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# XG1200 Hardware Guide

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# Preface

You have purchased the XG1200, a compact, 12 port 10 Gigabit Ethernet layer 2 switch that achieves unsurpassed standards of high throughput and low-latency performance. This manual explains the procedures required to install your XG1200 and should be read and understood before you start using your XG1200.

First edition (September 2005)


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# For Safe Use of the XG1200

This manual contains important information to ensure the safe use of your XG1200. Be sure to thoroughly read and understand its contents before attempting to use the XG1200. After reading, store this manual in a safe place for future reference. PFU has made every effort to ensure the safety of the user and others, and to prevent property damage. When using the XG1200, follow the instructions given in this manual.

## Warning notations

Warnings are included throughout this manual in order to prevent injury to the user and/or material damage. There are two levels of warnings, both of which are composed of a symbol and a message describing the issue.

 **WARNING** This symbol indicates the possibility of serious or fatal injury if the XG1200 is not used properly.

 **CAUTION** This symbol indicates the possibility of minor or moderate personal injury, as well as damage to the XG1200 and/or to other users and their property, if the XG1200 is not used properly.



**WARNING** This symbol indicates the possibility of serious or fatal injury if the XG1200 is not used properly.

For your safety and that of others, please follow these guidelines.

Category	Warning
Danger of electric shock or fire	Never attempt to disassemble, dismantle, upgrade, or recycle the XG1200 by yourself. Do not place objects on the XG1200, as there is a risk of electric shock, fire, and/or damage.
	Do not install the XG1200 where it will be exposed to direct sunlight, close to a heating device, or in an environment with much dust and high humidity, as there is a risk of electric shock and fire.
	For XG1200 models with cooling vents, do not block off the vents as these prevent the internal parts of the XG1200 from reaching high temperature, and there is a risk of fire.
	Do not wrap the running XG1200 with a cloth. Doing so keeps the heat in, and may cause a fire.
	Avoid getting any liquids (such as coffee) or pieces of metal (such as paper clips) into the XG1200, as there is a risk of electric shock and fire. To avoid foreign objects getting into the XG1200, never place objects on it.
	Do not put your fingers into the LAN jack, as there is a risk of electric shock.
	Do not use the XG1200 with any voltage other than that specified on the device, as there is a risk of electric shock and fire.
	Should the XG1200 start giving off heat, smoke, and/or a strange smell, immediately disconnect the power plug from the power outlet. To make this easy, the XG1200 should be located close to the power outlet (wall socket or power strip), and the power outlet must be readily accessible. Do not disconnect the ground cables before disconnecting the power plug from the power outlet. After the power is disconnected, contact the vendor's service department immediately. Continued use of the XG1200 may cause an electric shock and fire. Note that in this case, the state of data in transmission is not guaranteed. (page 32)
	If the power plug or power socket is dirty, clean it with a dry cloth. Continued use may cause a fire. (page 30)
	Do not touch the power plug with wet hands, as there is a risk of electric shock. (page 30)
	Insert the power plug completely into the power socket. A partially inserted power plug may cause an electric shock, give off smoke, and/or catch fire. (page 30)
	When you remove a power plug from its outlet, be sure to pull the only power plug itself. Pulling on the power cord itself may expose the cores or break the cord, and cause electric shock or fire. (page 30)
	If the XG1200 is to be left unused for any significant period, remove the power plug from the outlet for safety reasons. Failure to do so may cause a fire or damage. (page 30)
	Do not damage or remodel the power cords, as this may cause electric shock or fire. Do not place any object on, wrap any object with, pull and/or kick the power cords, as there is a risk of electric shock and fire. (page 30)
	Never overload a power outlet with multiple devices. If too many devices are connected, the power socket may overheat and cause a fire.
	When you remove a power plug from an outlet, be sure to pull the power plug itself. A power plug damaged by incorrect removal may cause an electric shock and fire.
	Do not use the XG1200 with a damaged power cord, a damaged power plug, and/or a loose socket. Continued use under these conditions may cause an electric shock and fire. (page 30)
Do not bundle the power cords. Doing so increases the heat density, and may cause a fire.	
Do not touch the power plug when there is thunder and lightning about, as there is a risk of electric shock. (page 30)	
Danger of breakage and injury	Do not place the XG1200 on its side or stack up multiple XG1200s. Ignoring this may damage the XG1200 or injure the operator.
	Do not install the XG1200 in an unstable place (such as on a slanted surface or a place subject to vibrations). Doing so may cause injury or device damage.
	Do not place any objects or perform any work on the XG1200. Ignoring this may damage the XG1200 or injure the operator.
	Never leave the plastic bags the XG1200 was packed in around where children can find them, as they may suck them into their mouths or place them over their heads in fun, with a severe risk of choking and asphyxia.
	Do not dispose the XG1200 with other wastes. If burnt, the XG1200 can explode.



This symbol indicates the possibility of minor or moderate personal injury, as well as damage to the XG1200 and/or to other users and their property, if the XG1200 is not used properly.

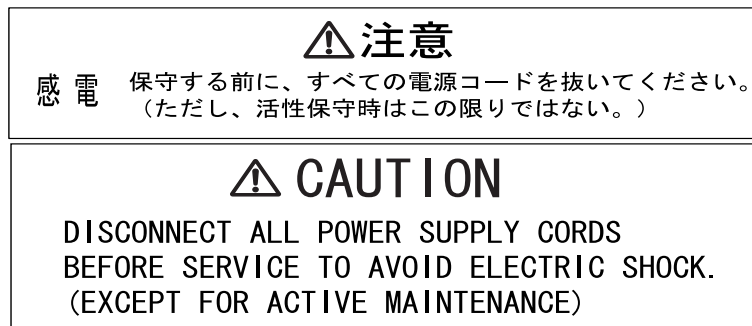
Category	Caution
Danger of device damage	Do not place the XG1200 on its side or stack up multiple XG1200s. Doing so may damage the XG1200.
	Do not install the XG1200 in an unstable place (such as on a slanted surface or a place subjected to vibrations). Doing so may damage the XG1200.
	Do not place any objects or perform any work on the XG1200. Doing so may damage the XG1200.
	Install the XG1200 inside a building. Using the XG1200 outside may damage it.
	Do not use the XG1200 in areas of extremely high temperature, low temperature, or a area where the temperature goes up and down suddenly. Installing the XG1200 in such areas may damage it.
	Do not expose the XG1200 to seawater. Installing the XG1200 in such areas may damage it.
	Do not use the XG1200 in a place subjected to shock or vibrations. Using the XG1200 in such a place may damage it.
	Do not use the XG1200 in a place where chemicals are being sprayed or may otherwise come in contact with it. Using the XG1200 in such a place may damage it.
	Do not use the XG1200 near objects which generate strong magnetic fields, such as microwave ovens. Using the XG1200 in such place may damage it.
	Do not use the XG1200 with foreign objects (liquids and/or pieces of metal) inside it. Using the XG1200 in such a condition may damage it.
When moving the XG1200, be sure to remove the power plug from the outlet first. Not doing so may damage it.	
Danger of electromagnetic interference	Do not use the XG1200 near a radio or a TV. Doing so can interfere with the radio and TV reception.
Danger of electric shock	To avoid an electric shock, do not open the cover unless you are a maintenance engineer. When performing maintenance on the XG1200, be sure to remove the power plug from the outlet first.
Danger when rackmounting	Only use the XG1200 if the temperature inside the rack is 40°C or less. Ignoring this may damage the XG1200 (page 24).
	Ensure that the rack is sufficiently ventilated and that excess heat is properly exhausted (page 24).
	Check that the configuration of devices in the rack does not overload the power supply (page 24).
	To ensure the stability of the rack, fix it to the wall or floor as appropriate (page 24).
	Do not install the XG1200 in a rack if it would make it unstable (page 24).
	Check that all units installed in the rack are correctly connected to a grounded power source (page 24).
Danger when cleaning	When removing the XG1200 from a rack, and be sure to hold it by both sides. At least two people should work together. (page 25) (page 28)
	When cleaning the XG1200, only use a soft cloth, and wipe it gently.

## No self maintenance

Never attempt to dismantle or modify the XG1200 yourself. This is extremely dangerous since the XG1200 includes both high voltage and high temperature components. If maintenance is required, contact the vendor's service department.

## Warning label

The following warning label may be found on the rear of XG1200. Do not attempt to remove this warning label. If you cannot read the details written in the warning label because of dirt or wear, contact the vendor's service department for a replacement label.



## Safety precautions

- The expected life of the XG1200 is approximately five years, assuming use at an ambient temperature of 25°C.
- Use of this hardware guide, the XG1200, its firmware, and the management software are the responsibility of the user.
- Fujitsu and its partners accept no responsibility for any errors or data loss arising from use of the XG1200. Before using the XG1200, it should be understood that the XG1200 is not guaranteed against failure for any more than the original purchase price.
- Fujitsu and its partners do not approve of any use of the firmware provided with the XG1200, or of any authorized firmware upgrades, for any purpose other than installation on the XG1200. Modification and disassemble are expressing not permitted.
- When connecting up the fiber optic cables, check that there is no dust, foreign objects or fingerprints on the connector surfaces.

## For security

A default login password is set before the XG1200 is shipped. For security reasons, a new password should be chosen before the XG1200 is used.

## Electromagnetic compatibility

FCC Class A  
CE Marking

## Safety

CAN/CSA C22.2 No. 60950, UL60950 and EN60950

## Static electricity

Under certain conditions, twisted pair cables can become charged with static electricity. Connecting a statically charged twisted pair cable to a device can cause the device or its LAN port to operate falsely or to become damaged.

Use a static removal tool to discharge twisted pair cables to ground immediately before connecting them to devices.

Note that a discharged twisted pair cable that has been left unconnected for a long time may become statically charged again.

## High safety

[Use for the high safety required case]

The XG1200 is designed, developed and manufactured as contemplated for general use, including without limitation, general office use, personal use, household use, and ordinary industrial use, but is not designed, developed and manufactured for use in situations with accompanying fatal risks or dangers that, unless extremely high safety is secured, could lead directly to death, personal injury, severe physical damage or other loss (hereinafter "High Safety Required Use"), including without limitation, nuclear reaction control in nuclear facility, aircraft flight control, air traffic control, mass transport control, medical life support system, and missile launch control in weapon systems.

Do not use the XG1200 for High Safety Required Use without otherwise ensuring the safety level required. Fujitsu and its related companies assume no liability whatsoever for damages arising from use of the XG1200 by the user in high-safety applications, and for any claims or compensation for damages by the user or a third party.

## Laser safety

The XG1200 contains a class 1 laser, and can emit invisible laser light. Do not look into the 10 Gigabit Ethernet port openings. The following warning applies to the XG1200's laser:

- The XG1200 contains Xenpak modules, which are laser devices.
  - In the USA, these Xenpak modules are certified as Class 1 laser products that conform to the requirements of the Department of Health and Human Services (DHHS) regulation 21 CFR Subchapter J, and this certification is indicated by a label attached to each Xenpak module.
  - Outside the USA, these Xenpak modules are certified as Class 1 laser products that conform to the requirements given in IEC825-1 (1993) and Amendment11 (1996) of EN60825-1 (1994).
- Even when cables are not connected, invisible laser light may be still emitted from the port openings. To avoid this laser light, never peer into the port openings.

# About This Manual

This section explains who this manual is aimed at, describes the layout of the manual, and gives a description of the symbols used in this manual.

## Targeted reader and expected knowledge

This manual is written for an administrator who has responsibility for network system configuration, maintenance, and management.

Understanding of the following knowledge is expected.

- Basic knowledge of networks, intranets and the internet.
- Basic knowledge of system management.
- Basic knowledge of system security.

This manual does not give any explanation of network protocol terms.

## Organization

This manual is organized as follows.

### Chapter 1 Before Use

This chapter lists the items that should be in the XG1200 package, describes the names and functions of the various components of the XG1200.

### Chapter 2 Installation and Operation

This chapter explains how to install, connect, and start the XG1200.

### Chapter 3 Troubleshooting

This chapter describes what you should do when your XG1200 has problems.

### Appendix

This appendix explains the specifications of the XG1200, and should be referred to as necessary.

## Related manuals

The following manuals are related to this manual. Consult them as required.

- XG1200 Hardware Guide (this manual)  
This manual describes the hardware of the XG1200.
- XG1200 User's Guide  
This manual describes a variety of operations and procedures, including the installation and maintenance of the XG1200.

When referring to the "XG1200 User's Guide", the manual name is usually abbreviated as "User's Guide".

The user's guide is an online manual, contained in the "XG1200 User's Guide CD-ROM".



## Symbols used in this manual

This manual uses the following symbols.



This symbol indicates a point that operator should pay attention to.



This symbol indicates supplemental information.



This symbol indicates a section which describes related information.



This symbol means "Danger! You are in a situation that could result in bodily injury". Before continuing, make yourself aware of the hazards involved and become familiar with common ways of preventing accidents.



This symbol means "Be careful, or you might do something that could damage your equipment or result in loss of data".

## Trademarks and abbreviations used in this manual

Company names and products names referred in this manual are registered trademarks or trademarks of respective companies.

The trademark <sup>TM</sup> and © have been omitted from this manual.

## Product Information

The latest product information including technical information, update information, are available from the following web site:

<http://www.pfu.fujitsu.com/products/xg>

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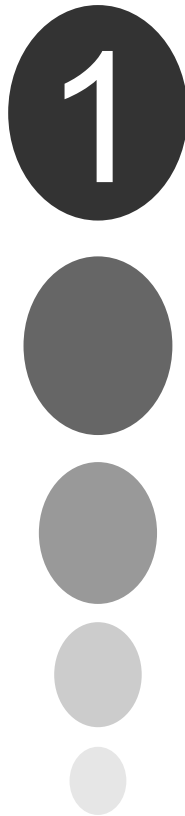
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# Before Use

This chapter lists the items that should be in the XG1200 package, describes the names and functions of the various components of the XG1200.



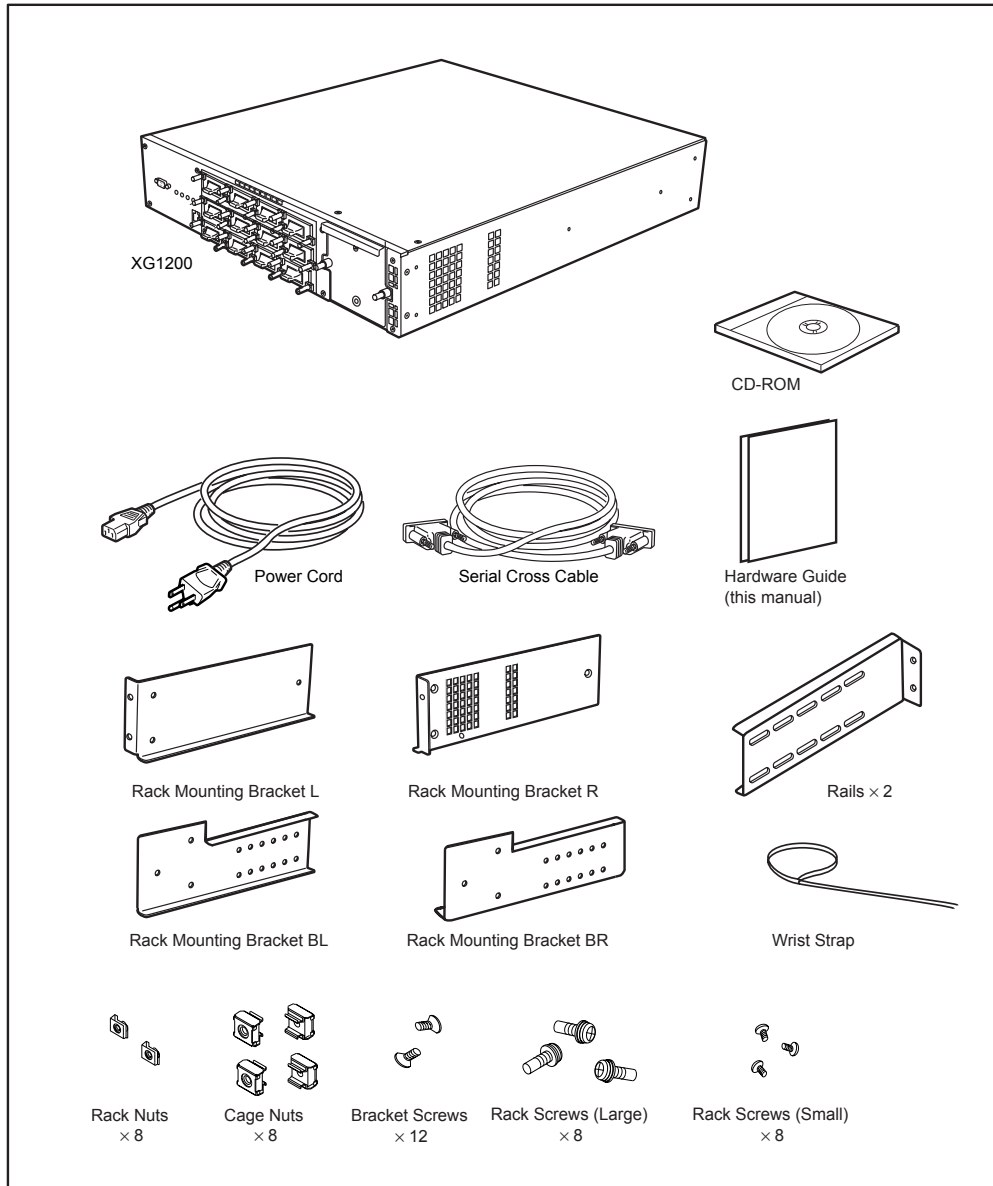
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# 1-1 Parts List

Before proceeding, check that all of the following parts were included in your XG1200 package. Contact the vendor's service department if any parts are missing and/or the manual has any missing or wrongly collated pages.

Keep the hardware guide (this manual) and the CD-ROM in a safe place.



- XG1200 The XG1200 itself (from zero to eight Xenpak modules may be installed).
- Power Cord A 3-pin cable to connect the XG1200 to a power supply.
- Serial Cross Cable A cable to connect the XG1200 to a PC when the settings need to be adjusted.
- Rack Mounting Bracket L A bracket for mounting the XG1200 in a rack. Attach the rack mounting bracket L to the front-left side of the XG1200, and fasten to the front-left rack post with the rack screws (large).
- Rack Mounting Bracket R A bracket for mounting the XG1200 in a rack. Attach the rack mounting bracket R to the front-right side of the XG1200, and fasten to the front-right rack post with the rack screws (large).
- Rack Mounting Bracket BL A bracket for mounting the XG1200 in a rack. Attach the rack mounting bracket BL to the back-left side of the XG1200, and fasten to the rail (attached to the back-left rack post) with the rack screws (small).
- Rack Mounting Bracket BR A bracket for mounting the XG1200 in a rack. Attach the rack mounting bracket BR to the back-right side of the XG1200, and fasten to the rail (attached to the back-right rack post) with the rack screws (small).
- Rails Two rails that are attached to the back-left and back-right rack posts and into which the back rack mounting brackets (BL, BR) are slid and then fastened when mounting the XG1200 in a rack.
- Bracket Screws Countersunk screws for fixing the rack mounting brackets (L, R, BL, and BR) to the XG1200.
- Rack Nuts When the rack post holes are round, use the rack nuts to fasten the XG1200 and the rails to the rack posts with the rack screws (large).
- Cage Nuts When the rack post holes are square, use the rack nuts to fasten the XG1200 and the rails to the rack posts with the rack screws (large).
- Rack Screws (Large) Pan-head screws for fixing the XG1200 and the rails to the rack posts.
- Rack Screws (Small) Pan-head screws for fixing the back rack mounting brackets (BL, BR) to the rails.
- CD-ROM Contains documents necessary to operate the XG1200.
- Hardware Guide A manual describing the XG1200 hardware and related matters (this manual).
- Wrist Strap Used when performing maintenance on the XG1200.

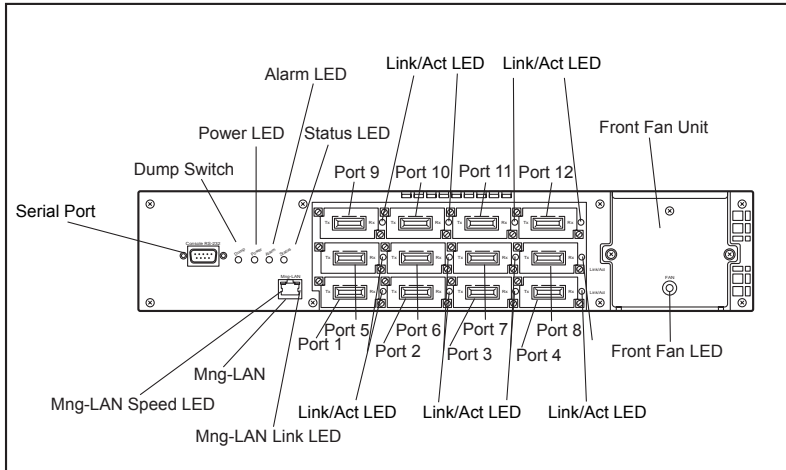


# 1-2 XG1200 Components

This section explains the names and functions of the various XG1200 components, including the various indicator LEDs.

## XG1200 front

The following explains the names and functions of the components at the front of the XG1200.



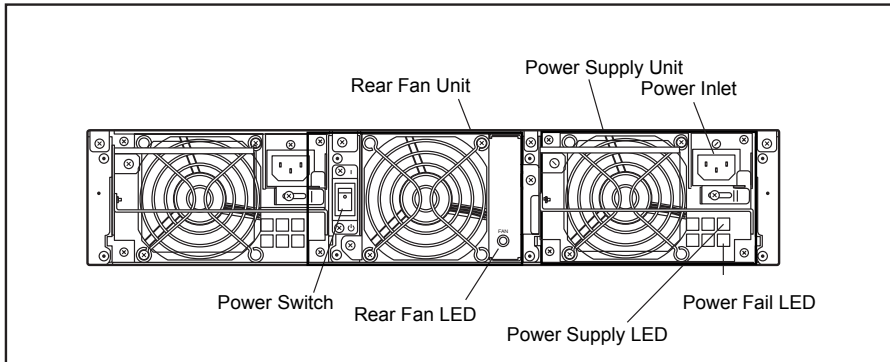
- Power LED (Green) Lights when the XG1200 is receiving power.
- Alarm LED (Orange) Lights when there is a problem with the XG1200.
- Status LED (Green) Lights when the XG1200 is in an operable state.
- Serial Port Used when performing maintenance or adjusting the settings (Console connection).
- Mng-LAN
  - Mng - LAN Speed LED (Orange) Lights if the link is 100BASE-TX.
  - Mng - LAN Link LED (Green) Lights when the link is established.
- Ports 1-12 Xenpak modules which connect to the IEEE802.3ae/ak compliant 10 Gigabit network served by the XG1200. Connection method varies depending on which Xenpak modules are installed.
- Link/Act LEDs (Green) Displays the condition of respective port. Each LED lights when a link is established on its port.
- Front Fan Unit Cooling air intake fan.
- Front Fan LED (Orange) Lights when there is a problem with the Front Fan Unit.
- Dump Switch Used to collect maintenance information.

### CAUTION

In order to avoid having negative effect on the cooling of the XG1200, do not loosen the Front Fan Unit screws on purpose.

## XG1200 rear

The following explains the names and functions of the components at the rear of the XG1200.



1

- Power Switch Used to turn the XG1200 on/off.
- Power Supply Unit Supplies power to the XG1200 (includes an exhaust fan).
  - Power Supply LED (Green) Lights when the XG1200 is on.
  - Power Fail LED (Orange) Lights when there is a problem with the Power Supply Unit.
- Rear Fan Unit Exhaust fan.
- Rear Fan LED (Orange) Lights when there is a problem with the Rear Fan Unit.

### **!** CAUTION

In order to avoid having negative effect on the cooling of the XG1200, do not loosen the Rear Fan Unit screws on purpose.



## Indicator LEDs

There are three main indicator LEDs on the front of the XG1200: Power LED, Alarm LED, and Status LED. The following explains the LED display under various conditions.

XG1200 Condition		LED		
		Power	Alarm	Status
Off		Off	Off	Off
Starting up	Power just turned on	On	On	Off
	System starting up	On	Off *1	Blinking
	System start-up completed	On	Off *1	On
Operable		On	Off *1	On
After shutdown		On	Off*1	Off

\*1: If the XG1200 is operating normally.

If a problem occurs, the front panel LEDs and the LEDs on the individual parts can be used to identify the trouble:

XG1200 Condition		LED			
		Power	Alarm	Status	LED on failed part
Problem detected	Startup error	On	Blinking	Blinking	---
	Front fan error	On	On	--- *3	Front Fan LED: On
	Rear fan error	On	On	--- *3	Rear Fan LED: On
	Power fan error	On	On	--- *3	Power Fail LED: On
	No AC supply *2	On	On	--- *3	Power Fail LED: On
	Power supply error	On	On	--- *3	Power Fail LED: On
	Voltage error	On	On	--- *3	---
	Temperature error	On	On	--- *3	---
	Xenpak error	On	On	--- *3	---
	System dump in progress	On	On	--- *3	---

\*2: Only detectable and indicated when two power supply units are installed and connected to separate, independent power supplies.

\*3: Condition of the Status LED will depend on the state of the system.

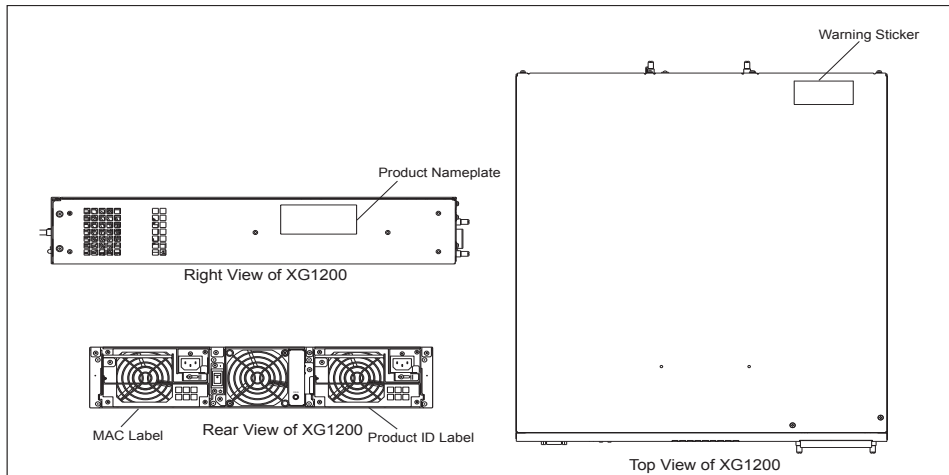
Note that the XG1200 does not shut itself off when trouble is detected.

Any problems other than those that occur during start up are recorded in the event log.

For details of the event log, refer to the "User Guide".

# 1-3 Labels

A warning sticker, product nameplate, product ID label, and MAC label are to be found in various places on the XG1200.



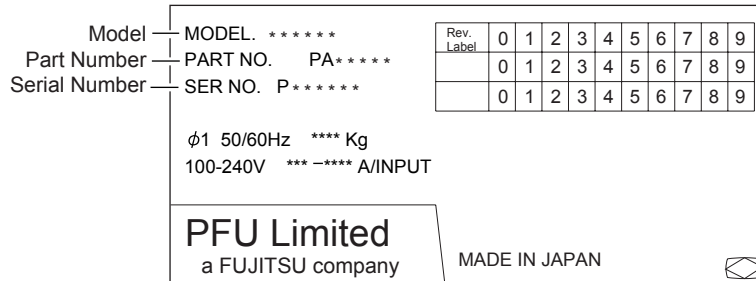
## Warning sticker

Obey the following warning:

<p><b>⚠ 注意</b></p> <p>感電 保守する前に、すべての電源コードを抜いてください。 (ただし、活性保守時はこの限りではない。)</p>
<p><b>⚠ CAUTION</b></p> <p>DISCONNECT ALL POWER SUPPLY CORDS BEFORE SERVICE TO AVOID ELECTRIC SHOCK. (EXCEPT FOR ACTIVE MAINTENANCE)</p>

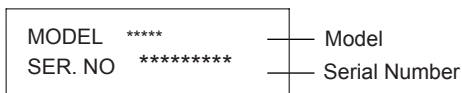
## Product nameplate

This indicates the model, part number, serial number, etc.



## Product ID Label

This indicates the model, serial number, etc.



## MAC Label

This indicates the MAC address:

MAC Address:xx:xx:xx:xx:xx~yy:yy:yy:yy

MAC addresses are allotted relative to the address on the MAC label:

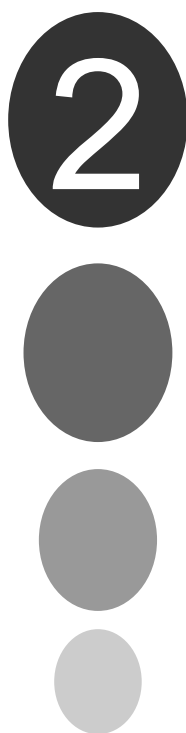
Address on the MAC label	Location
xx:xx:xx:xx:xx	Mng-LAN
xx:xx:xx:xx:xx+1	XG1200
xx:xx:xx:xx:xx+2	Port 1
xx:xx:xx:xx:xx+3	Port 2
xx:xx:xx:xx:xx+4	Port 3
xx:xx:xx:xx:xx+5	Port 4
xx:xx:xx:xx:xx+6	Port 5
xx:xx:xx:xx:xx+7	Port 6
xx:xx:xx:xx:xx+8	Port 7
xx:xx:xx:xx:xx+9	Port 8
xx:xx:xx:xx:xx+10	Port 9
xx:xx:xx:xx:xx+11	Port 10
xx:xx:xx:xx:xx+12	Port 11
xx:xx:xx:xx:xx+13 (=yy:yy:yy:yy:yy)	Port 12

1



# Installation and Operation

This chapter explains how the user should proceed from installation to operation of the XG1200.



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# 2-1 Installation Overview

This section reviews the flow of work as the user proceeds from installation to operation of the XG1200.

Install the XG1200 and then proceed with normal operation as follows:

## 1 Check the components

•▶ "1-1 Parts List"

## 2 Check the set up area and install the XG1200

•▶ "For Safe Use of the XG1200", "2-2 Installation Procedure"

## 3 Connect the cables to the XG1200

Connect the required fiber optic cables and power cords to the XG1200.

•▶ "2-3 Cable Connection"

## 4 Check that everything is secure

Check that the XG1200 doesn't wobble and that no cables are loose.

## 5 Turn the power on

Check that the system starts up normally.

•▶ "2-4-1 Turning the XG1200 on"

# 2-2 Installation Procedure

This chapter describes the installation requirements and installation procedure.

## 2-2-1 Installation requirements

Before installing the XG1200, read " For Safe Use of the XG1200" (page 2) and comply with the installation requirements described below.

### Space requirements

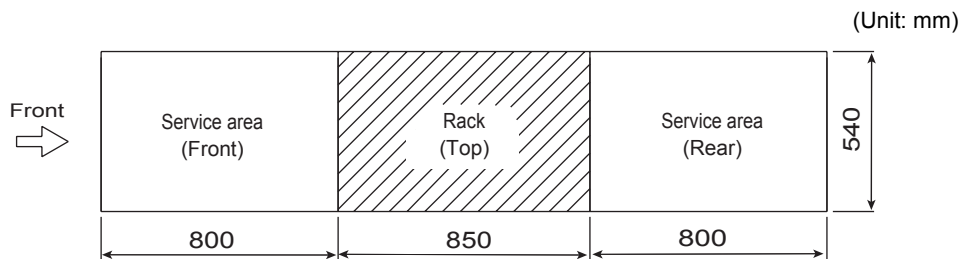
When installing the XG1200, a certain amount of installation space is necessary. When installing the rack, the indicated space (800mm of both the front and rear of the rack) should be reserved as a service area.

The following figures indicate examples of a 540mm (W) × 850mm (D) 19-inch rack and a 700mm (W) × 950mm (D) 19 inch rack.

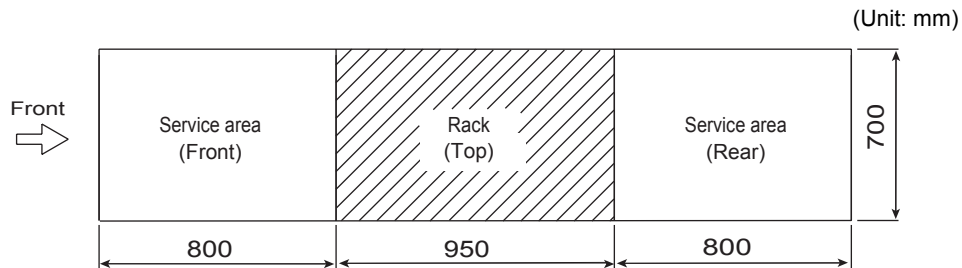
When installing in any other 19-inch rack, refer to the user guide provided with the rack.

2

#### [540mm (W) × 850mm (D) 19-inch rack]



#### [700mm (W) × 950mm (D) 19-inch rack]



### ⚠ CAUTION

The XG1200 may be installed in any rack with an internal depth of between 673mm and 770mm, except for the following ranges:

723mm - 726mm

743mm - 746mm

753mm - 756mm

763mm - 766mm



## Set up requirements

Only use the XG1200 under the temperature, humidity and other environmental conditions specified in "A.2 Installation Specifications" (page 38). Using the XG1200 outside the following ranges can shorten the lifetime or cause the failure of the XG1200.

- Temperature (5 - 40°C)
- Humidity (20 - 80%RH)

When installing the XG1200 in a rack, note the following.

- Certain types of racks cannot be used. To check whether the XG1200 can be installed in a given rack, contact the vendor's service department.

### CAUTION

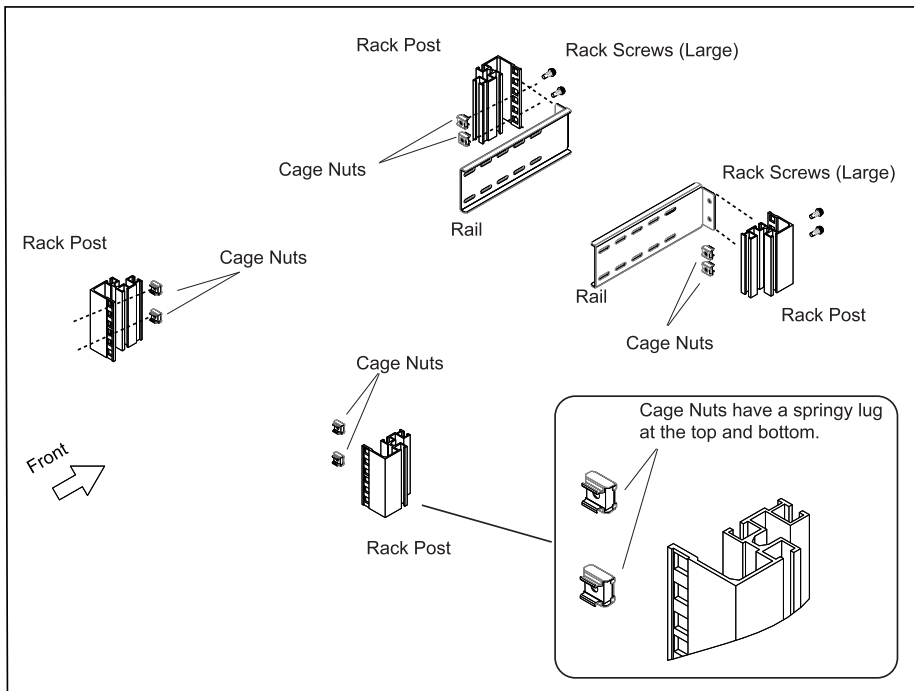
- Remember that when an installed unit is operating, the temperature inside the rack will be higher than the external ambient temperature, particularly if the rack contains multiple units. The rack's internal ambient temperature should not be allowed to exceed the maximum ambient temperature specified for each installed unit. The maximum ambient temperature allowed for the XG1200 is 40°C.
- A certain amount of air is required for the XG1200 to operate safely. Make sure that adequate ventilation is provided and that the front and rear air vents are not obstructed.
- Be careful that the rack is able to supply sufficient power for all the installed units. To avoid overloading the rack, check the power requirements specified for the each installed unit. The power requirement of the XG1200 are 0.23kVA.
- Installing the XG1200 in a rack may cause the entire rack to become unstable. To avoid this, fix the rack to the wall or floor as appropriate.
- Check that all the installed units are correctly grounded. Special care should be taken if the unit's power supply is not drawn directly from the distribution board (such as when a power strip is used, for example). When multiple devices are connected to a single power strip, the combined leakage currents can overwhelm the grounding capacity of the power strip.

## 2-2-2 Installing the XG1200 in a rack

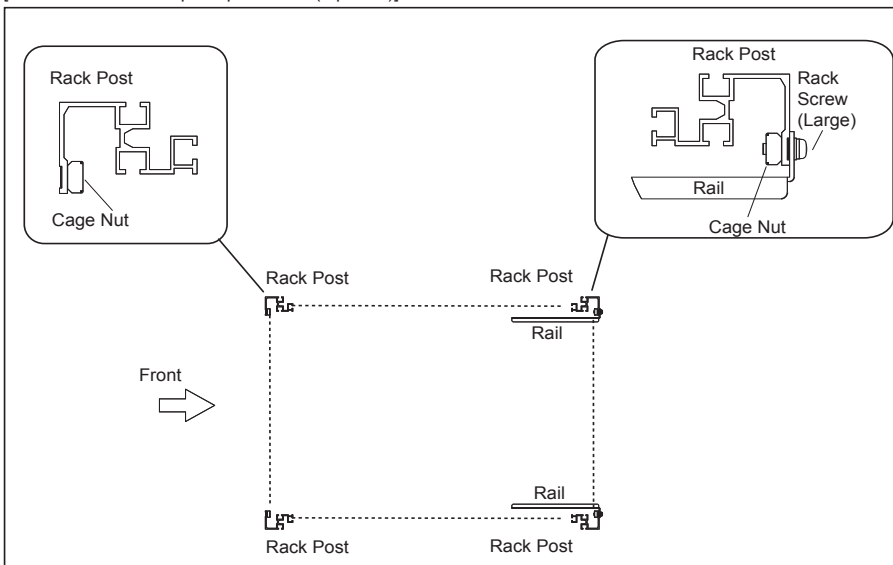
The following explains how to install the XG1200 in a 19-inch rack.

1. Take the XG1200 out of its box.
2. Fix the cage nuts and rails to the rack posts.

[When the rack has square post holes]

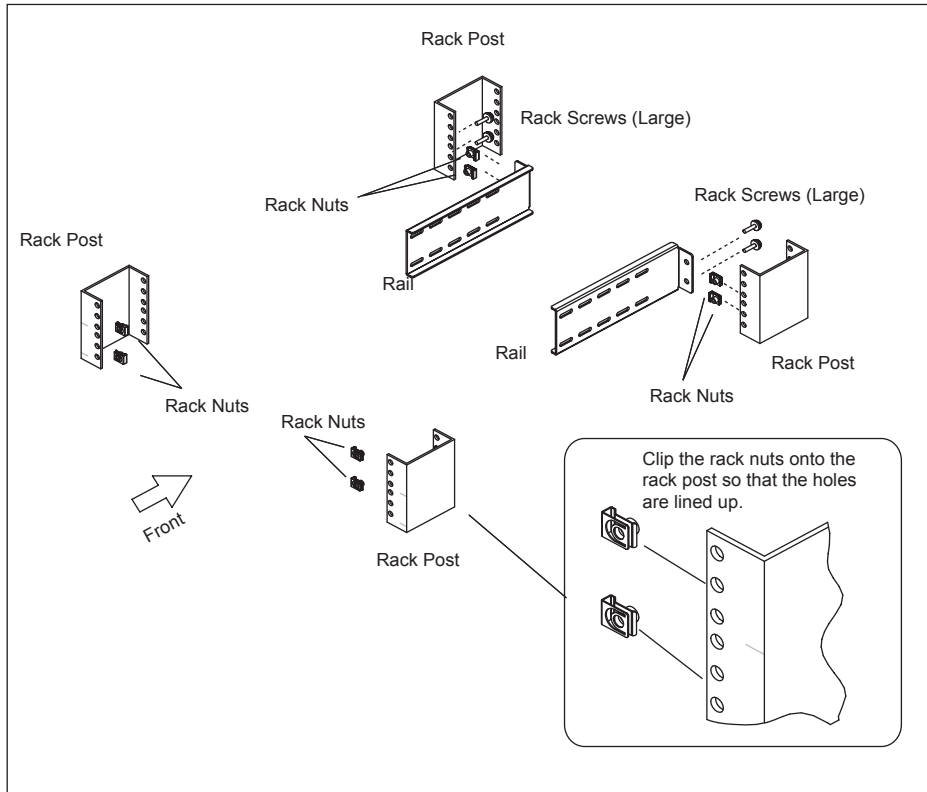


[When the rack has square post holes (top view)]

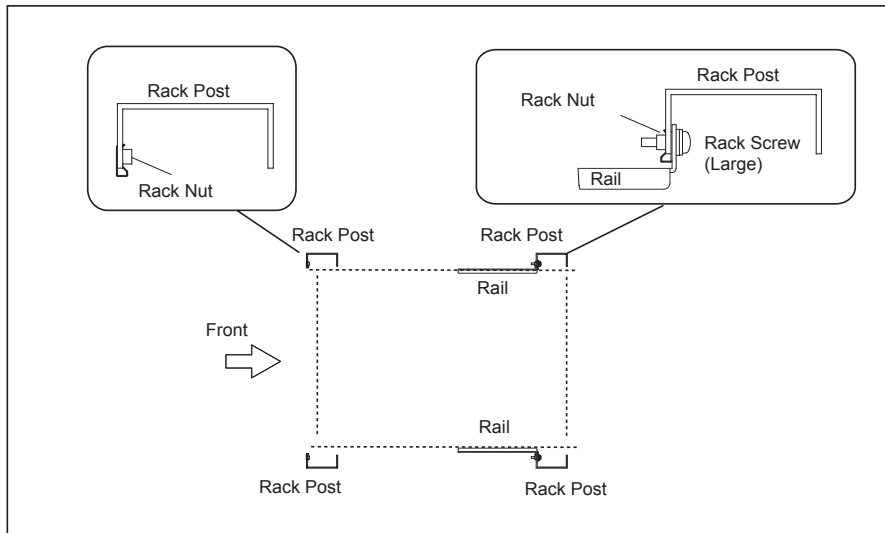


2

[When the rack has round post holes]

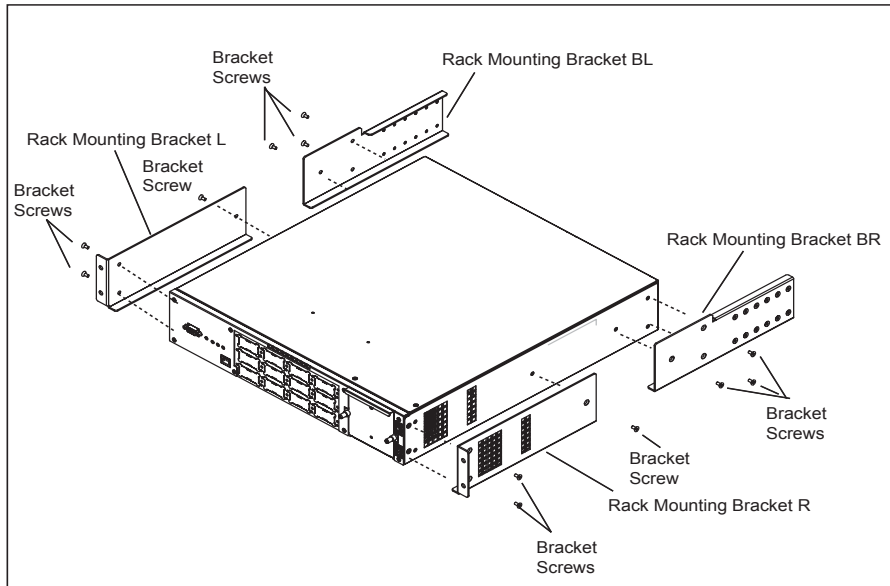


[When the rack has round post holes (top of view)]



### 3. Fix the four rack mounting brackets to the XG1200.

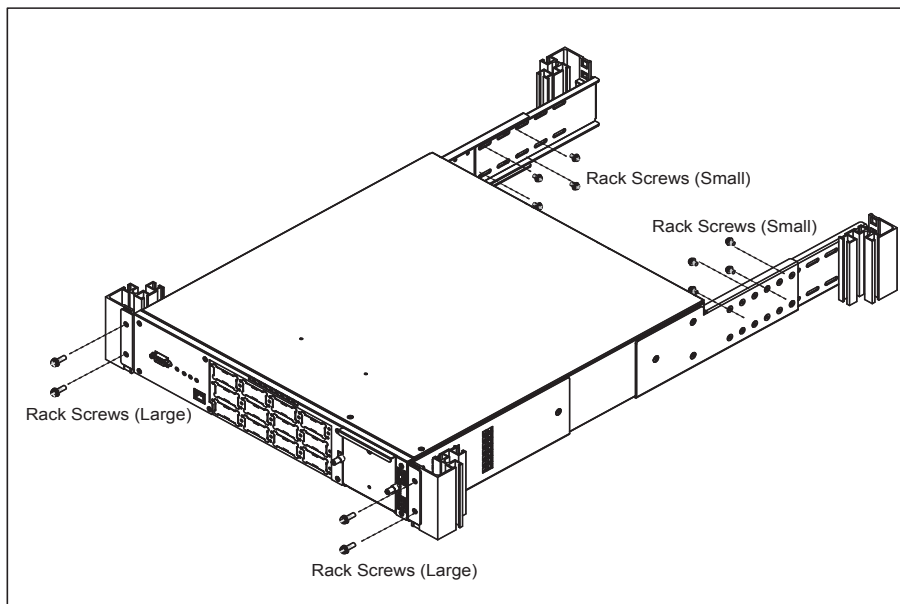
Each of the four rack mounting brackets (left, right, back-left, back-right) has three holes that should line up with matching holes on the sides of the XG1200, as shown in the diagram. Attach each rack mounting bracket using the countersunk bracket screws provided.



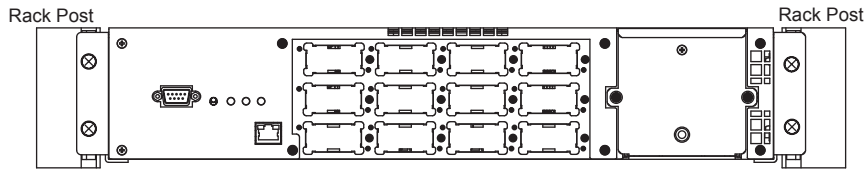
2

### 4. Slide the XG1200 into the rack and fasten it in place.

Insert the XG1200 into the rack and line up the back rack mounting brackets with the already attached rails. Do not let go of the XG1200 until the rack screws (large) have been fastened to the previously installed rack/cage nuts. The rack screws (small) may then be used to fasten the back rack mounting brackets to the rails. Securely tighten all the screws with a screwdriver.



5. This completes the rack installation procedure.



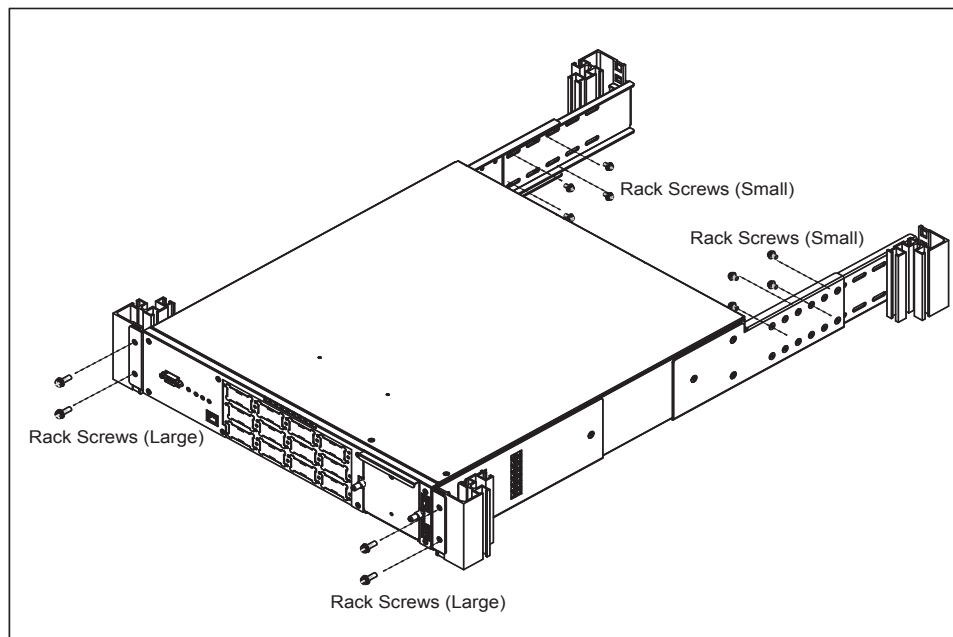
**! CAUTION**

As the XG1200 can weigh as much as 20kg, it should never be installed by a single person acting alone. At least two people should work together to insert and fasten the XG1200 in the rack.

### 2-2-3 Uninstalling the XG1200 from a rack

The following explains how to uninstall the XG1200 from a rack.

1. Undo the rack screws that were used to fasten the XG1200 to the rack.
- Remove the rack screws (small) that fasten the back rack mounting brackets to the rails first. The rack screws (large) that hold the front of the rack should only be removed if the front of the XG1200 is being securely supported.



2. Slide the XG1200 forward, and remove it from the rack.

**! CAUTION**

When removing the XG1200 from a rack, be sure to hold it by both sides. As the XG1200 can weigh as much as 20kg, it should never be removed by a single person acting alone. At least two people should work together to undo the screws and remove the XG1200 from the rack.

# 2-3 Cable Connection

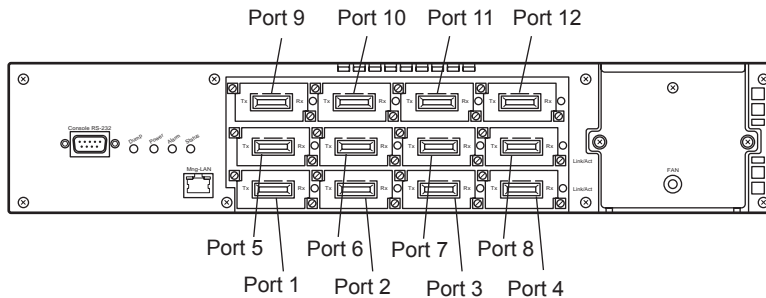
This section explains how to connect the fiber optic cables and power cords.

## 2-3-1 Connecting the fiber optic cables

The fiber optic cables need to be connected to the XG1200's Xenpak modules.

### 1. Connect the fiber optic cables to the XG1200.

Connect the fibre optic cables to the Xenpak modules Port 1 - Port 12 on the front.



- An fiber optic connector is used when connecting two fiber optic cables. When connectors such as these are used, it is important that they be connected correctly.
- If a connector is misconnected, or cleaned incorrectly, it can be damaged. If the fiber optic connector is dirty or damaged, data transmission may become error-prone and/or unstable.
- It is necessary that the connectors be fixed in the correct position, in order to protect the connector interface against external influences.
- Connection quality is influenced by two factors: the type of connector and whether it is properly cleaned and connected. Optical losses are often caused by dirty fiber connectors. Always keep your connectors clean and protect them with a dust power plug or cover if they are not being used.
- Before connecting any cables or connectors, use an lint-free alcohol pad (included in the cleaning kit) to clean the ferrule, the protective tube, and the end of the fiber core. If a large light loss is detected, and the cause is not immediately clear, clean the connector as a first attempt to resolve the problem.

## 2-3-2 Connecting the power cords

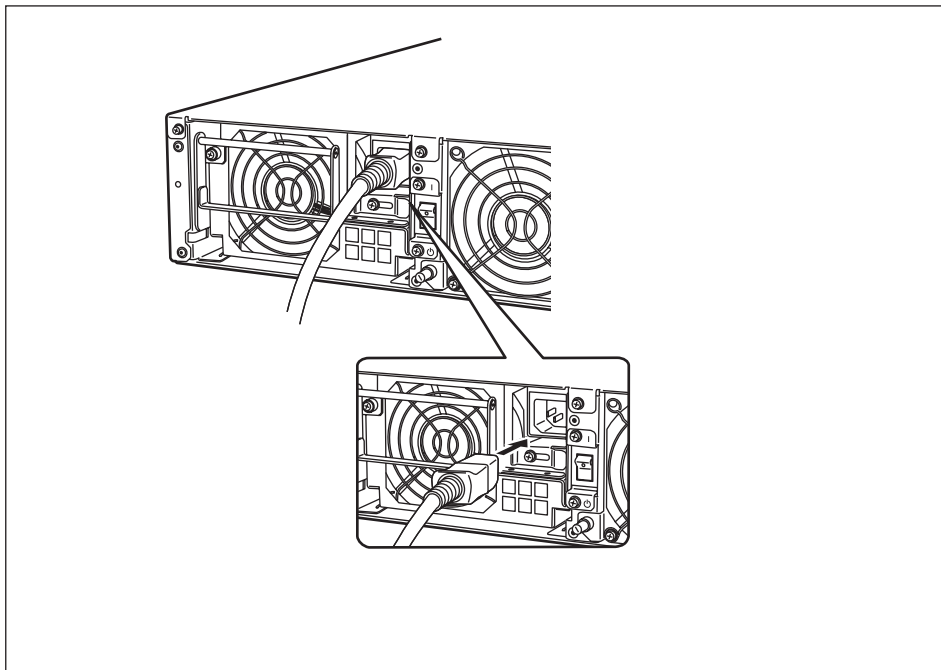
After connecting the peripheral units, connect the XG1200 power cords.

### WARNING

- Never touch a power plug with wet hands, as there is a risk of electric shock.
- Do not damage or remodel a power cord, as this may cause electric shock or fire. Placing a heavy object on, pulling, excessively bending, twisting, or overheating a power cord can damage it, and may cause electric shock or fire.
- Do not use the XG1200 with a damaged power cord, a damaged power plug, and/or a loose socket.  
Continued use under these conditions may cause a fire.
- If the power plug pins or socket holes are dusty, clean with a dry cloth. Continued use with a dirty power plug or socket may cause electric shock or fire.

### 1. Connect the power cords to the XG1200.

Insert the plug at the end of the power cord into the power inlet at the rear of the XG1200.



## 2. Connect the power cord to the power outlet.

Insert the plug at the other end of the power cord into the power strip or wall socket.

### WARNING

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- Unplug the XG1200 during thunder-starting. Continued use under these conditions risks lightning damage to the XG1200, and may cause a fire.
  - When you remove a power plug from its outlet, be sure to pull the only power plug itself. Pulling on the power cord itself may expose the cores or break the cord, and cause electric shock or fire.
  - Insert the power plug completely into the power socket. Using the XG1200 with a half inserted power plug may cause a fire or damage.
  - If the XG1200 is to be left unused for any significant period, remove the power plug from the outlet for safety reasons. Failure to do so may cause a fire or damage.
- 

2



Attention

- If your XG1200 has two power supply units, both should be connected to a power supply.
  - Maximum redundancy is achieved when each power supply unit is connected to a separate, independent power source.
-



# 2-4 Basic Operation

This section explains the basic operation of XG1200.

## 2-4-1 Turning the XG1200 on

### CAUTION

Do not move, shock, or vibrate the XG1200 while it is on.

1. Turn the power switch to the "on" position by pressing the [ | ] side.  
The Power LED (Green) on the front of the XG1200 should turn on. The Alarm LED (Orange) should turn on for a moment, then should turn off. The Status LED (Green) should turn on. If an error occurs while the XG1200 is starting up, the Alarm LED (Orange) will start blinking.
2. When the system has finished starting up, the Status LED (Green) turns on.  
If an error occurs after the startup stage has finished, the Alarm LED (Orange) will turn on.

## 2-4-2 Turning the XG1200 off

### CAUTION

Should the XG1200 start giving off heat, smoke, and/or a strange smell, immediately disconnect the power plug from the power outlet. To make this easy, the XG1200 should be located close to the power outlet (wall socket or power strip), and the power outlet must be readily accessible.

Do not disconnect the ground cables before disconnecting the power plug from the power outlet.

After the power is disconnected, contact the vendor's service department immediately. Continued use of the XG1200 may cause an electric shock and fire.

Note that in this case, the state of data in transmission is not guaranteed.

1. Execute the system shutdown command.  
If the firmware has not been updated yet, then execute system shutdown from the command line.



For details of the system shutdown command, refer to the "Command Reference" section in the "XG1200 User's Guide".

2. Just turn the power switch to the "off" position by pressing the [ ⊖ ] side.

# Troubleshooting

This chapter describes what you should do when your XG1200 has problems.



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# 3-1 Start-up Problems

The following errors may occur when the XG1200 is started up.  
If the cause of the error cannot be resolved, contact the vendor's service department.  
The following explains some general errors that can occur.  
Check if any of these match your problem.

## **The XG1200 does not turn on**

[Symptom] The power switch is turned on, but the XG1200 does not power up.

[Cause] Possible causes:  
1: Loose cable, or  
2: Hardware failure

[Solution]  
1: Check that all cables are connected properly, then (if the XG1200 still doesn't turn on)  
2: Contact the vendor's service department.

## **Status LED blinks, but the XG1200 does not start up**

[Symptom] The XG1200 has not started within a few minutes of the power switch being turned on and the Status LED keeps blinking.

[Cause] Probable hardware failure

[Solution] Contact the vendor's service department.

## **Alarm LED blinks, but the XG1200 does not start up**

[Symptom] The XG1200 has not started within a few minutes of the power switch being turned on and the Alarm LED (Orange) starts blinking.

[Cause] Probable hardware failure.

[Solution] Contact the vendor's service department.

# 3-2 Hardware Problems

This section explains what should be done when a fan, temperature, memory, or Xenpak module error occurs.

## Fan error

When a problem is detected with a fan, the front panel Alarm LED lights up in orange, the LED of the fan unit in which the error has occurred lights up in orange, and an error is recorded in the event log.

If a fan error occurs, contact the vendor's service department.

## Temperature error

When XG1200 overheats, the Alarm LED lights up in orange, and a temperature error is recorded in the event log. In this case, check that the ambient and internal rack temperatures are within the specified temperature range, adjust them if they are not and try turning the XG1200 back on.

When error occurs even though the ambient rack temperatures are acceptable, turn the XG1200 off and contact the vendor's service department.

3

## Voltage error

When a voltage problem is detected, the Alarm LED lights up in orange, and an error is recorded in the event log. In this case, turn the XG1200 off and contact the vendor's service department.

## Power supply error

When a power supply problem is detected, the Alarm LED lights up in orange, the power fail LED of the power unit in which the error has occurred lights up in orange, and an error is recorded in the event log. Verify that the AC power supply for the failed power unit is normal and the cable has not come loose.

If some other reason has caused the power fail LED to light up, contact the vendor's service department.

## Memory error

Startup diagnostic tests are run after the power is turned on. If a memory error is detected at this stage, the Alarm LED blinks, but an event log entry is not created. If a memory error is detected during operation, an event log entry is created and the system automatically reboots. Note that whether or not a memory error results in an event log entry is a matter of timing.

If memory errors occur repeatedly, contact the vendor's service department.

## Xenpak error

If an error is detected in one of the Xenpak modules, it will be recorded in the event log. In addition, if it is a temperature or laser output error the affected Xenpak module is shutdown.

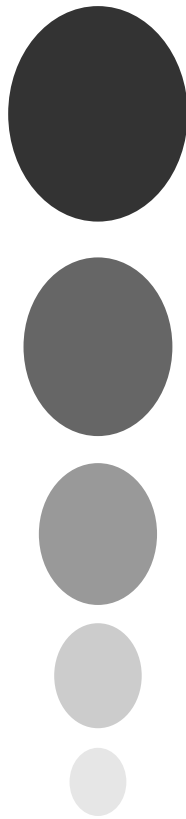
If a temperature error is recorded in the log, check that the ambient and internal rack temperatures are within the specified range, and adjust if necessary.

If Xenpak errors occur repeatedly, contact the vendor's service department.



# Appendix

This appendix explains XG1200 specifications.



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# Appendix-A Specifications

This section details the specifications of XG1200.

## A.1 Product Specifications

The product specifications of the XG1200 are as follows:

Items		Overview
10 Gigabit ports	Port 1 - Port 12	IEEE802.3ae/ak compliant 10 Gigabit Ethernet port × 12 (for Xenpak modules)
Serial port		RS-232C D-SUB9 × 1 Console connection port
Management LAN	Mng-LAN	10BASE-T/100BASE-TX × 1
Indicators	LED	Power (Green), Alarm (Orange), Status (Green) Front fan, Rear fan, Power supply units

## A.2 Installation Specifications

The installation specifications of the XG1200 are as follows:

Items		Specifications
Dimensions (Excluding protrusions)	Width	440mm
	Depth	480mm
	Height	86.9mm
Maximum weight		20kg
Power Cord		for 3-pin socket (grounded)
Power source	Voltage	AC100 (-10%) - 240V (+10%)
	Phase	Single-phase
	Frequency	50 or 60Hz (+2% / -4%)
Input current		100 - 240V 2.8 - 1.2A/Input
Ambient temperature	XG1200 on	+5 - +40°C (Inlet temperature)
	XG1200 off	0 - +50°C (Inlet temperature)
Ambient humidity	XG1200 on	20 - 80%RH (Non-condensing)
	XG1200 off	8 - 90%RH (Non-condensing)
Temperature gradient	XG1200 on	15°C/hr or less (Non-condensing)
	XG1200 off	
Ambient dust		0.15mg/m <sup>3</sup> or less
Ambient noise		55dB or less
Electromagnetic compatibility		FCC Class A CE Marking
Service area	Front	800mm
	Rear	800mm
Installation		2U in a 19-inch rack (occupies two pitches)

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## **XG1200 Hardware Guide**

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