

Installation and Quick Configuration Manual

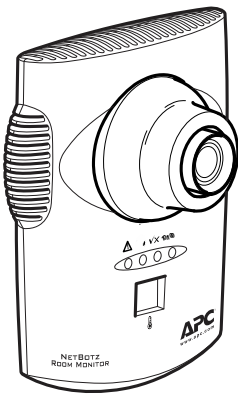
NetBotz[®] Room Monitor 455

NBWL0455/NBWL0455A

NBWL0456/NBWL0456A

990-3295H-001

Publication Date: 8/2019



APC[™]

by Schneider Electric

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Safety

Read the instructions carefully to become familiar with the equipment before trying to assemble, operate, service, or maintain it. The following special 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 label 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 you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

Indicates a potentially hazardous situation which, if not avoided, can result in death or serious injury.

⚠ CAUTION

Indicates a potentially hazardous situation which, if not avoided, can result in moderate injury.

NOTICE

Addresses practices not related to physical injury including certain environmental hazards, potential damage or loss of data.

Safety Information for the Room Monitor 455

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- No user serviceable parts inside. Refer servicing to qualified personnel.
- Use indoors in a dry location.

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

Introduction

The APC by Schneider Electric NetBotz® Room Monitor 455 is the central hardware appliance for a NetBotz security and environmental monitoring system. The Room Monitor 455 can be installed anywhere in a room. It includes an integrated camera and internal sensors that monitor temperature, humidity, air flow, and motion, and four sensor ports for connecting temperature, humidity, smoke, door, vibration, spot fluid, and third-party dry contact and 0–5 V sensors. It supports two-way audio, audio sensing, and audio recording. You can increase the space monitored by adding a wireless sensor network and up to two NetBotz sensor pods.

The integrated camera includes the following features:

- Image processor that generates images up to 1280 x 1024 resolution, 24-bit color, and up to 30 frames per second.

NOTE: The maximum frame rate describes the maximum number of images that the camera imager is capable of producing each second. The actual frame rate is dependent on the amount of available bandwidth and current resolution.

- Image Size: 7.7 mm x 6.1 mm (9.82 mm diagonal = 0.387 in).
- Field of View: 64° (H) x 53° (V) for all resolutions.
- User adjustable and switchable industry-standard CS-mount lens. CS-mount permits access to hundreds of different general purpose and special purpose lenses.

NOTICE

The equipment contains, and the software enables, visual recording capabilities, the improper use of which may subject you to civil and criminal penalties. Applicable laws regarding the use of such capabilities vary between jurisdictions and may require, among other things, express written consent from recorded subjects. You are solely responsible for insuring strict compliance with such laws and for strict adherence to any/all rights of privacy and personalty. Use of this software for illegal surveillance or monitoring shall be deemed unauthorized use in violation of the end user software agreement and result in the immediate termination of your license rights thereunder.

Document Overview

The *NetBotz Room Monitor 455 Installation and Quick Configuration Manual* describes how to install a NetBotz Room Monitor 455, how to connect devices to the appliance, and how to configure network settings. After performing the configuration procedures in this manual, you can access your system through its software interface, perform additional configuration tasks, and begin monitoring the environment.

Related Documents

Unless otherwise noted, the following documentation is available on the applicable product page on **www.apc.com**. To quickly find a product page, enter the product name or part number in the Search field.

NetBotz Appliance User Guide: Includes all details for using, managing, and configuring a NetBotz system with one of the following appliances: NetBotz Room Monitor 355 (NBWL0355/NBWL0355A), NetBotz Rack Monitor 450 (NBRK0450), NetBotz Room Monitor 455 (NBWL0455/NBWL0455A), NetBotz Rack Monitor 550 (NBRK0550), or NetBotz Rack Monitor 570 (NBRK0570).

Release Notes: Includes a summary of new features, fixed issues, and known issues for the latest firmware release.

Additional Options

The following options are available for the Room Monitor 455. For more information about any of the options, contact your APC by Schneider Electric representative or the distributor from whom you purchased your APC by Schneider Electric product.

- NetBotz Camera Pod 160 (NBPD0160/NBPD0160A*)
- NetBotz Rack Sensor Pod 150 (NBPD0150)
- NetBotz Room Sensor Pod 155 (NBPD0155)
- NetBotz Rack Access Pod 170 (NBPD0170)
- Temperature Sensor (AP9335T)
- Temperature/Humidity Sensor (AP9335TH)
- Temperature Sensor with Digital Display (AP9520T)
- Temperature/Humidity Sensor with Digital Display (AP9520TH)
- NetBotz Spot Fluid Sensor (NBES0301)
- NetBotz Door Switch Sensor for Rooms or Third Party Racks (NBES0302)
- NetBotz Door Switch Sensor for APC by Schneider Electric Racks (NBES0303)
- NetBotz Dry Contact Cable (NBES0304)
- NetBotz 0–5 V Sensor Cable (NBES0305)
- NetBotz Vibration Sensor (NBES0306)
- NetBotz Smoke Sensor (NBES0307)
- NetBotz USB-to-Serial Cable (NBAC0226)
- NetBotz Sensor Pod 120 (NBPD0122)
- NetBotz Camera Pod 120 (NBPD0121)
- NetBotz Wireless Sensor Pod 180 (NBPD0180)
- NetBotz USB Coordinator & Router (NBWC100U)
- NetBotz Wireless Temperature Sensor (NBWS100T and NBWS100H)

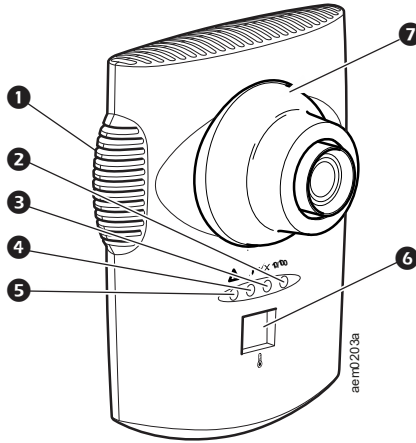
*NBPD0160A is only compatible with BotzWare™ v4.6.1 and newer.

StruxureWare® Certified

This product is certified for use in StruxureWare systems.

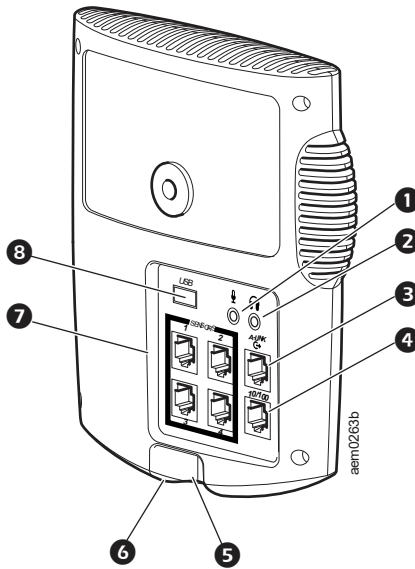
Physical Description

Front



Item	Description
1	Vented internal sensors Vented opening for airflow, temperature, and humidity sensors.
2	Network link LED Shows the status of the network connection. Blinks to indicate network traffic (green = connected at 10 Mbps; yellow = connected at 100 Mbps).
3	Power LED Indicates whether the unit is receiving power (green = receiving power; dark = not receiving power).
4	Camera LED Blinks steadily when the integrated camera is active.
5	Alert LED Indicates the alert status of the system. When more than one alert exists, the most severe will be indicated. <ul style="list-style-type: none">• Flashing once every eight seconds = Informational• Flashing once every four seconds = Warning• Flashing once every two seconds = Error• Flashing once every second = Critical• Flashing twice per second = Failure
6	Temperature display <ul style="list-style-type: none">• Displays the current temperature from 0 to 99 in Centigrade or Fahrenheit. Temperature reading from internal temperature sensor. If the temperature exceeds 99, the display will flash 99.• When the unit first receives power, displays the unique identifier number for one minute.• If an alert exists, flashes at the same rate as the Alert LED.• During a firmware upgrade, displays 88.
7	Lens housing Must be removed to change the focus of the integrated camera.

Rear



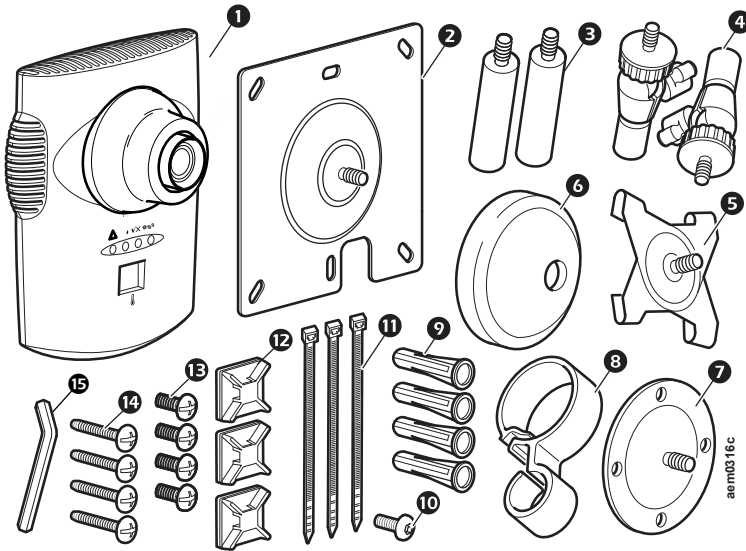
Item	Description
1 Microphone jack	Supports audio sensing, audio recording, and two-way audio. Maximum length of microphone cable: 3 m (9.8 ft).
2 Speaker jack	Supports two-way audio. Maximum length of speaker cable: 3 m (9.8 ft).
3 A-Link port	Used for cascading NetBotz sensor pods and temperature and humidity sensors with digital displays. Provides communications and power to the connected devices over standard CAT-5 cabling with straight-through wiring. For details, see “Connect Sensors and Sensor Pods to A-Link Ports” on page 27.
4 10/100 Base-T network port	Provides for a 10/100 Base-T network connection and power through Power-over-Ethernet (PoE). Status and link LEDs indicate network traffic: <ul style="list-style-type: none">• Status LED: blinks orange and green at start-up; indicates the status of the network connection (solid green = IP address established; blinking green = attempting to obtain an IP address).• Link LED: blinks to indicate network traffic (green = connected at 10 Mbps; orange = connected at 100 Mbps).
5 USB port	Used to configure the appliance.

Item	Description
6 Reset	Used to restart the appliance.
7 Sensor ports (4)	Used for connecting APC by Schneider Electric sensors, third-party dry-contact sensors, and standard third-party 0–5 V sensors. Third-party dry-contact state sensors require the NetBotz Dry Contact Cable (NBES0304). Standard third-party 0–5 V sensors require the NetBotz 0–5 V Sensor Cable (NBES0305).
8 USB -A port	Used to connect a USB device to the appliance.

Inventory

Inspect the package and contents for shipping damage. Make sure all parts were sent. Immediately report any shipping damage to the shipping agent. Report missing contents, product damage, or other problems with the product to APC by Schneider Electric or your Schneider Electric reseller.

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



Item	Description	Item	Description
1	NetBotz Room Monitor 455 (NBWL0455/NBWL0455A)	9	Mounting screw wall anchors
2	Bracket mounting plate for electrical boxes	10	Extender arm set screw
3	Extender arms	11	203 mm (8 in) tie wraps
4	Ball-joint adjuster arms	12	Adhesive cable tie holders
5	T-bar mounting plate	13	13 mm (0.5 in) machine screws (for electrical box)
6	Rubber bracket cover	14	19 mm (0.75 in) sheet metal screws (for wall or enclosure)
7	Mounting plate	15	Allen wrench
8	Cable retainer		

Not shown

1.8 m (6 ft) IEC-320-C13 to IEC-320-C14 power cord
(only included with NBWL0456/NBWL0456A)

1.8 m (6 ft) NEMA 5-15P to IEC-320-C13 power cord
(only included with NBWL0456/NBWL0456A)

Power-over-Ethernet injector power supply (100–250 VAC in, 48 VDC out)
(only included with NBWL0456/NBWL0456A)

Installation

Choose an installation option that meets your needs. Consider the following:

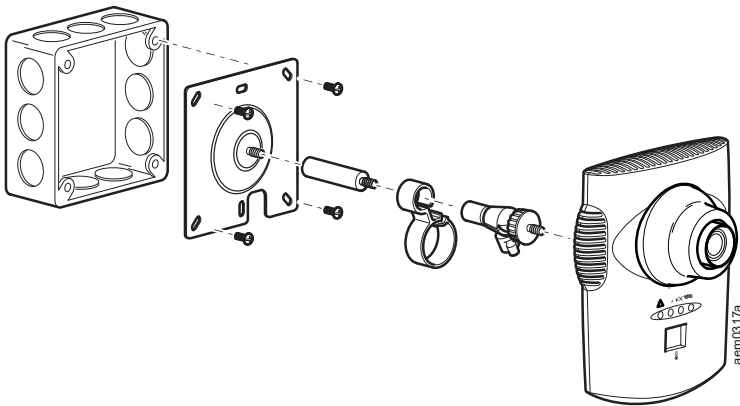
- Consider the location of the nearest network port.
- Make sure the camera will not be obstructed.
- Consider cable routing for all sensors that you plan to connect to the appliance.
- The ideal position of the Room Monitor 455 for measuring the airflow is directly facing the oncoming air.

NOTICE

Only connect approved devices to ports on the Room Monitor 455 as directed in this manual. Plugging in other devices may result in equipment damage.

Install the Room Monitor 455

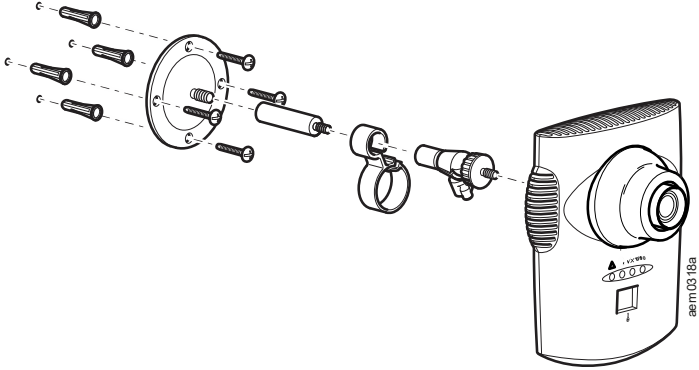
Electrical box



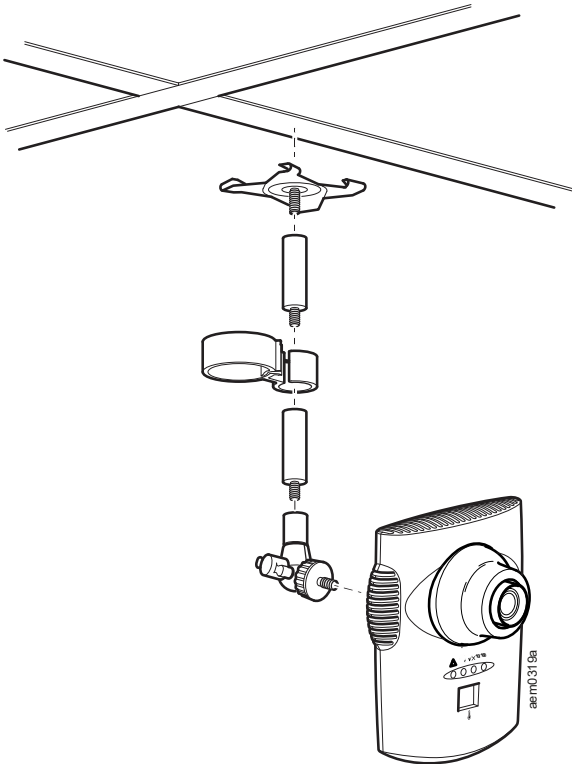
Wall

Drill 4.76 mm (0.19 in) pilot holes for wall anchors.

NOTE: Do not overtighten the screws.

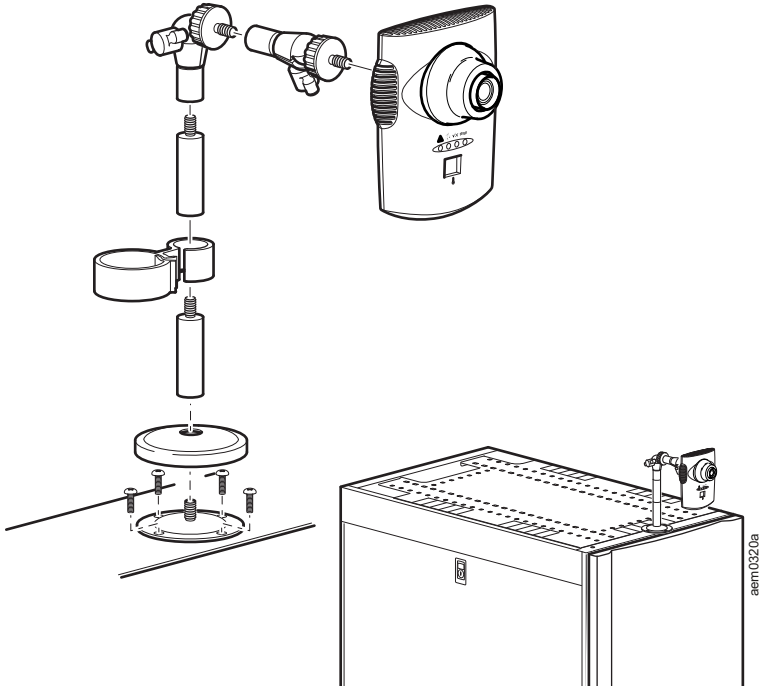


Ceiling



Rack

Use a #32 drill bit to make four 2.94 mm (0.116 in) pilot holes.

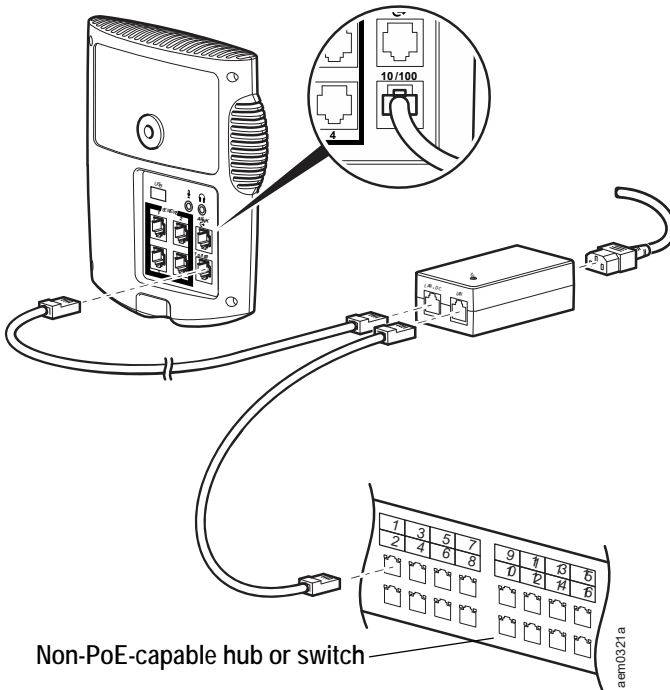


Connect the Room Monitor 455 to Your Network

Power-over-Ethernet (PoE) injector

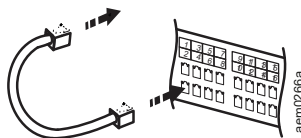
NOTICE

- Before you energize the Room Monitor 455, review the electrical specifications on page 33 to avoid overloading the circuit.
- Be sure the appliance is properly grounded by plugging the power cord directly into a wall outlet or by verifying the ground path if you are using a power strip.



PoE-capable hub or switch

To appliance 10/100 Base-T network port



Adjust the Lens

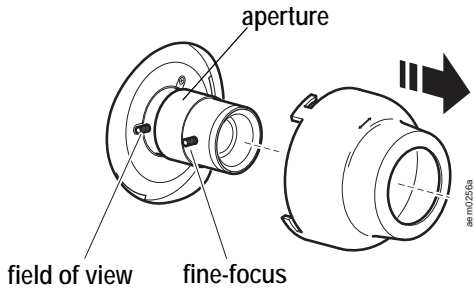
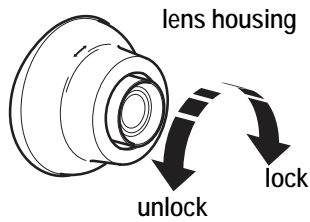
View the camera feed during the adjustment of the camera in order to correctly adjust the focus of the feed and field of view settings.

To access the adjustment screws, remove the lens housing by turning the lens housing to the left until the latches disengage.

To reattach the lens housing, engage the latches and rotate the housing to the right until you hear a click.

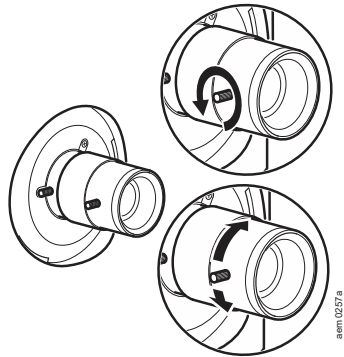
To increase the aperture of the lens, rotate the aperture ring to the right.

To reduce the aperture, rotate the aperture ring to the left.



To adjust the focus and field of view settings:

1. Loosen the adjustment screw by turning it to the left.
2. Rotate the lens rings to the desired position.
3. Tighten the adjustment screw by turning it to the right.



Initial Configuration

This section explains how to set up your network settings and other configuration tasks.

Disregard the procedures in this section if you have StruxureWare Data Center Expert® as part of your system. See the documentation for your StruxureWare device for more information.

NOTE: NBWL0455A is only compatible with BotzWare™ v4.6.1 and newer.

Configure Network Settings

Before you install your NetBotz 455 appliance, you must configure your appliance's network settings. By default, your appliance is configured to obtain its network settings using DHCP. Alternately, you can use a terminal emulator or serial configuration utility to specify network settings (including IP address, gateway address, subnet mask, hostname, NAT proxy, and speed and duplex settings) to be used by the appliance.

You must use a terminal emulator to change the root password before you can access the Serial Configuration Utility. Follow steps 1-4 of "Configure network settings using a terminal emulator" on page 16 to change the root password.

Gather network settings information

If you intend to configure the network settings manually, collect the following information from your systems administrator. You will need this information to configure the network settings on your appliance.

- DHCP and IP Address Information:
 - Does your network use a DHCP server?
 - If you do not use DHCP, what IP address is assigned to your appliance?
- Subnet Mask Information:
 - Will you use a subnet mask for the appliance LAN interface?
 - If you are using a subnet mask, what is the mask?
- Gateway Information:
 - Will you use a default gateway for packet routing?
 - If you use a default gateway, what is the IP address of the gateway?
 - If a default gateway is unavailable, use the IP address of a computer that is located on the same subnet as the appliance and that is usually running. The appliance uses the default gateway to test the network when traffic is very light.

Obtain network settings using DHCP

By default, your appliance is configured to obtain its network settings using DHCP. When you connect the appliance to your network and apply power, it automatically attempts to contact a DHCP server. The appliance will wait 30 seconds for a response.

If the DHCP server is configured to provide a hostname, the appliance will request either its configured hostname or 'netbotzxxxxxx' (where xxxxxx is the last 6 digits of the appliance serial number) as a hostname to be associated with the IP address granted by the DHCP server. This enables you to use a Web browser to connect to the appliance at the <http://netbotzxxxxxx> without any additional configuration.

The appliance will also request a DNS server addresses, a DNS domain, SMTP server addresses, and NTP server addresses from the DHCP server.

NOTE: After your DHCP server has assigned network settings for the appliance, you can connect your system to the appliance using the provided null modem cable, and use a terminal emulator or the serial configuration utility to view the network settings. For more information, see “Configure network settings using a terminal emulator” on this page or “Configure network settings using the Serial Configuration Utility” on this page.

Configure network settings using a terminal emulator

To configure your appliance using the terminal emulator:

1. Connect one end of the USB cable to a USB port on your system and the other end of the cable to the USB port on the appliance.
2. Open a serial connection on your terminal emulator using port settings 38400 baud, 8, 1, N.
3. Enter the root account user name and password for the appliance (**root** and **apc**, by default). Change the password when prompted. It is recommended that you use a strong password that conforms to your company's password requirements.
4. Set your appliance to use network settings assigned by a DHCP server, or provide an IP address, subnet mask, and gateway address for the appliance. You can specify a NAT proxy name or IP address to be used by a NAT Proxy server in your network to allow users to connect to the appliance from outside the firewall. You can also specify speed and duplex settings for use by this interface, or use Auto Negotiate.
5. Close the terminal emulator. Test the IP connection of the appliance. Start your Web browser and enter `https://your_IP_address` in the address field. Press **Enter**. If the NetBotz appliance is online and properly configured, the Web UI displays in the browser window.

Configure network settings using the Serial Configuration Utility

The serial configuration utility is automatically installed with Advanced View (see “Advanced View” on page 19). To configure your appliance using the Serial Configuration Utility:

1. Click **Start > Programs > APC > Serial Configuration > Serial Configuration Utility** to start the Serial Configuration Utility.
2. Connect one end of a USB cable to your computer and the other end of the cable to the Console port on the NetBotz appliance.

3. Plug the power cord provided with your NetBotz appliance into a wall outlet, and then connect it to the AC line inlet.
NOTE: Use only the provided power cord with NetBotz products.
The green Power LED illuminates immediately after you apply power to the appliance. The unit can take up to two minutes to initialize, depending on appliance configuration. The red Alert LED illuminates when the appliance detects an alert condition. Click **Next** to continue.
4. The Serial Configuration Utility automatically scans your system COM ports to determine if a NetBotz appliance is connected to the network. If an appliance is discovered, the appliance is listed in the **Device** column of the window. Select the radio button for the appliance to configure and click **Next** to continue.
NOTE: If the COM port associated with the port to which your USB cable is connected is currently in use by another application, the message beside the COM port in the **Owner** column indicates that the port is not available. To correct this, close the application that is using the COM port and click **Scan Serial Ports**.
5. The Root Password window appears. Enter the root password and click **OK**.
6. Specify whether to use DHCP to specify the network settings of your appliance. Click **Yes** or **No**, and click **Next** to continue.
7. The utility scans the appliance and displays the network settings stored on the appliance. The network settings are divided into Ethernet Card Settings and DNS Settings.
8. Specify the Ethernet Card settings.
 - To use network settings assigned by a DHCP server, select **Configure automatically via DHCP**.
 - To specify network settings for use by this appliance, select **Configure using these settings** and provide an IP address, subnet mask, and gateway address for the appliance. Specify a NAT proxy name or IP address to be used by a NAT Proxy server in your network to allow users to connect to the appliance from outside the firewall. You can also specify speed and duplex settings for use by this interface, or use the default setting, Auto Negotiate.
9. Specify the DNS Settings.
 - To use DNS Settings provided by your DHCP server, select **Use DHCP DNS Settings**.
 - To specify DNS Settings for this appliance manually, clear the **Use DHCP DNS Settings** checkbox and provide the domain and DNS server information.
10. Click **Next** to save your configuration settings. Click **Finish** to close the Serial Configuration Utility.
11. Test the IP connection of the appliance. Start your web browser and type the IP address of the appliance into the address field. Press Enter. If the appliance is online and properly configured, the Basic View displays in the browser window.

Access an Appliance

After the appliance is running on your network, you can access the configured appliance through the Web UI or Advanced View.

You must change the root password before you can access the Web UI or Advanced View. Follow steps 1-4 of “Configure network settings using a terminal emulator” on page 16 to change the root password.

Web UI

The NetBotz Web UI provides a real-time overview of alerts and device details, including sensor readings and images captured by camera pods.

To access the Web UI, enter `https://your_appliance_IP_address` into the URL address bar of your Web browser. (See the release notes on www.apc.com for a list of supported Web browsers. If needed, you can use Advanced View to enable HTTP.)

You may receive a message that the Web page is not secure. This is normal, and you can continue to the Web UI. The warning is generated because your Web browser does not automatically trust the self-signed certificate installed on the appliance. However, the certificate is still used to encrypt information transmitted over HTTPS. You can direct the Web browser to accept the default certificate permanently or install a CA-signed certificate to stop the warning. See the *User Guide* on www.apc.com for more information about certificates.

Log on to the appliance (the default user name is **apc**, and the default password is the password for the Root account).

NOTE: You can use the Advanced View Users task to change the default User ID and Password.

Advanced View

Advanced View is a stand-alone application that must be installed on a supported network-attached computer. Use Advanced View to view sensor data, camera images, and other appliance data in a custom Java application. You can also use Advanced View to generate relay output actions and configure all appliance features. For more information on the Web UI or Advanced View, see the *User Guide* on www.apc.com.

NOTE: Advanced View is not supported on mobile devices.

Install Advanced View.

NOTE: The Java Runtime Environment used by Advanced View is always installed, regardless of whether the installation target already has a suitable JRE installed.

Microsoft® Windows® Systems: To install the applications and the JRE on a computer running Windows 8, 10, 7 Pro, Windows Vista® Enterprise, or Windows Vista Business, download `install.exe` from www.apc.com. Follow the prompts to complete the installation of your software.

Linux Systems: To install the applications and the JRE on a computer running Red Hat® Enterprise Linux® 5 or 7, or Fedora™ 12 or 24, download `install.bin` from www.apc.com. Follow the prompts to complete the installation of your software.

Access an Appliance with Advanced View. Before using Advanced View to manage an appliance, you must first add the appliance IP address or hostname to the **Appliance** list. To add an appliance to the **Appliance** list:

1. Click **Add Appliance**. The Add Host Device window opens.
2. In the **IP Address or Hostname** field, type the IP address or hostname of the appliance.
3. In the **Port** field, type the TCP port through which you will communicate with this appliance.
4. To use SSL encryption to communicate with this appliance, select **Connect Using SSL**.
NOTE: HTTP is disabled by default. Until you enable HTTP, you must select this option.
5. If you want to be logged out after a period of inactivity, select **Auto Logoff** and specify the length of idle time before you are logged out in the provided field. Click **OK**.

You may receive an **Untrusted certificate** warning. This is normal on first startup, and you can proceed to the appliance. The warning is generated because the default certificate is self-signed, rather than being signed by a trusted Certificate Authority. However, the certificate still allows your information to be encrypted over SSL. You can direct Advanced View to **Accept this certificate permanently** or install a CA-signed certificate to stop the warning.

6. Log on to the appliance. (On first startup, the **User** name is **apc** and the **Password** is the Root password).
NOTE: To increase security, use the Advanced View *Users* task to change the default User ID and Password.
7. The NetBotz Configuration Wizard opens. See “The Configuration Wizard” on page 21 and the *User Guide* on www.apc.com for more information on the Configuration Wizard, or select **Close** to go to your appliance.

The Configuration Wizard. Use the Configuration Wizard to configure the following settings on your appliance:

- Domain Name Server Settings
- Clock and Calendar Settings
- Region Settings
- Administrator user ID and password
- E-Mail Settings
- E-Mail Alert Notification Recipients

The Configuration Wizard downloads the latest available version of BotzWare to your appliance.

When you finish configuring your appliance with the Wizard, your appliance monitors your environment for lack of adequate air flow and for changes in temperature and humidity. The appliance also detects motion in the area where the camera is located. Alert conditions detected by any of these sensors generate an email to send to a specified email address.

The Configuration Wizard runs each time you use Advanced View with your appliance until you complete all of the steps in the Wizard, or until you select **Don't Show Configuration Wizard Next Time**. You can run the Wizard again by selecting **Configuration Wizard** from the Advanced View **Tools** pull-down menu.

Types of user accounts

Your appliance has a pre-configured Administrator account and Root account. You must change the Root account password before you can access the Administrator account. After you set the Root account password, you can use the Administrator account to access the Web UI or Advanced View using the Root password and the default user ID (**apc**).

The Root account is used only for communications that are performed with the USB Console Port, e.g., when you use the Serial Configuration Utility to specify network settings. The default user ID is **root** and the password is **apc**.

NOTE: You cannot change the root account user ID. After initial log on, you can use the Advanced View *Change Root Password* Tool to change the root account password.

Quick Configuration

Once you configure, install, and apply power to your appliance, use Advanced View to perform the following procedures.

- **Configure Appliance Settings:** Configure the appliance Clock, DNS, Region, Network Interface (hostname, NAT proxy, and speed and duplex settings), E-mail Servers, and Proxy settings.
- **Configure Alert Actions:** Configure the Play Audio Alert and Primary E-mail Notification alert actions.

Configure appliance settings

Open Advanced View and perform the following Appliance Settings tasks. The icons associated with each task are located in the Configuration pane, in the Appliance Settings region.

1. Set the Clock settings. By default, your appliance synchronizes the system clock with the default NTP servers. If network access to these servers is not permitted, double-click on the **Clock** icon and specify your NTP server address or manually specify clock settings.
2. Set DNS settings. Double-click the **DNS** icon and specify the DNS Domain and at least one DNS Server address.
3. Set the Region settings. Double-click the **Region** icon and set Locale and Time Zone. The default settings are US and Central Standard Time.
4. Specify a hostname for your appliance. Double-click **Network Interfaces** and specify a hostname for your appliance. Optionally, specify a NAT proxy name or IP address to be used by a NAT Proxy server in your network to allow users to connect to the appliance from outside the firewall. You can also specify speed and duplex settings for use by this interface, or use the default setting, Auto Negotiate.
5. Assign a unique user ID and password to the Administrator account. By default, user ID and password for the Administrator account are both **apc**. To increase security, double-click the **Users** icon, double-click **APC Admin Account**, and specify a unique user ID and password for the administrator account.
6. Set your email server settings. This is the email server that your appliance uses to deliver email alert notifications. Double-click the **E-mail Servers** icon, and configure the following settings:
 - (Optional) Provide a **From** address.
 - In the **SMTP server** field, type the hostname or IP address of your SMTP server (for example, mail.yourcompany.com).
 - If necessary, specify a **Port** value (25, by default).
 - Select an **SSL option** for authentication and certificate verification. Check with your network administrator for further assistance.
 - Click **Test E-mail Server**, type in your email address, and click **OK**. An email is sent to your address when an alert is detected. Confirm that you received the test email and continue.
7. If your network uses an HTTP or Socks proxy server, double-click the **Proxy** icon and specify your Proxy settings. If you are unsure whether you use an HTTP or Socks proxy, check with your network administrator.

Configure alert actions

You can configure your appliance to play audio alert notifications through the headphone/speaker jack on your Camera Pod 160 or Camera Pod 120 or to send an email alert notification to your email address when sensor thresholds are violated.

Open Advanced View and perform the following Pod/Alerts Settings tasks. The icons associated with each task are located in the Configuration pane, in the Pod/Alerts Settings region.

1. Double-click the **Alert Actions** icon to open the Alert Action Configuration window.
2. Click **Add...** to open the Select Alert Action window, select **Play Audio Alert** and click **OK** to open the Add Alert Action window.
3. In the **Alert Action Name** field, type a name for this alert action (for example, Play Audio Alert).
4. Select your Camera Pod from the **Output Device** drop box. Optionally, adjust the **Volume%** setting.
5. Click **OK** to close the Add Alert Action window and continue. Your newly created alert action is included in the list of Alert Actions.
6. Select **Primary E-mail Notification** from the list of defined alert actions and click **Edit**.
7. Check **Include a sound clip with the alert**. This ensures that any alert emailed to you includes a sound clip with any camera images that are delivered. You can disable this option later, if the file size of alert notifications is too large.
8. Click **Add...**, type your email address in the **Add E-mail Address** window, and click **OK**.
9. Click **OK** to close the Edit Alert Action window and continue.
10. Click **OK** to close the Alert Action Configuration window.

Connect Sensors and Devices

Connect Sensors to Sensor Ports

You can connect the following APC by Schneider Electric sensors to the four sensor ports labeled **Sensors** on the Room Monitor 455:

- Temperature Sensor (AP9335T)
- Temperature/Humidity Sensor (AP9335TH)
- NetBotz Vibration Sensor (NBES0306)
- NetBotz Smoke Sensor (NBES0307)
- NetBotz Spot Fluid Sensor (NBES0301)
- NetBotz 0–5 V Sensor Cable (NBES0305)
- NetBotz Door Switch Sensor for APC by Schneider Electric Racks (NBES0303)
- NetBotz Door Switch Sensor for Rooms and Third Party Racks (NBES0302)
- NetBotz Dry Contact Cable (NBES0304)

Consider the following when connecting APC by Schneider Electric and third-party sensors to the four sensor ports:

- Third-party dry contact sensors require the NetBotz Dry Contact Cable (NBES0304). To connect a sensor to the cable, follow the instructions provided with the sensor and the instructions provided with the cable.
- Standard third-party 0–5 V sensors require the NetBotz 0–5 V Sensor Cable (NBES0305). To connect a sensor to the cable, follow the instructions provided with the sensor and the instructions provided with the cable.
- If a sensor cable is not long enough, use an RJ-45 coupling (provided with some sensors) and standard CAT-5 cabling to extend the cable up to 15 m (50 ft) for a Temperature/Humidity Sensor (AP9335TH) or a Temperature Sensor (AP9335T) and up to 30.5 m (100 ft) for all other supported sensors.

For sensors that connect to A-Link ports (Temperature Sensors with Digital Display [AP9520T] and Temperature/Humidity Sensors with Digital Display [AP9520TH]), see “Connect Sensors and Sensor Pods to A-Link Ports” on page 27. To connect a wireless sensor network, see “Connect the Wireless Sensor Network” on page 28.

Add pods to your appliance

The NetBotz Room Monitor 455 supports the following pods:

- A combined total of four Camera Pod 120s, Camera Pod 160s, and CCTV Adapter Pod 120s. (The internal camera pod counts automatically as one.)
- A combined total of two Sensor Pod 150s, Sensor Pod 155s, Sensor Pod 120s, and 4-20mA Input Pod 120s.
- Up to two Rack Access Pod 170s (with AP9505i power supply).

NOTE: For pods that connect to A-Link ports (Sensor Pod 150/155 and Rack Access Pod 170 units), see “Connect Sensors and Sensor Pods to A-Link Ports” on page 27.

Camera Pods, Sensor Pod 120s, and 4-20mA Input Pod 120s can be connected directly to the appliance USB port, or you can connect a USB hub to your appliance and then connect pods to the hub. Hubs can also be cascaded, and pods can be connected to the cascaded hubs as long as the pod is no more than the fifth device in the chain.

NOTICE

Due to power requirements, Camera Pod 160s, Sensor Pod 120s, CCTV Adapter Pod 120s, and 4-20mA Input Pod 120s **must** be connected either directly to the USB port at the appliance or to a USB hub receiving power from an external source. RS232-based sensors or devices can be connected to unpowered USB hubs.

As pods are connected to your appliance, they automatically appear in the Navigation pane in both the Basic and Advanced View interfaces. Newly added pods are labeled by their pod type and their serial number.

Once a pod is added, you can change its label using either the Basic View or Advanced View.

- Once connected, CCTV Adapter Pod 120s require additional configuration before they can be used. For more information, see “Install and configure a CCTV adapter pod 120” on this page.
- If you connect a pod and then disconnect it, its entry in the Navigation pane in Advanced View is grayed out. If you reconnect a disconnected pod, its Navigation pane entry becomes active.

Install and configure a CCTV adapter pod 120: To install a CCTV Adapter Pod 120, connect your video source to the appropriate DIN, BNC, or RCA video input jack on the pod. Use the USB cable to connect your pod to your NetBotz appliance, or to a USB hub connected to the appliance. To reduce radio frequency noise and emissions from the USB cable, clamp one clamp-on ferrite onto the USB cable within 51–76 mm (2–3 in) of the end that connects to the pod, and the second clamp-on ferrite onto the USB cable within 51–76 mm (2–3 in) of the end that connects to your appliance or to the USB hub.

After you connect your CCTV Adapter Pod 120 and video source to your appliance, use Advanced View to configure the pod.

To configure your pod:

1. Start Advanced View. From the **Appliance** drop-down list, select the IP address of the appliance you have connected the CCTV Adapter Pod 120 to.
2. Log on to the appliance using an administrator account. After you log on, confirm that the newly connected CCTV Adapter Pod 120 appears in the Navigation Pane. The default label for CCTV Adapter Pod 120s is CCTV Video Pod *serial*, where *serial* is the serial number of the pod.
3. Click the **Configuration** button and double-click the Camera Pods icon (located in the Pod/Sensor Settings portion of the Configuration pane).
4. In the Camera Pod Configuration pane, select the entry that corresponds to the CCTV Adapter Pod 120 and click **Capture**.
5. The Camera Capture Settings window opens. In addition to the fields that are available when you use this window to configure Camera Pod 160s, one additional setting is available when you configure a CCTV Adapter Pod 120: Video Format.
Video Format is used to specify the format in which video is transmitted by the video source. Available selections include: NTSC-M, NTSC-Japan, PAL-B, PAL-D, PAL-G, PAL-H, PAL-I, PAL-M, PAL-N Combination, and SECAM.
6. Use the controls in the Camera Capture Settings window to configure the camera and image capture settings for use with the pod. To see an example of an image capture using the currently selected **Video Format**, **Brightness**, **Contrast**, and **Image Quality** settings, click **Apply**. The sample image in the Capture window will be updated using the new values. When you are finished, click **OK** to save your changes to the appliance.

Your video source should now appear in the Advanced View Cameras pane. Once configured, you can use the video source in the same ways you use Camera Pod 160s.

Connect Sensors and Sensor Pods to A-Link Ports

You can cascade any combination of the following:

- A combined total of two NetBotz Rack Sensor Pod 150s (NBPD0150) and NetBotz Room Sensor Pod 155s (NBPD0155)
- Two NetBotz Rack Access Pod 170s (NBPD0170)
- A combined total of eight Temperature Sensors with Digital Display (AP9520T) and Temperature/Humidity Sensors with Digital Display (AP9520TH).

Do not cascade appliances. Use one appliance per system. A-Link is an APC by Schneider Electric proprietary CAN (Controller Area Network) bus. Devices compatible with A-Link are not Ethernet devices and cannot coexist on an Ethernet bus with other networking devices, such as hubs and switches.

Before performing this procedure, follow the installation instructions provided with the devices you are cascading.

NOTICE

Do not use crossover cables.

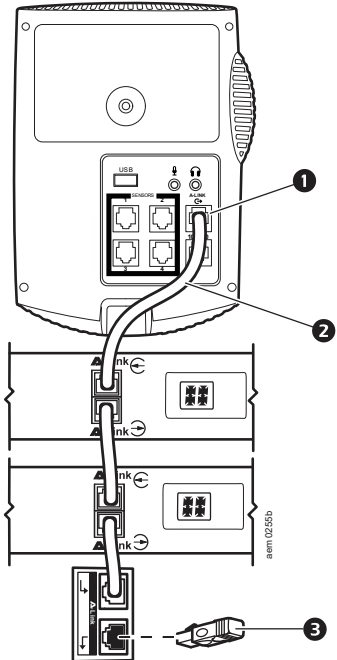
1. Connect sensors and sensor pods to the appliance as shown (1).
 - Use CAT-5 (or equivalent) Ethernet patch cables (2).
 - Connect to **in** and **out** ports as shown.
 - The maximum combined length of all A-Link cables must not exceed 1000 m (3,280 ft).
2. Plug an A-Link terminator into the unused A-Link port (3).

Room
Monitor 455
(NBWL0455/
NBWL0455A)

Sensor Pod
150
(NBPD0150)

Sensor Pod
150
(NBPD0150)

Temperature/
Humidity
Sensor
(AP9520TH)



Connect the Wireless Sensor Network

NOTICE

Only the devices listed here are compatible with the NetBotz wireless sensor network. Other devices will not function and may damage the appliance and other wireless devices.

You can connect a wireless sensor network to a Room Monitor 455, v4.4 and above, to monitor temperature and humidity.

The wireless sensor network is made of a host appliance, a coordinator, routers, and end devices.

- The **host appliance** (the Rack Monitor or Room Monitor) collects data from the wireless sensor network and generates alerts based on sensor readings.
- The **coordinator** is connected directly to the host appliance via USB. It reports data from the sensors on the network and provides available firmware updates to the wireless network. Each wireless sensor network must have only one coordinator, which is connected to a USB Type A port on the NetBotz appliance.
- **Routers** extend the range of the wireless sensor network. Routers pass information between themselves and the coordinator, and between the coordinator and end devices. Routers are optional. In a data center environment where obstructions are common, routers are recommended if sensors are more than 50 feet from the coordinator. Each router is powered by an AC-USB adapter, not directly connected to the NetBotz appliance.
- **End devices** monitor attached and internal sensors and send data back to the host appliance through the network. End devices are powered by batteries.

The following devices can be configured on your wireless network:

Wireless Device	Network Role
USB Coordinator & Router (NBWC100U)	coordinator or router
Wireless Sensor Pod 180 (NBPD0180)	coordinator, router, or end device
Wireless Temperature Sensor (NBWS100T/H)	end device

NOTE: Wireless devices have a maximum range of 100 ft, line of sight. In a data center environment where obstructions are common, a range of 50 feet is typical.

NOTE: You can connect additional sensors to the Sensor Pod 180.

The NetBotz Room Monitor 455 supports a total of 48 wireless devices on the wireless sensor network, including the coordinator and routers.

For information about installing and configuring your wireless devices, see the installation manual that came with the NetBotz Wireless USB Coordinator & Router, NetBotz Wireless Temperature Sensor, and NetBotz Wireless Sensor Pod 180.

Add wireless devices to Advanced View. You add wireless sensors to the network in the Advanced View *Wireless Sensor Setup* task. Click **Apply Commission List** to save the list of MAC addresses to the NetBotz appliance.

You can add wireless sensors to the network in the following ways:

- Enter the MAC addresses for the wireless sensors manually.
- Use any barcode or QR code scanner to save a list of MAC addresses to a text file, one address per line, and copy and paste it into the dialog.
- Use a hand-held USB scanner to manually scan the MAC address bar code on the USB Coordinator & Router label, or the QR code on the Wireless Temperature Sensor or Wireless Sensor Pod 180, directly into the dialog.
- Once the coordinator is connected to the appliance, use Auto Join to allow wireless devices to automatically join and form the network.

NOTE: Some bar code and QR code scanners return the part number, serial number, and MAC address on one line:

XN:NBWC100U%SN:XXXXXX123456%MAC:00C0B70000XXXXXX. To add a device to your wireless network, enter only the alphanumeric MAC address of each device.

USB scanner. When you use a USB scanner with document capture capabilities, only the extended address (MAC) of each wireless device will appear in the list in Advanced View in the correct format.

1. Attach a hand-held USB scanner with document capture capabilities to a computer running Advanced View.
2. With Advanced View open to the “Add Addresses” dialog in the Wireless Sensor Setup task, scan the QR code on the label of each wireless device.
3. Click **Apply Commission List** to save the list to the appliance.

Update wireless devices. Once you have added all the wireless devices to your wireless network, you can check their current firmware revision in the Wireless Sensor Setup task. If an update is available, the **Firmware Update Available** button will be activated in the display.

For more information about updating your wireless devices, see the *User Guide* on www.apc.com.

Install a third-party Wireless Network Device

You can install a third-party wireless network device by connecting it to the Ethernet port on the appliance using an Ethernet cable. APC by Schneider Electric currently supports the D-Link® DWL-G820, a wireless Ethernet bridge. To install and configure a third-party wireless network device, see the instructions provided with that device.

Connect a USB modem

You can enhance the network communication capabilities of your appliance by connecting a supported USB modem to it. The following USB modems are supported:

- MultiTech® MultiModem® GPRS
- MultiTech MultiMobile™ USB
- Option GlobeSurfer® iCon

Connect the USB modem to your appliance or a USB hub connected to the appliance. Once the modem is recognized as a serial port by the appliance, use the Basic View *Setup* view or the Advanced View *Serial Devices* task to specify the modem that is associated with the serial port. Once you specify the modem model, use the *PPP/Modem* task to configure your appliance for PPP communications.

To uninstall your USB modem, use the *Serial Devices* task in Advanced View to remove the device.

Connect a USB digital I/O device

You can increase the number of dry contact sensors that can be connected to your appliance by connecting a supported USB digital I/O device to your appliance. The following USB digital I/O devices are supported for use with the appliance:

- Sealevel® SeaLINK® PIO-48 (adds 48 digital I/O connections)
- Sealevel Seal/O 462U (adds 96 digital I/O connections)
- Sealevel Seal/O 463U (adds 96 digital I/O connections)
- Sealevel Seal/O 450U (adds 16 digital I/O connections)

To connect a USB digital I/O device to your appliance:

1. Remove power from the appliance.
2. Connect the USB digital I/O device to your appliance, or to a USB hub connected to the appliance.
3. Apply power to the appliance.
4. Once the appliance has finished booting up, it will recognize power for the digital I/O device at a serial port. Use the Basic View *Setup* view or the Advanced View *Serial Devices* task to specify the digital I/O device that is associated with the serial port.
5. Use the Advanced View *Dry Contacts* task to configure any dry contact sensors you have connected to your digital I/O device.

To uninstall your USB digital I/O device, use the *Serial Devices* task in Advanced View to remove the device.

Connect a switched rack PDU

To connect an APC by Schneider Electric Switched Rack PDU 79xx to your appliance, use an FTDI USB-to-serial cable to the RJ-12-to-DB9 serial cable (940-0144A) included with the Rack PDU. Connect your USB-to-serial cable to your appliance, or to a USB hub that is connected to the appliance.

Once you connect the USB-to-serial cable to your appliance, you can connect the Rack PDU to the RJ-12-to-DB9 serial cable for use with your appliance.

Supported APC by Schneider Electric Switched Rack PDUs.

Switched Rack PDUs with firmware version 2.74 and lower are supported at this time.

Install intelligent power strips. Connect the intelligent power strip to a serial port on your USB-to-serial cable. Use the Basic View *Setup* view or the Advanced View *Serial Devices* task to specify which serial port-based sensor you have connected to the appliance.

The sensor readings associated with the device will appear in the Basic and Advanced Views once you complete installation.

To uninstall your intelligent power strip, use the Serial Devices task in Advanced View to remove the device.

Connect external sensors

To install an external sensor, plug the sensor into an available External Port on any Sensor Pod 150, Sensor Pod 155, or Sensor Pod 120.

NOTE: When connecting a sensor to a Sensor Pod 120, be sure to note both the sensor pod serial number, located on the back of the pod, and the number of the External Port on the pod when you connect the cable. You will need this information when you use the sensor pod task to configure your appliance. The External Port number is printed above the port on the pod.

The female connectors on the NetBotz 120 Sensor Pod units are Version 2, NetBotz DIN standard connectors and can only accept male, Version 2, NetBotz DIN Sensor Cables. The new Version 3 products use standard RJ-45 connectors.

If the external sensor cable is not long enough, use an Extension Cable for External Sensors, available in 15 m (50 ft) and 30 m (100 ft) lengths from your APC by Schneider Electric reseller, to lengthen the cable.

When you have finished installing external sensors, use the Sensor Pods task to configure the appliance to use the external sensor. Once you configure your appliance, an additional temperature sensor appears in the Sensor Data pane when the pod to which the temperature sensor is connected is selected from the Navigation pane. Use the Advanced View *Sensor Pods* task to specify thresholds for this external sensor.

Software Upgrades

You can upgrade the BotzWare on your appliance using the *Upgrade* task in Advanced View. You can add the following software packs to your appliance:

- Advanced Software Pack, which includes the following features:
 - Block out masking for camera images
 - Digitally signed clips
 - Enhanced audio features
 - Detailed appliance location information
 - Increased number of definable users and user capabilities
- 5 Node Scanner/IPMI Pack, which provides IPMI and SNMP scanner integration

NOTE: When you upgrade your appliance, the connected pods are automatically updated. If your network includes more than one appliance, you must perform the upgrade on all appliances. Valid data is not available during the upgrade.

Clean the Room Monitor 455

To clean the device, gently wipe surfaces with a clean, dry cloth.

Specifications

Electrical

Input voltage, nominal 48 VDC (Power-over-Ethernet)

Maximum power consumption 15 W

Physical

Dimensions (H x W x D) 210 x 170 x 94 mm (8.3 x 6.7 x 3.7 in)

Weight 0.64 kg (1.40 lb)

Environmental

Elevation (above MSL)

Operating 0 to 3000 m (0 to 10,000 ft)
Storage 0 to 15 000 m (0 to 50,000 ft)

Temperature

Operating 0 to 45° C (32 to 113° F)
Storage -15 to 65° C (5 to 149° F)

Relative Humidity

Operating 10 to 90%, non-condensing
Storage 10 to 90%, non-condensing

Compliance

CE, FCC Part 15 Class A, ICES-003 Class A,
VCCI Class A, EN 55022 Class A, EN 55024,
AS/NZS CISPR 22

Two-Year Factory Warranty

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

Terms of warranty

APC by 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. APC by 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 the APC by Schneider Electric website, www.apc.com.

Exclusions

APC by 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, APC by 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 APC by Schneider Electric recommendations or specifications or in any event if the APC by 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 APC by Schneider Electric customer support network through the Support page of the APC by Schneider Electric website, **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

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

USA—FCC

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 not installed and used in accordance with this user manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference. The user will bear sole responsibility for correcting such interference.

After an electrostatic discharge (ESD) event, the appliance may require up to 2 minutes to restart services that are necessary for normal operation. During this time, the Web interface of the appliance will be unavailable. If any necessary services or devices external to the appliance, such as a DHCP server, were affected by the ESD event, these devices also need to restart properly.

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に要求されることがあります。

Taiwan—BSMI

警告使用者：

這是甲類的資訊產品，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。

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 the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. APC by Schneider Electric cannot accept responsibility for any failure to satisfy the protection requirements resulting from an unapproved modification of the product.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to CISPR 22/European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide a reasonable protection against interference with licensed communication equipment.

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.

Worldwide Customer Support

Customer support for this product is available at www.apc.com.

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