Ruijie RG-S2915-L Series Switches

Hardware Installation and Reference Guide

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Preface

Intended Audience

This document is intended for:

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

Technical Support

- Ruijie Networks website: https://www.ruijienetworks.com/
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- Live chat: https://www.ruijienetworks.com/rita
- Documentation feedback: doc@ruijie.com.cn

Conventions

1. Signs

The signs used in this document are described as follows:

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. Note

The manual provides configuration information, including models, port types, and command line interfaces, for reference purposes only. In the event of any discrepancy or inconsistency between the manual and the actual version, the actual version shall take precedence.

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1 Product Overview

RG-S2915-L series switches are the new-generation GE switches released by Ruijie Networks for campus access. With a brand-new hardware architecture and Ruijie RGOS11.X modular operating system, the RG-S2915-L series switches provide more resource entries, faster hardware processing performance, and better user experience.

RG-S2915-L Series Switches

Model	10/100/1000Base-T Port	1GE SFP Port	2.5GE SFP Port	Console Port	USB Port	Redundant Power Supply
RG-S2925-24GT4MS-L	24	4	4	1	1	Fixed single power supply
RG-S2915-48GT4MS-L	48	4	4	1	1	Fixed single power supply
RG-S2915-10GT2MS-P-L	10 (ports 1 to 8 supporting PoE/PoE+)	2	2	1	1	Fixed single power supply
RG-S2915-24GT4MS-P-L	24 (supporting PoE/PoE+)	4	4	1	1	Fixed single power supply

Note

- 1000BASE-T ports are downward compatible with 100BASE-TX and 10BASE-T ports.
- The 1GE/2.5GE SFP ports support 2500BASE-X, 1000BASE-X, and 100BASE-FX.

1.1 RG-S2915-24GT4MS-L

1.1.1 Specifications

Model	RG-S2915-24GT4MS-L
CPU	Built-in single-core CPU, with the clock speed of 1.2 GHz
BootROM	N/A

Flash memory	64 MB
Memory	DDR4 512 MB
Switch buffer	512 KB
Fixed service port	24 x 10/100/1000BASE-T ports 4 x 1GE/2.5GE SFP ports
Transmission medium	10/100/1000BASE-T Cat 5 UTP 1000BASE-X to 1000BASE-T Cat 5e/6/6a 1000BASE-SX (850 nm) 1000BASE-LX (1310 nm) 1000BASE-LH (1310 nm) 1000BASE-ZX (1550 nm) 1000BASE-LX (1310 nm, 1550 nm) 1000BASE-LH (1310 nm, 1550 nm) 2.5GBASE-LX (1310 nm, 1550 nm)
Fixed management port	1 x RJ45 console port
USB	1 x USB port
Status LED	1 x system status LED 24 x 10/100/1000BASE-T port LEDs 4 x 1GE/2.5GE SFP port LEDs
Power supply	1 x fixed power supply
Power input	AC input: ● Rated input voltage: 100 V AC to 240 V AC, 50 Hz to 60 Hz ● Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz ● Maximum input current: 0.6 A
Power cord	10 A power cord
Maximum power consumption	15.6 W
Leakage current	≤ 3.5 mA
Energy saving	Energy Efficient Ethernet (EEE)
Unit dimensions (W x D x H)	440 mm x 220 mm x 43.5 mm (17.32 in. x 8.66 in. x 1.71 in.)
Rack height	1 RU
Unit weight	2.5 kg (5.51 lbs)

Temperature	Operating temperature: 0°C to 45°C (32°F to 113°F) Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At an altitude between 1,800 m (5,905.51 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).
Humidity	Operating humidity: 10% to 90% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing)
Altitude	0 m to 5,000 m (0 ft. to 16,404.20 ft.)
Mean time between failure (MTBF)	200,000 hours (about 22 years)
Fan	Fanless
Acoustic noise	Fanless
USB hot swapping	Supported
Cable hot swapping	Cable hot swapping for all ports
Safety regulation	IEC 62368-1
EMC regulation	EN 300386, EN 55032 Class A, EN 55035, EN IEC 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
RoHS	RoHS, SJ/T 11363/11364/11365

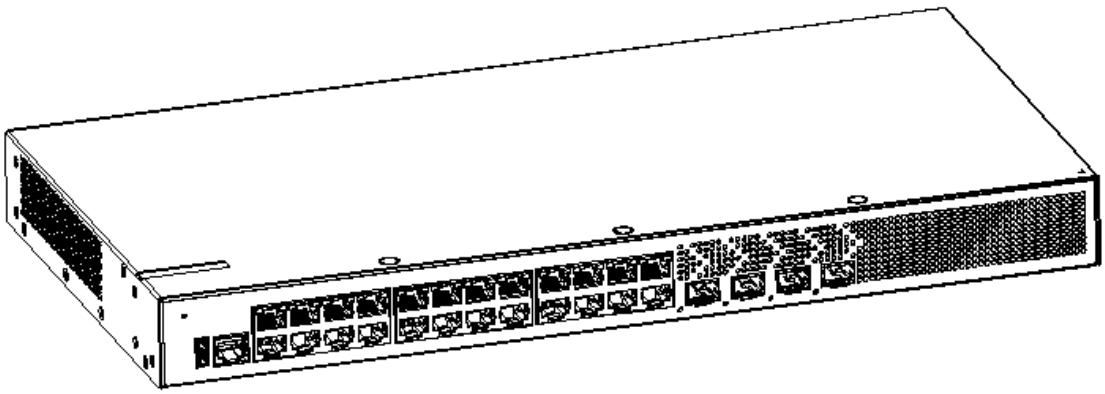
Caution

The RG-S2915-24GT4MS-L switch is a Class A product. This device may cause radio interference in the living environment. You are advised to take proper measures.

1.1.2 Product Appearance

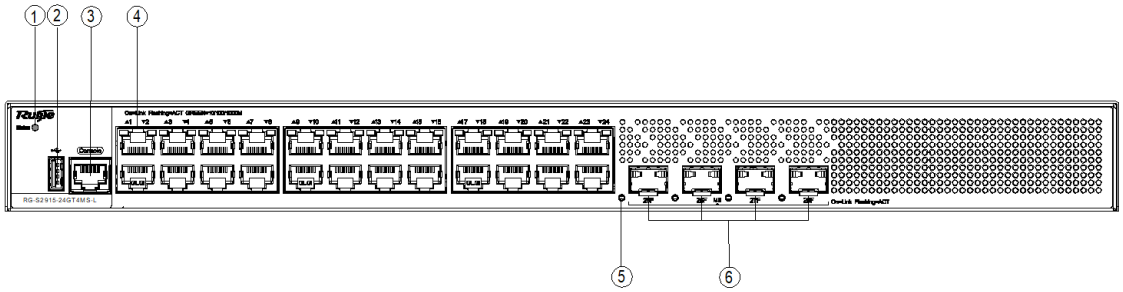
On the front panel, the RG-S2915-24GT4MS-L Ethernet switch provides one RJ45 console port, one USB port, 24 RJ45 10/100/1000Base-T adaptive Ethernet ports, and four SFP ports.

Figure 1-1 Appearance of RG-S2915-24GT4MS-L Switch



Front Panel

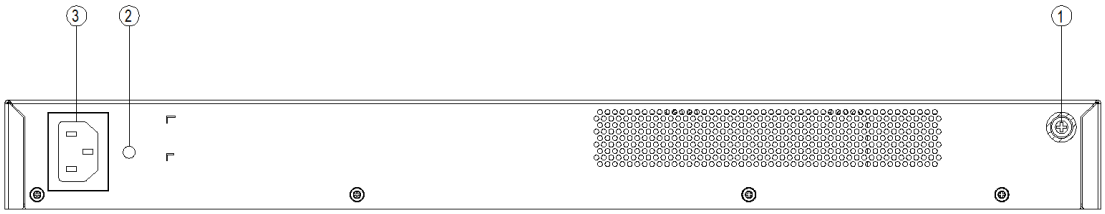
Figure 1-2 Front Panel of RG-S2915-24GT4MS-L Switch



Description:	1. System status LED	4. 10/100/1000Base-T port
	2. USB port	5. 1GE/2.5GE SFP port LED
	3. Console port	6. 1GE/2.5GE SFP port

Back Panel

Figure 1-3 Back Panel of RG-S2915-24GT4MS-L Switch

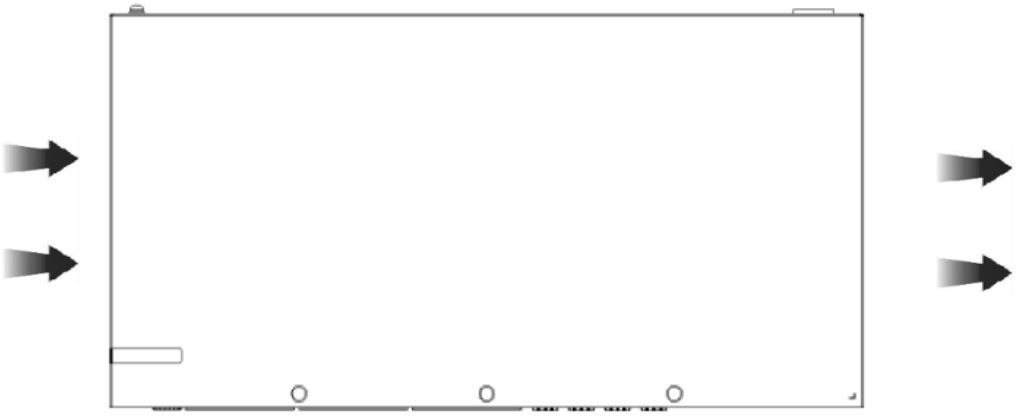


Description:	1. Grounding stud	3. Power plug
	2. Power cord retention clip hole	

Heat Dissipation

The RG-S2915-24GT4MS-L switch adopts natural heat dissipation without fans. To ensure proper heat dissipation, maintain a minimum clearance of 10 cm (3.94 in.) on both sides and around the back panel of the chassis for air circulation. Besides, dust the device every three months to avoid blocking the ventilation openings on the housing.

Figure 1-4 Airflow Direction of RG-S2915-24GT4MS-L Switch



Note

The switch should be installed at least 1 U (44.45 mm/1.75 in.) away from the neighbor device for normal heat dissipation.

LED

LED	Panel Identification	Status	Description
System status LED	Status	Blinking green	The system is being initialized.
		Solid green	The system is operating normally.
		Solid yellow	A system over-temperature alarm occurs.
		Solid red	1. The temperature severely exceeds the threshold, and the system will be reset and restart. 2. A system failure occurs.

LED	Panel Identification	Status	Description
10/100/1000BASE-T port LED	1-24	Off	No link is detected for this port.
		Solid green	The port has a 10/100/1000 Mbps link up.
		Blinking	The port is receiving or transmitting data.
1GE/2.5GE SFP port LED	25F-28F	Off	No link is detected for this port.
		Solid green	The port has a link up.
		Blinking	The port is receiving or transmitting data.
		Solid yellow	The optical attenuation value exceeds the value specified in the communication quality requirements.
		Solid red	The optical module is in position, but the optical module fails or an optical link failure occurs.

1.2 RG-S2915-48GT4MS-L

1.2.1 Specifications

Model	RG-S2915-48GT4MS-L
CPU	Built-in single-core CPU, with the clock speed of 1.2 GHz
BootROM	N/A
Flash memory	64 MB
Memory	DDR4 512 MB
Switch buffer	512 KB
Fixed service port	48 x 10/100/1000BASE-T ports 4 x 1GE/2.5GE SFP ports
Transmission medium	10/100/1000BASE-T Cat 5 UTP 1000BASE-X to 1000BASE-T Cat 5e/6/6a 1000BASE-SX (850 nm) 1000BASE-LX (1310 nm)

	1000BASE-LH (1310 nm) 1000BASE-ZX (1550 nm) 1000BASE-LX (1310 nm, 1550 nm) 1000BASE-LH (1310 nm, 1550 nm) 2.5GBASE-LX (1310 nm, 1550 nm)
Fixed management port	1 x RJ45 console port
USB	1 x USB port
Status LED	1 x system status LED 48 x 10/100/1000BASE-T port LEDs 4 x 1GE/2.5GE SFP port LEDs
Power supply	1 x fixed power supply
Power input	AC input: ● Rated input voltage: 100 V AC to 240 V AC, 50 Hz to 60 Hz ● Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz ● Maximum input current: 1.5 A
Power cord	10 A power cord
Maximum power consumption	30 W
Leakage current	≤ 3.5 mA
Energy saving	Energy Efficient Ethernet (EEE)
Unit dimensions (W x D x H)	440 mm x 220 mm x 43.5 mm (17.32 in. x 8.66 in. x 1.71 in.)
Rack height	1 RU
Unit weight	2.8 kg (6.17 lbs)
Temperature	Operating temperature: 0°C to 45°C (32°F to 113°F) Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At an altitude between 1,800 m (5,905.51 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).
Humidity	Operating humidity: 10% to 90% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing)
Altitude	0 m to 5,000 m (0 ft. to 16,404.20 ft.)
Mean time between failure (MTBF)	200,000 hours (about 22 years)

Fan	2 x fixed fan modules
Acoustic noise	≤ 37 dB
USB hot swapping	Supported
Cable hot swapping	Cable hot swapping for all ports
Safety regulation	IEC 62368-1
EMC regulation	EN 300386, EN 55032 Class A, EN 55035, EN IEC 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
RoHS	RoHS, SJ/T 11363/11364/11365

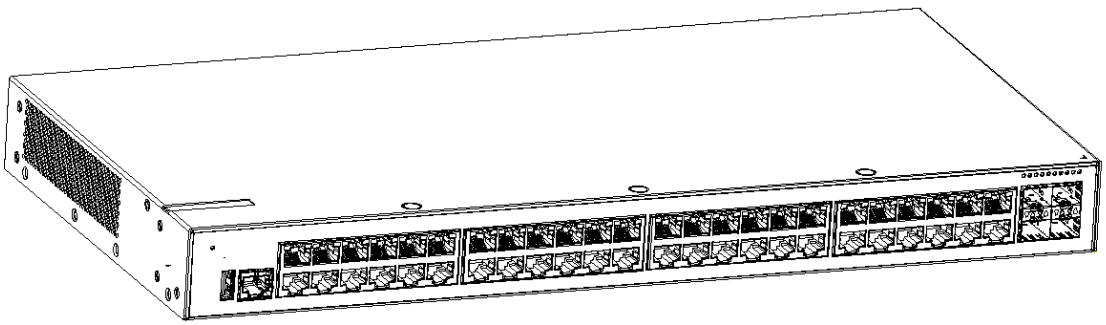
Caution

The RG-S2915-48GT4MS-L switch is a Class A product. This device may cause radio interference in the living environment. You are advised to take proper measures.

1.2.2 Product Appearance

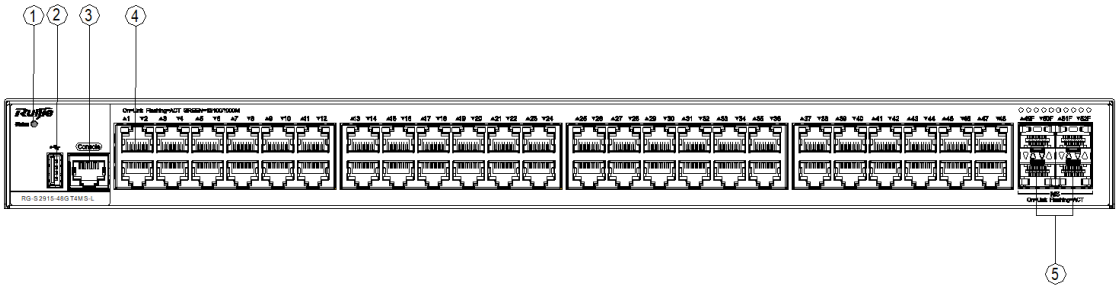
The RG-S2915-48GT4MS-L Ethernet switch provides one RJ45 console port, one USB port, 48 RJ45 10/100/1000Base-T adaptive Ethernet ports, and four SFP ports.

Figure 1-5 Appearance of RG-S2915-48GT4MS-L Switch



Front Panel

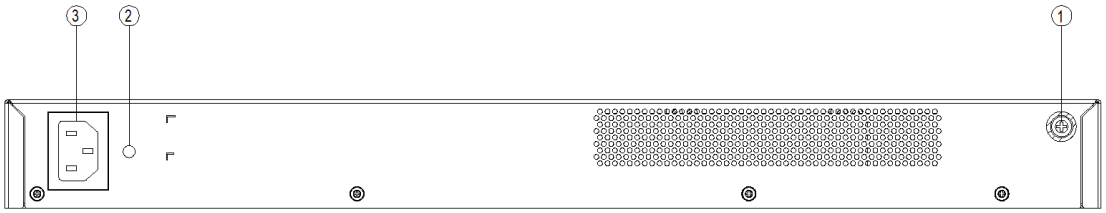
Figure 1-6 Front Panel of RG-S2915-48GT4MS-L Switch



Description:	1. System status LED	4. 10/100/1000Base-T port
	2. USB port	5. 1GE/2.5GE SFP port
	3. Console port	

Back Panel

Figure 1-7 Back Panel of RG-S2915-48GT4MS-L Switch

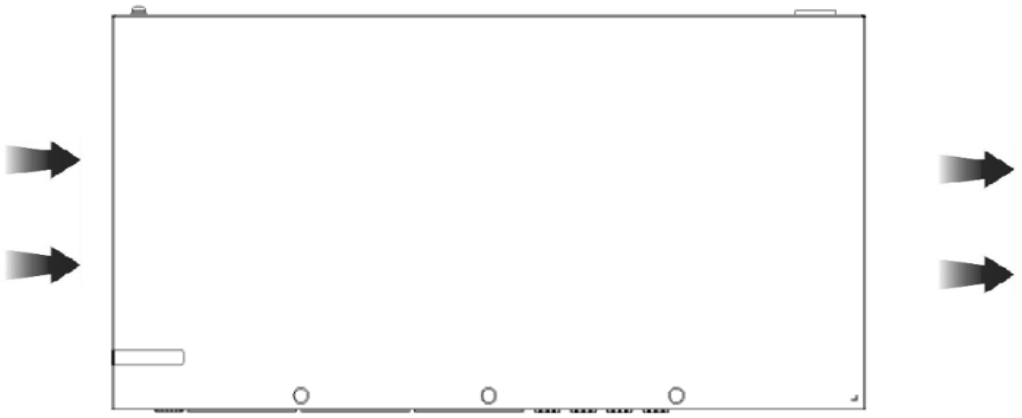


Description:	1. Grounding stud	3. Power plug
	2. Power cord retention clip hole	

Heat Dissipation

The RG-S2915-48GT4MS-L switch adopts the left-to-right airflow for heat dissipation to ensure that the device works properly in the specified environment. Maintain a minimum clearance of 10 cm (3.94 in.) on both sides and around the back panel of the chassis for air circulation. Dust the device every three months to avoid blocking the ventilation openings on the housing.

Figure 1-8 Airflow Direction of RG-S2915-48GT4MS-L Switch



LED

LED	Panel Identification	Status	Description
System status LED	Status	Blinking green	The system is being initialized.
		Solid green	The system is operating normally.
		Solid yellow	A system over-temperature alarm is generated.
		Solid red	1. The temperature severely exceeds the threshold, and the system will be rest and restart. 2. A system failure occurs.
10/100/1000BASE-T port LED	1-48	Off	No link is detected for this port.
		Solid green	The port has a 10/100/1000 Mbps link up.
		Blinking	The port is receiving or transmitting data.
1GE/2.5GE SFP port LED	49F-52F	Off	No link is detected for this port.
		Solid green	The port has a link up.
		Blinking	The port is receiving or transmitting data.
		Solid yellow	The optical attenuation value exceeds the value specified in the communication quality requirements.

LED	Panel Identification	Status	Description
		Solid red	The optical module is in position, but the optical module fails or an optical link failure occurs.

1.3 RG-S2915-10GT2MS-P-L

1.3.1 Specifications

Model	RG-S2915-10GT2MS-P-L
CPU	Built-in single-core CPU, with the clock speed of 1.2 GHz
BootROM	N/A
Flash memory	64 MB
Memory	DDR4 512 MB
Switch buffer	512 KB
Fixed service port	10 x 10/100/1000BASE-T ports, ports 1 to 8 supporting PoE/PoE+ 2 x 1GE/2.5GE SFP ports
Transmission medium	10/100/1000BASE-T Cat 5 UTP 1000BASE-X to 1000BASE-T Cat 5e/6/6a 1000BASE-SX (850 nm) 1000BASE-LX (1310 nm) 1000BASE-LH (1310 nm) 1000BASE-ZX (1550 nm) 1000BASE-LX (1310 nm, 1550 nm) 1000BASE-LH (1310 nm, 1550 nm) 2.5GBASE-LX (1310 nm, 1550 nm)
Fixed management port	1 x RJ45 console port
USB	1 x USB port
Button	1 x LED mode button
Status LED	1 x system status LED 1 x LED mode indicator 10 x 10/100/1000BASE-T port LEDs 2 x 1GE/2.5GE SFP port LEDs

Power supply	1 x fixed power supply
Power input	AC input: ● Rated input voltage: 100 V AC to 240 V AC, 50 Hz to 60 Hz ● Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz ● Maximum input current: 3 A
Power cord	10 A power cord
Maximum power consumption	16 W (non-PoE) 141 W (full PoE load)
Leakage current	≤ 3.5 mA
PoE port	Ports 1-8 (RJ45 ports) support PoE/PoE+ (IEEE802.3af/at) power supply
PoE power cable pairs	Mode A (1-2, 3-6 pairs)
PoE output power	Each PoE port provides up to 30 W of power. The maximum power is 125 W. Note: The maximum number of powered devices supported by the switch is determined by the available power of the switch and the actual power consumption of each device.
Energy saving	Energy Efficient Ethernet (EEE)
Unit dimensions (W x D x H)	297 mm x 170 mm x 44.5 mm (11.69 in. x 6.69 in. x 1.75 in.)
Rack height	1 RU
Unit weight	2.5 kg (5.51 lbs)
Temperature	Operating temperature: 0°C to 45°C (32°F to 113°F) Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At an altitude between 1,800 m (5,905.51 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).
Humidity	Operating humidity: 10% to 90% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing)
Altitude	0 m to 5,000 m (0 ft. to 16,404.20 ft.)
Mean time between failure (MTBF)	200,000 hours (about 22 years)
Fan	1 x fixed fan module
Acoustic noise	≤ 37 dB

Cable hot swapping	Cable hot swapping for all ports
Safety regulation	IEC 62368-1
EMC regulation	EN 300386, EN 55032 Class A, EN 55035, EN IEC 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
RoHS	RoHS, SJ/T 11363/11364/11365

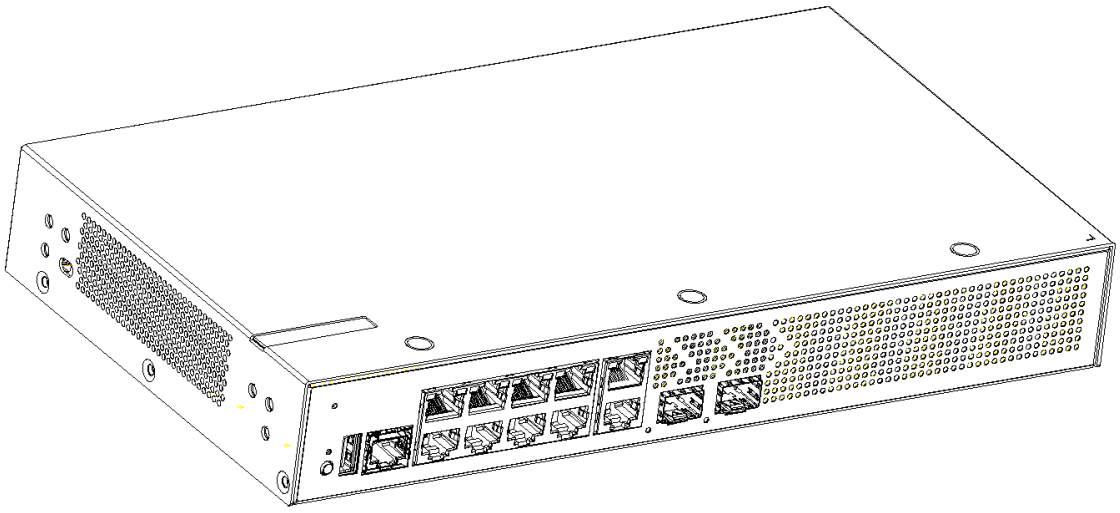
Caution

The RG-S2915-10GT2MS-P-L switch is a Class A product. This device may cause radio interference in the living environment. You are advised to take proper measures.

1.3.2 Product Appearance

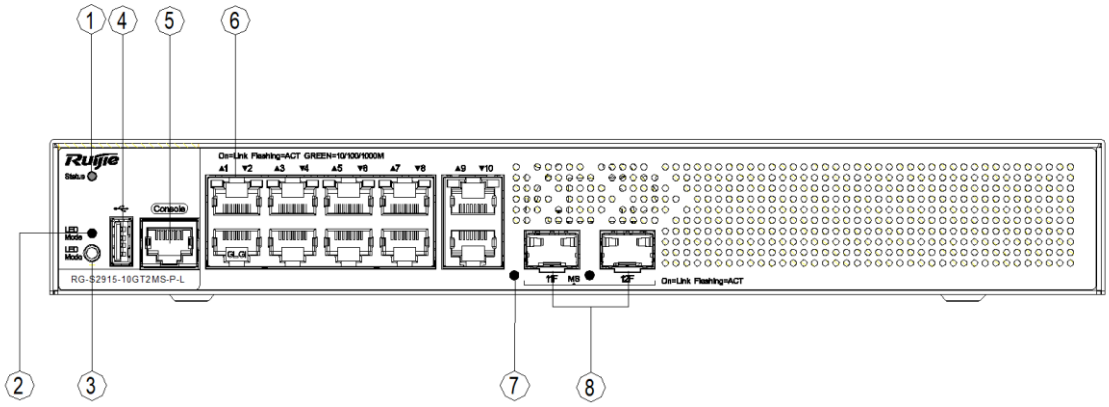
The RG-S2915-10GT2MS-P-L Ethernet switch provides one RJ45 console port, one USB port, 10 RJ45 10/100/1000Base-T adaptive Ethernet ports, and two SFP ports.

Figure 1-9 Appearance of RG-S2915-10GT2MS-P-L Switch



Front Panel

Figure 1-10 Front Panel of RG-S2915-10GT2MS-P-L Switch



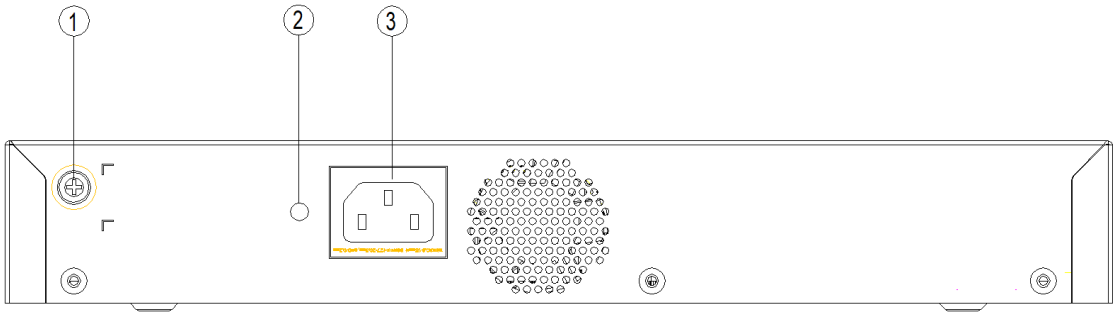
Description:	1. System status LED	5. Console port
	2. PoE status LED	6. 10/100/1000Base-T port
	3. LED mode button	7. 1GE/2.5GE SFP port LED
	4. USB port	8. 1GE/2.5GE SFP port

Caution

You can press the port LED mode switching button (LED mode button) to switch the port status indicator function (port PoE power supply indicator and port rate indicator). Hold down the button for more than 2 seconds to ensure successful switching.

Back Panel

Figure 1-11 Back Panel of RG-S2915-10GT2MS-P-L Switch

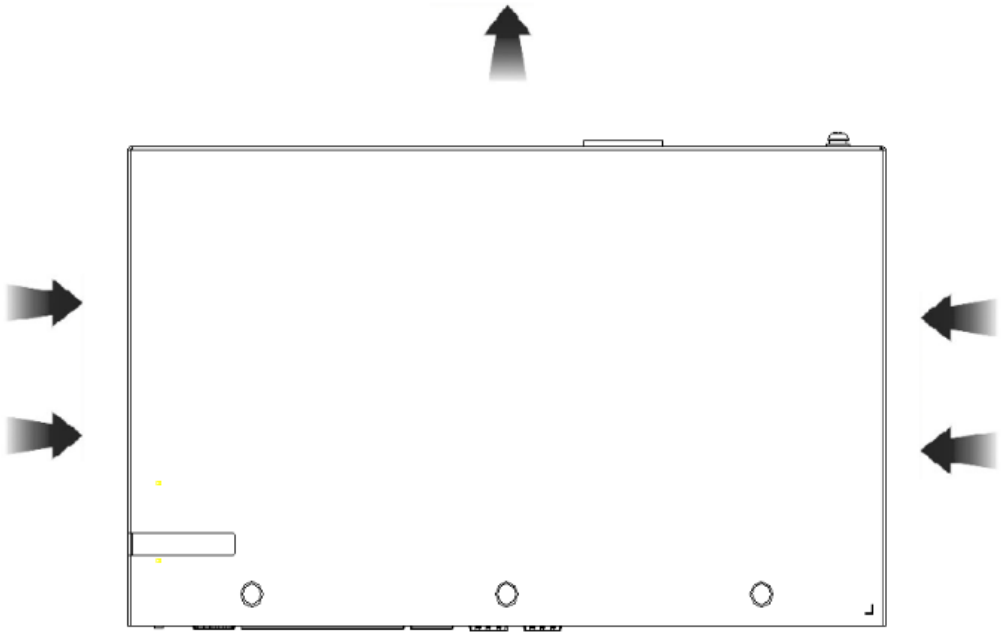


Description:	1. Grounding stud 2. Power cord retention clip hole	3. Power plug

Heat Dissipation

The RG-S2915-10GT2MS-P-L switch adopts the ventilation mode of air inlet from the left and right sides and air outlet through the rear side to ensure that the device works properly under specified environment. When placing a chassis, maintain a minimum clearance of 10 cm (3.94 in.) on both sides and around the back panel of the chassis for air circulation. Dust the device every three months to avoid blocking the ventilation openings on the housing.

Figure 1-12 Airflow Direction of RG-S2915-10GT2MS-P-L Switch



LED

LED	Panel Identification	Status	Description
System status LED	Status	Blinking green	The system is being initialized.
		Solid green	The system is operating normally.
		Solid yellow	A system over-temperature alarm is generated.
		Solid red	1. The temperature severely exceeds the threshold, and the system will be

LED	Panel Identification	Status	Description
			reset and restart. 2. A system failure occurs.
LED mode indicator	LED Mode	Solid green	The indicator shows the switching status.
		Solid yellow	The indicator shows the PoE status.
10/100/1000BASE-T port LED (switching status)	1-10	Off	No link is detected for this port.
		Solid green	The port has a 10/100/1000 Mbps link up.
		Blinking	The port is receiving or transmitting data.
10/100/1000BASE-T port (PoE status)	1-10	Off	PoE is disabled.
		Solid green	PoE is enabled.
		Blinking	PoE overload occurs.
1GE/2.5GE SFP port LED	11F-12F	Off	No link is detected for this port.
		Solid green	The port has a link up.
		Blinking	The port is receiving or transmitting data.
		Solid yellow	The optical attenuation value exceeds the value specified in the communication quality requirements.
		Solid red	The optical module is in position, but the optical module fails or an optical link failure occurs.

1.4 RG-S2915-24GT4MS-P-L

1.4.1 Specifications

Model	RG-S2915-24GT4MS-P-L
CPU	Built-in single-core CPU, with the clock speed of 1.2 GHz
BootROM	N/A
Flash memory	64 MB

Memory	DDR4 512 MB
Switch buffer	512 KB
Fixed service port	24 x 10/100/1000BASE-T ports, supporting PoE/PoE+ 4 x 1GE/2.5GE SFP ports
Transmission medium	10/100/1000BASE-T Cat 5 UTP 1000BASE-X to 1000BASE-T Cat 5e/6/6a 1000BASE-SX (850 nm) 1000BASE-LX (1310 nm) 1000BASE-LH (1310 nm) 1000BASE-ZX (1550 nm) 1000BASE-LX (1310 nm, 1550 nm) 1000BASE-LH (1310 nm, 1550 nm) 2.5GBASE-LX (1310 nm, 1550 nm)
Fixed management port	1 x RJ45 console port
USB	1 x USB port
Button	1 x LED mode button
Status LED	1 x system status LED 1 x LED mode indicator 24 x 10/100/1000BASE-T port LEDs 4 x 1GE/2.5GE SFP port LEDs
Power supply	1 x fixed power supply
Power input	AC input: ● Rated input voltage: 100 V AC to 240 V AC, 50 Hz to 60 Hz ● Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz ● Maximum input current: 6 A
Power cord	10 A power cord
Maximum power consumption	33 W (non-PoE) 403 W (full PoE load)
Leakage current	≤ 3.5 mA
PoE port	All RJ45 ports support PoE/PoE+ (IEEE802.3af/at) power supply
PoE power cable pairs	Mode A (1-2, 3-6 pairs)
PoE output power	Each PoE port provides up to 30 W of power. The maximum power is 370 W.

	Note: The maximum number of powered devices supported by the switch is determined by the available power of the switch and the actual power consumption of each device.
Energy saving	Energy Efficient Ethernet (EEE)
Unit dimensions (W x D x H)	440 mm x 292 mm x 43.6 mm (17.32 in. x 11.50 in. x 1.72 in.)
Rack height	1 RU
Unit weight	2.8 kg (6.17 lbs)
Temperature	Operating temperature: 0°C to 45°C (32°F to 113°F) Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At an altitude between 1,800 m (5,905.51 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).
Humidity	Operating humidity: 10% to 90% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing)
Altitude	0 m to 5,000 m (0 ft. to 16,404.20 ft.)
Mean time between failure (MTBF)	200,000 hours (about 22 years)
Fan	2 x fixed fan modules
Acoustic noise	≤ 39 dB
USB hot swapping	Supported
Cable hot swapping	Cable hot swapping for all ports
Safety regulation	IEC 62368-1
EMC regulation	EN 300386, EN 55032 Class A, EN 55035, EN IEC 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
RoHS	RoHS, SJ/T 11363/11364/11365

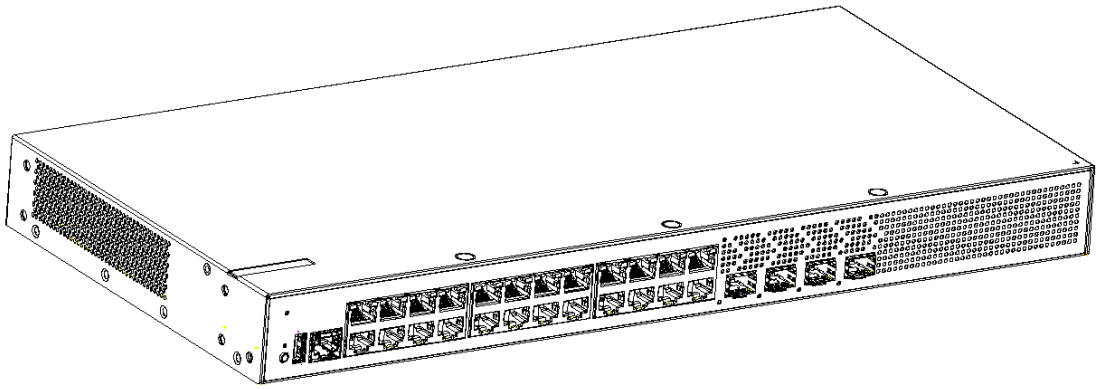
Caution

The RG-S2915-24GT4MS-P-L switch is a Class A product. This device may cause radio interference in the living environment. You are advised to take proper measures.

1.4.2 Product Appearance

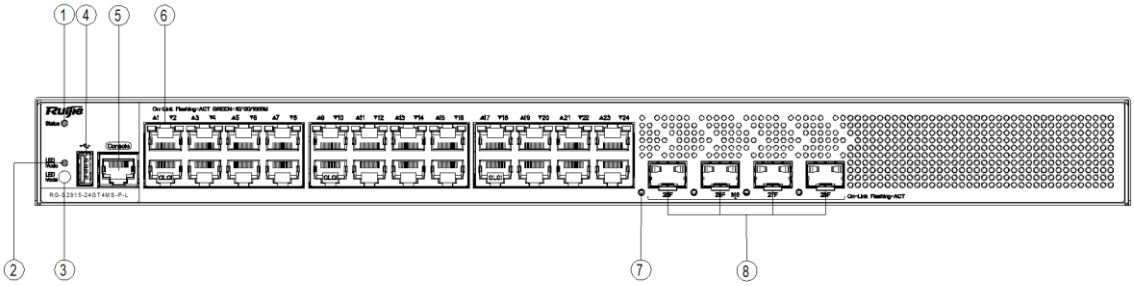
The RG-S2915-24GT4MS-P-L Ethernet switch provides one RJ45 console port, one USB port, 24 RJ45 10/100/1000Base-T adaptive Ethernet ports, and four SFP ports.

Figure 1-13 Appearance of RG-S2915-24GT4MS-P-L Switch



Front Panel

Figure 1-14 Front Panel of RG-S2915-24GT4MS-P-L Switch



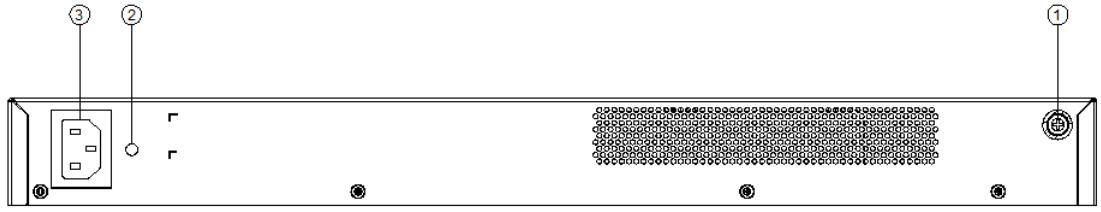
Description:	1. System status LED	5. Console port
	2. PoE status LED	6. 10/100/1000Base-T port
	3. LED mode button	7. 1GE/2.5GE SFP port LED
	4. USB port	8. 1GE/2.5GE SFP port

Caution

You can press the port LED mode switching button (LED mode button) to switch the port status indicator function (port PoE power supply indicator and port rate indicator). Hold down the button for more than 2 seconds to ensure successful switching.

Back Panel

Figure 1-15 Back Panel of RG-S2915-24GT4MS-P-L Switch

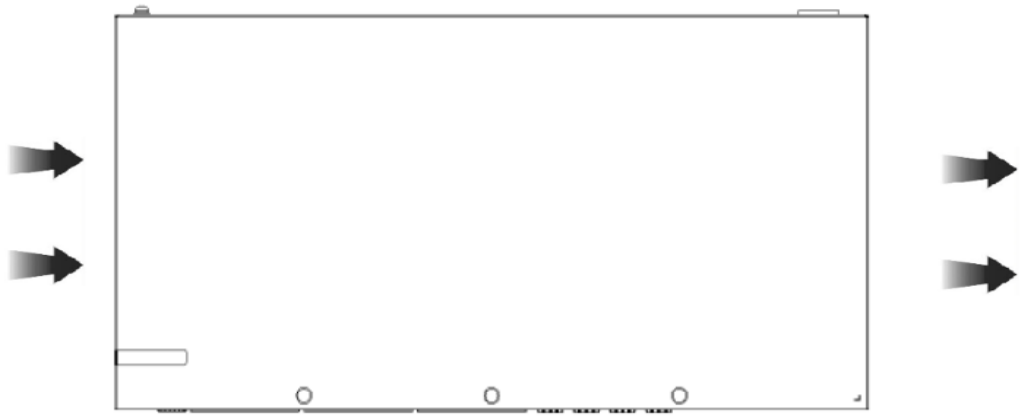


Description:	1. Grounding stud 2. Power cord retention clip hole	3. Power plug

Heat Dissipation

The RG-S2915-24GT4MS-P-L switch adopts the left-to-right airflow for heat dissipation to ensure that the device works properly under specified environment. When placing a chassis, maintain a minimum clearance of 10 cm (3.94 in.) on both sides and around the back panel of the chassis for air circulation. Dust the device every three months to avoid blocking the ventilation openings on the housing.

Figure 1-16 Airflow Direction of RG-S2915-24GT4MS-P-L Switch



LED

LED	Panel Identification	Status	Description
System status LED	Status	Blinking green	The system is being initialized.
		Solid green	The system is operating normally.

LED	Panel Identification	Status	Description
		Solid yellow	A system over-temperature alarm is generated.
		Solid red	1. The temperature severely exceeds the threshold, and the system restarts. 2. A system failure occurs.
LED mode indicator	LED Mode	Solid green	The indicator shows the switching status.
		Solid yellow	The indicator shows the PoE status.
10/100/1000BASE-T port LED (switching status)	1-24	Off	No link is detected for this port.
		Solid green	The port has a 10/100/1000 Mbps link up.
		Blinking	The port is receiving or transmitting data.
10/100/1000BASE-T port (PoE status)	1-24	Off	PoE is disabled.
		Solid green	PoE is enabled.
		Blinking	PoE overload occurs.
1GE/2.5GE SFP port LED	25F-28F	Off	No link is detected for this port.
		Solid green	The port has a link up.
		Blinking	The port is receiving or transmitting data.
		Solid yellow	The optical attenuation value exceeds the value specified in the communication quality requirements.
		Solid red	The optical module is in position, but the optical module fails or an optical link failure occurs.

1.5 Pluggable Modules

The following table describes the compatibility between switches and optical transceivers.

For more information, visit Ruijie Networks official website at https://www.ruijienetworks.com/. Choose **Support** > **Documentation and Download** > **Products** > **Switches** > **Accessories** > **Optics and Transceivers**. Click on the optical transceiver model to access related documents, or use keywords to search for required documents.

Models	Matching Optical Transceivers
RG-S2915-24GT4MS-L ● 4 x 1GE/2.5GE SFP ports RG-S2915-48GT4MS-L ● 4 x 1GE/2.5GE SFP ports RG-S2915-10GT2MS-P-L ● 2 x 1GE/2.5GE SFP ports RG-S2915-24GT4MS-P-L ● 4 x 1GE/2.5GE SFP ports	1GE optical transceivers ● Mini-GBIC-GT ● MINI-GBIC-SX-MM850 ● MINI-GBIC-LX-SM1310 ● MINI-GBIC-LH40-SM1310 ● MINI-GBIC-ZX80-SM1550 ● GE-SFP-LX20-SM1310-BIDI ● GE-SFP-LX20-SM1550-BIDI ● GE-SFP-LH40-SM1310-BIDI ● GE-SFP-LH40-SM1550-BIDI 2.5GE optical transceivers ● 2.5G-SFP-LX03-SM1310-BIDI-I ● 2.5G-SFP-LX03-SM1550-BIDI-I

Caution

Use pluggable modules supplied by Ruijie Networks. The reliability of modules supplied by other vendors cannot be guaranteed, which may cause service instability. If you use a module supplied by other vendors, Ruijie Networks will not be liable for the service issues and will not solve them in principle.

1.6 Package Contents

Item	RG-S2915-48GT4MS-L RG-S2915-24GT4MS-L RG-S2915-24GT4MS-P-L	RG-S2915-10GT2MS-P-L
Chassis	1	1
Power cord	1	1
Grounding wire	1	1
Nylon buckle	1	1
Mounting bracket	2	2
Rubber pad	4	/
Cross recessed countersunk head screw, M4x8, GB819-85	8	8
Mounting Bracket Installation Guide	1	1

Item	RG-S2915-48GT4MS-L RG-S2915-24GT4MS-L RG-S2915-24GT4MS-P-L	RG-S2915-10GT2MS-P-L
Warranty Manual and Network Product Hazardous Substance Statement	1	1
Ruijie Networks Access Product Management Software	1 (pre-installed)	1 (pre-installed)

Note

A normal delivery should contain the above mentioned items, which may differ from the actual delivery, depending on purchase contracts. Please check your goods carefully according to the packing list or purchase contract. If you have any questions or there are any errors, please contact your distributor.

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 RG-S2915-L series switches.
- The following safety precautions may not cover all possible dangers.

2.1.1 Installation Safety

- Keep the chassis clean and free from any dust.
- Do not place the device in walking areas.
- During the installation and maintenance, do not wear loose clothes, ornaments, or any other things that may be hooked by the chassis.
- Cut off all the power supplies and unplug all power cords before handling the switch.

2.1.2 Handling Safety

- Prevent the device from being frequently handled.
- Keep balance and prevent personal injuries when handling the switch.
- Cut off all the power supplies and unplug all power cords before moving or handling the device.

2.1.3 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.
- Find out the position of the indoor emergency power switch before installation. Cut off the power switch in case of accidents.
- Try to avoid maintaining the switch that is powered-on alone.
- Be sure to make a careful check before you shut down the power supply.
- Do not place the switch in a damp location, and keep the switch away from liquid.

Caution

- Any nonstandard and inaccurate electric operation may cause an accident such as fire or electrical shock, thus causing severe even fatal damages to human bodies and equipment.
- Direct or indirect touch through a wet object on high-voltage and mains supply may bring a fatal danger.
- If a power supply system is equipped with a leakage protector (also referred to as "leakage current switch" or "leakage current breaker"), 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 with sixteen 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 sixteen 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 current 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. Otherwise, misoperation may easily occur due to high sensitivity and thus the leakage protector trips, devices are powered off, and services are interrupted.

- 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.
- For the leakage current value of each product model, see the technical specifications table of the corresponding product model in Chapter 1.

2.1.4 Electrostatic Discharge Safety

To prevent damage from electrostatic discharge, pay attention to the following points:

- Ensure that the grounding screw on the back panel of the device is grounded. Ensure that the AC power socket is a single-phase three-core power socket with protective earthing conductors (PE).
- Keep the indoor installation environment clean and free of dust.
- Keep the indoor humidity within a certain range.

2.1.5 Laser Safety

The RG-S2915-L series switches support various types of optical modules available in the market and these optical modules are Class I laser products. Improper use of optical modules may cause damage. Therefore, pay attention to the following points when you use them:

- When a fiber transceiver works, ensure that the port has been connected with a fiber-optic cable or covered by a dust cap to keep out dust and prevent it from burning your eyes.
- When the optical module is working, do not pull out the fiber-optic cable and stare at the transceiver interface or you may hurt your eyes.

Caution

Do not approach or stare at any optical port under any circumstances, as this may cause permanent damage to your eyes.

2.1.6 Storage Security

To ensure the normal operation of the device, maintain a proper storage environment in accordance with the storage temperature/storage humidity requirements in the technical specifications table of the corresponding device.

Caution

If the storage time exceeds 18 months, you must power on the device and keep it running for 24 hours without interruption for device activation.

2.2 Installation Environment Requirements

To ensure the normal operation and prolonged service life of the device, the installation site must meet the following requirements.

Caution

You are not advised to install the RG-S2915-L series switches in a ELV box.

2.2.1 Ventilation and Cooling Requirements

Maintain a minimum clearance of 10 cm (3.94 in.) on both sides of the chassis and around the back panel of the switch for normal air ventilation and heat dissipation. After various cables are connected, bundle the cables or place them in the cable management bracket to avoid blocking air inlets. Dust the device every three months to avoid blocking the ventilation openings on the housing.

2.2.2 Temperature and Humidity Requirements

To ensure the normal operation and prolonged service life of the switch, 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 switch.

- In an environment with high relative 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, the insulating strip may dry and shrink. Besides, static electricity is prone to occur and damage the internal circuits of the switch.
- A high ambient temperature is more harmful to the device. It not only deteriorates device performance but also causes various hardware faults.

The table below lists the temperature and humidity requirements of RG-S2915-L series switches.

Temperature	Relative Humidity
0 ºC to 50ºC (32°F to 122°F)	10% to 90%

Note

- Requirements for ambient temperature and humidity of sampling points:
- The ambient temperature and humidity of the switch 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 switch rack when there is no protective plate in front or at the back of the rack.

2.2.3 Cleanliness Requirements

Dust poses a major threat to the switch. The indoor dust takes on a positive or negative static electric charge when falling on the switch, 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 switch, but also causing communication faults. The requirements for the dust content and granularity in the equipment room are shown in the following table.

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

Apart from dust, the salt, acid, and sulfide in the air in the equipment 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.

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 the harmful gas measured in one week, and the maximum value lasts up to 30 minutes every day.

2.2.4 Anti-interference Requirements

The switch is susceptible to external interference by capacitive coupling, inductive coupling, electromagnetic waves, common impedance (ground) coupling, or conduction over power lines, signal lines and output lines. Therefore, pay attention to the following points:

- In a TN earthing system, use a single-phase three-core power socket that has protective earthing conductors (PE) to allow the filter circuit in the device to eliminate interference from the power grid.
- The switch should be located far away from the large power radio launch pads, radar launch pads, and high-frequency large-current devices.
- Use EMI shielding such as shielded interface cables to minimize interference when necessary.
- Route interface cables only indoors to prevent signal ports from getting damaged by overvoltage or

overcurrent caused by lightning strikes.

2.2.5 Grounding Requirements

A proper grounding system is the basis for stable and reliable running of the RG-S2915-L series switches 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.

Caution

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 switch is securely grounded using a yellow/green grounding cable when the switch uses the AC power supply. Otherwise, electric shock may occur when the insulation resistance between the power supply inside the switch and the chassis becomes small.

Caution

- The building should provide a protective ground connection to ensure that the device is connected to the protection ground.
- Installation and maintenance personnel should check whether the AC socket is reliably connected to the protection ground of the building. If not, installation and maintenance personnel should use a protective ground cable to connect the protection grounding lug of the AC socket to the protection ground of the building.
- The power socket should be installed in an easily operable position near the device.
- During the device installation, be sure to connect the ground cable first and disconnect it last.
- The cross-sectional area of the protective ground cable should be at least 0.75 mm^2 (18 AWG).
- Install the device by using 3-core power cords, with a minimum cross-sectional area of 0.75 mm^2 or 18AWG per pin.

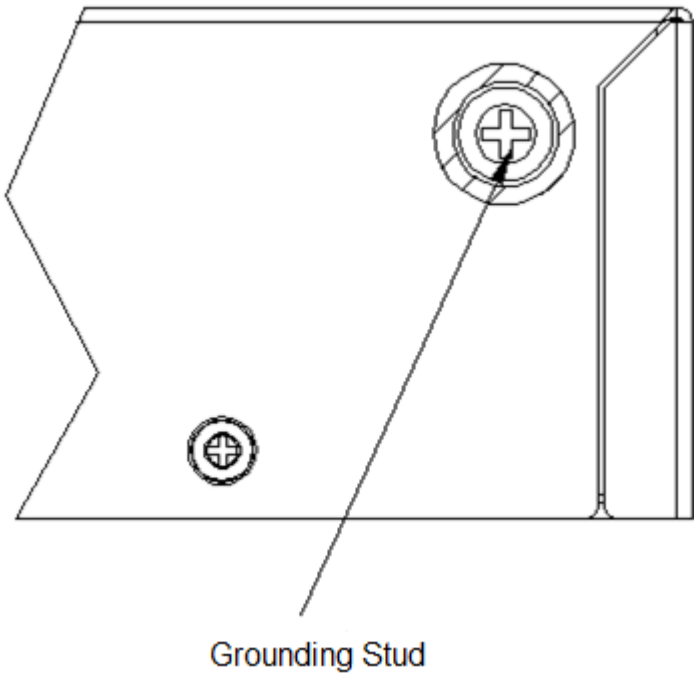
Lightning Grounding

The lightning protection system of facilities is an independent system composed of a lightning rod, a downlead conductor, and a connector connected to the grounding system. The grounding system is usually used for power reference grounding and safe 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 includes shielded grounding, filter grounding, noise and interference suppression, and level reference, which contribute to the overall grounding requirements. The resistance of the ground cable should be smaller than 1 ohm. Each of the RG-S2915-L series switches provides one grounding connector on the back panel, as shown in Figure 2-1.

Figure 2-1 Grounding of RG-S2915-L Series Switches



Lightning Protection Requirements

When an AC power cord is introduced from outdoors and directly connected to the power port of the switch, the AC power port must be connected to an external lightning resistance socket to protect the switch against lightning strokes. The lightning resistance socket is used as follows: Connect the mains AC power cable to the lightning resistance socket and then connect the switch to the lightning resistance socket. This, to some extent, prevents the current of high-voltage lightning from directly passing through the switch along the mains cable.

Note

- Lightning resistance sockets are purchased by customers as required.
- For details of lightning resistance sockets, see the related user guide.

2.2.6 EMI Requirements

All interference sources, either from outside or inside of the device or application system, affect the device by capacitive coupling, inductive coupling, or electromagnetic waves.

Electromagnetic interference (EMI) occurs due to electromagnetic radiation or conduction, depending on the transmission path.

When the energy, often RF energy, from a component arrives at a sensitive component via the space, the energy is known as radiated interference. The interference source can be both a part of the interfered system and a completely electrically isolated unit. Conducted interference results from the electromagnetic wire or signal cable connection between the source and the sensitive component. The interference is conducted from one unit to another unit through cables. Conducted interference often affects the power supply of the equipment, but can be controlled by a filter. Radiated interference may affect any signal path in the equipment, and is difficult to shield.

- Take interference prevention measures for the power supply system.
- Keep the switch far away from the lightening protection and grounding system of the power device.
- Keep the switch far away from high-frequency current devices such as high-power radio transmitting station and radar launcher.
- Take electromagnetic shielding measures when necessary.

2.3 Tools

The following table lists the installation tools.

Common Tools	Phillips screwdriver, straight screwdriver, related Ethernet cables and fiber-optic cables, screws, diagonal pliers, binding straps
Special Tools	Anti-static tools
Meters	Multimeter

Note

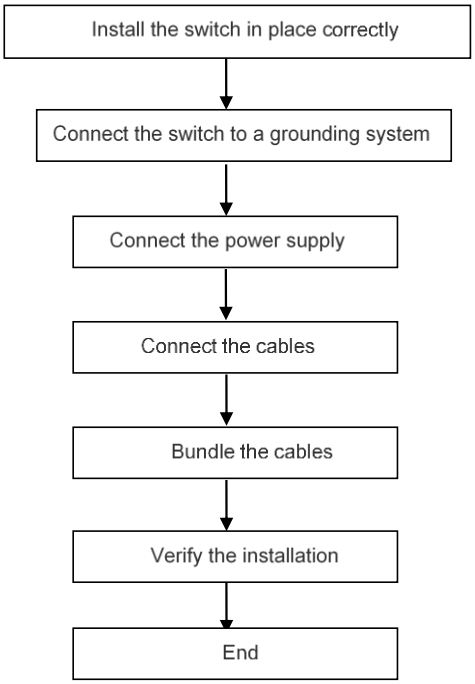
The device is delivered without a tool kit. The tools listed above are customer-supplied.

3 Installing the Switch

Note

- Before reading Chapter 3, ensure that you have read Chapter 2 carefully.
- Ensure that requirements in Chapter 2 are all met.

3.1 Installation Procedure



3.2 Before You Begin

Confirm the following requirements before installing the switch:

- The installation environment meets heat dissipation requirements.
- The installation environment meets the temperature and humidity requirements of the device.
- The power supply and required current are available in the installation site.
- The Ethernet cables have been deployed in the installation site.

3.3 Installing the RG-S2915-L Series Switches

Precautions

Pay attention to the following points during installation:

- Connect the power cords of different colors to the corresponding binding posts.

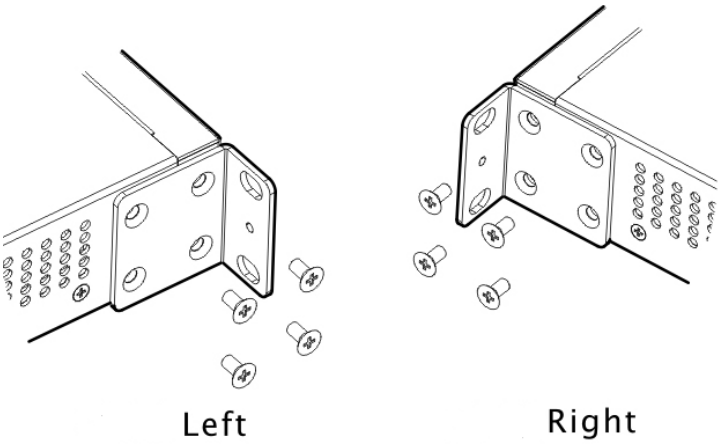
- Ensure that the connector of the power cord and the power port of the device are in good contact. After the power cord is securely inserted into the device, fasten the power cord with power cord retention clips.
- Do not place anything on the RG-S2915-L series switches.
- Maintain sufficient ventilation space (more than 10 cm/3.94 in.) around the device to ensure good air circulation. Do not stack the device.
- Keep the switch away from high-power radio launch pads, radar launch pads, and high-frequency large-current devices. Take electromagnetic shielding measures to minimize interference when necessary, for example, use shielded interface cables.
- Route the 100-meter (328.08 ft) Ethernet cable only indoors. Take lightning protection measures if they need to be routed outdoors.

3.3.1 Mounting the Switch to a Rack

The RG-S2915-L switch can be installed in a 19-inch EIA rack.

(1) Take out the screws (delivered with the mounting bracket) from the packaging materials. Secure the mounting bracket to each side of the chassis.

Figure 3-1 Attaching the Mounting Bracket to the Switch



(2) Position the mounting brackets at the desired level on the rack and mark the positions. Install cage nuts into the positions. Gently push the switch along the guide rail into the rack and use M6 screws to fasten the mounting brackets to the cage nuts on the square hole strips of the rack.

Figure 3-2 Installing the Cage Nuts

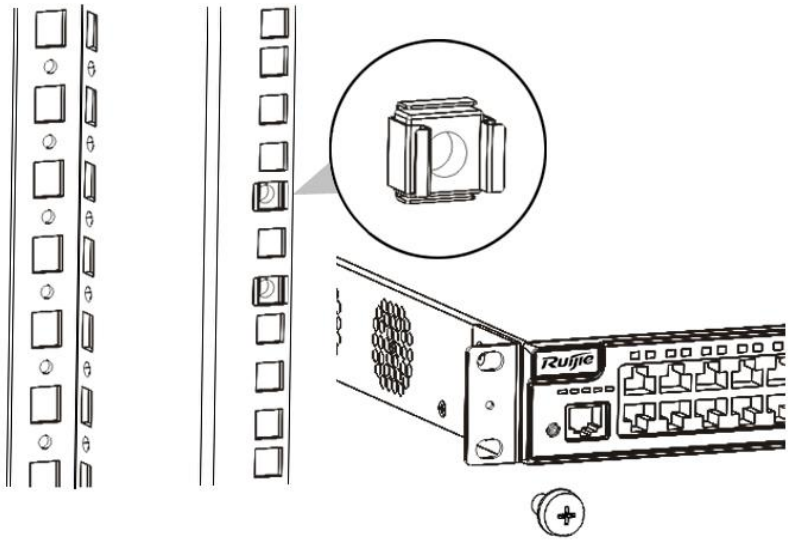
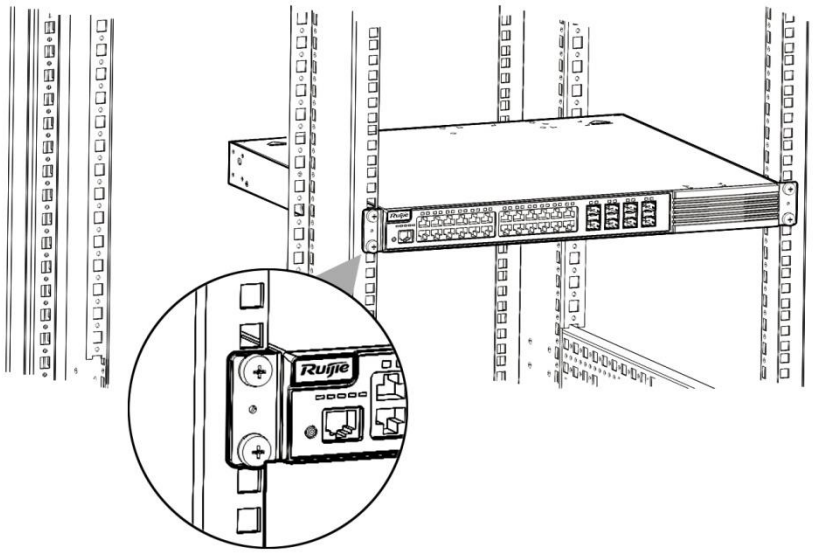


Figure 3-3 Securing the Switch to the Rack

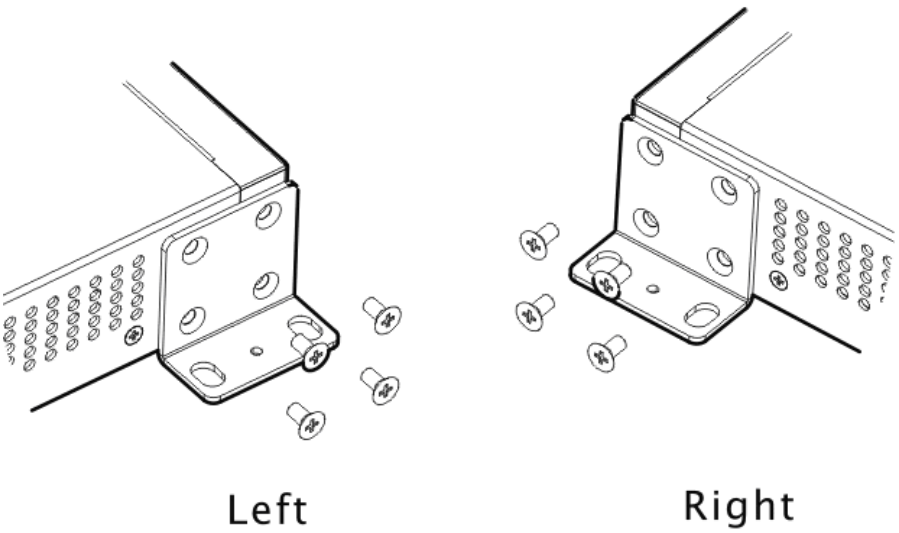


3.3.2 Mounting the Switch on a Wall

You can also mount the RG-S2915-L switch on a wall with the provided mounting brackets.

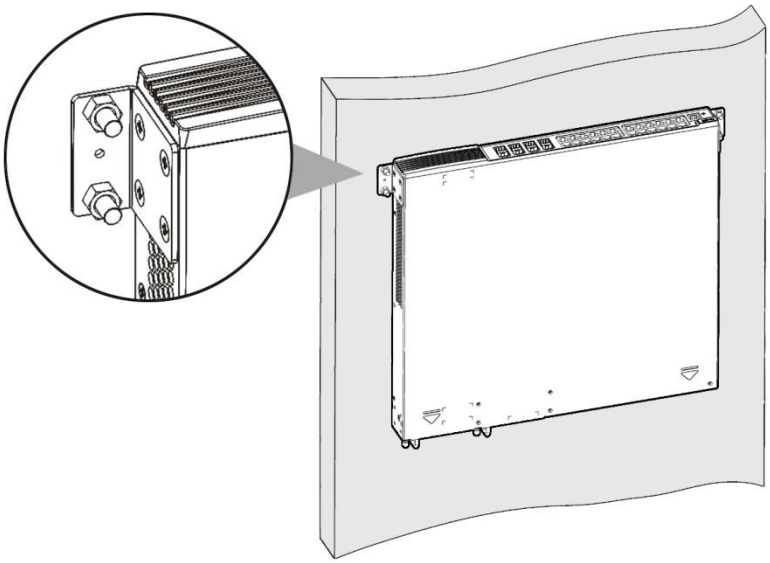
(1) Take out the screws (delivered with the mounting bracket) from the packaging materials. Rotate the mounting brackets by 90 degrees, and secure the mounting brackets to the switch by using the screws.

Figure 3-4 Attaching the Mounting Brackets to the Switch



(2) Use expansion screws to secure the switch to a wall.

Figure 3-5 Securing the Switch to the Wall



Caution

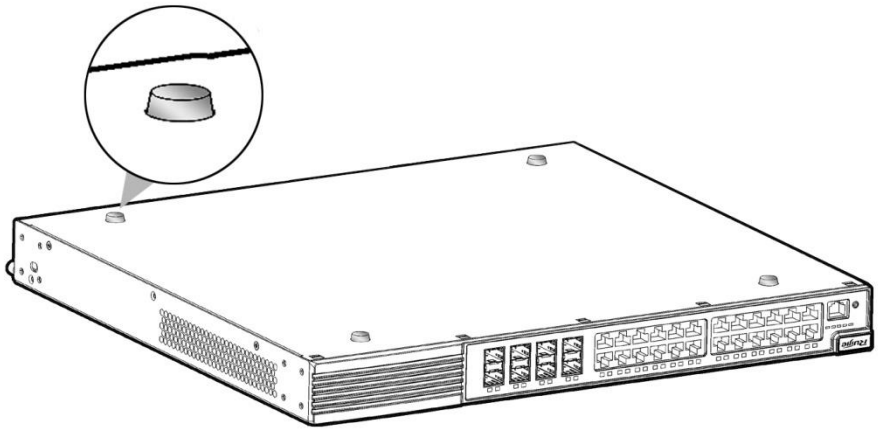
If wall mount is adopted, the device can only be mounted on a concrete or non-flammable surface.

3.3.3 Mounting the Switch on a Workbench

In many cases, users do not have a standard 19-inch rack. The common solution is to place the switch on a clean workbench.

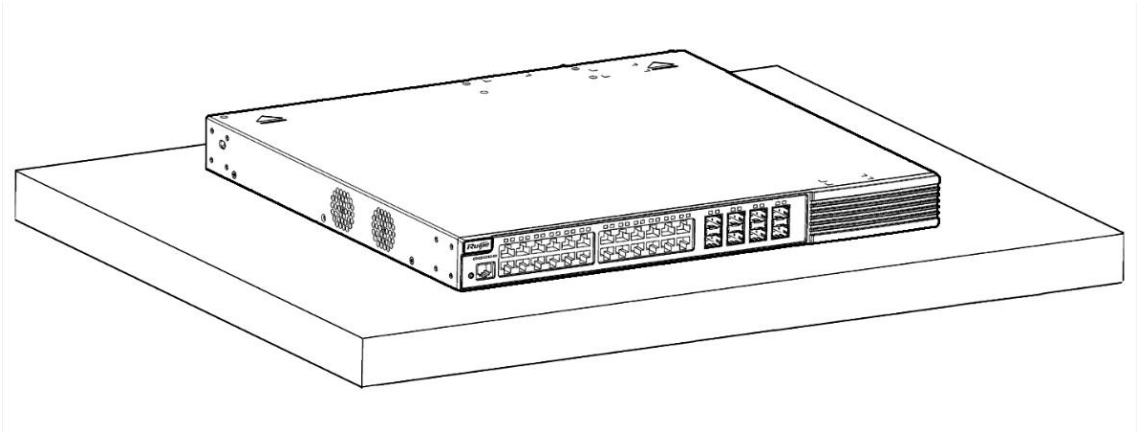
(1) Attach the four rubber pads to the four corners at the bottom of the switch.

Figure 3-6 Attaching the Rubber Pads to the Four Corners



(2) Place the switch on a workbench and ensure adequate airflow around the switch.

Figure 3-7 Mounting the Switch on the Workbench



Caution

The location where the device is mounted and operated must be subject to movement restrictions.

3.4 Connecting a Grounding Cable

Connect the PGND to the grounding lug of the cabinet and then connect the grounding lug to the grounding bar of the equipment room.

Precautions

- The sectional area of the ground cable should be determined according to the possible maximum current. Cables with good conductor should be used.

- Do not have bare wires exposed.
- The grounding resistance value for combined grounding should be less than 1 ohm.

Caution

- To guarantee the security of the person and the device, the switch chassis must be well-grounded. The grounding resistance between the chassis and the ground shall be less than 1 ohm.
- The maintenance personnel should check whether the AC socket is reliably connected to the protection ground of the building. If not, the maintenance personnel should use a protection ground wire to connect the protection ground terminal of the AC socket to the protection ground of the building.
- The power socket shall be installed in an easily operable position near the device.
- During the device installation, connect the grounding cable first and disconnect it last.
- The cross-sectional area of protection ground cable should be at least 2.5 mm^2 (12AWG).

3.5 Connect the External Interface Cables

Precautions

- Correctly distinguish single-mode fiber (SMF) and multi-mode fiber (MMF) optical cables and ports.
- Avoid a small bend radius at the connector.

Simple Connection Steps

(1) Connect the RJ-45 connector of the delivered Ethernet cable to the management port of the switch and the other end to the management terminal.

(2) Insert the SMF and MMF optic cables into the corresponding ports according to the panel identification, and distinguish the transmitting and receiving ends of the fiber-optic cable.

(3) Insert the twisted pair cable with RJ45 connector into the corresponding ports according to the panel identification, and distinguish the crossover cable and the straight-through cable.

3.6 Bundling the Cables

Precautions

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

Simple Bundling Steps

(1) Bind the drooping part of the fiber-optic cables and twisted pair cables, and lead them to both sides of the chassis for convenience.

(2) On the both sides of the chassis, fasten the fiber-optic cables and twisted pair cables to the cable management bracket.

(3) For the power cords, you should bind them closely along the bottom of the chassis, in a straight line wherever possible.

3.7 Checking after Installation

Caution

Before checking the installation, turn off the power supply to avoid any personal injury or damage to the components due to connection errors.

- Verify that the ground cable is connected.
- Verify that the cables and power input cables are correctly connected.
- Verify that the 100 m (328.08 ft.) Ethernet cable is routed indoors. If it is routed outdoors, verify that the AC lightning resistance socket and network interface lightning protector are connected.
- Verify that there is a minimum clearance of 10 cm (3.94 in.) around the device.

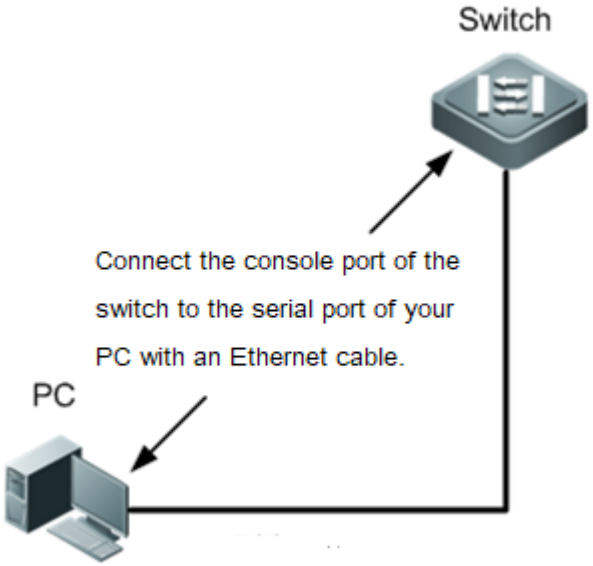
4 Verifying Operating Status

4.1 Setting up the Configuration Environment

Setting up the Environment

Connect a PC to the console port of the switch by using an Ethernet cable.

Figure 4-1 Setting up the Environment



Connecting the Cable

(1) Plug the DB-9 connector of the cable into the serial port of the PC.

(2) Plug the RJ-45 connector of the cable to the console port of the switch.

Setting HyperTerminal Parameters

(1) Start the PC and run the terminal simulation program on your PC, such as Terminal on Windows 3.1 or HyperTerminal on Windows 95/98/NT/2000/XP.

(2) Set terminal parameters. The parameters are as follows: baud rate 9600, data bit 8, parity check none, stop bit 1, and flow control as none.

Follow the steps below to set the parameters:

(1) Choose Setup > Programs > Attachment > Communication > HyperTerminal.

(2) Choose **Cancel**, and a window appears as shown in Figure 4-2.

Figure 4-2



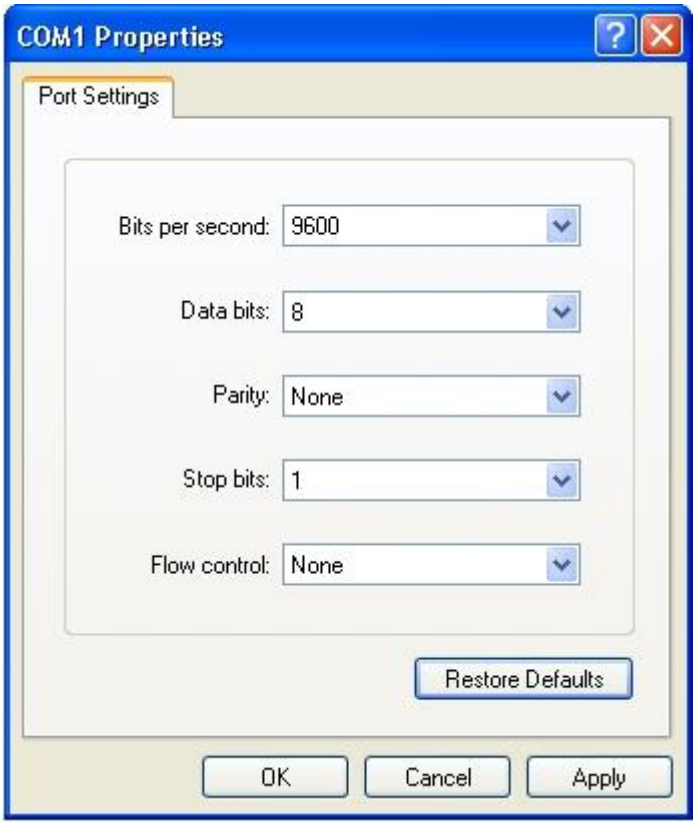
(3) Enter the name of the new connection and click **OK**, and a window appears as shown in Figure 4-3. Choose the serial port you want to use.

Figure 4-3



(4) After choosing the serial port, click **OK** to display the **Serial Port Parameter Setting** window as shown in Figure 4-4. Set the baud rate to 9600, data bit to 8, parity check to none, stop bit to 1 and flow control to none.

Figure 4-4



(5) After setting the parameters, click **OK**.

4.2 Powering on the Switch

Checklist before Power-on

- Check that the switch is fully grounded.
- Check that the power cord is properly connected.
- Check that the power supply voltage meets the requirement of the switch.
- Check that the control cable of the PC is correctly connected to the console port of the switch. Check that the HyperTerminal is started and parameters are set correctly.

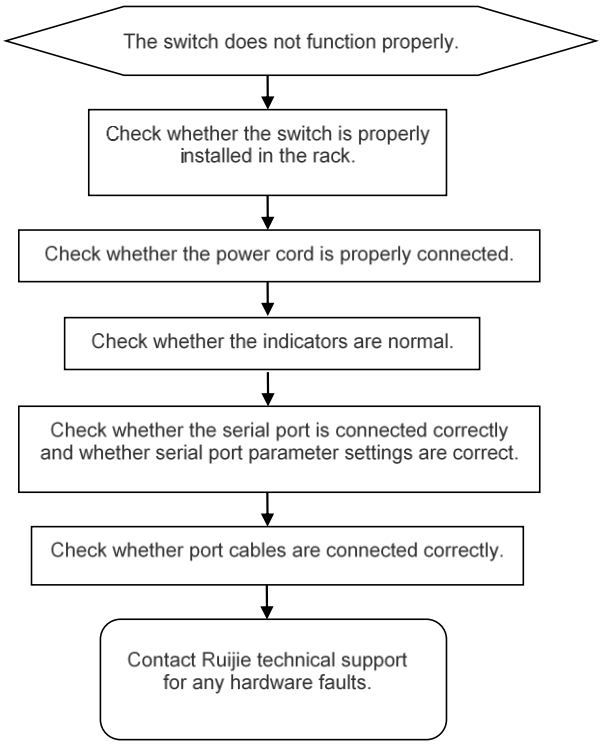
Checklist after Power-on (Recommended)

After power-on, check the following items.

- Check that information is displayed on the terminal interface.
- Check that the switch status LED is normal.
- Check that the main program of the device is normally loaded.
- Check that the time on the device is consistent with the current Beijing time.
- Check that the service interface forwards data normally.

5 Troubleshooting

5.1 General Troubleshooting Procedure



5.2 Common Troubleshooting Procedures

Symptom	Possible Causes	Solution
You forget the login password.	● You forget the password after manually configuring it.	● Please contact Ruijie Networks Customer Service Department for technical support.
The status LED is off after the switch is powered on.	● No power is supplied to the device. ● The power cable is loose.	● Check whether the power socket in the equipment room is normal. ● Check whether the power cord of the switch is in good contact.
The status LED is red.	● Fan alarm ● Temperature alarm	● Check whether the fan is blocked or damaged. ● Services on the switch have been stopped. Check in time the working environment of the switch, clean the dust on the cabinet and enhance cooling.
The serial port console has no	● The serial port connected to the switch is different from that enabled on the configuration	● Change the serial port enabled on the configuration software to the serial port connected to the switch.

Symptom	Possible Causes	Solution
output or outputs illegible characters.	software. ● The serial port is not configured correctly.	● Check that the serial port parameter settings are consistent with the serial port configuration description.
The RJ45 port cannot be connected or an error occurs in the transmission and receiving of frames.	● The connected twisted pair cable is faulty. ● The cable length exceeds 100 m (328.08 ft). ● The port is specially configured and does not use the same work mode as the interconnected switch.	● Replace the twisted pair cable. ● Check that the port configuration has the common working mode with the connected switch.
The fiber port cannot be connected.	● The Rx and Tx ends are connected incorrectly/reversely. ● The types of the interconnected optical modules do not match. ● The optical fiber type does not meet requirements. ● The optical fiber length exceeds the allowed length marked on the optical module.	● Switch the Rx and Tx ends of the fiber-optic cable. ● Replace the optical module with one of the matched type. ● Replace the optical fiber with one of the appropriate type. ● Replace the optical fiber with one of the appropriate length.

6 Appendix

6.1 Connectors and Connection Media

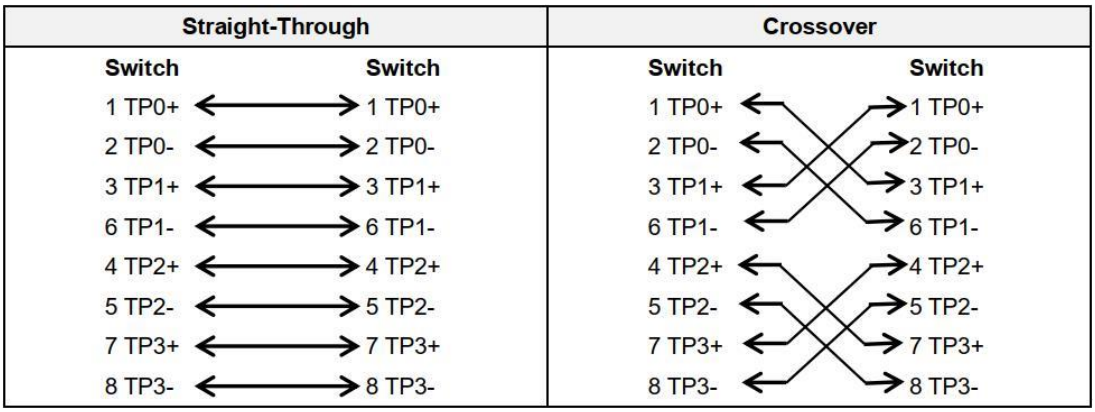
1000BASE-T/100BASE-TX/10BASE-T Port

1000BASE-T/100BASE-TX/10BASE-T is a 10/100/1000M auto-negotiation port that supports auto MDI/MDIX Crossover.

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

The 1000BASE-T port uses four pairs of wires for transmission, all of which must be connected. Figure A-1 shows the connections of the twisted pairs used by the 1000BASE-T port.

Figure 6-1 Connection of Four Twisted Pairs of a 1000BASE-T Port



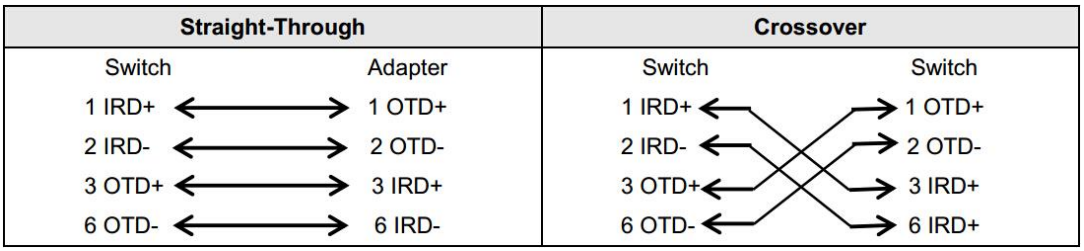
In addition to the above cables, the 100BASE-TX/10BASE-T can also use 100-ohm Category-3, 4, 5 cables for 10 Mbps, and 100-ohm Category-5 cables for 100 Mbps, both of which can be up to 100 m. Figure 6-2 shows the pin signals for the 100BASE-TX/10BASE-T port.

Figure 6-2 Definitions of Pin Signals for a 100BASE-TX/10BASE-T Port

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

Figure 6-3 shows feasible connections of straight-through and crossover twisted-pair cables for a 100BASE-TX/10BASE-T port.

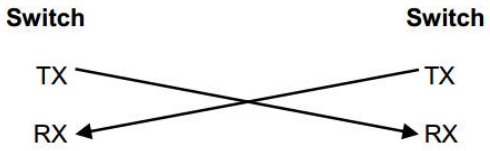
Figure 6-3 Twisted Pair Connections of a 100BASE-TX/10BASE-T Port



Optical Fiber Connection

Please choose SMF or MMF optical fibers according to the optical module types. Figure 6-4 shows the connection.

Figure 6-4 Optical Fiber Connection

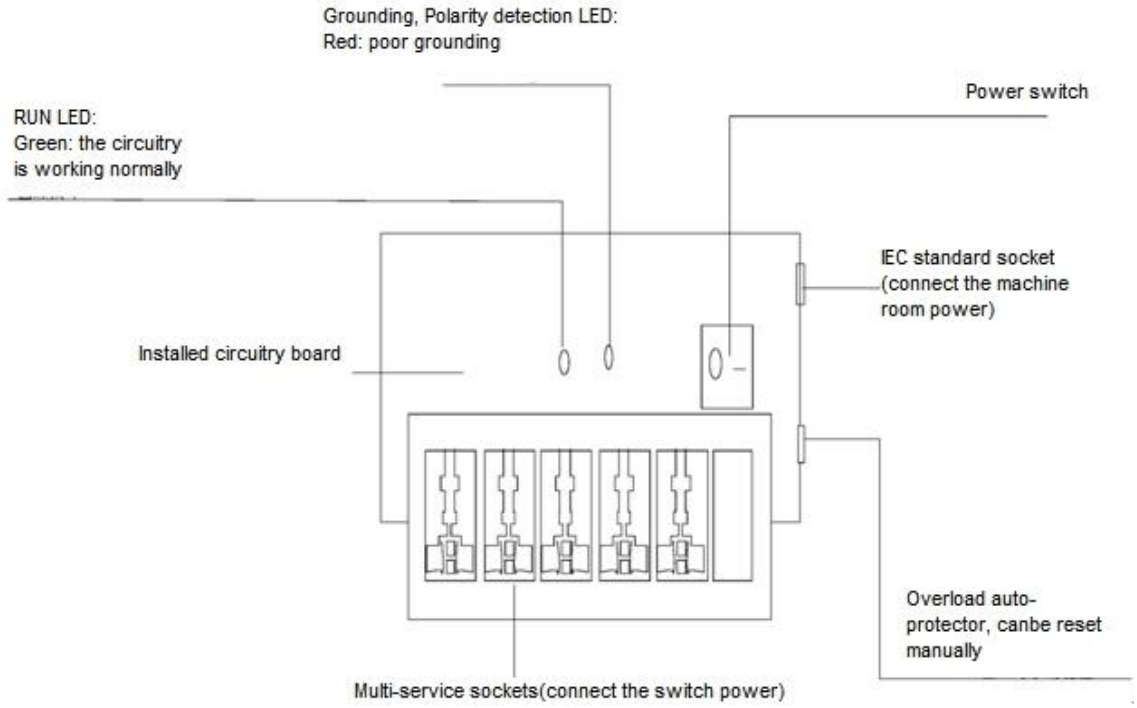


6.2 Lightning Protection

Installing AC Power Arrester (lightning protection cable row)

The external lightning protection cable row shall be used on the AC power port to prevent the switch from being struck by lightning when the AC power cable is introduced from the outdoor and directly connected to the power port of the switch. The lightning protection cable row is fixed on the cabinet, operating table or the wall in the machine room using the line buttons and screws.

Figure 6-5 Schematic Diagram for the Power Arrester



Note

The power arrester is not provided and the user shall purchase it to address the practical requirement.

Precautions for installation:

- Make sure that the PE terminal of the power arrester has been well-grounded;
- After connecting the switch AC power plug to the socket of the power arrester (lightning protection cable row), lightning protection function implements if the RUN LED is Green and the ALARM LED is OFF.
- If the ALARM LED on the power arrester is Red, you shall check what the reason is, poor grounding connection or the reversed connection of the Null and Live lines: Use the multimeter to check the polarity of the power socket for the arrester when the LED is Red, if the N line is on the left and the L line is on the right, the arrester PE terminal is not grounded; if the L line is on the left and the N line is on the right, the polarity of the arrester power cable shall be reversed; if the LED is still Red, it is confirmed that the arrester PE terminal has not been grounded.

Installing the Ethernet Port Arrester

During the switch usage, the Ethernet port arrester shall be connected to the switch to prevent the switch damage by lightning before the outdoor network cable connects to the switch.

Tools: Cross or straight screwdriver, Multimeter, Diagonal pliers

Installation Steps:

(1) Tear one side of the protection paper for the double-sided adhesive tape and paste the tape to the framework of the Ethernet port arrester. Tear the other side of the protection paper for the double-sided adhesive tape

and paste the Ethernet port arrester to the switch framework. The paste location for the Ethernet port arrester shall be as close to the grounding terminal of the switch.

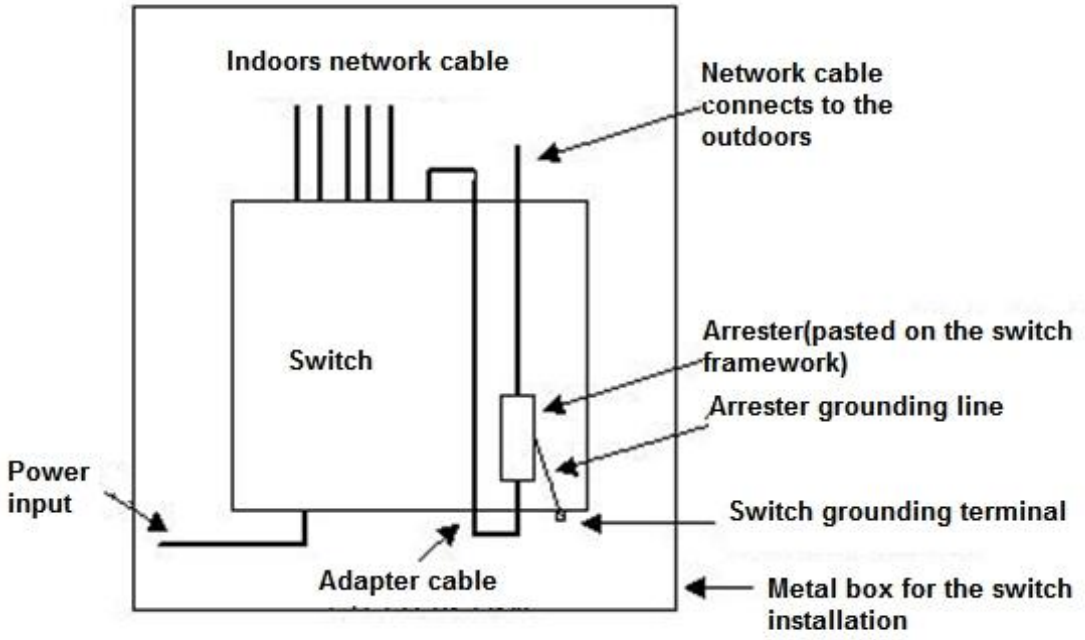
(2) Based on the distance of the switch grounding terminal, cut the grounding line for the Ethernet port arrester and firmly tighten the grounding line to the grounding terminal of the switch.

(3) Use the multimeter to check whether the grounding line for the arrester is in good contact with the switch grounding terminal and the framework.

(4) According to the description on the Ethernet Port Arrester Hardware Installation Guide, connect the arrester using the adapter cable(note that the external network cable is connected to the end of IN, while the adapter cable connected to the switch is connected to the end of OUT) and observe whether the LED on the board is normal or not.

(5) Use the nylon button to bundle the power cables.

Figure 6-6 Schematic Diagram for the Ethernet port Arrester Installation



Note

- The Ethernet port arrester is only for the 10 M/100 M copper Ethernet ports with the RJ-45 connector;
- The Ethernet port arrester is not provided, the user can purchase them to address their own practical requirements. For the detailed information during the arrester installation, please refer to Ethernet Port Arrester Hardware Installation Guide, which contains the technical specification and the maintenance and installation of the arrester.

You may pay attention to the following conditions during the actual installation to avoid influencing the performance of the Ethernet port arrester:

- Reversed direction of the arrester installation. You shall connect the external network cable to the “IN” end and connect the switch Ethernet port to the “OUT” end.

- Poor arrester grounding. The length of the grounding line should be as short as possible to ensure that it is in good contact with the switch grounding terminal. Use the multimeter to confirm the contact condition after the grounding.
- Incomplete arrester installation. If there is more than one port connected to the peer device on the switch, it needs to install the arresters on all connection ports for the purpose of the lightning protection.

6.3 Cabling Recommendations in Installation

When RG-S2915-L series switches are 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.

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.

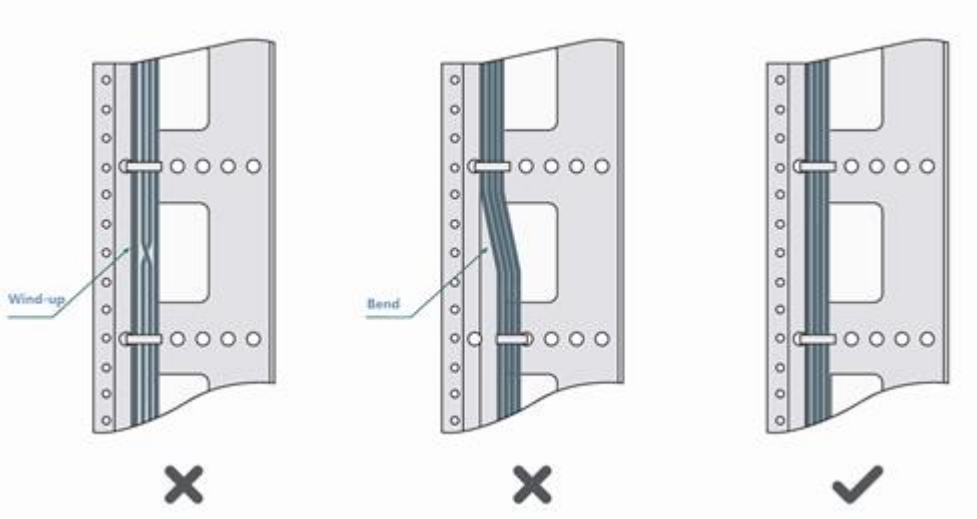
Requirement for the minimum fiber bend radius

- 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.

Precautions for Bundling up Cables

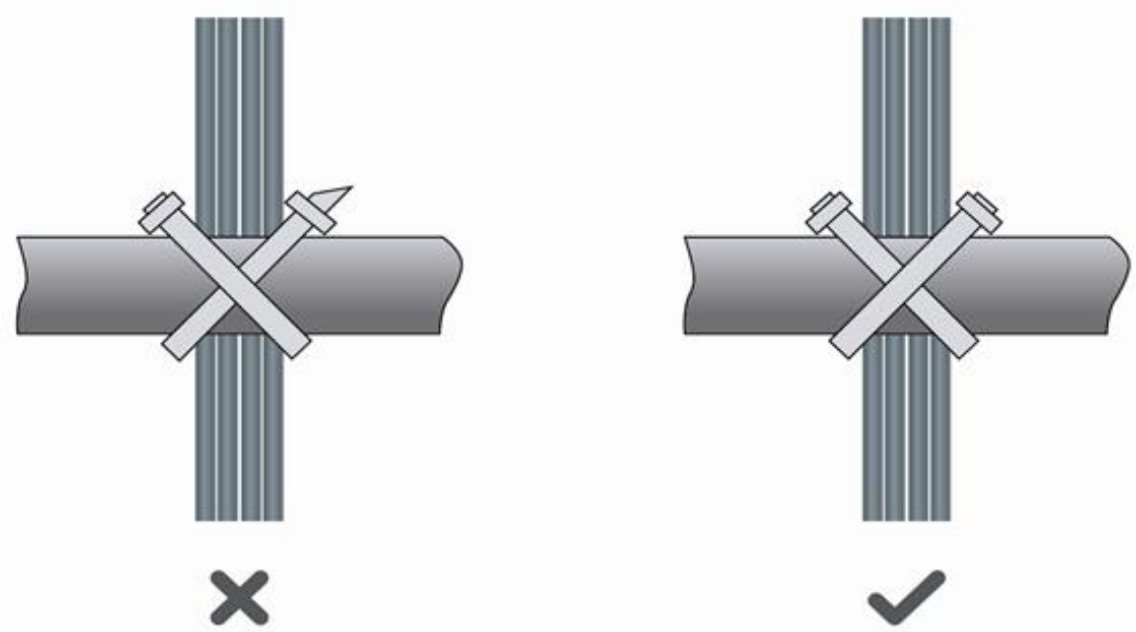
- Before bundling cables, correctly mark labels and stick the labels to cables where appropriate.
- Cables should be neatly and properly bundled, as shown in Figure 6-7.

Figure 6-7 Bundling Up Cables (1)



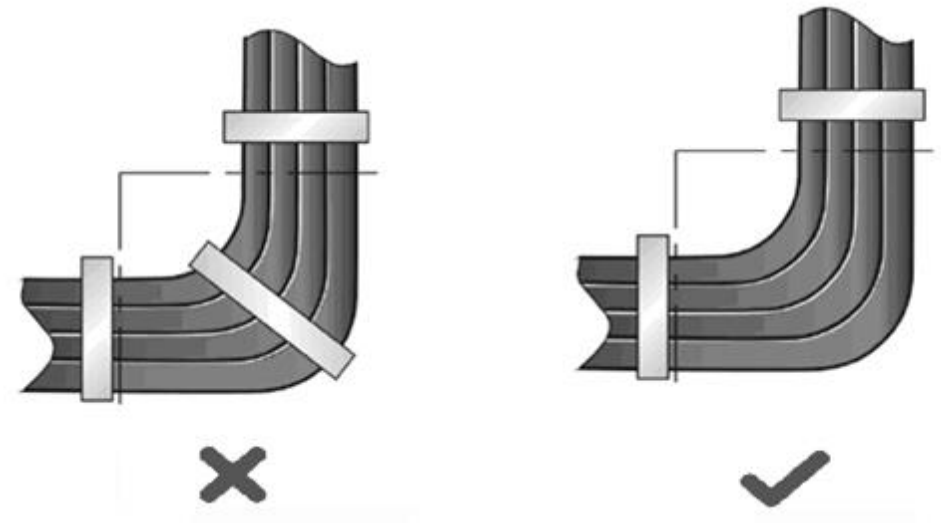
- Cables of different types (such as power cords, signal cables, and grounding cables) should be separated in cabling and bundling. When they are close, crossover cabling can be adopted. In the case of parallel cabling, power cords and signal cables should maintain a space equal to or greater than 30 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 6-8.

Figure 6-8 Bundling Up Cables (2)



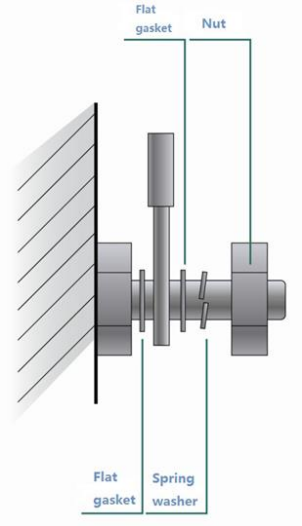
- When cables need to bend, you should first bundle them up. However, the buckle cannot be bundled within the bend area. Otherwise, significant stress may be generated in cables, breaking cable cores. As shown in Figure 6-9.

Figure 6-9 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 6-10.

Figure 6-10 Cable Fastening



- 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 Table 6-1.

Table 6-1

Cable Bunch Diameter (mm)	Binding Space (mm)
10	80-150
10-30	150-200
30	200-300

- 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.

6.4 Site Selection

- The machine room should be at least 5 km away from the heavy pollution source such as the smelter, coal mine and thermal power plant, 3.7 km away from the medium pollution source such as the chemical industry, rubber industry and electroplating industry, and 2 km away from the light pollution source such as the food manufacturer and leather plant. If the pollution source is unavoidable, the machine room should be located on the windward side of the pollution source perennially with advanced protection.
- The machine room should be at least 3.7 km away from the sea or salt lake. Otherwise, the machine room

must be sealed, with air conditioner installed for temperature control. Saline soil cannot be used for construction. Otherwise, you should select devices with advanced protection against severe environment.

- Do not build the machine room in the proximity of livestock farms. Otherwise, the machine room should be located on the windward side of the pollution source perennially. The previous livestock house or fertilizer warehouse cannot be used as the machine room.
- The machine room should be firm enough to withstand severe weather conditions such as windstorm and heavy rain as well as away from dust. If the dust is unavoidable, keep the door and window away from the pollution source.
- The machine room should be away from the residential area. Otherwise, the machine room should meet the construction standard in terms of noise.
- Make sure the air vent of the machine room is away from the sewage pipe, septic tank, and sewage treatment tank. Keep the machine room under positive pressure to prevent corrosive gas from entering the machine room to corrode components and circuit boards. Keep the machine room away from industrial boiler and heating boiler.
- The machine room had better be on the second floor or above. Otherwise, the machine room floor should be 600mm higher than the highest flood level ever recorded.
- Make sure there are no cracks or holes in the wall and floor. If there are cable entries in the wall or window, take proper sealing measures. Ensure that the wall is flat, wear-resistant, and dust-free, which should be up to the standard for flame retarding, soundproofing, heat absorption, dust reduction, and electromagnetic shielding.
- Keep the door and the window closed to make the machine room sealed.
- The steel door is recommended for soundproofing.
- Sulfur-containing materials are forbidden.
- Pay attention to the location of the air conditioner. Keep the air conditioner from blowing wind straight toward the device or blowing water drops from the window or air vent toward the device.