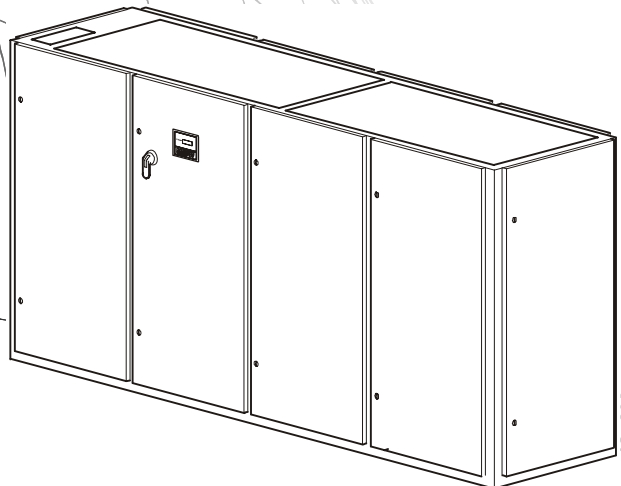


Installation

NetworkAIR[®] CW

CCT-CW



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General Information

Overview

Save these instructions

This manual contains important instructions that must be followed during the installation of this equipment.

Safety symbols that may be used in this manual



Electrical Hazard: Indicates an electrical hazard, which, if not avoided, could result in injury or death.



Danger: Indicates a hazard, which, if not avoided, could result in severe personal injury or substantial damage to product or other property.



Warning: Indicates a hazard, which, if not avoided, could result in personal injury or damage to product or other property.



Heavy: Indicates a heavy load that should not be lifted without assistance.



Caution: Indicates a potential hazard, which, if not avoided, could result in personal injury or damage to product or other property.

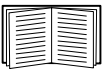


Tip Hazard: This equipment is easily tipped. Use extreme caution when unpacking or moving.



Note: Indicates important information.

Cross-reference symbols used in this manual



Indicates that more information is available on the same subject in a different section of this manual.



Indicates that more information is available on the same subject in a different manual.

Safety



Note: All work should be performed by APC authorized personnel only.

Follow all local and national codes when installing this system.

Only a licensed plumber may connect water lines.

For indoor use only.



Caution: Keep your hands, clothing, and jewelry away from moving parts.

Check the equipment for foreign objects before closing the doors and starting the unit.



Heavy: This equipment is heavy. For safety, at least two people must be present when moving or installing.

The equipment has a high center of gravity. Use extreme caution when unpacking and moving.

When using a forklift to move the equipment, make sure to lift only from the bottom.



Electrical Hazard: Only a licensed electrician or APC Field Service Engineer may connect the equipment to UPS power.

Only a licensed electrician may connect the equipment to utility power.

This equipment has multiple power sources. Disconnect all energy sources before servicing.

Do not wear jewelry when working near energized components.

Inspecting the Equipment

Your equipment has been tested and inspected for quality assurance prior to shipment from APC. To ensure that the equipment has not been damaged during transit, carefully inspect both the exterior and interior of the equipment immediately upon receipt.

Filing a claim

If damage is identified on receipt of the equipment, note the damage on the bill of lading and file a damage claim with the shipping company. Contact APC for information on filing a claim with the shipping company. The shipping claim must be filed at the receiving end of the delivery.



Note: In case of shipping damage, do not operate the equipment. Keep all packaging for inspection by the shipper and call APC at one of the numbers listed on the back cover of this manual.

Storing the Equipment Before Installation



Caution: Leaving the equipment uncovered and exposed to the elements can cause damage and will void the factory warranty.

Moving the Equipment

Moving the equipment through door openings. Depending upon your installation, you may need to remove the panels to prevent damage during handling.

When using chains, cable or rope to lift the equipment, use spreader bars to prevent damage to the panels.

Sockets are located in the bottom corners of the equipment and are sized to accept casters with 7/8-in stems (casters are available from the factory, if desired). Use casters to move the equipment through halls and rooms where forklifts are not practical.



Tip Hazard: The equipment is narrow and easily tipped. Use extreme caution to prevent tipping when unpacking or moving the equipment to its final location.

Moving the equipment requires a minimum of two people for safety. Push the equipment from the front only.



Warning: When using a forklift to move the equipment, make sure to lift only from the bottom. Use a forklift with extra-long forks due to the size of the equipment. Do not use a forklift if the equipment has been removed from its pallet.



Heavy: Do not attempt to move the equipment without assistance. Moving the equipment requires a minimum of two people for safety. Push the equipment from the front only.

Move the equipment to its final location

Select the appropriate tools for moving the equipment. Each site will have different needs and considerations.

Pallet jack



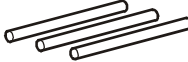
Furniture dollies (2)



Forklift



Roller bars

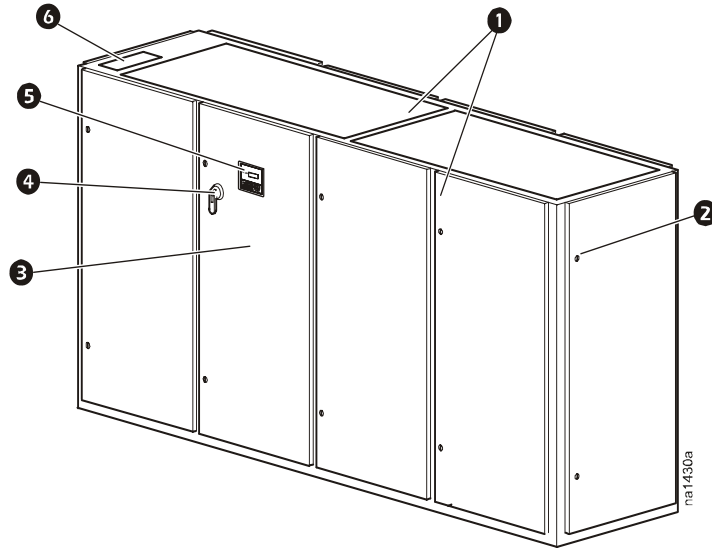


Wheeled lever



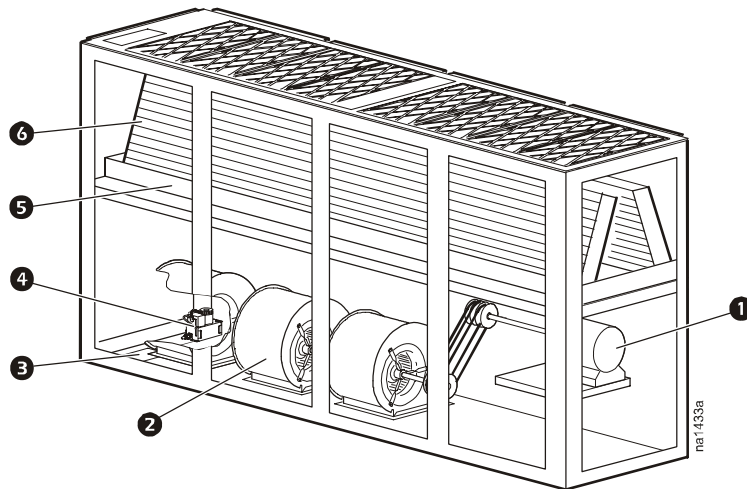
Component Identification

Downflow CW100—exterior



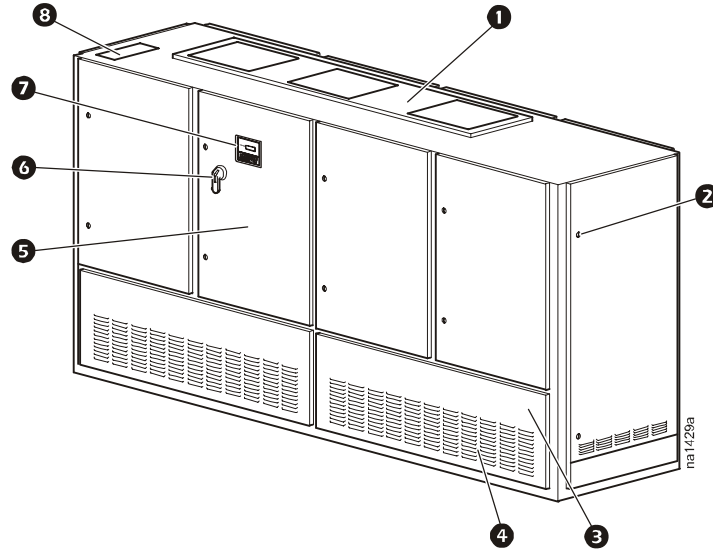
- 1 Top or front filter access
- 2 1/4-turn semi-flush latch
- 3 Electrical panel access
- 4 Disconnect handle
- 5 Display
- 6 Top piping and electrical access (optional)

Downflow CW100—interior



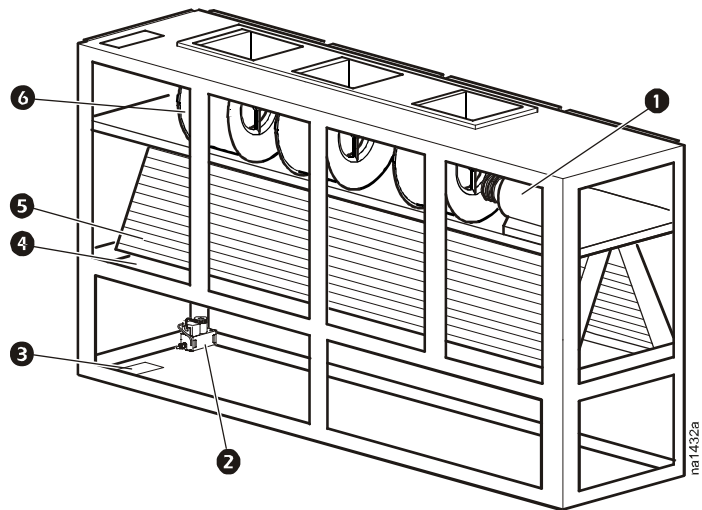
- 1 Blower motor
- 2 Blower (3)
- 3 Bottom piping and electrical access
- 4 Condensate pump
- 5 Condensate drip pan
- 6 A-frame cooling coils

Upflow CW100—exterior



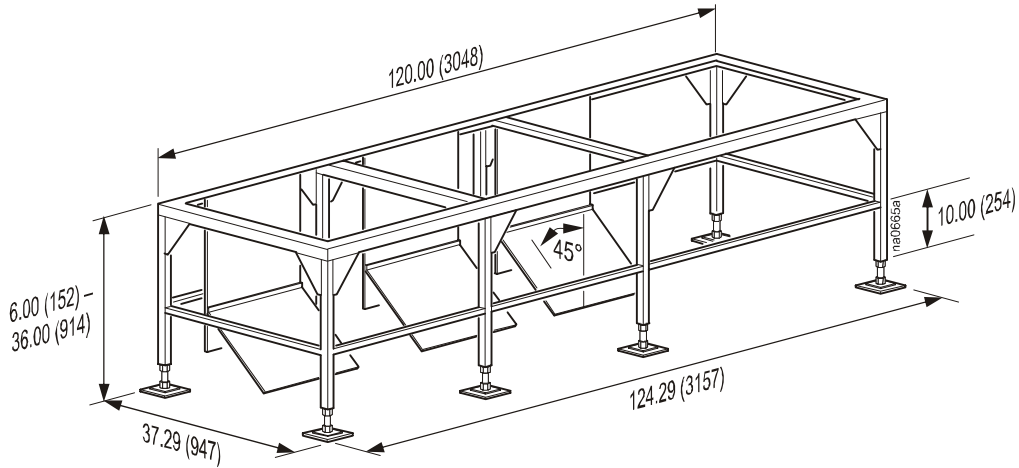
- | | |
|--|---|
| ❶ Blower discharge opening
(optional duct collar) | ❺ Electrical access panel |
| ❷ 1/4-turn semi-flush latch | ❻ Disconnect handle |
| ❸ Front filter access | ❼ Display |
| ❹ Return air louvers (optional) | ❽ Top piping and electrical access (optional) |

Upflow CW100—interior



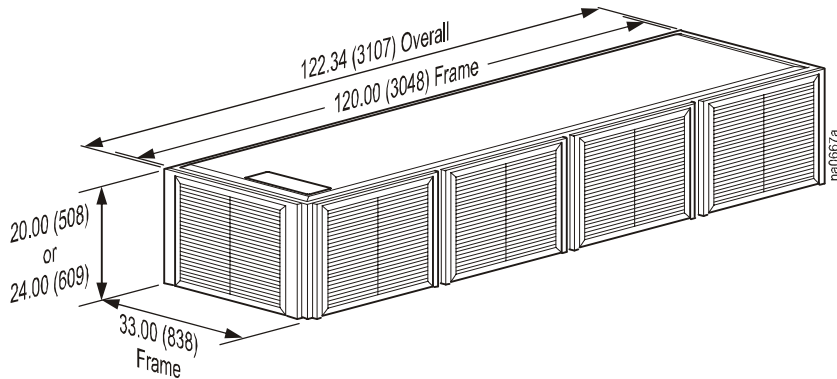
- | | |
|---------------------------------------|-------------------------|
| ❶ Blower motor | ❹ Condensate drip pan |
| ❷ Condensate pump | ❺ A-frame cooling coils |
| ❸ Bottom piping and electrical access | ❻ Blower (3) |

Floorstand (optional)



Dimensions shown in inches (millimeters).

Top discharge plenum (optional)



Dimensions shown in inches (millimeters).

Room preparation

During the design of the data center, consider ease of entry for the equipment, floor loading factors, and accessibility to piping and wiring.

Seal the room with a vapor barrier to minimize moisture infiltration. (Polyethylene film is recommended for ceiling and wall applications.) Apply rubber- or plastic-based paints to concrete walls and floors.

Insulate the room to minimize the influence of exterior heat loads. Use the minimum required amount of fresh air for make up to comply with local and national codes and regulations. Fresh air imposes extreme load variation on the cooling equipment from summer to winter and causes increased system operating costs.

Incoming power supply requirements



Caution: The equipment requires three-phase electrical service. Electrical service must conform to national and local electrical codes and regulations. The equipment must be grounded.

Supporting the equipment

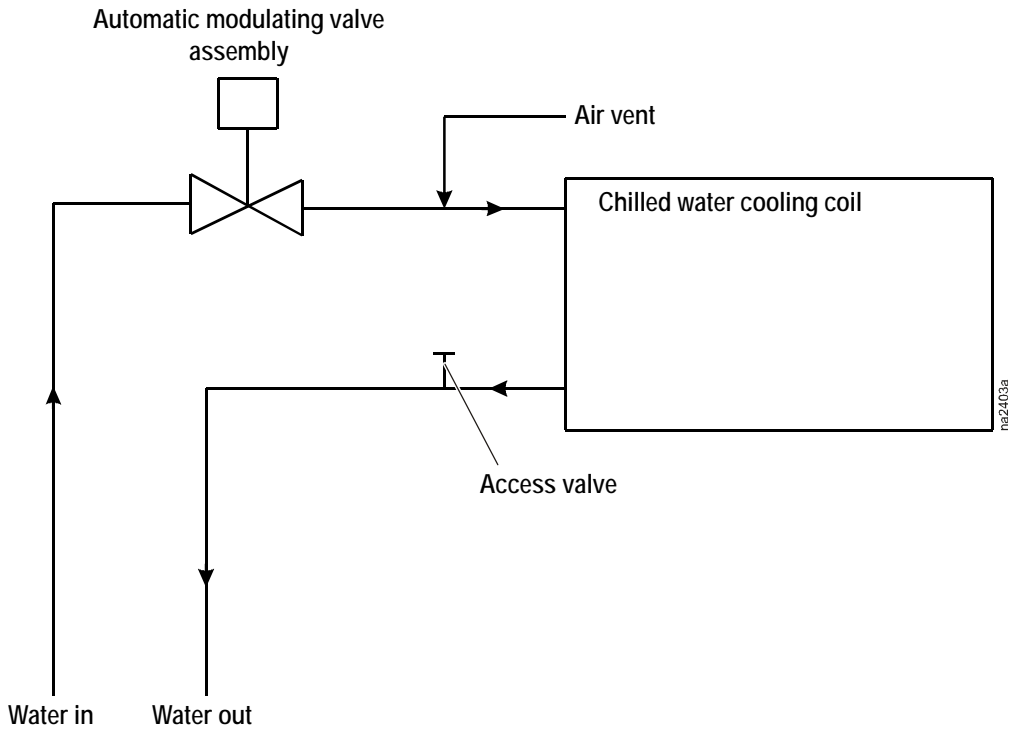
Downflow equipment may be placed either directly on the raised floor or on a floorstand.



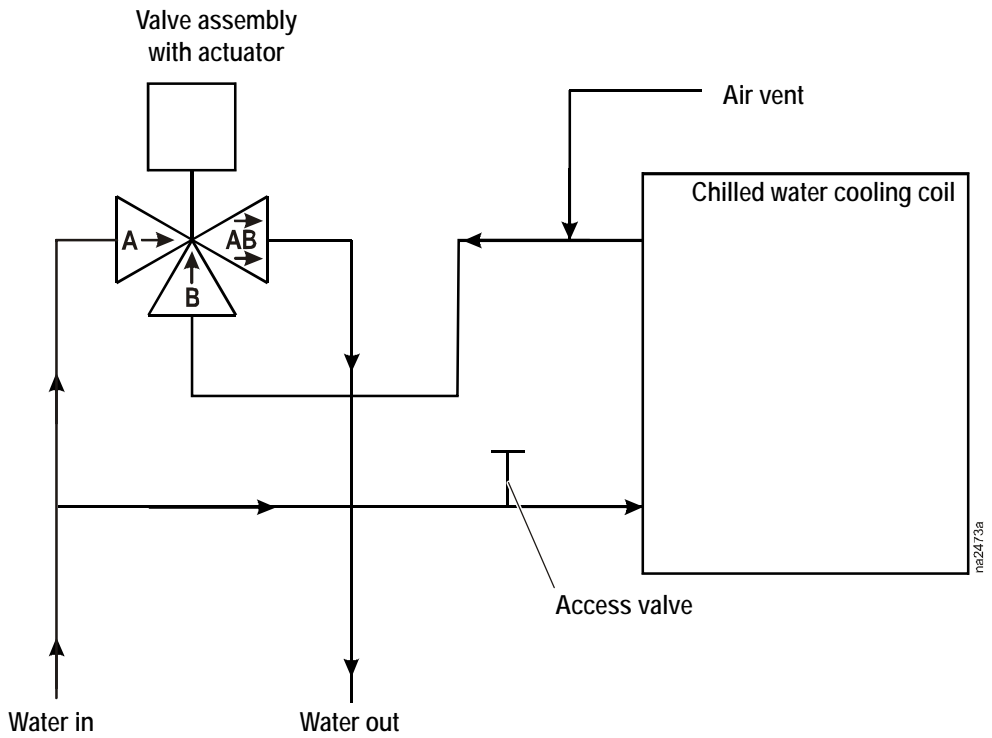
Note: Consult your raised floor manufacturer for weight capacities if you are installing the equipment directly on the raised floor.

Piping Diagrams

2-way valve



3-way valve



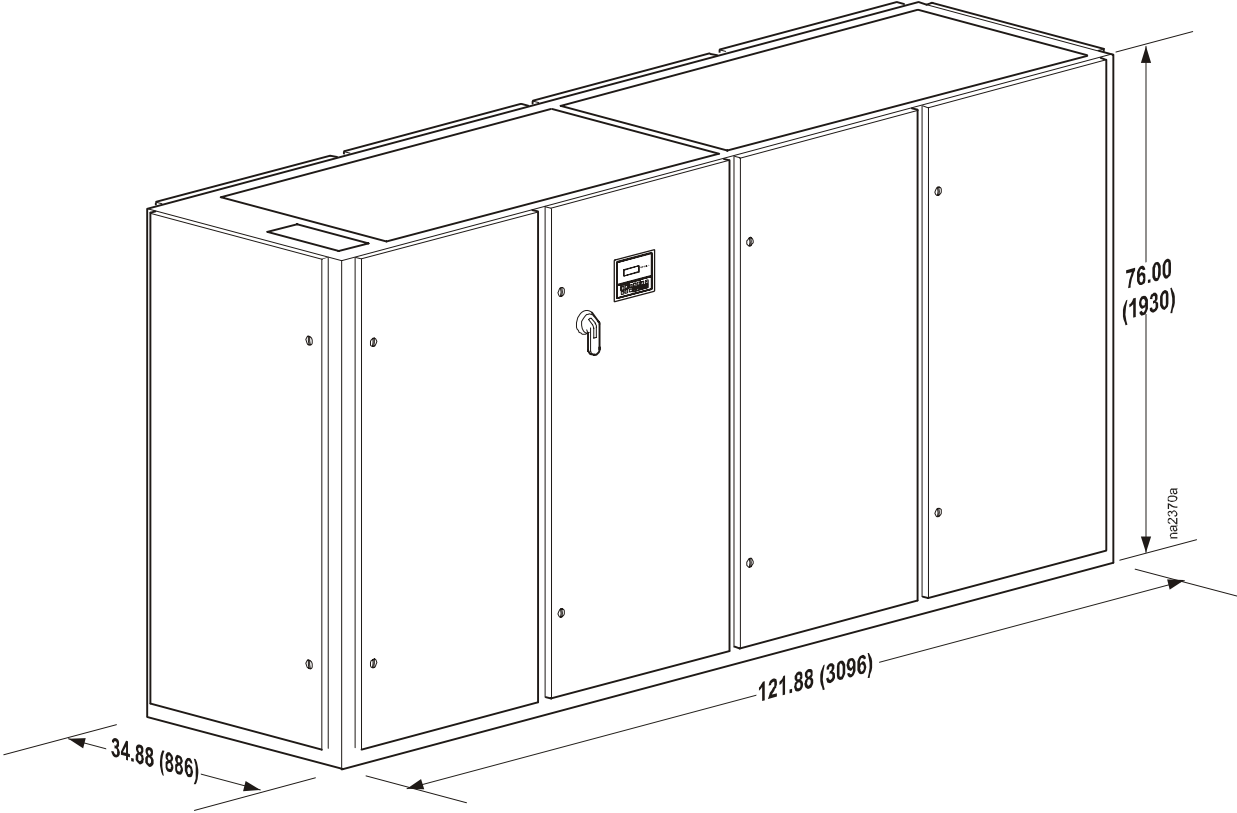
Weights and Dimensions

Weight

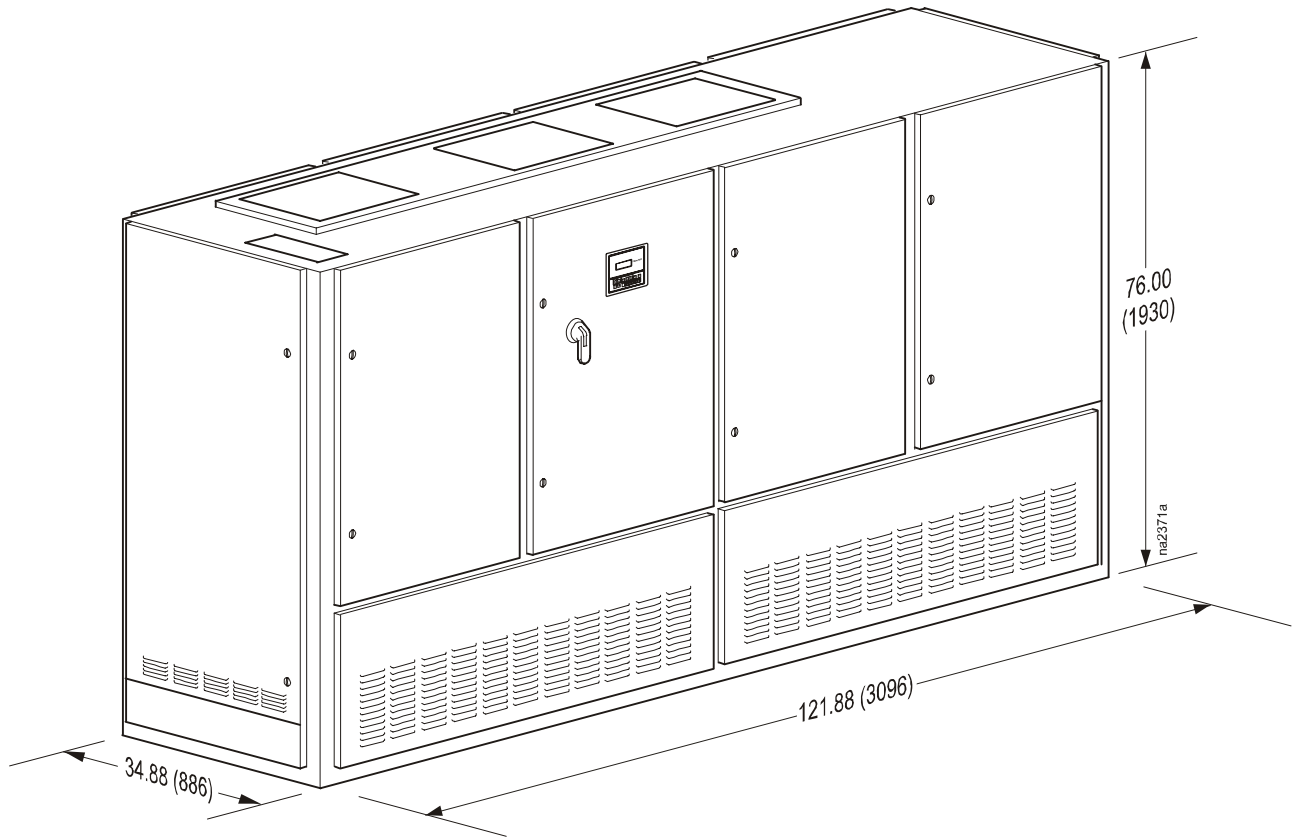
The equipment weight is 2100 lbs (960 kg).

Dimensions

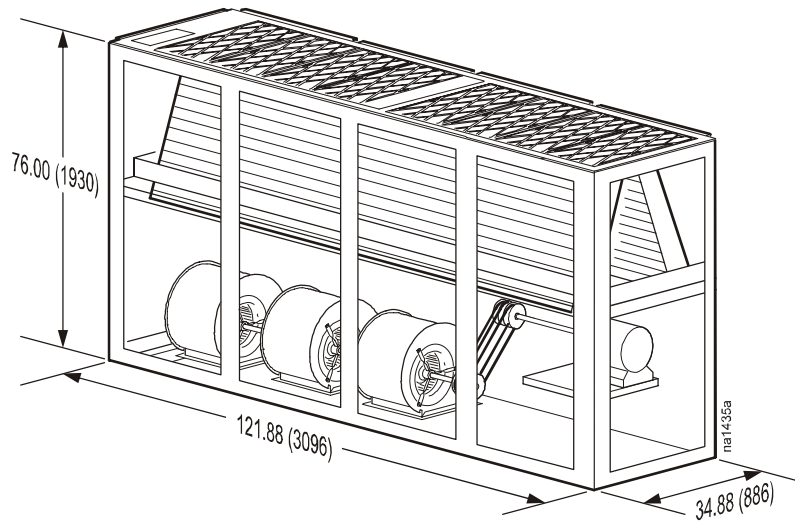
Downflow—CW100



Upflow—CW100



Panels and main circuit breaker removed

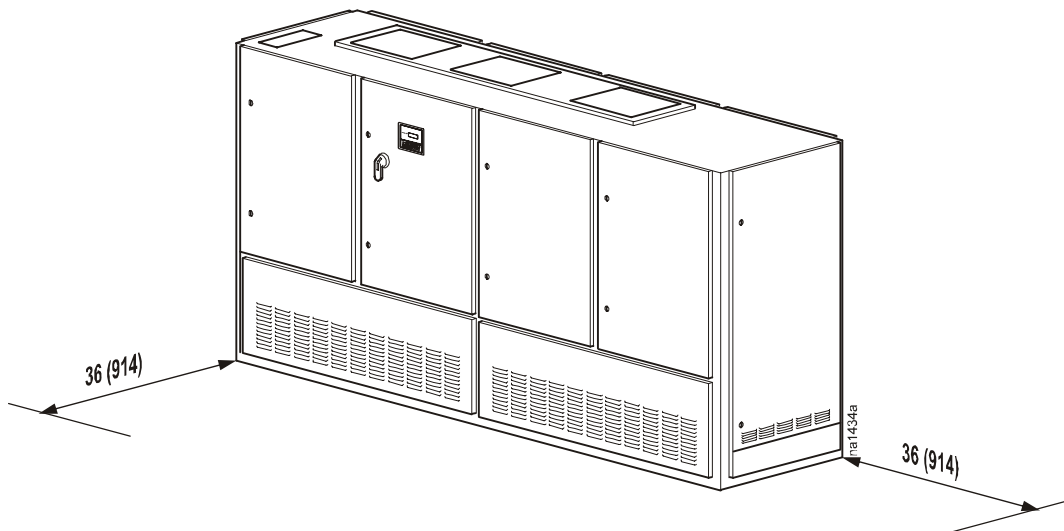


Installation

Positioning the Equipment

Service access

A minimum area of 36 in (914 mm) of clear floor space in front of and beside the equipment is required for service.



Air distribution considerations

Downflow discharge. If the installation location of the equipment has a raised floor, the space between the raised floor and sub-floor can be used as an air distribution plenum. Equipment using downflow discharge may be installed directly on the raised floor after ensuring that the floor can support the equipment. Use a floorstand if the floor cannot support the equipment.

Raised floor. When installing equipment on a raised floor, maintain the correct amount of free area to allow proper air movement.

Consider under-floor obstructions that might prevent conditioned air from being properly distributed throughout the room.

Install an adequate number of perforated floor tiles to allow for proper air distribution in the conditioned space. Allow additional relief near heavier heat loads.

Upflow discharge. In rooms designed for upflow discharge systems, air is distributed through a supply duct or through a discharge plenum into the conditioned space. Equipment location considerations for a downflow discharge system also apply to upflow discharge systems.



Note: The equipment is designed for a maximum of 0.5 in (125 Pa) of external static pressure.

Rigging

The equipment is manufactured with a formed steel frame for maximum strength and unit rigidity. However, as with all electrical and mechanical devices, you must properly rig the equipment.

When using a forklift to move the equipment, use the shipping pallet to protect its bottom. When using chains, cables, or rope to lift the equipment, use spreader bars to prevent damage to the finished panels.

Top-discharge plenum

The top-discharge plenum discharges the air horizontally from the front of the plenum. Discharge air should be ducted down cold aisles.

Stabilizing the Equipment

Floorstand

The floorstand raises the height of the equipment above the subfloor to match the height of the raised floor. Floorstands are equipped with air deflectors and turning vanes for optimal air distribution.



For instructions on installing the floorstand and plenum, see the documentation supplied with those items.

Mechanical Connections

Water

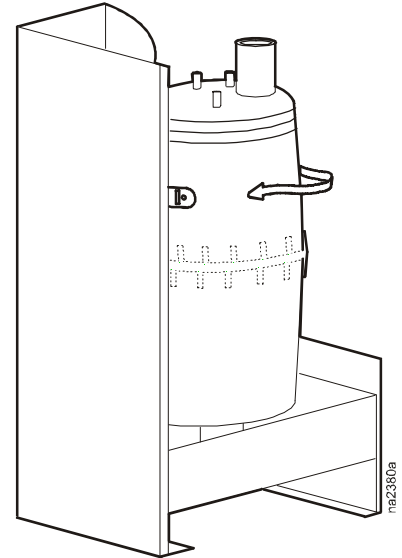
Install shutoff valves for routine service and emergency isolation of the equipment.

Insulate water lines to protect personnel and to minimize condensation.

Humidifier (optional). The humidifier water supply connection is a 1/4-in compression fitting (supplied). Water pressure should be between 30 psi (200 kPa) and 85 psi (600 kPa) for proper humidifier operation. Extremely dirty water must be filtered before it is introduced into the humidifier. Do not use hot, softened, demineralized, or deionized water.



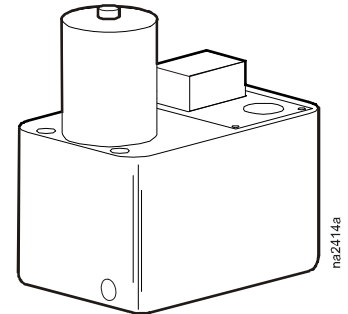
See the *Installation, Operation, Maintenance, Spare Parts, and Exploded Views Guide* included with the humidifier.



Condensate pump

The pump is factory-wired and piped internally to the condensate pan and humidifier discharge. The pump has a maximum lift of 22 ft (6.7 m). The pump also uses an on-board condensate high level float switch, which is wired into the alarm input for local and remote alarm capabilities.

Condensate pump drain connection. Route the drain line through an opening in the bottom of the equipment to an available drain.



Note: Comply with all local and national codes and practices when installing the condensate drain line to an open drain.

Electrical Connections

The electrical connections required in the field are:

- Main power
- Controls
- Communication



See the electrical schematic on the lid of the electrical box for all electrical connections.

See the wiring diagram for detailed connection information. The wiring diagram is located on the equipment control panel doors, or inside the electrical box cover.

1. Make all electrical connections in accordance with national and local codes.
2. Refer to the equipment nameplate for voltage and current requirements.
3. A power disconnect is required to isolate the equipment for maintenance and service.
4. Make all low-voltage connections, including data and control connections with properly insulated wires. The low voltage connections must have 600 V insulation.



Electrical Hazard: Potentially dangerous and lethal voltages exist within this equipment. More than one disconnect switch may be required to energize or de-energize this equipment. Observe all cautions and warnings. Failure to do so could result in serious injury or death. Only qualified service and maintenance personnel should attempt to work on this equipment.



Warning: Use a voltmeter to ensure that power is turned off before making any electrical connections.

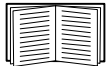


Note: Three-phase electrical service is required. Electrical service must conform to national and local electrical codes. The equipment must be grounded to an earth ground. Check the nameplate for correct minimum circuit ampacity (MCA) and maximum overcurrent protection (MOP).



Note: All signal input and output connections should be wired as Class 2 circuits.

Depending on configuration, additional control connections may be required for the Modbus/JBus Gateway remote communications through traditional equipment-monitoring software.



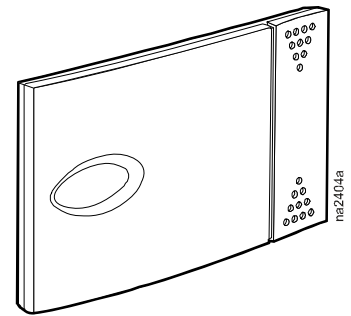
See the wiring diagram on the electrical box door for connection information.

Temperature and relative humidity sensor

A temperature and relative humidity sensor kit is supplied with the equipment. Additional sensors can be purchased and connected with A-Link cables.



See the temperature and relative humidity sensor installation sheet (supplied with the kit) to install and set up the temperature and relative humidity sensor.



Main electrical connections

Top electrical access.

1. Remove the top access panel.
2. Modify the access panel to allow electrical cables to pass through, allowing for proper grommets and strain reliefs.
3. Route cables to the electrical panel and through access points on the left side of the panel.
4. Make all connections in accordance with local and national codes. Torque fasteners to the value displayed on each circuit breaker.

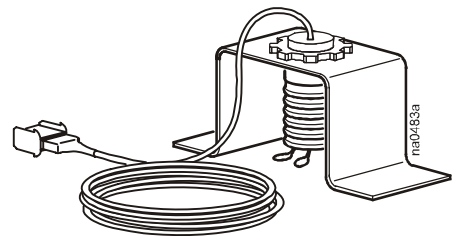
Bottom electrical access.

1. Remove the bottom access panel.
2. Modify the access panel to allow electrical cables to pass through, allowing for proper grommets and strain reliefs.
3. Route cables to the electrical panel and through access points on the bottom of the panel.
4. Make all connections in accordance with local and national codes. Torque fasteners to the value displayed on each circuit breaker.

Water spot detector (optional). An optional water spot detector can be installed in the bottom compartment of the equipment.



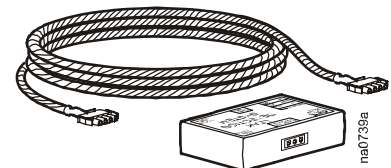
See the *NetworkAIR® Water Spot Detector Installation* manual, supplied with the kit, for installation and wiring.



Rope water detector (optional). Optional rope water detectors (a maximum of two) can be installed as needed.



See the “Rope Water Detector” installation manual, supplied with the kit, for installation and setup.



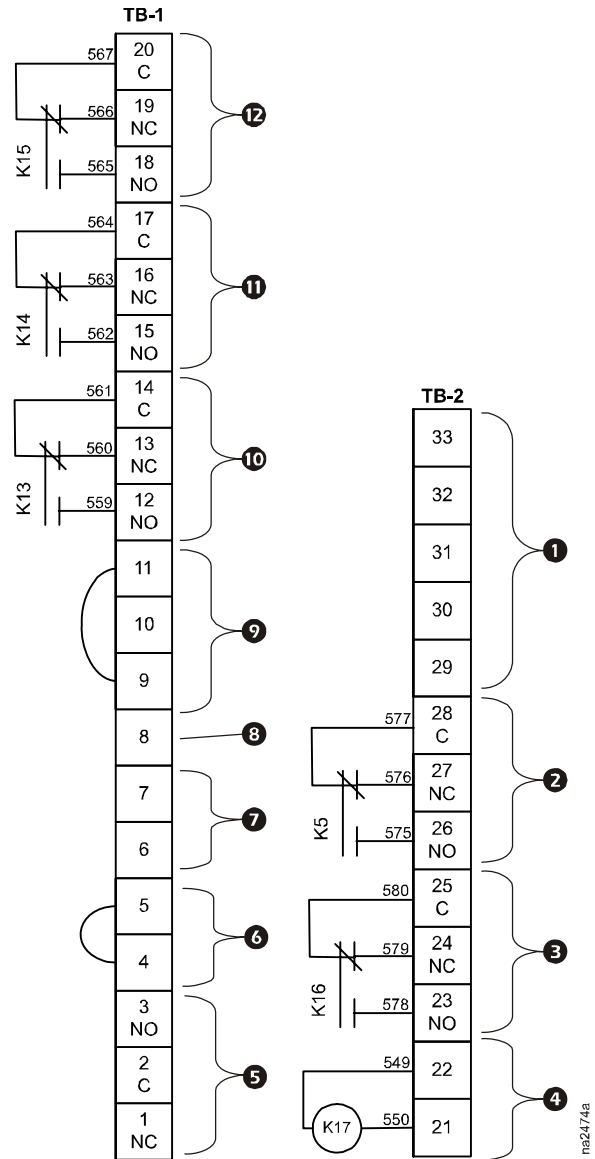
Input and output connections



See the wiring diagram provided with the equipment for more details.

Control panel insert terminal block orientation.

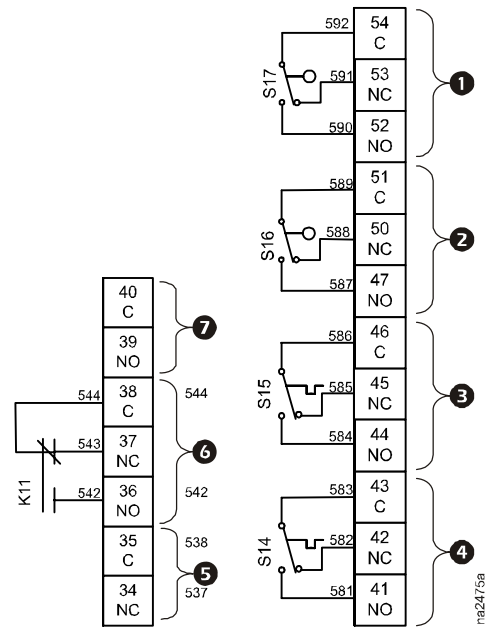
- ❶ Remote temperature/humidity sensor
- ❷ Remote change humidity canister alarm
- ❸ Remote flow switch alarm
- ❹ Remote reheat and humidity lockout supply (24 Vac)
- ❺ Summary alarm dry contacts output
- ❻ Remote shutdown input
- ❼ Water spot detector S9
- ❽ Water cable detector S9A
- ❾ Cool 1 override input
- ❿ Remote firestat alarm
- ⓫ Remote water detector alarm
- ⓬ Remote clogged filter alarm



na2474a

User interface panel located in 4 x 8 junction box.

- ❶ Remote high humidity alarm
- ❷ Remote low humidity alarm
- ❸ Remote high temperature alarm
- ❹ Remote low temperature alarm
- ❺ Condensate pump overflow alarm
- ❻ Remote loss of airflow alarm
- ❼ Remote smoke detector alarm



RUG connections



See *NetworkAIR Redundant Group Network - Installation & Set-up* manual for more information.

Building management system



See *NetworkAIR Supervisory Network - Installation & Set-Up* manual for more information.

Incoming power



Note: Three-phase electrical service is required and must conform to national and local electrical codes. The equipment must be connected to earth ground.

Check the nameplate for correct Minimum Circuit Ampacity (MCA) and Maximum Fuse Size (MFS).

Route three-phase electrical service into the bottom left of the equipment. (Access may be either through the top or bottom of the equipment.) Terminate the conduit at the electrical box. Connect power cables to the main circuit breakers and the ground lug.

Warranty

One-Year Factory Warranty

The limited warranty provided by American Power Conversion (APC[®]) in this Statement of Limited Factory Warranty applies only to products you purchase for your commercial or industrial use in the ordinary course of your business.

Terms of warranty

American Power Conversion warrants its products to be free from defects in materials and workmanship for a period of one year from the date of purchase. The obligation of APC under this warranty is limited to repairing or replacing, at its sole discretion, any such defective products. 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 the APC Web site, www.apc.com.

Exclusions

APC 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, APC 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, start-up by non-APC designated personnel, a change in location or operating use, exposure to the elements, Acts of God, fire, theft, or installation contrary to APC recommendations or specifications or in any event if the APC serial number has been altered, defaced, or removed, or any other cause beyond the range of the intended use.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, OF PRODUCTS SOLD, SERVICED OR FURNISHED UNDER THIS AGREEMENT OR IN CONNECTION HEREWITH. APC DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY, SATISFACTION AND FITNESS FOR A PARTICULAR PURPOSE. APC EXPRESS WARRANTIES WILL NOT BE ENLARGED, DIMINISHED, OR AFFECTED BY AND NO OBLIGATION OR LIABILITY WILL ARISE OUT OF, APC RENDERING OF TECHNICAL OR OTHER ADVICE OR SERVICE IN CONNECTION WITH THE PRODUCTS. THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES AND REMEDIES. THE WARRANTIES SET FORTH ABOVE CONSTITUTE APC'S SOLE LIABILITY AND PURCHASER'S EXCLUSIVE REMEDY FOR ANY BREACH OF SUCH WARRANTIES. APC WARRANTIES EXTEND ONLY TO PURCHASER AND ARE NOT EXTENDED TO ANY THIRD PARTIES.

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NO SALESMAN, EMPLOYEE OR AGENT OF APC IS AUTHORIZED TO ADD TO OR VARY THE TERMS OF THIS WARRANTY. WARRANTY TERMS MAY BE MODIFIED, IF AT ALL, ONLY IN WRITING SIGNED BY AN APC OFFICER AND LEGAL DEPARTMENT.

Warranty claims

Customers with warranty claims issues may access the APC customer support network through the Support page of the APC Web site, 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.

Warranty Procedures

Claims

To obtain service under the warranty, contact APC Customer Support (see the back cover of this manual for contact information). You will need the model number of the Product, the serial number, and the date purchased. A technician will also ask you to describe the problem. If it is determined that the Product will need to be returned to APC, you must obtain a returned material authorization (RMA) number from APC Customer Support. Products that must be returned must have the RMA number marked on the outside of the package and must be returned with transportation charges prepaid. If it is determined by APC Customer Support that on-site repair of the Product is allowed, APC will arrange to have APC authorized service personnel dispatched to the Product location for repair or replacement, at the discretion of APC.

Parts

- APC warrants the parts of their systems for 1 year from the date of commissioning or 18 months from the ship date. This warranty only covers the cost of the part and not the labor for installation.
- Calls for warranty parts requests need to have specific unit information (serial number, model number, job number) to allow proper identification and processing of the warranty part transaction.
- A purchase order may be required to issue any warranty parts. An invoice will be sent once the parts are shipped to the field. You have 30 days to return the defective parts to APC. After 30 days, the warranty invoice will be outstanding, and payment of the invoice will be expected in full.
- Return authorization documentation will be sent with the replacement part. This documentation must be sent back with the defective part to APC for proper identification of the warranty return. Mark the warranty return number on the outside of the package.
- After the part has been received at APC, we will determine the status of the credit based on the findings of the returned part. Parts that are damaged from lack of maintenance, misapplication, improper installation, shipping damage, or acts of man/nature will not be covered under the parts warranty.
- Any warranty parts request received before 1:00 PM EST will be shipped same-day standard ground delivery. Any costs associated with Next Day or Airfreight will be the responsibility of the party requesting the part.
- Return freight of warranty parts to APC is the responsibility of the party returning the part.

APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Visit the APC Web site to access documents in the APC Knowledge Base and to submit customer support requests.
 - **www.apc.com** (Corporate Headquarters)
Connect to localized APC Web sites for specific countries, each of which provides customer support information.
 - **www.apc.com/support/**
Global support searching APC Knowledge Base and using e-support.
- Contact an APC Customer Support center by telephone or e-mail.
 - Regional centers

Direct InfraStruXure Customer Support Line	(1)(877)537-0607 (toll free)
APC headquarters U.S., Canada	(1)(800)800-4272 (toll free)
Latin America	(1)(401)789-5735 (USA)
Europe, Middle East, Africa	(353)(91)702000 (Ireland)
Japan	(0) 35434-2021
Australia, New Zealand, South Pacific area	(61) (2) 9955 9366 (Australia)

- Local, country-specific centers: go to **www.apc.com/support/contact** for contact information.

Contact the APC representative or other distributor from whom you purchased your APC product for information on how to obtain local customer support.

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