

# FortiSwitch 448D

# Register for Support

Register your Fortinet product to receive:

- Technical Support
- New product features
- Protection from new threats

Vous devez enregistrer le produit pour recevoir:

- Support technique
- Nouvelles fonctionnalités du produit
- Protection contre de nouvelles menaces

La registrazione ti permette di usufruire di:

- Supporto Tecnico
- Nuove funzionalità
- Protezione dalle ultime minacce

Debe registrar el producto para recibir:

- Apoyo técnico
- Nuevas funcionalidades del producto
- Protección contra ataques

## 登録のお願い

本日、フォーティネット製品の登録をしてください。

登録すると次のメリットがあります。

テクニカルサポート・新機能の追加・新しい脅威への防御

## 请马上注册

您的飞塔产品

您在注册以后才能得到技术支持、新产品特点信息、最新威胁防护



September 03, 2020

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<https://support.fortinet.com>

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Phone: 1 408 486 7899

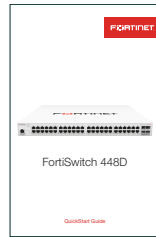
Fax: 1 408 235 7737

Email: [register@fortinet.com](mailto:register@fortinet.com)

# Box Includes



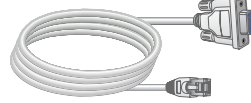
FortiSwitch 448D



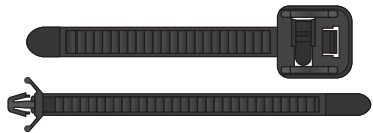
QuickStart Guide



2x Power Cables (FS-448D & 448D-FPOE)  
1x Power Cable (FS-448D-POE)



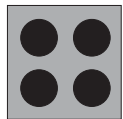
1x Console Cable



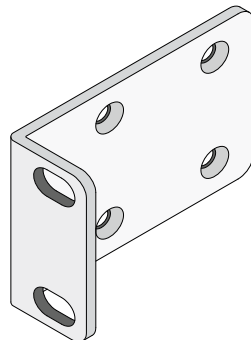
2x Power Cable Straps  
(FS-448D-FPOE only)



8x Bracket Screws

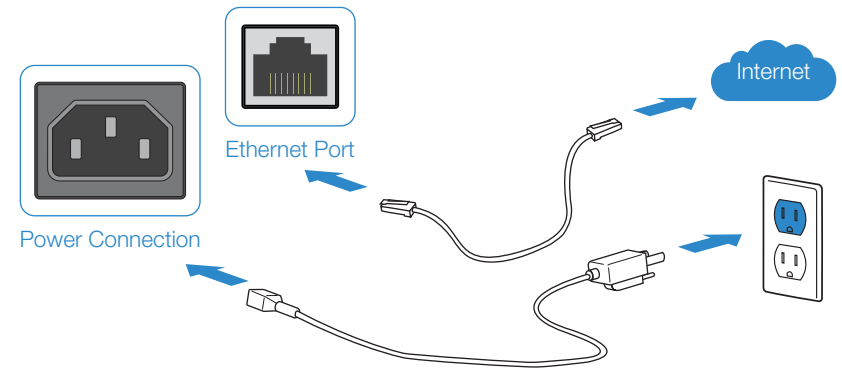


4x Rubber Feet



2x Rack-Mount Brackets

## 1 Basic Connections



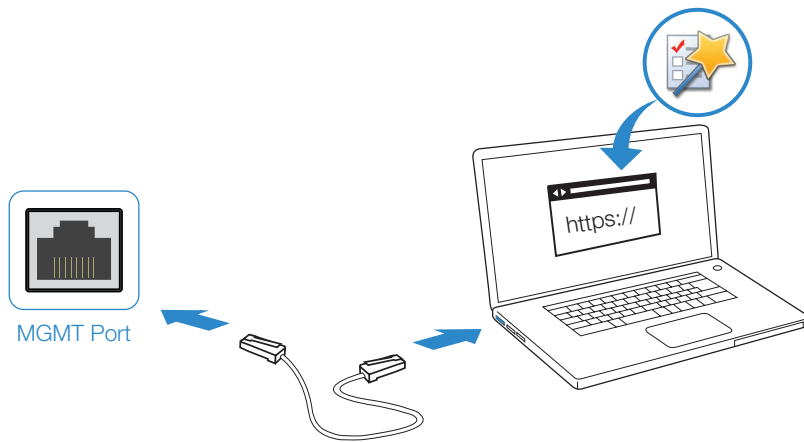
Connect your device to a **power outlet** and an **Internet connection**. This is usually a modem, but could also be another device on your network.

## 2 Setup Options

**A** Web Browser  
Setup Wizard (p.6)

**B** Terminal Emulation  
With console cable (p.7)

## A Web Browser with Ethernet cable



### GUI

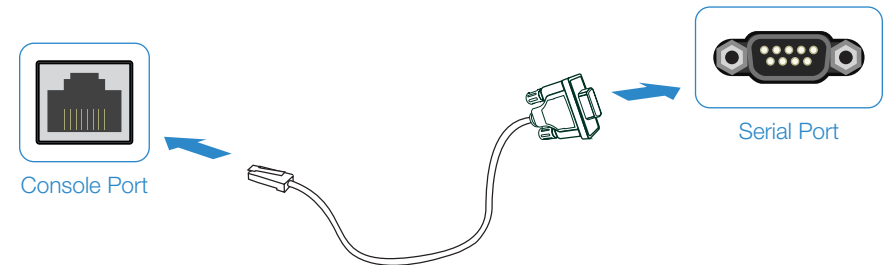
1. Connect an [Ethernet cable](#).
2. Configure the management computer to be on the same [subnet](#) as the internal interface as the FortiSwitch unit:

**IP address:** 192.168.1.XXX

**Netmask:** 255.255.255.0

3. Visit <https://192.168.1.99> in your web browser.
4. Login using username "[admin](#)" and [no password](#).
5. [Configure your device](#) and save your settings.
6. [Register your device](#) from the dashboard page.

## B Terminal Emulation with Console Cable



### To Connect to the CLI

1. Connect the device's [console port](#) to the management computer using the provided [console cable](#).
2. Start a [terminal emulation program](#) on the management computer, select the [COM port](#), and use the following settings:

**Baud Rate:** 115200

**Data bits:** 8

**Parity:** None

**Stop bits:** 1

**Flow Control:** None

3. Press [Enter](#) on your keyboard to [connect to the CLI](#).
4. Login using username "[admin](#)" and no password. You can now proceed with configuring your device.

Get started by typing "?" for a list of available [commands](#).

Begin typing a command then type "?" for a list of available ways to complete. For example "[config ?](#)" will show the lowest level of configuration options.

### 3 Installation

The FortiSwitch unit can be placed on any [flat surface](#), or mounted in any standard [19 inch rack](#) unit with the provided rack-mount brackets and screws.

*Please read "Cautions and Warnings" prior to installing your device.*

#### Caution:

Electrostatic discharge (ESD) can damage your Fortinet equipment.

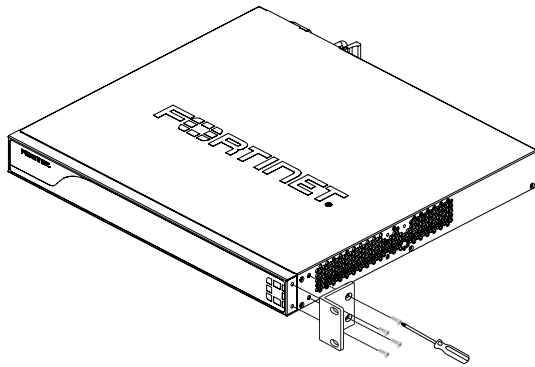
Do not place heavy objects on the unit.

To avoid personal injury or damage to the unit, it is recommended that two or more people install the unit into the rack.

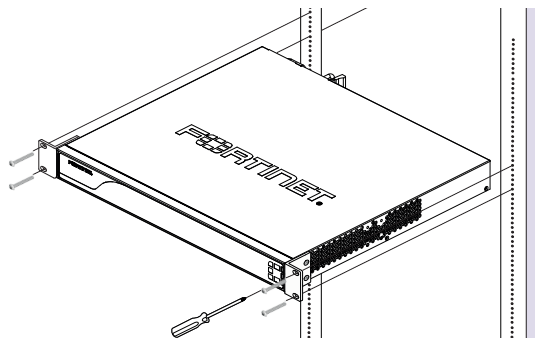
**Note:** If the unit has a redundant power supply, each power cable should be connected to a different power source. In this way, if one power source fails, the other may still be operational and the unit will not lose power.

#### To install the FortiSwitch unit into a rack

1. Ensure that the FortiSwitch unit is placed on a stable surface prior to [rack-mount](#) installation.
2. Attach the provided [rack-mount brackets](#) to the sides of the unit using the provided [bracket screws](#).



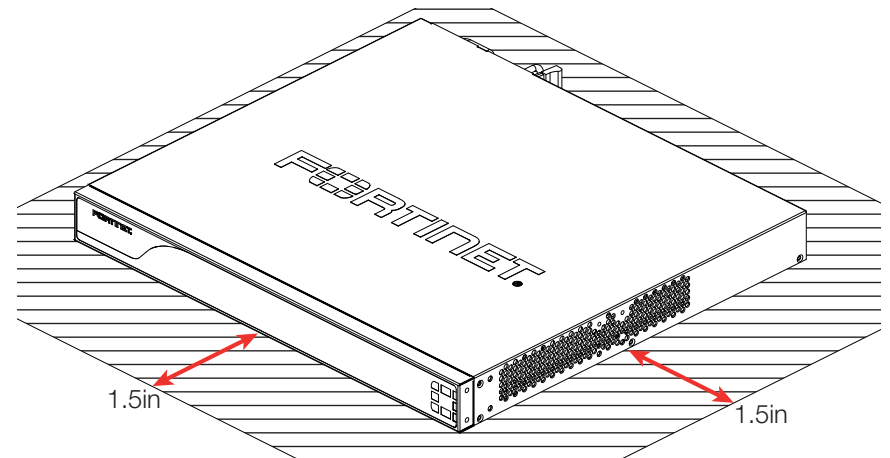
3. Position the FortiSwitch unit in the [rack](#). Ensure there is enough room around the unit to allow for sufficient air flow.



4. Line up the [rack-mount bracket holes](#) to the [holes on the rack](#) and ensure that the FortiSwitch unit is [level](#).
5. Finger tighten [four rack-mount screws](#) to attach the unit to the [rack](#).
6. Verify that the spacing around the FortiSwitch unit conforms to requirements and that the unit is [level](#), then tighten the [rack-mount screws](#) with an appropriate [screwdriver](#).
7. Plug the provided [power cable](#) into the rear of the unit, and then into a [grounded electrical outlet](#) or a separate power source such as an [uninterruptible power supply \(UPS\)](#) or a [power distribution unit \(PDU\)](#).

#### To install the unit on a flat surface

1. Ensure that the surface onto which the FortiSwitch unit to be installed is clean, level, and stable and that there is at least [1.5in \(3.8cm\)](#) of clearance on all sides to allow for adequate airflow.
2. Attach the provided [rubber feet](#) to the bottom of the FortiSwitch unit.
3. Place the unit in the designated location.
4. Verify that the spacing around the FortiSwitch unit conforms to requirements and that the unit is [level](#).



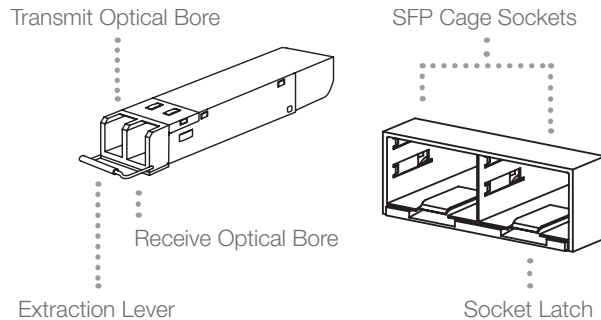
5. Plug the provided [power cable](#) into the rear of the unit, and then into a [grounded electrical outlet](#) or a separate power source such as an [uninterruptible power supply \(UPS\)](#) or a [power distribution unit \(PDU\)](#).

# SFP Transceivers

**Caution:** SFP transceivers are static sensitive devices. Use an ESD wrist strap or similar grounding device when handling transceivers.

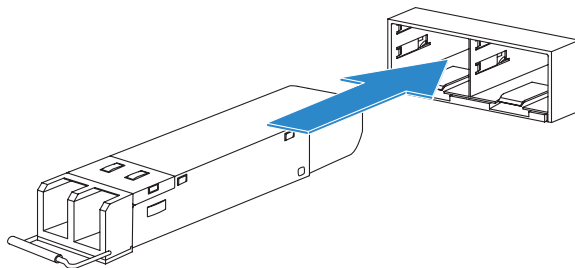
Do not install or remove SFP transceivers while fiber-optic cables are still attached. This can cause damage to the cables, cable connectors, and the optical interfaces. It may also prevent the transceiver from latching correctly into the socket connector.

**Note:** Installing and removing SFP transceivers can shorten their useful life. Do not install or remove transceivers more than is necessary.



## To install the SFP transceivers

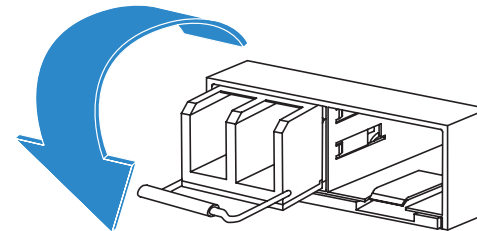
1. Ensure that you are properly grounded.
2. Remove the caps from the SFP cage sockets on the front panel of the unit.
3. Position the SFP transceiver in front of the cage socket opening and ensure that the transceiver is correctly oriented. When the transceiver is correctly oriented, the extraction lever will be level with the socket latch.  
**Note:** SFP cage socket orientation may vary. Ensure that the SFP transceiver module is correctly oriented each time that you are inserting a transceiver.
4. Hold the sides of the SFP transceiver and slide it into the cage socket until it clicks into place.



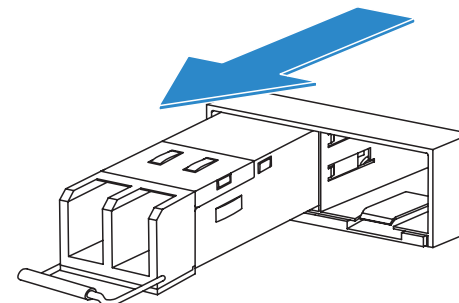
5. Press the transceiver firmly into the cage socket with your thumb.
6. Verify that the transceiver is latched correctly by grasping the sides of the transceiver and trying to pull it out without lowering the extraction lever.  
If the transceiver cannot be removed, it is installed and latched correctly.  
If the transceiver can be removed, reinsert it and press harder with your thumb.  
If necessary, repeat this process until the transceiver is securely latched into the cage socket.

## To remove the SFP transceivers

1. Ensure that you are properly grounded.
2. If applicable, disconnect the fiber-optic cable from the transceiver connector and install a clean dust plug in the transceiver's optical bores.
3. Pull the extraction lever out and down to eject the transceiver. If you are unable to use your finger to open the lever, use a small flat-head screwdriver or other similar tool to open the lever.



4. Hold the sides of the transceiver and carefully pull it away from the cage socket.



5. Replace the cap on the SFP cage socket and place the removed SFP transceiver into an antistatic bag.

**Caution:** Do not force the SFP transceivers into the cage slots. If the transceiver does not easily slide in and click into place, it may not be aligned correctly or may be upside down. If this happens, remove the SFP transceiver, realign it or rotate it and slide it in again.

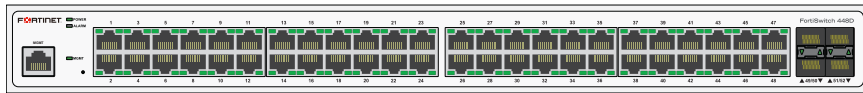
**Note:** Follow proper fiber-optic handling procedures when installing and removing SFP transceivers to ensure the devices remain clean and are not damaged.

## Ethernet Ports Link/Activity

- Green: Connected
- Flashing Green: Transmitting & receiving data
- Off: No link established

## Ethernet Ports Speed

- Green: Connected at 1Gbps
- Amber: Connected at 100Mbps
- Off: Connected at 10Mbps or not in use



## SFP Ports Link/Activity

- Green: Connected
- Flashing Green: Transmitting & receiving data
- Off: No link established

## SFP+ Ports Speed

- Green: Connected at 10Gbps
- Amber: Connected at 1Gbps

## Power

- Green: The unit is on
- Off: The unit is off

## Alarm

- Amber: The unit has a fault
- Off: No faults detected

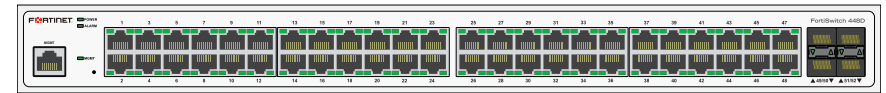
## MGMT

- Green: Connected
- Flashing Green: Transmitting & receiving data
- Off: No link established



## Ethernet Ports 1 to 48 (RJ-45)

Gigabit Ethernet network connections



## MGMT (RJ-45)

Client port for management

Default IP address is 192.168.1.99

## SFP+ Ports 49 to 52 (SFP+)

10Gbps small form-factor pluggable transceiver ports

## Console (RJ-45)

Optional connection to the management computer

Provides access to the CLI

## Power

100-240V AC, 50-60Hz, 1.4A Max  
Redundant power supplies



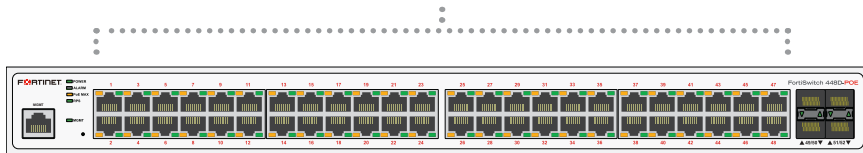
# FortiSwitch 448D-POE

## PoE Ports Link/Activity

- Green: Connected
- ⚡ Flashing Green: Transmitting & receiving data
- Off: No link established

## PoE Ports Power

- Amber: Providing power
- Off: Not providing power



## SFP Ports Link/Activity

- Green: Connected
- ⚡ Flashing Green: Transmitting & receiving data
- Off: No link established

## SFP+ Ports Speed

- Green: Connected at 10Gbps
- Amber: Connected at 1Gbps

## Power

- Green: The unit is on
- Off: The unit is off

## Alarm

- Amber: The unit has a fault
- Off: No faults detected

## PoE MAX

- Amber: Maximum output power budget reached
- Off: Power available for new PD

## RPS

- Green: Power on and the RPS DC input is normal
- Amber: RPS failure
- Off: Power off, no connection

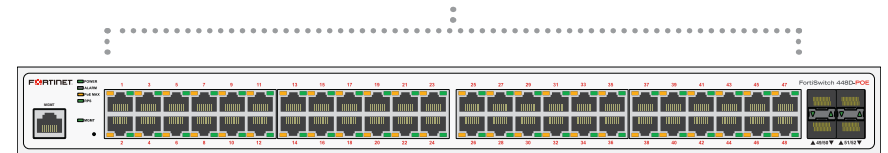
## MGMT

- Green: Connected
- ⚡ Flashing Green: Transmitting & receiving data
- Off: No link established



## Ethernet Ports 1 to 48 (RJ-45)

Gigabit Ethernet ports with smart Power over Ethernet (PoE) providing up to a maximum of 370W for all ports



## MGMT (RJ-45)

Client port for management  
Default IP address is 192.168.1.99

## SFP+ Ports 49 to 52 (SFP+)

10Gbps small form-factor pluggable transceiver ports

## Console (RJ-45)

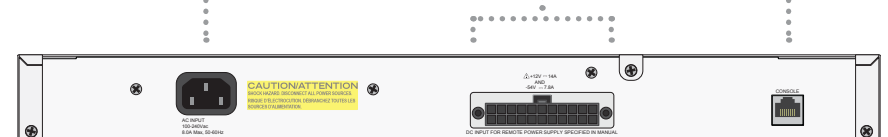
Optional connection to the management computer  
Provides access to the CLI

## Power

100-240V AC, 50-60Hz, 8A Max

## RPS

Optional connection for redundant power  
12V DC, 14A and -54V DC, 7.8A



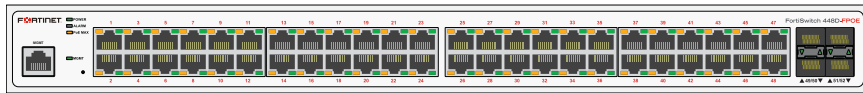


## PoE Ports Link/Activity

- Green: Connected
- ⚡ Flashing Green: Transmitting & receiving data
- Off: No link established

## PoE Ports Power

- Amber: Providing power
- Off: Not providing power



## SFP Ports Link/Activity

- Green: Connected
- ⚡ Flashing Green: Transmitting & receiving data
- Off: No link established

## SFP+ Ports Speed

- Green: Connected at 10Gbps
- Amber: Connected at 1Gbps

## Power

- Green: The unit is on
- Off: The unit is off

## Alarm

- Amber: The unit has a fault
- Off: No faults detected

## PoE MAX

- Amber: Maximum output power budget reached
- Off: Power available for new PD

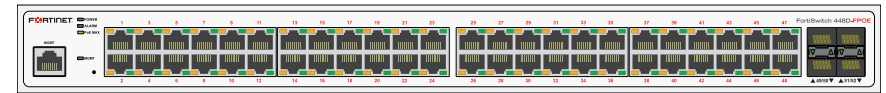
## MGMT

- Green: Connected
- ⚡ Flashing Green: Transmitting & receiving data
- Off: No link established



## Ethernet Ports 1 to 48 (RJ-45)

Gigabit Ethernet ports with smart Power over Ethernet (PoE) providing up to a maximum of 740W for all ports



## MGMT (RJ-45)

Client port for management  
Default IP address is 192.168.1.99

## SFP+ Ports 49 to 52 (SFP+)

10Gbps small form-factor pluggable transceiver ports

## Console (RJ-45)

Optional connection to the management computer  
Provides access to the CLI

## Power

100-240V AC, 50-60Hz, 10A Max  
Redundant power supplies



## Cautions and Warnings

### Environmental Specifications

Ambient operating temperature: 0°C to 40°C

Rack Mount Instructions - The following or similar rack-mount instructions are included with the installation instructions:

Instructions de montage en rack - Les instructions de montage en rack suivantes ou similaires sont incluses avec les instructions d'installation:

Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T<sub>ma</sub>) specified by the manufacturer.

Température ambiante élevée – S'il est installé dans un rack fermé ou à unités multiples, la température ambiante de fonctionnement de l'environnement du rack peut être supérieure à la température ambiante de la pièce. Par conséquent, il est important d'installer le matériel dans un environnement respectant la température ambiante maximale (T<sub>ma</sub>) stipulée par le fabricant.

Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

Ventilation réduite – Installation de l'équipement dans un rack doit être telle que la quantité de flux d'air nécessaire au bon fonctionnement de l'équipement n'est pas compromise.

Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

Chargement Mécanique – Montage de l'équipement dans le rack doit être telle qu'une situation dangereuse n'est pas lié à un chargement mécanique inégal.

Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Surtension – Il convient de prendre l'ensemble des précautions nécessaires lors du branchement de l'équipement au circuit d'alimentation et être particulièrement attentif aux effets de la suralimentation sur le dispositif assurant une protection contre les courts-circuits et le câblage. Ainsi, il est recommandé de tenir compte du numéro d'identification de l'équipement.

Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

Fiabilité de la mise à la terre– Fiabilité de la mise à la terre de l'équipement monté en rack doit être maintenue. Une attention particulière devrait être accordée aux connexions d'alimentation autres que les connexions directes au circuit de dérivation (par exemple de l'utilisation de bandes de puissance).

*Refer to specific Product Model Data Sheet for Environmental Specifications (Operating Temperature, Storage Temperature, Humidity, and Altitude)*

*Référez à la Fiche Technique de ce produit pour les caractéristiques environnementales (Température de fonctionnement, température de stockage, humidité et l'altitude).*

### Safety

Warning: Equipment intended for installation in Restricted Access Location.

Avertissement: Le matériel est conçu pour être installé dans un endroit où l'accès est restreint.

Caution: This equipment is to be used in a Network Environment 0 per IECTR 62101. This product is connected only to PoE networks without routing to the outside plant.

Attention: Ce matériel doit être utilisé dans un Environnement Réseau 0 par IECTR 62101. Ce produit est uniquement connecté aux réseaux PoE sans installation externe de routage.

The RPS connection is intended to be connected to the power source from Fortinet IEC certified/UL Listed equipment. The power rating of the product must be less than or equal to the output rating of the power source.

La connexion de RPS est destiné à être relié à la source de Fortinet CEI de matériel homologué / Listé UL puissance. La puissance nominale du produit doit être inférieure ou égale à la puissance nominale de sortie de la source d'alimentation.

CAUTION: Shock Hazard. Disconnect all power sources.

ATTENTION: Risque d'électrocution. Débranchez toutes les sources d'alimentation.

## Regulatory Compliance

### Federal Communication Commission (FCC) – USA

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received; including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

WARNING: Any changes or modifications to this product not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

### Industry Canada Equipment Standard for Digital Equipment (ICES) – Canada

CAN ICES-3 (A) / NMB-3 (A)

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Cet appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

### European Conformity (CE) - EU

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.



### Product Safety Electrical Appliance & Material (PSE) - Japan

日本では電気用品安全法(PSE)の規定により、同梱している電源コードは本製品の専用電源コードとして利用し、他の製品に使用しないでください。

### Voluntary Control Council for Interference (VCCI) – Japan

この装置は、クラスA 情報技術装置です。この装置を 家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。V C C I – A

### Bureau of Standards Metrology and Inspection (BSMI) – Taiwan

這是甲類射頻電機產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

The presence conditions of the restricted substance (BSMI RoHS table) are available at the link below:

<https://www.fortinet.com/bsmi>

### China

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。这种情况下，可能需要用户对其采取切实可行的措施。

### Agência Nacional de Telecomunicações (ANATEL) – Brazil

For FS-448D and FS-448D-FPOE

Este produto não é apropriado para uso em ambientes domésticos, pois poderá causar interferências eletromagnéticas que obrigam o usuário a tomar medidas necessárias para minimizar estas interferências.

Para maiores informações, consulte o site da ANATEL <http://www.anatel.gov.br>

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