

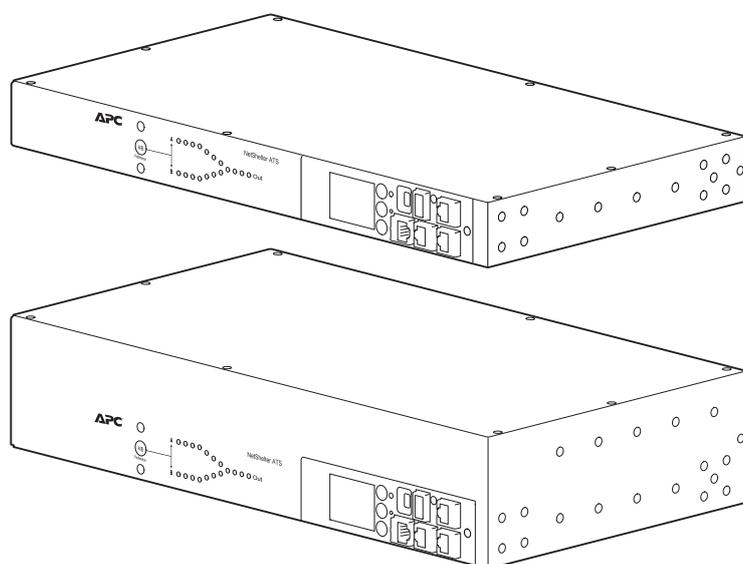
# Rack ATS with Network Management Card 3 Installation



AP44XXA

990-91717A-001

Release Date: December 2022



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# Important Safety Instructions — SAVE THESE INSTRUCTIONS

Read these instructions carefully and look at the equipment to become familiar with it before trying to install, operate, service or maintain it. The following safety messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety message indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert the user to potential personal injury hazards. Obey all safety messages with this symbol to avoid possible injury or death.

## **⚠ DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, **will result in death or serious injury.**

**Failure to follow these instructions will result in death or serious injury.**

## **⚠ WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, **could result in death or serious injury.**

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## **⚠ CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, **could result in minor or moderate injury.**

**Failure to follow these instructions can result in injury or equipment damage.**

## **NOTICE**

**NOTICE** is used to address practices not related to physical injury. The safety alert symbol shall not be used with this type of safety message.

**Failure to follow these instructions can result in equipment damage.**

## Please Note

Electrical equipment should only be installed, operated, serviced, and maintained by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Always abide strictly by local laws and regulations in force in the place of installation.

## Safety Information for the Rack ATS

### DANGER

#### HAZARD OF ELECTRIC SHOCK

- High leakage current from attached loads is possible. If total leakage current will exceed 3.5mA, attach a ground wire from the Rack ATS supplementary ground (M4 thread) to a reliable ground in your facility before energizing the Rack ATS.
- Do not operate the Rack ATS with the covers removed.
- No user-serviceable parts inside. Refer servicing to qualified personnel.
- Use indoors only in a dry location.
- Use only the supplied hardware to attach mounting and cable control accessories.

**Failure to follow these instructions will result in death or serious injury.**

### NOTICE

#### HAZARD OF EQUIPMENT DAMAGE

- The ambient operating temperature of a closed or multi-unit rack environment may be greater than the ambient temperature of the room. Ensure the ambient operating temperature of your rack environment does not exceed the rated ambient operating temperature for the device.
- Ensure the device is mounted securely and evenly.

**Failure to follow these instructions can result in equipment damage.**

### NOTICE

#### HAZARD OF EQUIPMENT DAMAGE

- Do not plug a Rack ATS into a generator without the protection of a Double Conversion On-Line Uninterruptible Power Supply (UPS).
- The Rack ATS is only compatible with a Double Conversion On-Line UPS and not a Line Interactive UPS. (See White Paper 1, *The Different Types of UPS Systems*, on [www.apc.com](http://www.apc.com) for more information.)

**Failure to follow these instructions can result in equipment damage.**

To find a white paper, go to [www.apc.com](http://www.apc.com). Select Support > Product Documentation and Software. From the Document Category list, select White Papers. Enter the title or subject of the white paper in the search bar, then click the magnifying glass icon to view the search results.

## Preliminary Information

The APC™ Rack Automatic Transfer Switch (Rack ATS) with Network Management Card 3 (NMC3) provides redundant power to single-corded equipment loads, such as servers. The Rack ATS has two input power cords that supply power to the connected loads from both a primary and secondary power source. If the primary source becomes unavailable or goes out of the configured power range, the Rack ATS will switch to draw power from the secondary source without interrupting critical loads. The Rack ATS has built-in network connectivity, which allows remote management via the Web User Interface (Web UI), its Command Line Interface (CLI), Data Center Expert™, EcoStruxure™ IT, or Simple Network Management Protocol (SNMP).

**NOTE:** A Network Management Card (NMC) is a Web-based device that manages communication with third-party systems (such as your network). The NMC supports a single management interface across a variety of APC products for a more uniform customer experience.

**NOTE:** Update your firmware to the latest version after startup. Check [www.apc.com](http://www.apc.com) for the latest version of the Rack ATS firmware. Enter the model number for your equipment in the Search bar of the website's home page ([www.apc.com](http://www.apc.com)). Select the desired product from the search results to open that product page. Select the Software & Firmware tab on the product page to view and download any available firmware for that product. You can find detailed instructions to update the firmware in the *User Guide* on [www.apc.com](http://www.apc.com).

## Available Power Cords

Power cords are not provided with the following units:

- For AP4421A use a properly IEC rated, VDE/HAR certified power cord, rated 300 VAC, 3 x 1.0 mm<sup>2</sup> minimum, with approved plug and outlet, for use on listed information technology equipment.
- For AP4423A use a properly IEC rated, VDE/HAR certified power cord, rated 300 VAC, 3 x 1.5 mm<sup>2</sup> minimum, with approved plug and outlet, for use on listed information technology equipment.
- For AP4433A use a properly rated, UL Listed/CSA certified power cord, rated 300 VAC, 14 AWG minimum, with approved plug and outlet, for use on listed information technology equipment.
- For AP4434A use a properly rated, UL Listed/CSA certified power cord, rated 300 VAC, 12 AWG minimum, with approved plug and outlet, for use on listed information technology equipment.

The length of the power cord should be a minimum of 1.5 m and a maximum of 4.5 m, unless intended for special installation such as dedicated equipment intended to be mounted near a receptacle.

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## Additional Documentation

You can find the latest version of this manual and additional documentation on [www.apc.com](http://www.apc.com):

- *Safety Sheet*: Includes critical safety information for the Rack ATS.
- *User Guide*: Instructions to configure and manage your Rack ATS firmware.
- *Release Notes*: Describes new features, fixed issues, and known issues for the latest firmware version.
- *Security Handbook*: Describes security features for the Network Management Card and for devices with embedded components of the Network Management Card.

To find product documentation, enter the model number for your equipment in the Search bar of the website's home page ([www.apc.com](http://www.apc.com)). Select the desired product from the search results to open that product page. Select the Documentation tab on the product page to view the list of available literature for that product. Literature can be opened within the website or downloaded as a pdf.

## Receiving Inspection

Inspect the package and contents for shipping damage, and make sure that all parts were sent. Report any shipping damage immediately to the shipping agent, and report missing contents, damage, or other problems immediately to APC or your APC re-seller.

## Please Recycle

The shipping materials are recyclable. Please save them for later use, or dispose of them appropriately.

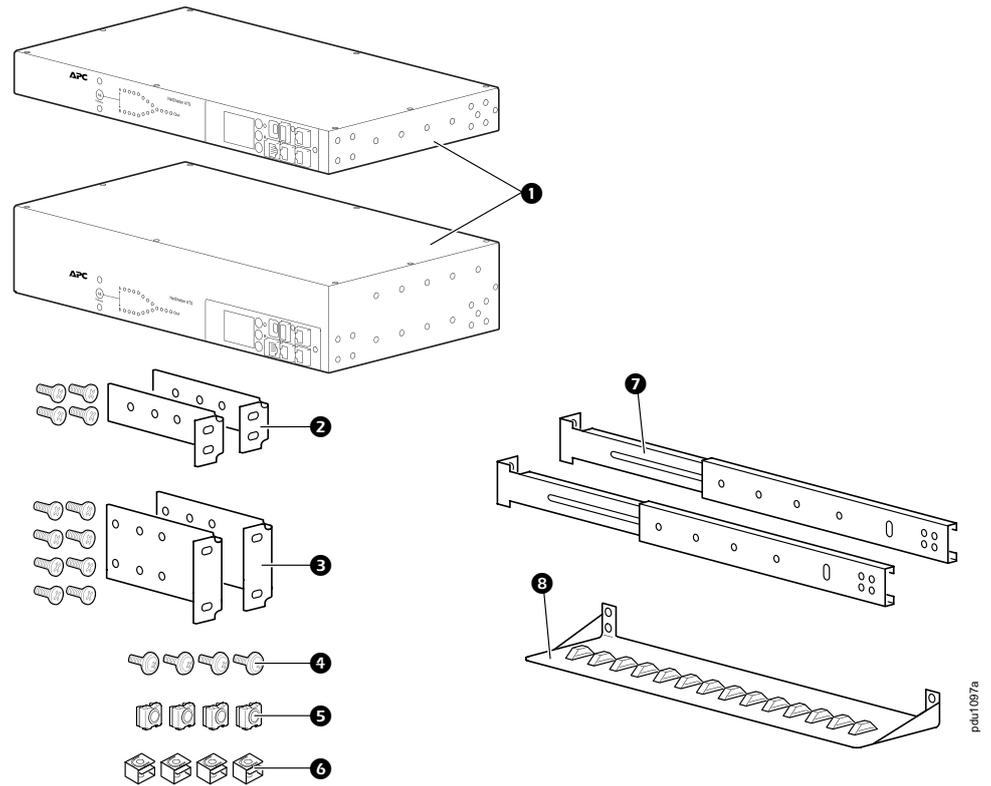
## Worldwide Customer Support

Support for this product is available at [www.apc.com](http://www.apc.com).

## User Comments

We welcome your comments about this document. Contact us at [www.apc.com](http://www.apc.com).

# Inventory



Item	Description
1	Rack ATS, 1 U or 2 U
2	1-U rack-mount bracket kit (provided with 1-U Rack ATS models)
3	2-U rack-mount bracket kit (provided with 2-U Rack ATS models)
4	Phillips screws, 10-32 x 0.5 in
5	Cage nuts, 10-32 (for use with square holes)
6	Clip-on nuts, 10-32 (for use with round, un-threaded holes)

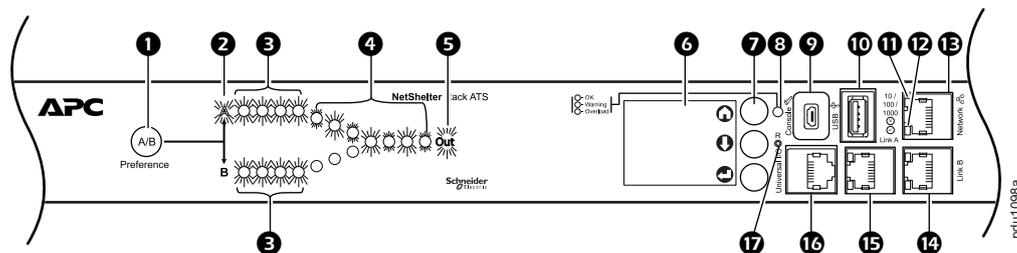
#### Additional options (not provided)

7	Front and rear rail segments AP7768
8	Cord retention bracket AP7769

**NOTE:** Some 2-U models may contain ferrite beads and an RJ12 to DB-9 serial cable. These are not used.

**NOTE:** Install the Rack ATS with front and rear rail segments for increased stability. The front/rear rail segments and cord retention bracket are available on the APC website, [www.apc.com](http://www.apc.com).

# Front Panel Overview



Your Rack ATS is configured so the display backlight turns off after 10 minutes of inactivity. Press any display navigation button to illuminate the backlight.

Item	Function
1 Preference A/B Button	Press to set a preferred power source: the first press sets Source A, the second press sets Source B, and the third press sets no preference.
2 Source A and B LEDs	Indicates preferred power source. If no source is preferred, both LEDs are illuminated. You can also see the Preferred Source on the LCD Display.
3 Input Connector LEDs	Provides information about input voltage from each source. If the RMS input voltage and measured frequency are within the selected tolerance range, the corresponding LED will be illuminated. In a normal operating condition (full source redundancy) both sets of LEDs are illuminated.
4 Output Connector LEDs	Indicates which source is being used for the output (only one path will be illuminated at any time). Together, the Source Preference LEDs, the Connector LEDs, and the Output LED show the power flow through the Rack ATS.
5 Output LED	Shows that voltage is available at the output for the Rack ATS.
6 LCD Display	View Rack ATS status, settings, and product information. See the <i>User Guide</i> on <a href="http://www.apc.com">www.apc.com</a> for more information on LCD display screens.
7 Display navigation buttons	On the LCD Display, icons indicate the purpose of adjacent buttons. ⏪ Home: Press to move through monitor screens or return to monitor screens from sub-menus. ⏩ Down: Press to move through monitor screens or menu items. ⏹ Select: Press to select menu items or navigate to the main menu from monitor screens.
8 Device Status LED	See Device Status LED, page 11.
9 Console port	Connect your computer to the Rack ATS for local access to the CLI. Use a Micro USB cable (not provided).
10 USB port	Use USB drives for firmware upgrades.
11 10/100/1000 Status LED	See 10/100/1000 Status LED, page 11.
12 Network status LED	See Network Status LED, page 11.
13 Network Port	Connects the Rack ATS to the network using a network cable (not provided).
14 Link A and Link B ports	For use with the Network Port Sharing feature to connect multiple Rack ATS units to one another. Both ports can be used as the In or Out port. A terminator is not required.
16 Universal I/O	Port for connecting an optional APC Temperature Sensor (AP9335T) or an optional APC Temperature/ Humidity Sensor (AP9335TH).
17 Reset switch	Restarts the network and serial communication.

## Device Status LED

This LED identifies the alarm status for the Rack ATS.

Alarms may be related to the ATS hardware (for example, load threshold violations and redundancy loss) or environmental monitoring (for example, temperature threshold violations and sensor communication alarms).

Condition	Description
Solid Green	No Critical or Warning alarms are present.
Solid Yellow	At least one Warning alarm is present, but no Critical alarms are present.
Flashing Red	At least one Critical alarm is present.

## Network Status LED

This LED indicates the network status.

Condition	Description
Off	The Rack ATS is connected to an unknown network.
Solid green	The Rack ATS has valid TCP/IP settings.
Flashing green	The Rack ATS does not have valid TCP/IP settings. <sup>1</sup>
Solid orange	A hardware failure has been detected in the Rack ATS.
Flashing orange	The Rack ATS is making BOOTP requests.
Flashing orange and green (alternating)	The Rack ATS is making DHCP requests.
<sup>1</sup> If you do not use a BOOTP or a DHCP server, see the <i>User Guide</i> on <a href="http://www.apc.com">www.apc.com</a> to configure the TCP/IP settings.	

## 10/100/1000 Status LED

This LED indicates the network status of the Rack ATS.

Condition	Description
Off	One or more of the following situations exists: <ul style="list-style-type: none"> <li>The Rack ATS is not receiving input power.</li> <li>The cable that connects the Rack ATS to the network is disconnected or defective.</li> <li>The device that connects the Rack ATS to the network is turned off.</li> <li>The Rack ATS itself is not operating properly. It may need to be repaired or replaced. Contact Customer Support.</li> </ul>
Solid Yellow	The Rack ATS is connected to a network operating at 10–100 Megabits per second (Mbps).
Solid Green	The Rack ATS is connected to a network operating at 1000 Mbps.
Flashing Yellow	The Rack ATS is receiving or transmitting data packets at 10–100 Mbps.
Flashing Green	The Rack ATS is receiving or transmitting data packets at 1000 Mbps.

# Installation

## ⚡⚠ DANGER

### HAZARD OF ELECTRIC SHOCK

- High leakage current from attached loads is possible. If total leakage current will exceed 3.5mA, attach a ground wire from the Rack ATS supplementary ground (M4 thread) to a reliable ground in your facility before energizing the Rack ATS.
- Do not operate the Rack ATS with the covers removed.
- No user-serviceable parts inside. Refer servicing to qualified personnel.
- Use indoors only in a dry location.
- Use only the supplied hardware to attach mounting and cable control accessories.

**Failure to follow these instructions will result in death or serious injury.**

## NOTICE

### HAZARD OF EQUIPMENT DAMAGE

- The ambient operating temperature of a closed or multi-unit rack environment may be greater than the ambient temperature of the room. Ensure the ambient operating temperature of your rack environment does not exceed the rated ambient operating temperature for the device.
- Ensure the device is mounted securely and evenly.

**Failure to follow these instructions can result in equipment damage.**

# Cage Nuts

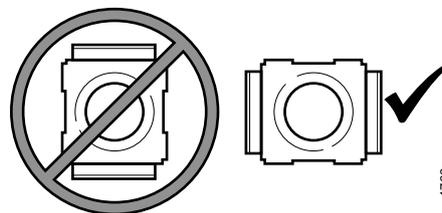
## ⚠ CAUTION

### FALLING EQUIPMENT

Do NOT install cage nuts vertically, with the ears engaging the top and bottom of the square hole.

**Failure to follow these instructions can result in injury or equipment damage.**

- Install cage nuts horizontally, with the ears engaging the sides of the square hole.
- Install the cage nuts on the interior of the vertical mounting rail.



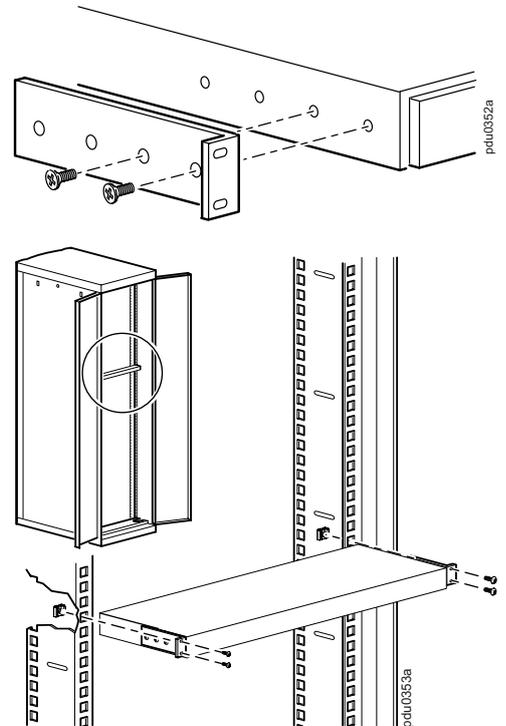
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# Mounting Options

You can mount the Rack ATS in an APC NetShelter® or other EIA-310-D standard 483-mm (19-in) rack.

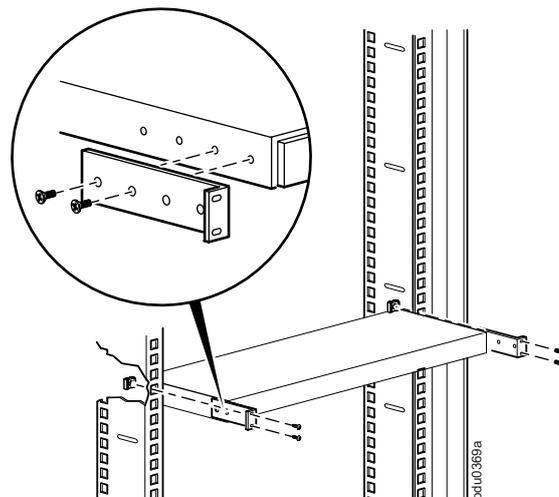
## Horizontal Mounting

1. Choose a mounting position for the Rack ATS with either the digital display or the rear panel facing out of the enclosure.
2. Attach the mounting brackets to the Rack ATS using the provided flat-head screws.
3. Choose a location for the unit. The unit occupies one or two U-spaces. A notched hole on the enclosure's vertical rail (or a number, on newer enclosures) indicates the middle of a U-space.  
 Insert cage nuts above and below the notched hole (or number) on each vertical mounting rail in your chosen location. (Use clip-on nuts for round, un-threaded holes.)
4. Align the mounting holes of the brackets with the installed cage nuts. Insert and tighten screws.



## Recessed Horizontal Mounting

You can mount the Rack ATS in a recessed configuration by attaching the brackets as shown in the following illustration:



# Connect the ATS

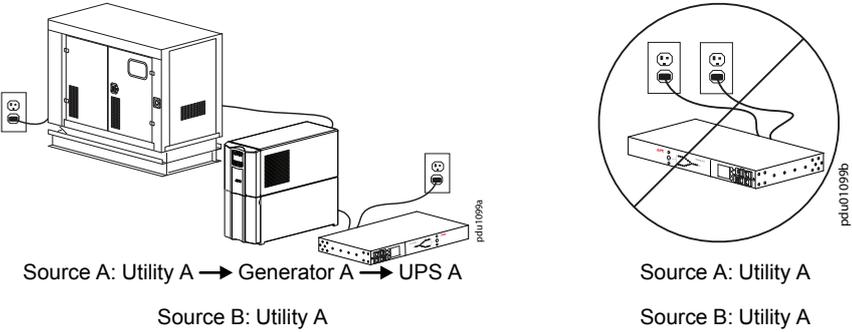
**NOTICE**

**HAZARD OF EQUIPMENT DAMAGE**

- Do not plug a Rack ATS into a generator without the protection of a Double Conversion On-Line Uninterruptible Power Supply (UPS).
- The Rack ATS is only compatible with a Double Conversion On-Line UPS and not a Line Interactive UPS. (See White Paper 1, *The Different Types of UPS Systems*, on [www.apc.com](http://www.apc.com) for more information.)

**Failure to follow these instructions can result in equipment damage.**

Plug the Rack ATS into two power sources that are independent of each other. The Rack ATS protects your equipment by drawing from a secondary power source when the primary source becomes unstable or unavailable. Without two independent sources, the Rack ATS is unable to protect your equipment.



**Source Configurations**

Source	Configuration	Configuration strength
A	Utility A → Generator A → UPS A	Better
B	Utility B → Generator B → UPS B	
A	Utility A → Generator A → UPS	Better
B	Utility B	
A	Utility A → Generator → UPS A	Good
B	Utility A	
A	Utility A → UPS A	Good
B	Utility B → UPS B	
A	Utility A → UPS	Good
B	Utility A	
A	Utility A	Weak
B	Utility B	
A	Utility A	Bad: sources A and B are not independent
B	Utility A	
A	Utility A → Generator A	Bad: see NOTICE
B	Utility B → Generator B	

## Two-year Factory Warranty

This warranty applies only to the products you purchase for your use in accordance with this manual.

## Terms of Warranty

Schneider Electric warrants its products to be free from defects in materials and workmanship for a period of two years from the date of purchase. Schneider Electric will repair or replace defective products covered by this warranty. This warranty does not apply to equipment that has been damaged by accident, negligence or misapplication or has been altered or modified in any way. Repair or replacement of a defective product or part thereof does not extend the original warranty period. Any parts furnished under this warranty may be new or factory-remanufactured.

## Non-transferable Warranty

This warranty extends only to the original purchaser who must have properly registered the product. The product may be registered at [www.apc.com](http://www.apc.com).

## Exclusions

Schneider Electric shall not be liable under the warranty if its testing and examination disclose that the alleged defect in the product does not exist or was caused by end user's or any third person's misuse, negligence, improper installation or testing. Further, Schneider Electric shall not be liable under the warranty for unauthorized attempts to repair or modify wrong or inadequate electrical voltage or connection, inappropriate on-site operation conditions, corrosive atmosphere, repair, installation, exposure to the elements, Acts of God, fire, theft, or installation contrary to Schneider Electric recommendations or specifications or in any event if the Schneider Electric serial number has been altered, defaced, or removed, or any other cause beyond the range of the intended use.

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## Warranty Claims

Customers with warranty claims issues may access the customer support network through the Support page, [www.apc.com/support](http://www.apc.com/support). Select your country from the country selection pull-down menu at the top of the Web page. Select the **Support** tab to obtain contact information for customer support in your region.

# Radio Frequency Interference

## USA—FCC

This equipment complies 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 or can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

## Canada—ICES

This Class A digital apparatus complies with Canadian ICES-003.

*Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.*

## Japan—VCCI

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス 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。

## Australia and New Zealand

**Attention:** 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.

## European Union

This product is in conformity with Electromagnetic Compatibility (EMC) requirements set forth by the EU directive 2014/30/EU of the European parliament and of the council of 26 February 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to CISPR 32/EN 55032:2015 for Emissions and EN 55024:2010+A1:2015 for Immunities.

**Attention:** This is a Class A product. In a domestic/residential environment this product may cause radio interference in which the user may be required to take adequate measures.

## United Kingdom

This product is in conformity with Electromagnetic Compatibility Regulations 2016 of the UK Legislation as applied to products being supplied in or into Great Britain from 1 January 2021.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to CISPR 32/EN 55032:2015 for Emissions and EN 55024:2010+A1:2015 for Immunities.

**Attention:** This is a Class A product. In a domestic/residential environment this product may cause radio interference in which the user may be required to take adequate measures.



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As standards, specifications, and design change from time to time,  
please ask for confirmation of the information given in this publication.

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