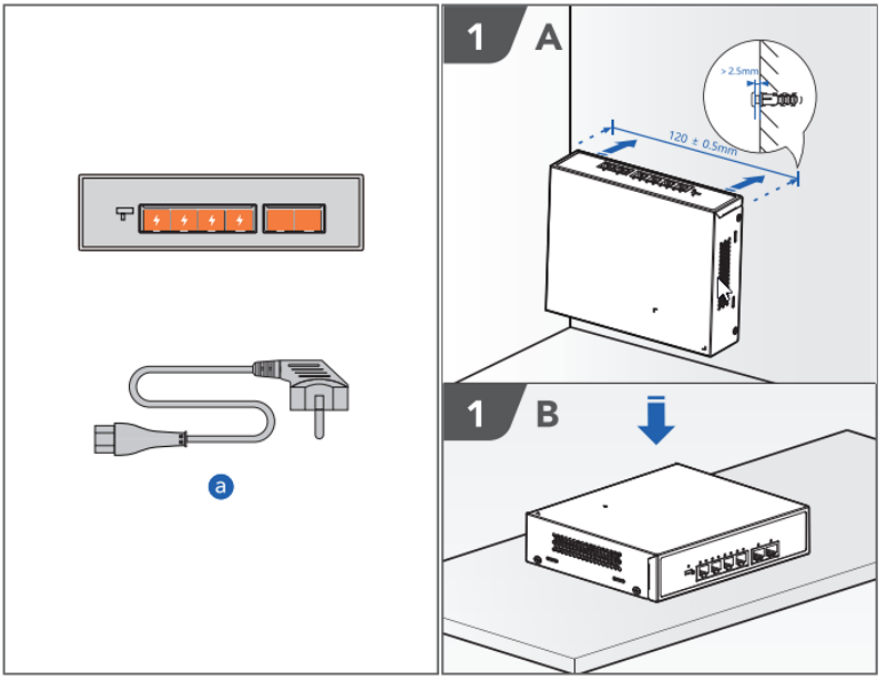


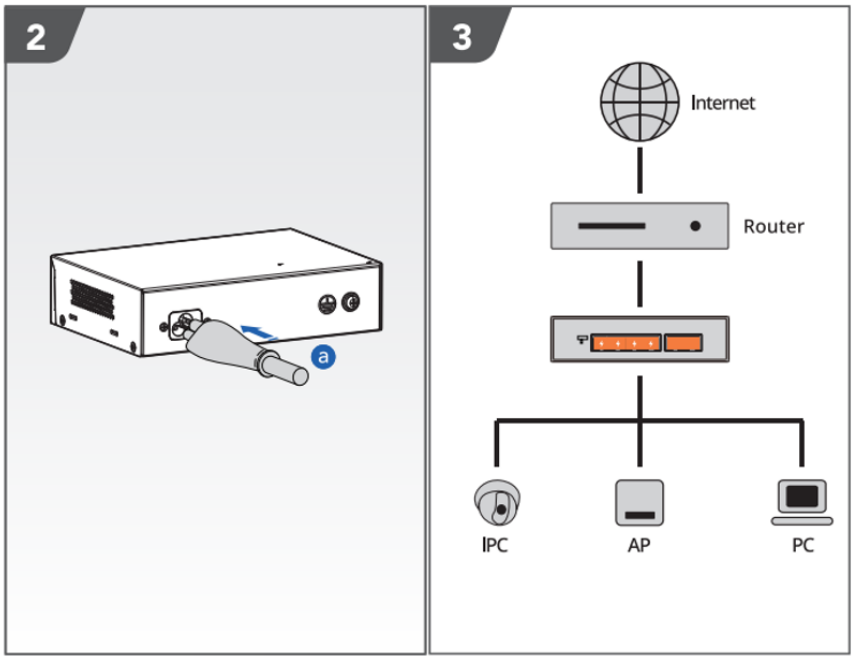


2.2.2 RG-ES08F/RG-ES08G-L

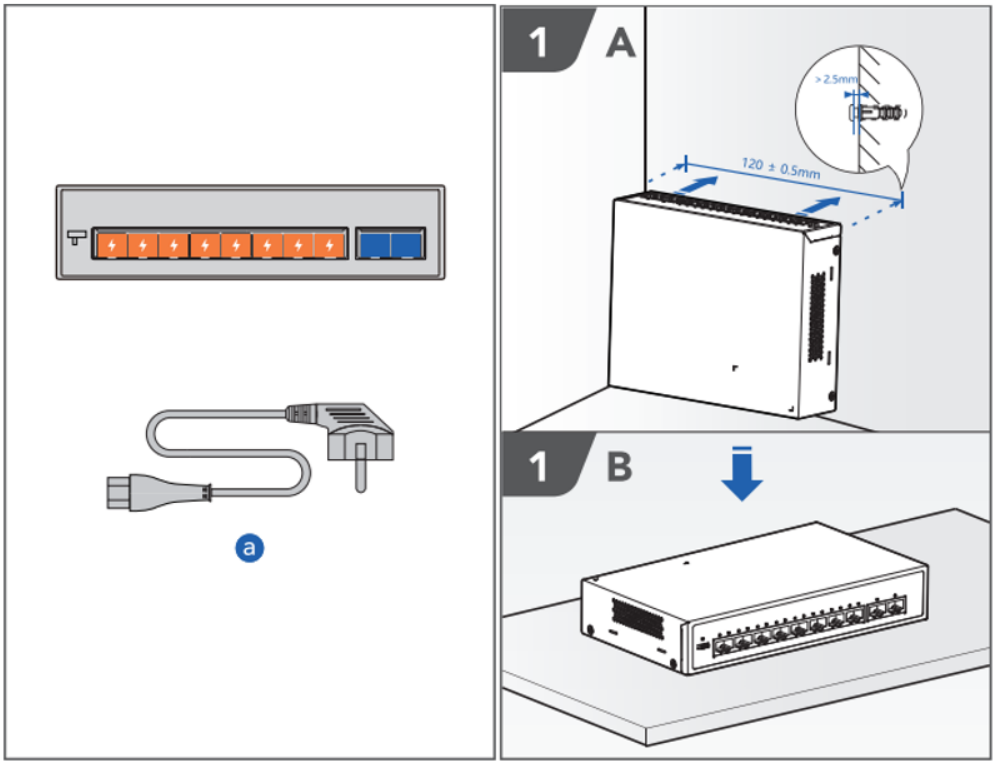


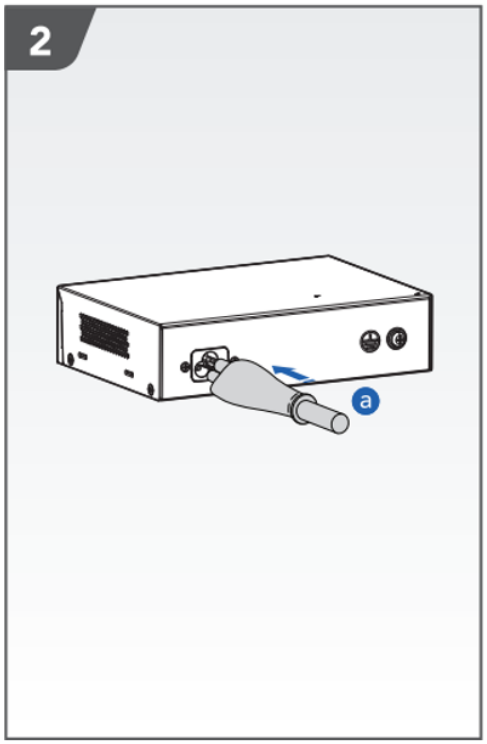
2.2.3 RG-ES106F-P

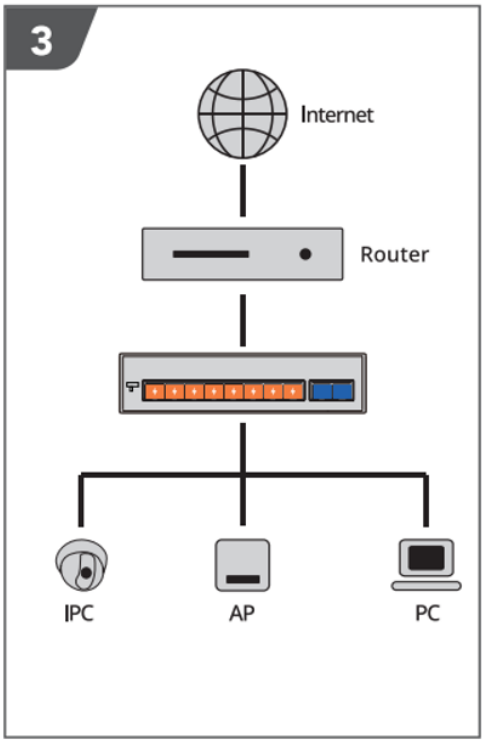




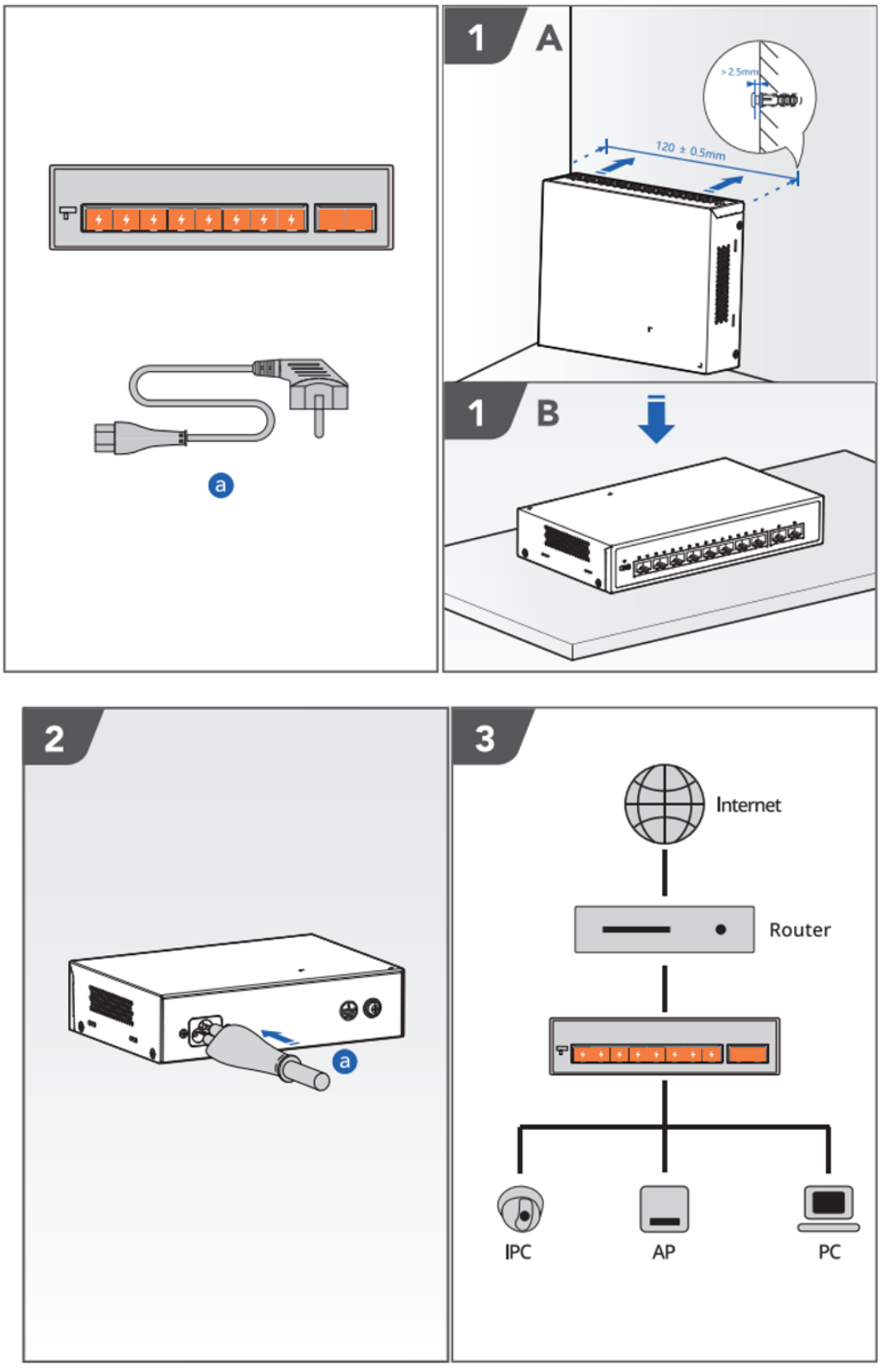
2.2.4 RG-ES110FG-P



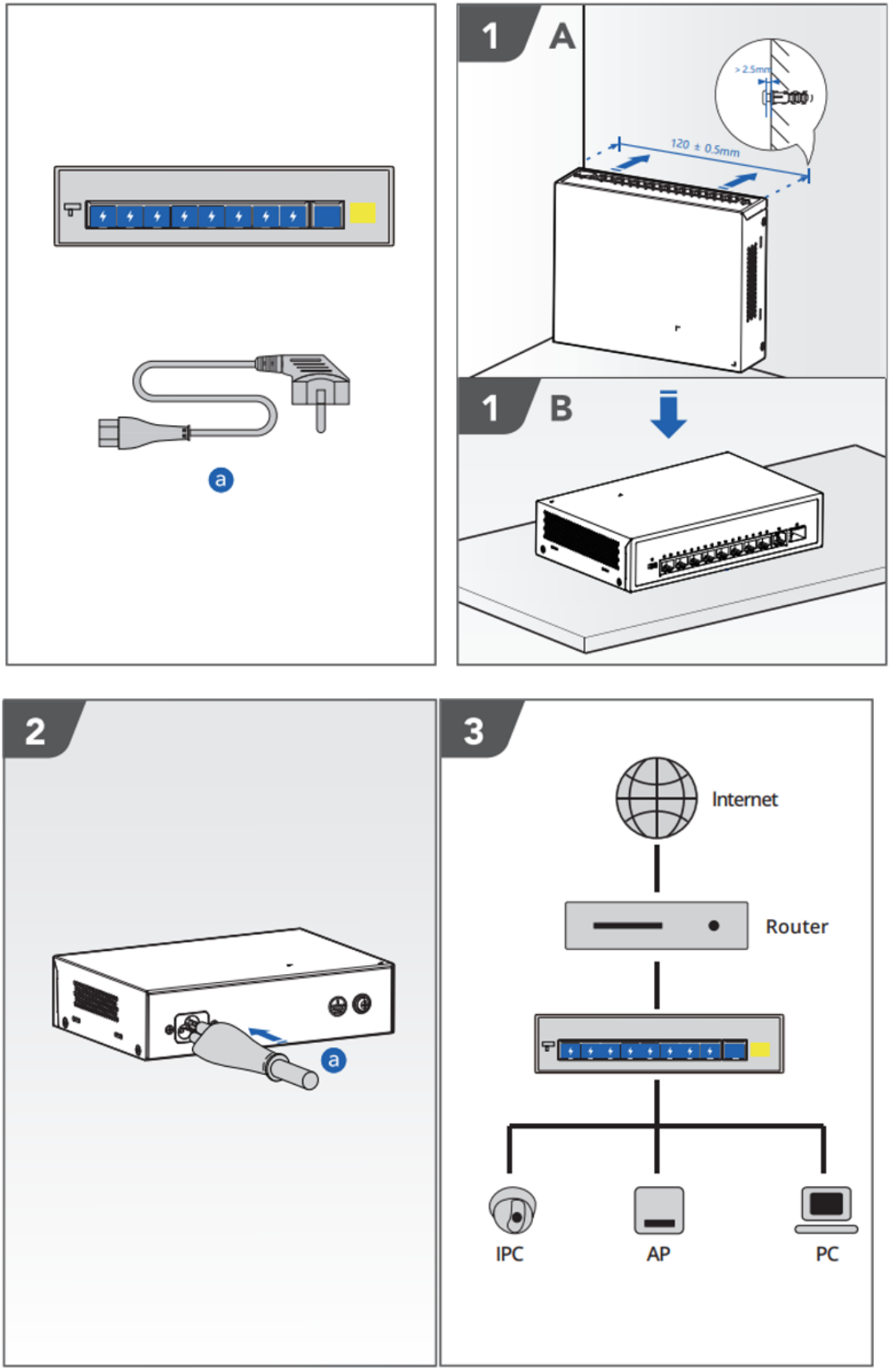




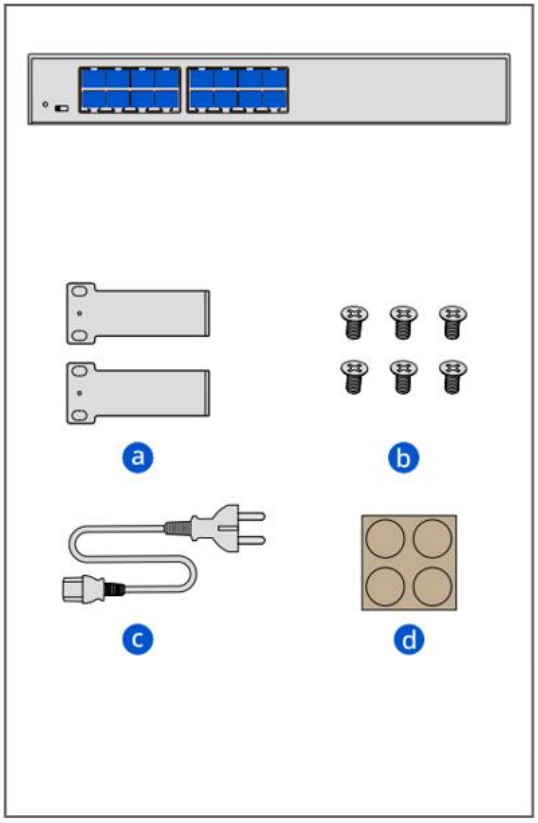
2.2.5 RG-ES110F-P

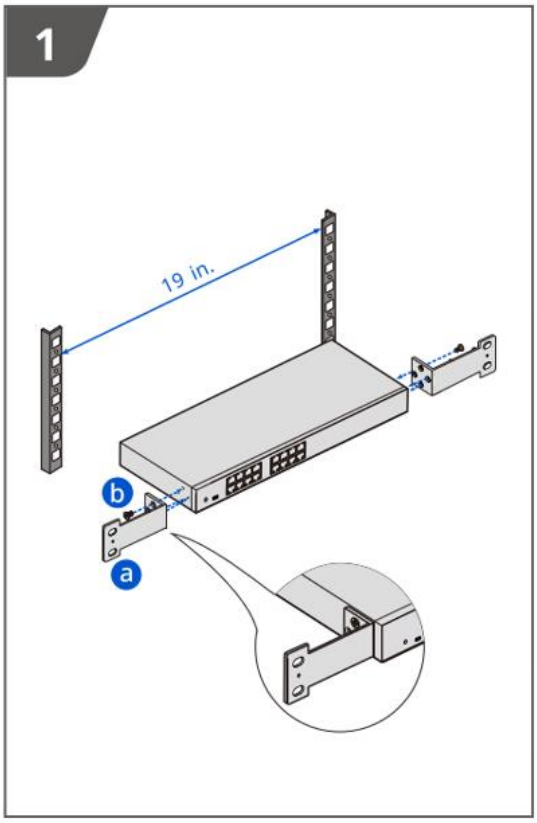


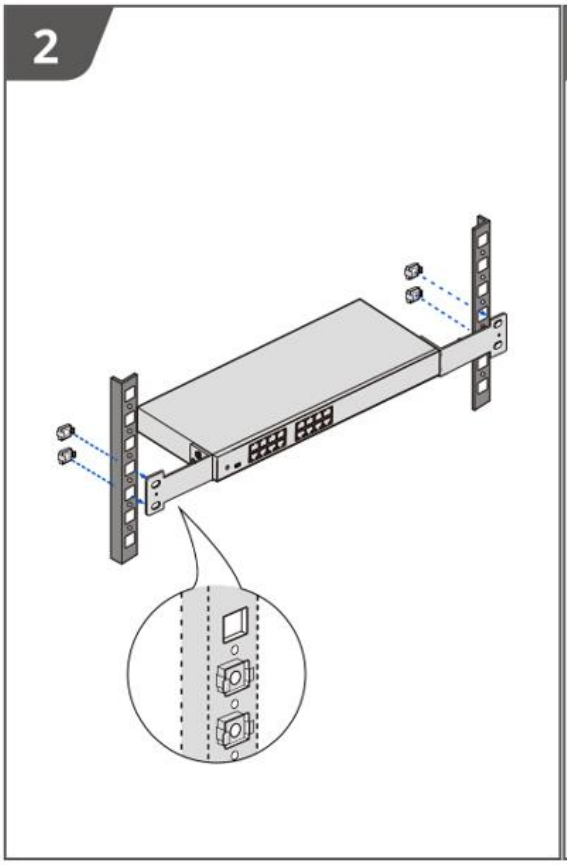
2.2.6 RG-ES110GS-P-L

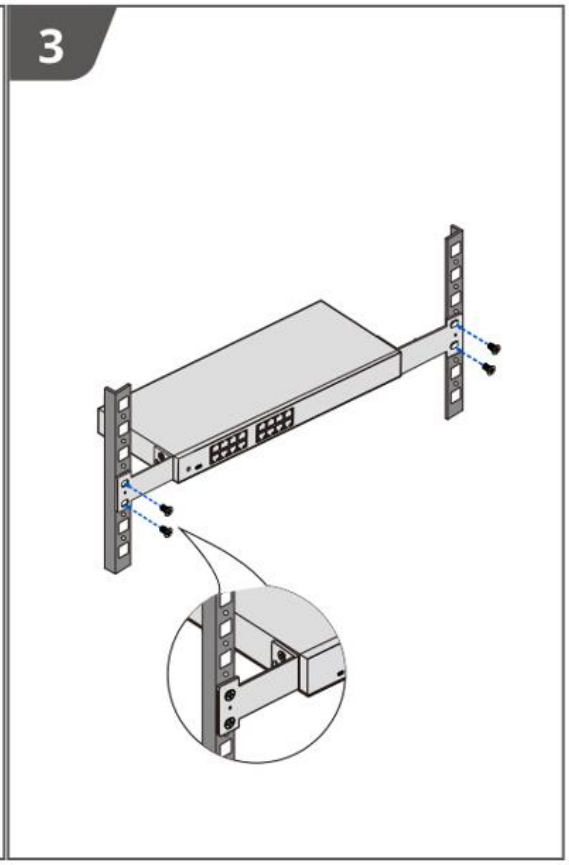


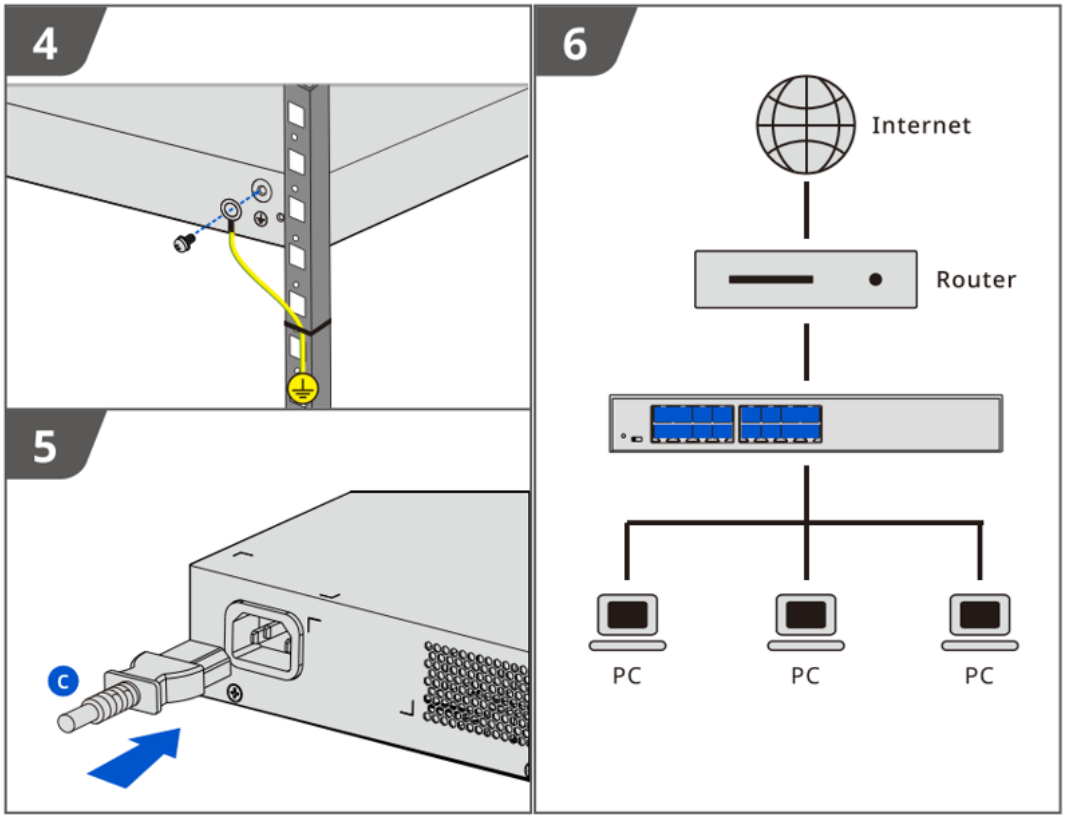
2.2.7 RG-ES116G-L



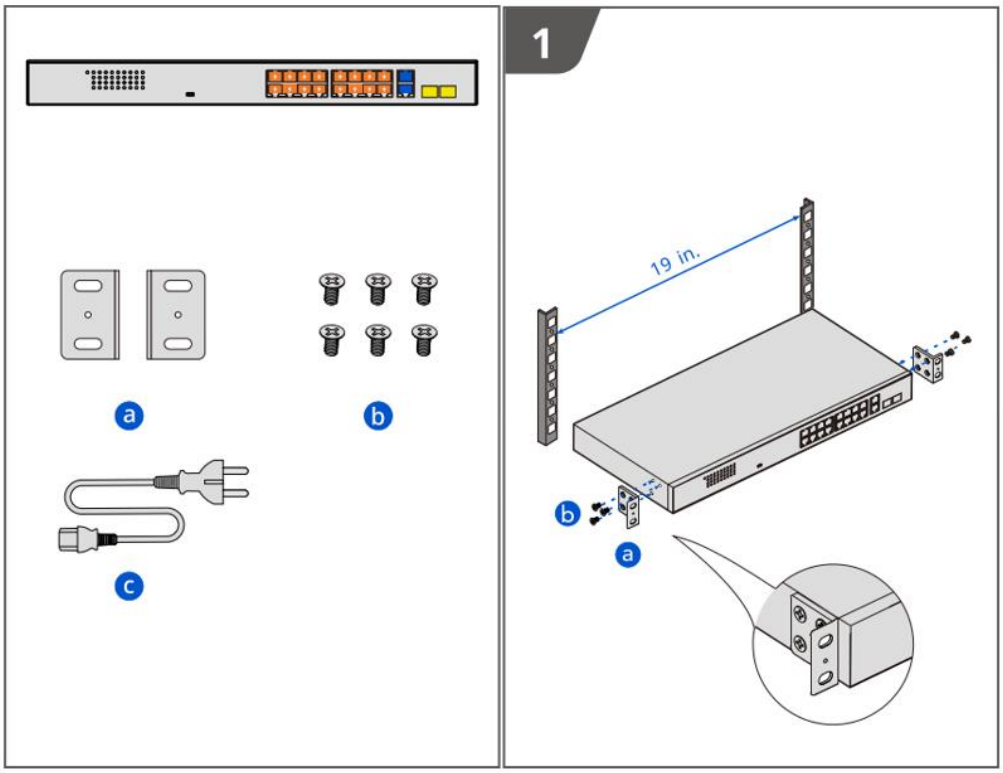


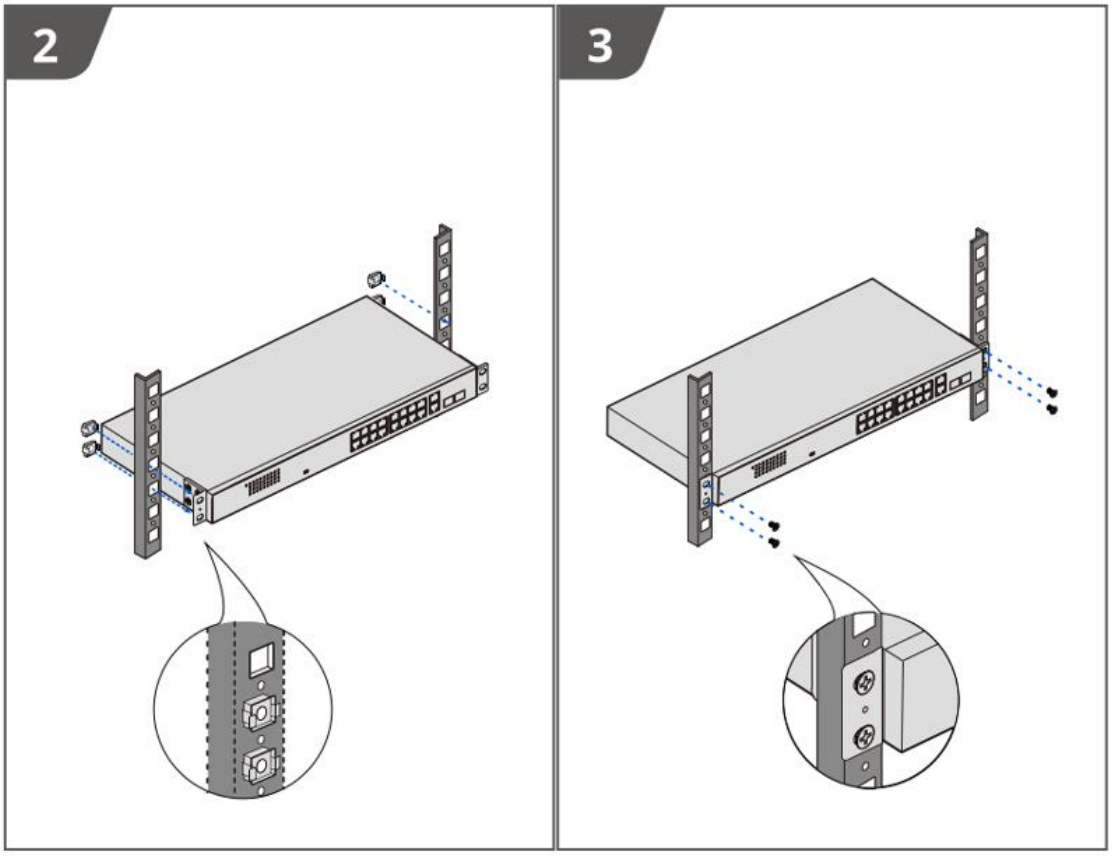






2.2.8 RG-ES118FGS-LP

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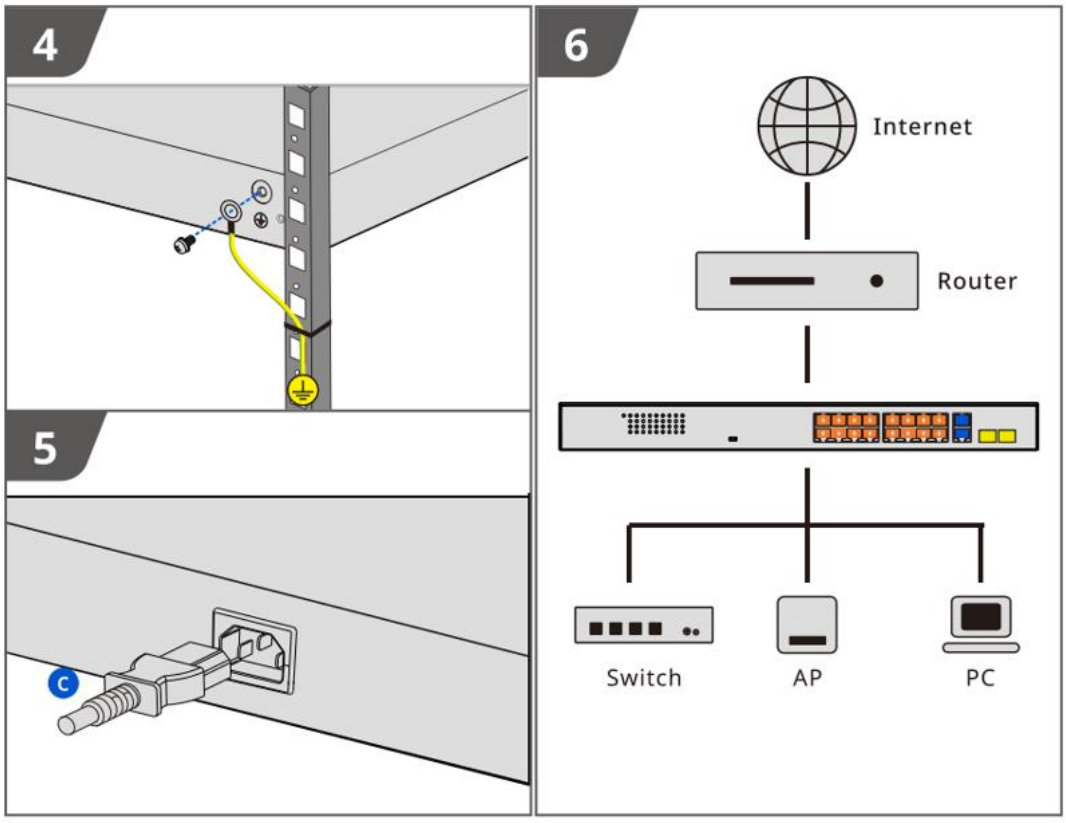
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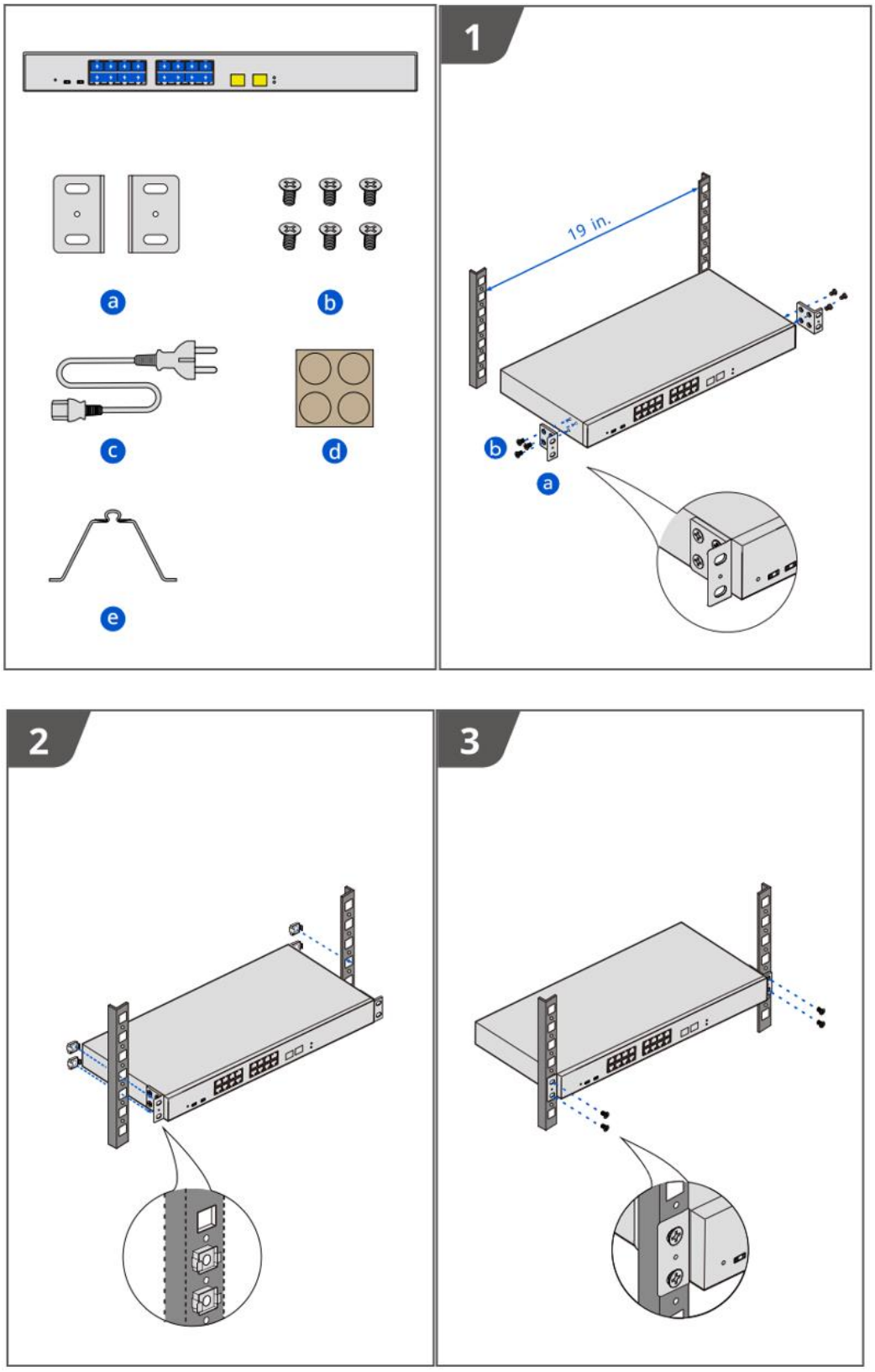
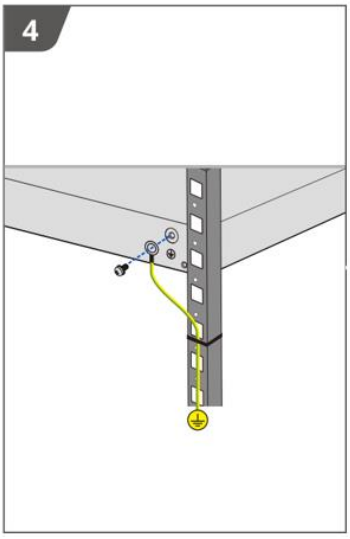
2.2.9 RG-ES118GS-P-L

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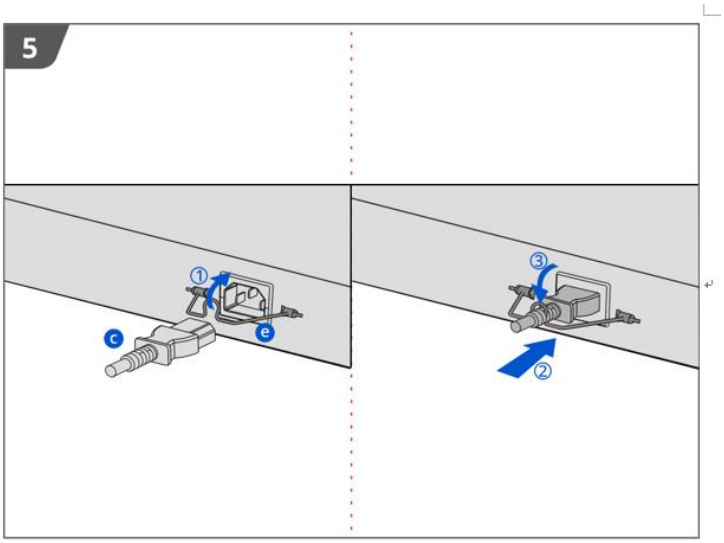
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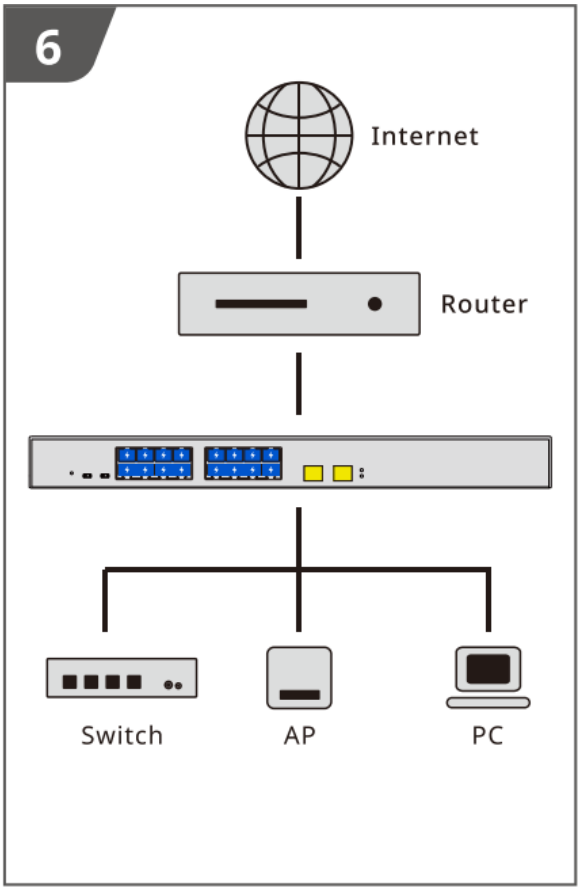
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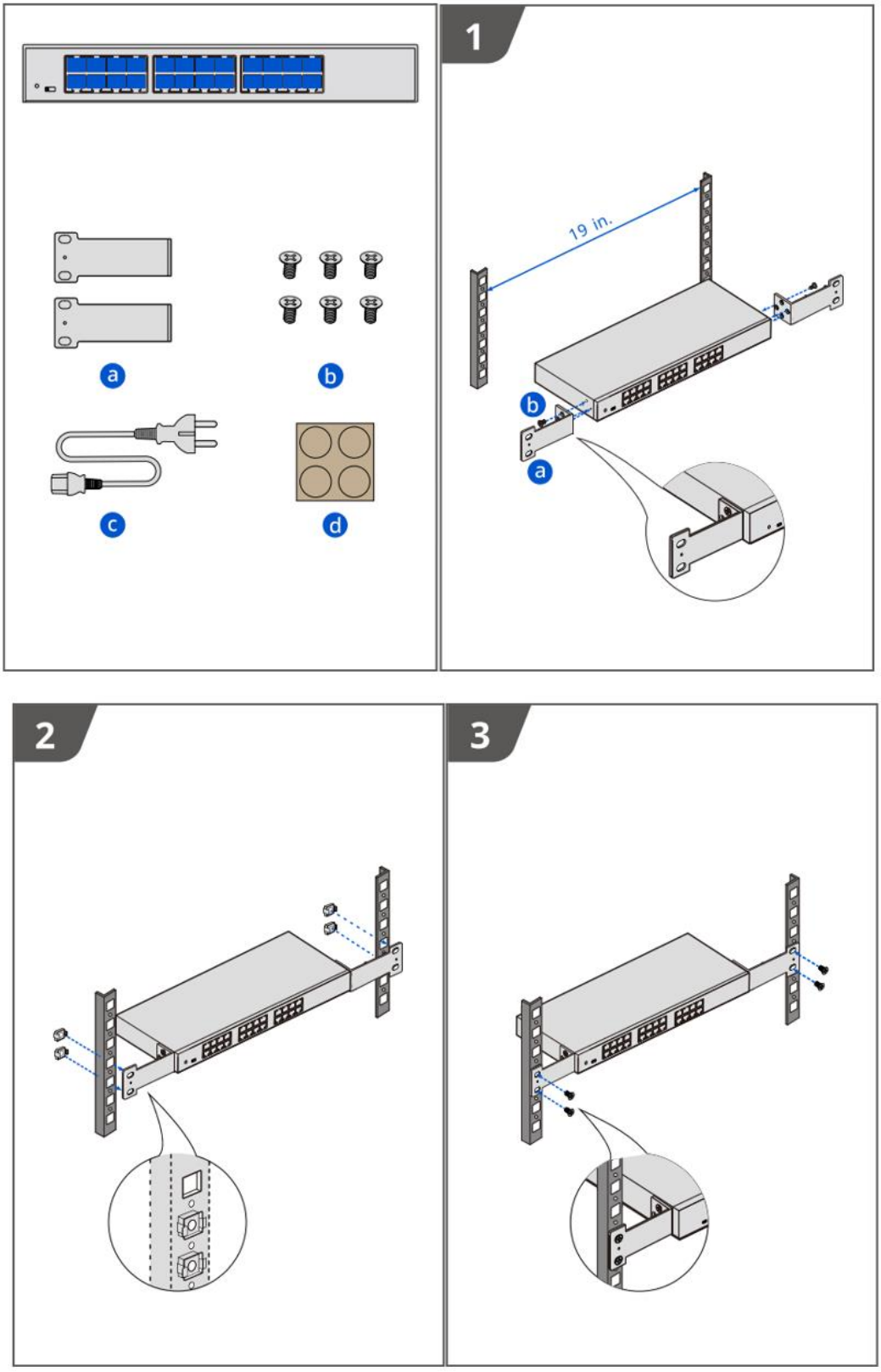
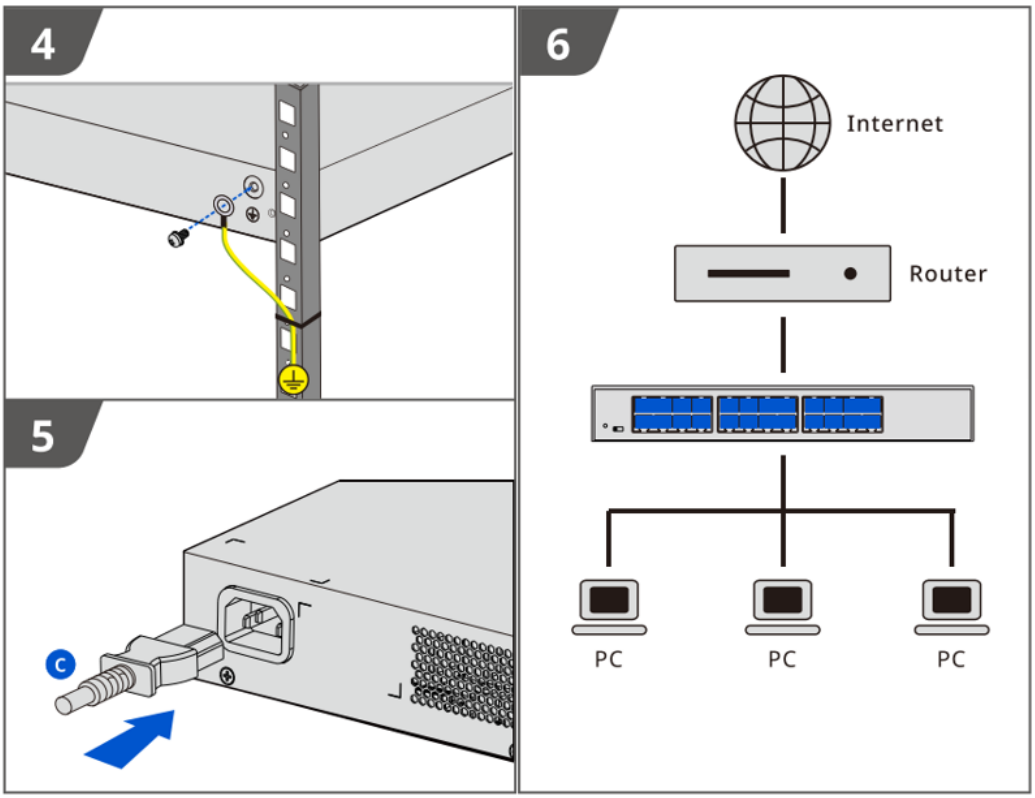
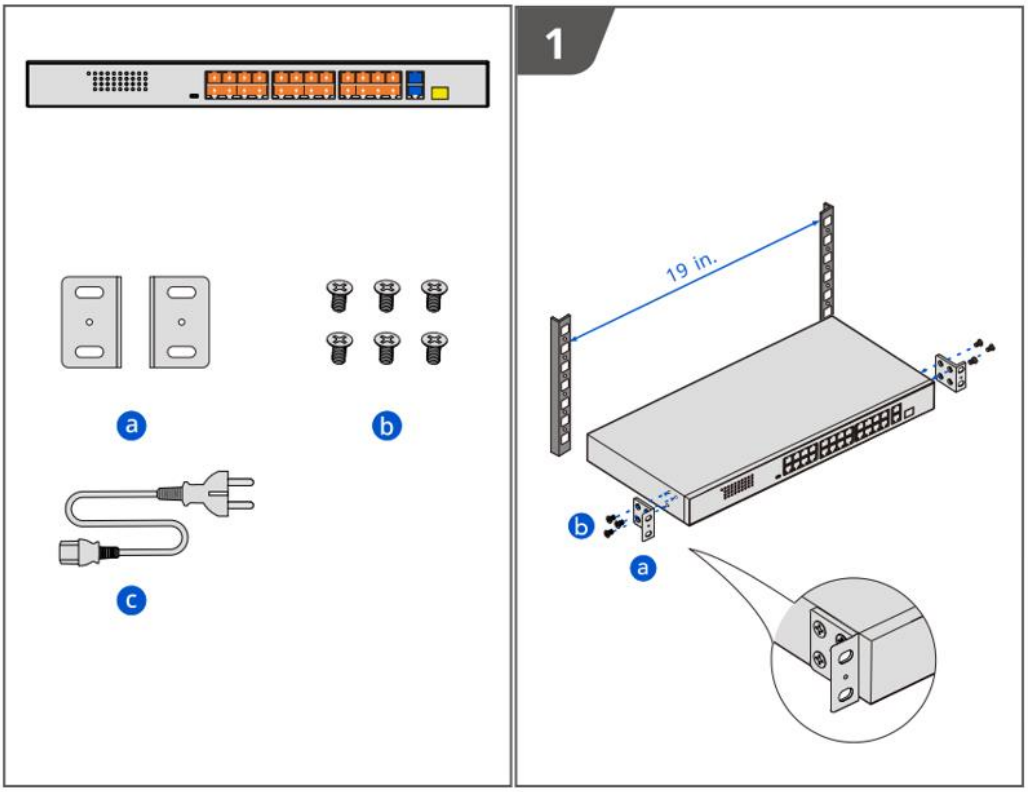
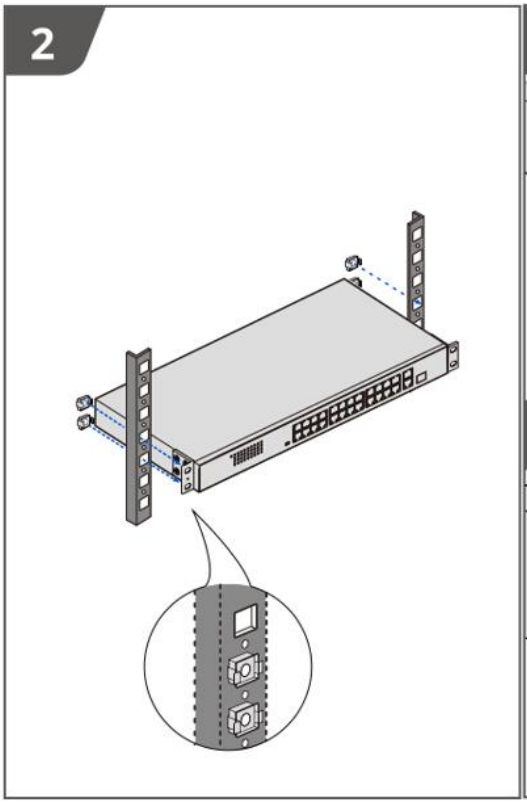
2.2.10 RG-ES124G-L





2.2.11 RG-ES126FGS-LP

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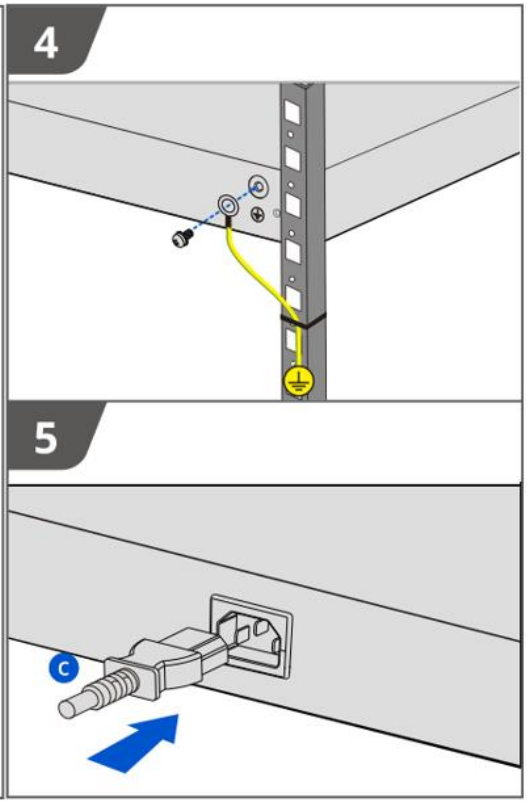
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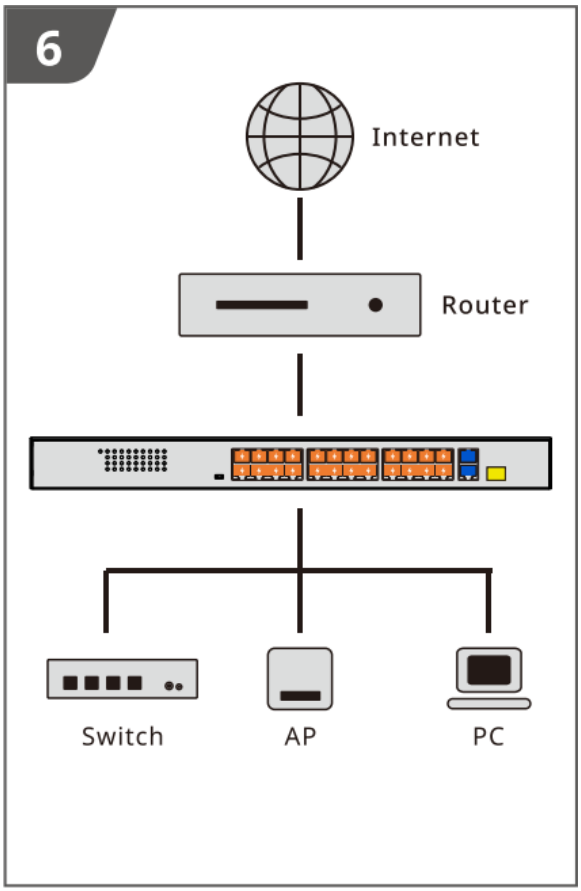
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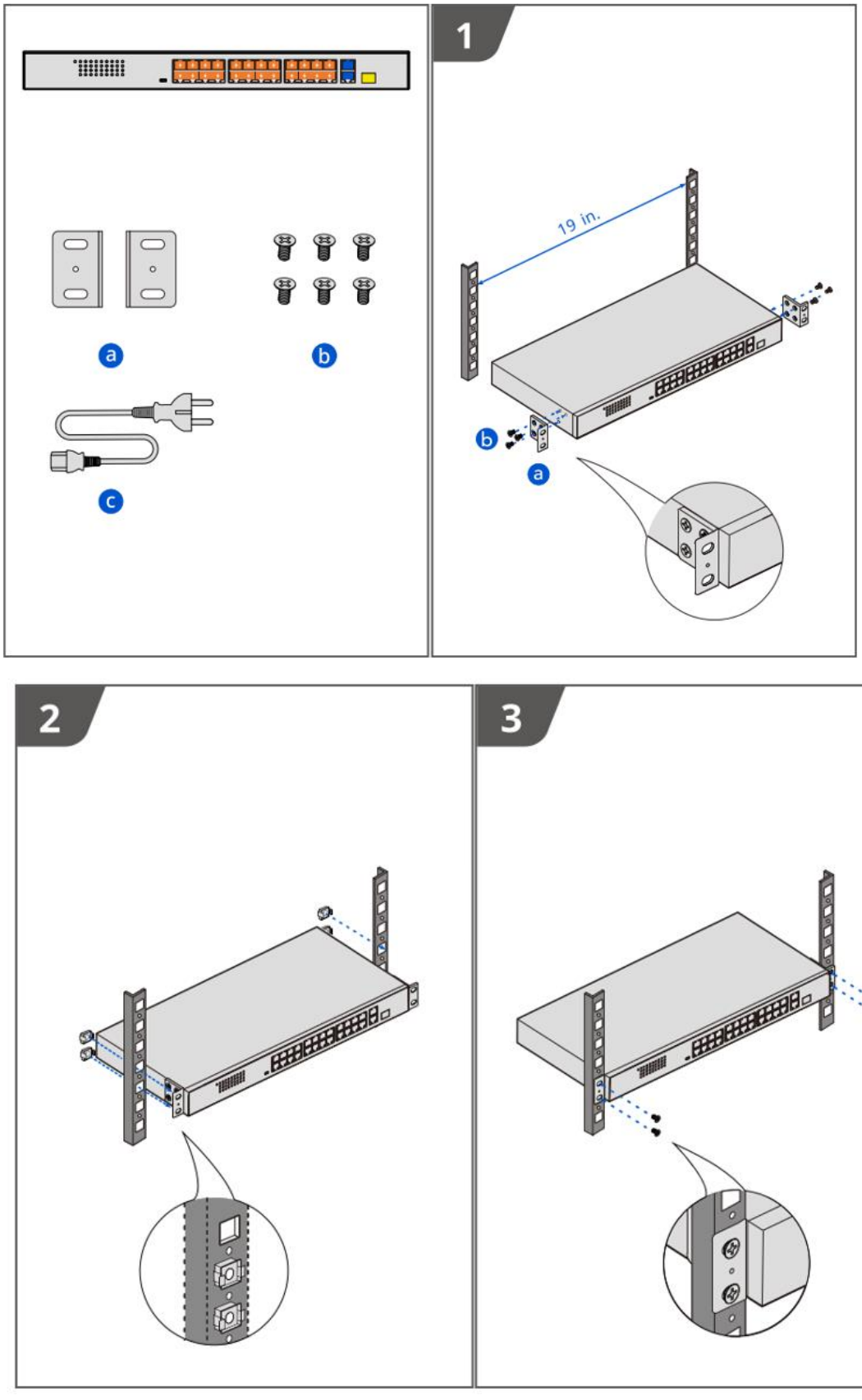
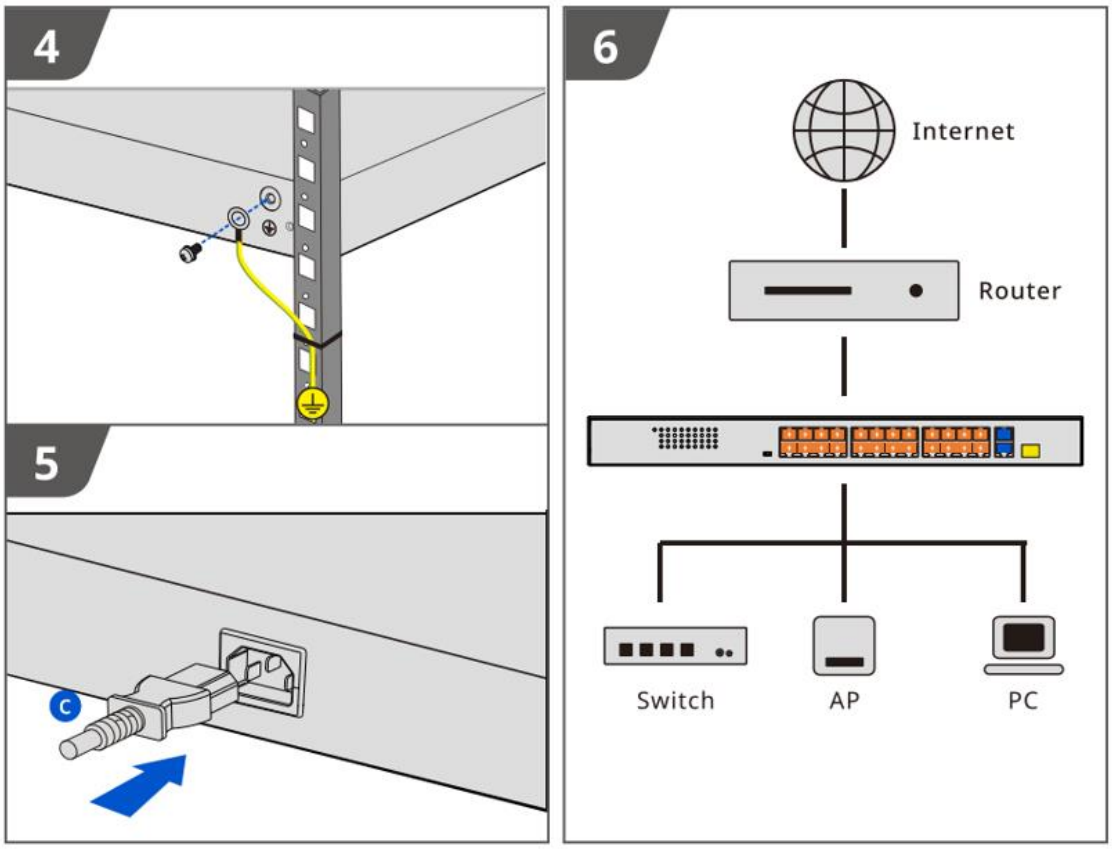
2.2.12 RG-ES126FGS-P





2.2.13 Checklist before Power-on

- Check whether the switch is properly grounded.
- Check whether the switch is properly installed in the rack.
- Check whether the power cord is properly connected.
- Check whether the power supply voltage meets the requirements.
- Check whether the Ethernet cable is properly connected, whether the client (may be PC) is started, and whether configuration parameters are set.

2.2.14 Checklist after Power-on

- Check whether the fiber-optic cable and Ethernet cable are properly connected.
- Check the LED status.